

COMPUTER-ASSISTED VOCABULARY ACQUISITION IN THE ESL CLASSROOM

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University of Pittsburgh, 2006

The advantages of both explicit and incidental vocabulary learning mechanisms have been a subject of ongoing scholarship within the field of Second Language Vocabulary Acquisition (SLVA). Most studies addressing these two types of learning mechanisms have explored them within the context of second language (L2) reading activities. Traditionally, research on explicit and incidental vocabulary has been conducted without computer technology, at least for studies involving English. This thesis examines the opportunities that intermediate ESL learners had to acquire vocabulary while reading pre-selected texts every week using a computer program known as REAP as part of their coursework in the English Language Institute. Students received an individualized series of documents containing “target” words in a study that was developed as an extension of an earlier study of enhanced learning conditions. The target words consisted of a list of academic words that students did not know. The list was determined by a vocabulary pre-test. Students were told explicitly to try to learn the meanings of their target vocabulary words by clicking on them in order to view online dictionary definitions. Students engaged in explicit learning of target words, though in doing so, they were given the opportunity to use the same online dictionary to look up other “non-target” words. The learning of non-target words proceeded via incidental learning mechanisms. Data was collected through observations of students, teacher feedback and student-student interviews. The quantitative and qualitative analyses revealed a variety of student learning outcomes and behaviors. There was no relation between non-target and target vocabulary learning outcomes. Students exhibited one of two

distinct vocabulary-learning behaviors. One group of students took notes while reading and focusing more on target words. The other mainly asked their teacher vocabulary questions while reading. The results of the study are explored in terms of their pedagogical implications.

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PREFACE

I would like to thank Alan Juffs, Dawn E. McCormick and Claire Bradin Siskin for all their assistance and encouragement. I would also like to thank Lois Wilson, Maxine Eskenazi, Jaime Callan, Michael Heilman, Jonathan Brown, Kevyn Collins-Thompson and James Sanders for making this project possible. I would also like to thank Yasui Eiko and Il'Ya Bratman for everything they have given me. Last but certainly not least, I would like to thank my family for all their support.

1.0 INTRODUCTION

Second language (L2) acquisition depends crucially on the development of a strong vocabulary. In the second language acquisition (SLA) subdiscipline known as second language vocabulary acquisition (SLVA), researchers have focused their attention on the need for second-language learners to optimize their vocabulary knowledge (see, for instance, Singleton, 1999; and Schmitt, 2000). In the last five years, the merits of a variety of methods of vocabulary development have been hotly debated, beginning, one might argue, with Nation's (2001) work. At issue within SLVA has been the relative importance and efficacy of implicit, explicit and incidental learning mechanisms in the acquisition of L2 vocabulary. The debate has centered around the results of recent SLVA studies (see Horst et al., 1998, and Cobb, 2006, for two useful reviews of such studies). Because incidental vocabulary acquisition has figured prominently in most of the studies (e.g. Brown, 1993; and Rott, 1999), a gap in the research exists. Specifically, not enough recent research has included conditions for both incidental and explicit learning of vocabulary. Moreover, as Singleton (1997) points out, pedagogical applications of research findings have been modest.

The present study attempts to go some way toward addressing the gap in SLVA research by providing ESL (English as a Second Language) students with opportunities for both incidental and explicit vocabulary learning. Significantly, the study builds directly on previous work in the field, particularly on that of Hulstijn, Hollander, and Greidanus (1996). In addition,

it involves new computer-mediated opportunities for both explicit and incidental vocabulary learning in English. Students are given the opportunity to build their vocabulary through both explicit and incidental mechanisms in the course of using a technologically advanced reading tool. In terms of SLVA theory, the study addresses a fundamental question in the field that Zahar, Cobb, and Spada (2001, p.544) posed in the following terms: Can a “functional reading lexicon in a second language (L2) itself ... be acquired through reading (Nagy, 1997) or is [it] more likely to result from some kind of direct instruction (Zimmerman, 1997) or instructionally enhanced reading (Hulstijn, Hollander, & Greidanus, 1996)?”

2.0 RESEARCH ON EXPLICIT AND INCIDENTAL VOCABULARY LEARNING

A number of SLVA studies (Nation, 1990; Paribakht & Wesche, 1996; Zimmerman, 1997) have suggested that explicit instruction has an important effect on student vocabulary learning, though researchers disagree on the form such instruction should take. As regards such instruction in the classroom, some have suggested that teachers ask students to produce words or phrases associated with an idea or concept. Others have emphasized the provision of semantic contrasts between words through the use of examples; still others have backed the use of techniques designed to compel students to negotiate meaning, as in deciding the kind of context in which a particular word might be appropriate (Lee, 2003). Other studies (N. C. Ellis & Beaton, 1993) have focused on the degree to which explicit instruction should foreground different aspects of a word, such as semantic content, pronunciation and graphic form. In addition, significant theoretical work has centered on the semantic unrelatedness of target words (Nation, 1990; Tinkham, 1993). Essentially, as Nation (1990) has argued, teaching words with similar meanings may thwart learners in their attempts to map form onto meaning. However, of crucial importance is the fact that researchers remain divided in their interpretation of the results of such studies.

Recently, incidental vocabulary learning has received renewed attention within SLVA research. As with explicit vocabulary learning, incidental vocabulary learning must be defined clearly before it can be discussed in any meaningful way. Paribakht and Wesche (1999, p.176)

suggest that “incidental vocabulary learning” occurs when “learners are focused on comprehending meaning rather than on the explicit goal of learning new words”. Proponents of incidental vocabulary learning often point to research results that demonstrate vocabulary acquisition in the absence of vocabulary-based directives from teachers or researchers. Often, exposure to vocabulary is thought to be sufficient to trigger acquisition.

In one such study, conducted by Rott (1999), differential exposure to vocabulary items affected the vocabulary development of English native speakers learning German. Specifically, students exposed to words two times in the course of reading fared as well on measures of vocabulary acquisition and retention as those exposed to the same words four times, though both groups performed far worse than a third group that saw the words six times. Rott’s (1999) study addressed the relationship between “target” word frequency and vocabulary acquisition. The exposure to a target vocabulary word six times or more triggered acquisition of the word significantly more than did an exposure of five times or fewer. In effect, her study established six occurrences as the numerical determinant of target vocabulary word acquisition in an incidental context.

Within research on incidental vocabulary learning, the analysis of the interplay between word frequency and acquisition is nothing new. From the work of Saragi, Nation, and Meister (1978) to work by Nagy, Herman, and Anderson (1985) to Rott’s (1999) more recent study, such an area of focus has informed much of the research on incidental vocabulary learning, as Zahar, Cobb, and Spada (2001) point out.

In another kind of vocabulary study by Paribakht and Wesche (1996), students in a group who were given vocabulary questions following a reading demonstrated greater productive knowledge of target words than a comparable group presented instead with comprehension

questions. In a later study, Paribakht and Wesche (1999) explored student strategies for learning new words. Such strategies included inferencing, making use of grammatical and morphological information, and to a relatively small degree, dictionary use. Gu and Johnson (1996) conducted related research that revealed the effectiveness of several different vocabulary-learning strategies, such as using context to guess meaning, for a group of Chinese speakers learning English. Significantly, those students whose proficiency was lowest and whose vocabulary was smallest relied on methods of visual, written repetition of the form and meaning of a word to a larger degree than more successful students. In other words, less proficient students may benefit more than others from glosses. For such students, vocabulary-learning strategies that require more “bottom-up” processing may be useful.

In contrast to most other recent SLVA studies, those of Gu and Johnson (1996) and Paribakht and Wesche (1999) explore aspects of both incidental and explicit learning. In these studies, to the degree that students use supplemental materials to learn the meanings of new words, they engage in explicit vocabulary learning. To the extent that they read in order to improve their reading comprehension, rather than their vocabulary, they also engage in incidental vocabulary acquisition when they learn new words through reading.

The present study thus bears a relation to the aforementioned studies. Less important to the present study is the idea of implicit learning encapsulated by the formulation N. C. Ellis (1995, p.14) refers to as the “strong implicit vocabulary learning hypothesis”. Such learning occurs when “the meaning of a new word is acquired totally unconsciously as a result of abstraction from repeated exposures in a range of activated contexts” (N. C. Ellis, 1995, p.14). Very recently, the hypothesis has been revised to take into account the explicit learning necessary for the pattern recognition that precedes implicit language learning (N. C. Ellis, 2005).

However, the fact remains that the implicit learning stemming from input processing does not figure prominently in the current study.

To summarize, incidental and explicit learning mechanisms both require conscious attention to aspects of a language-learning task, though the goal (reading comprehension vs. vocabulary building, respectively) is different in each case. Both mechanisms have been focuses of SLVA at one time or another, and the merits of both have been fiercely debated (see, for instance, N. C. Ellis, 2005; Laufer, 2005; and Folse, 2004). Those adopting different positions have much in common, however. Specifically, they are concerned with the facilitation of student vocabulary learning in an L2. Furthermore, their research addresses the usefulness of additional or external sources of information about vocabulary for students, whether such information is given in dictionary entries, glosses or in other forms.

As important as resources for vocabulary learning are, some researchers have argued they may be of little use without student attention to learning. Specifically, Schmidt (1994), among others, has maintained that learning cannot occur without attention. In other words, in the context of vocabulary learning, students who have not been directed to attend to the form of a word or who do not notice and/or negotiate the meaning of a word will not learn a word. However, the attention students can give to their learning depends on several factors.

As cognitive load researchers have demonstrated, resource- and processing-based constraints limit such attention. In fact, as Sweller (1988, 1994) has shown, working memory is constrained in terms of both capacity and duration. In a vocabulary study, then, the greater the number of unknown words to which a student is exposed at one time, the greater the demands placed upon working memory, and the higher the likelihood that learning will be hindered and long-term retention blocked. If the demands placed upon working memory are reduced,

learning should improve, inasmuch as such a reduction will facilitate increased information storage in long-term memory.

The research on incidental and explicit vocabulary learning, attention to learning, and cognition is important for the present study. However, any overview of such research is incomplete if it does not address the principles of activity theory. Activity theory, as Lantolf and Thorne (2006, p. 226) explain, is concerned with the description of ‘activity systems’ comprising heterogeneous groups of participants that interact in dynamic, often unpredictable ways. Activity systems usually include a ‘community’ (Lantolf & Thorne, 2006, p. 223) of participants who engage in an activity that has achievable outcomes. Because of the inherent instability of interrelated activity systems, conflict drives all activity systems. More precisely, within an activity system, participants often differ in both the outcomes they work towards and the ways they bring about any one outcome.

In the classroom, students approach a language-learning ‘task’ from different perspectives, frequently with goals uniquely “formed and reformed under specific historical material circumstances” (Lantolf & Genung, 2002, p. 191). Students with different goals and motivations engage in distinct activities even when asked to perform the same ‘task’, which Lantolf and Thorne (2006, p. 238) define as an instructor’s or researcher’s “plan [for language learning] with its accompanying artifacts and orientations”. That is, actual language-learning behavior frequently deviates from desired or expected language-learning behavior. In addition, individual student behavior changes during the course of a task. In a vocabulary-learning study, for example, student interaction with a language-learning tool such as an online dictionary often diverges from the use that the researcher has tried to facilitate.

2.1 CONTEXT OF THE STUDY

The ongoing debate surrounding incidental, explicit and implicit vocabulary learning informs the present study. Specifically, in order to fully understand the purpose and relevance of the present study, one must revisit the seminal vocabulary study done by Hulstijn, Hollander, and Greidanus (1996). This study was one of the first to explore the issue of student access to supplementary information for L2 vocabulary-building. Of late, researchers have returned to this issue from a variety of perspectives, though most studies have involved traditional, paper-and-pencil methods of data collection. For the most part, such research has not created opportunities for computer-assisted language learning (CALL), though there are some important exceptions (see, for instance, Smidt & Hegelheimer, 2004; Hill & Laufer, 2003; Bowles, 2004; and Fuente, 2003). Moreover, of the studies designed to facilitate computer-assisted vocabulary learning, relatively few (e.g., Ten Hacken & Tschichold, 2001; Brown, Sagers, & LaPorte, 1999) have involved English as the target language.

The current study, by contrast, examines the efficacy of incidental and explicit L2 vocabulary-learning mechanisms. Not only does the study extend previous research, it does so by means of computer technology. A vocabulary-acquisition study involving computer technology is appropriate for several reasons.

Essentially, coupling the reading of documents containing unknown words with supplemental lexical and morphosyntactic information in the form of dictionary definitions may provide students with the necessary tools to optimize their acquisition of unknown vocabulary. Moreover, evidence exists that computer-based tutorials with explanations help students with mathematics (e.g. Alevan & Koedinger, 2002), but it is still unclear how such instruments affect language-learning outcomes. Furthermore, many researchers and scholars of SLVA (e.g., N. C.

Ellis, 2005) think students who actively engage and can explain their behavior in language learning can be more accurate and that such interaction creates robust learning. Robust learning occurs when “the acquired knowledge or skill” is either long-lasting or transferable, or when it promotes future learning (VanLehn, 2006). For learning to be long-lasting, its duration must constitute days, months or years. For it to be transferable, it must be usable in conditions other than those in which it was learned, and it is said to promote future learning when it can increase the rate at which related knowledge or skills are acquired. Of course, robust language learning is a desirable objective—it is an outcome sought by students, educators and researchers alike.

2.1.1 The Findings of Hulstijn, Hollander, and Greidanus (1996)

In light of the need for scholars and researchers to facilitate robust language learning and engage in an ongoing dialogue within the field, the results of the work done by Hulstijn, Hollander, and Greidanus (1996) were taken as the starting point for the present study. Specifically, the three researchers found that Dutch students of French benefited from receiving supplemental information (e.g. definitions and/or glosses) in the acquisition of target vocabulary through reading. That is to say, when Dutch university students read French-language texts for the purposes of comprehension, they performed better on post-reading vocabulary-learning measures when given either marginal glosses or dictionary definitions of unknown words. Students engaged in incidental vocabulary learning in the study insofar as their purpose in reading was to understand what they read. They were not told to try to learn the meanings of unknown words.

In general, the researchers found that marginal glosses proved superior to dictionary definitions in helping the students to learn new French words. Moreover, supplementary material led to greater vocabulary learning than no supplementary material. Somewhat

problematically, however, most students supplied with dictionaries did not make use of them to look up unknown words. As the researchers reported, students furnished with dictionaries only looked up 12% of the target words. When they actually looked up words, students given dictionaries outperformed students given marginal glosses in terms of vocabulary acquisition.

2.1.2 The Pittsburgh Science of Learning Center (PSLC) Research Framework

The current study followed from the results of earlier SLVA studies. However, the research principles of the Pittsburgh Science of Learning Center (PSLC) also influenced the development of the study. Specifically, the study was conducted in accordance with the theoretical framework of the PSLC. The PSLC concentrates its research efforts on designs that measure significant, “sustainable” learning done by students in their academic courses (Van Lehn, 2006).

PSLC research studies require treatments that markedly increase student learning for an extended period of time. Such treatments must not be cumbersome or unreliable in their application, and they must be used in the analysis and prediction of robust learning. In fact, robust learning is the focus of all PSLC studies.

In the PSLC, this thesis falls under the “fluency and refinement cluster” rubric (VanLehn, 2006, p.1). This rubric comprises studies pertaining to both the fine-tuning of acquired knowledge and a sharpening of the awareness of when to apply such knowledge. Additionally, studies in the fluency and refinement cluster are concerned with the automatization of knowledge, which can quicken the acquisition of future knowledge (VanLehn, 2006, p.4). In effect, the growth of student fluency, along with attempts by students to make sense of what they are learning apart from any instruction given, can give rise to robust learning.

2.2 AN EXTENSION OF HULSTIJN, HOLLANDER, AND GREIDANUS (1996)

The results of the study by Hulstijn, Hollander, and Greidanus (1996) served as the foundation for a meaningful extension of the original study. This extension included both an advanced technology component (to promote CALL) and an important directive to students about the purpose of the language-learning task they were to engage in. The REAP computer program developed by Jaime Callan and Maxine Eskenazi at Carnegie Mellon University comprised the advanced technology component. REAP, an intelligent tutoring system (see <http://orleans.lti.cs.cmu.edu/Reap/#Project>), was used to select documents from the Internet for students to read in order to track the learning of target vocabulary within an individualized, adaptive framework. Significantly, the database in its entirety consisted of nearly 10,000,000 documents, yielding a corpus considerably larger than those employed in recent studies. The documents chosen by REAP were filtered from an open corpus (the World Wide Web) according to multiple vocabulary-related constraints.

2.2.1 The English Language Institute (ELI) at the University of Pittsburgh

The students who read the 1,000-word documents that the REAP program provided were students at the English Language Institute (ELI) at the University of Pittsburgh. The ELI operates under the aegis of the Department of Linguistics at the University of Pittsburgh and offers English-language instruction primarily to prepare ESL students for university and graduate programs at tertiary institutions in America. The focus of the Institute is on academic English, and most of the students in the study are between the ages of 18 and 35. The adult ESL learners in the ELI are all at least 17 years old. The overwhelming majority are between 17 and 50 years

of age. Traditionally, ELI students have come to Pittsburgh mainly from Southeast Asia, including Japan, Korea and Taiwan, though at the time of this study, there was a large influx of students from Saudi Arabia. There also were, and there continue to be, only a few students from Europe, Latin America and Africa.

Incoming ELI students are required to take the Michigan Test of English Language Proficiency (MTELP). The test helps ensure appropriate student placement in either the beginner (Level 3), intermediate (Level 4) or advanced (Level 5) English-language courses. In actuality, ELI placement decisions also depend on teacher recommendations, writing scores and the results of a listening test. Full-time students take 5 courses per term, each of which meets for 50 minutes four times a week. The majority of students enroll as full-time students, though some elect to take 1 or 2 courses on a part-time basis.

The ELI offers non-credit courses in reading, writing, grammar, speaking and listening that are taught according to the principles of Communicative Language Teaching (CLT). Only English is used in the ELI, and often, classes involve pair and group work, including activities and tasks that require students to work together to negotiate meaning through meaningful communication. As much as possible, particularly in intermediate and advanced courses, authentic academic materials are used as supplements to textbooks in order to prepare students for the kinds of tasks and language they will be expected to master in an academic program. For this reason, it is crucial that much of the vocabulary students learn in their reading classes be Academic English.

2.2.2 The Role of REAP in Student Vocabulary Development

To aid students in learning Academic English, the REAP program was used to find appropriate reading material for students in the intermediate ELI reading course (Reading 4). Specifically, a series of search parameters were designed and refined in order to provide students with 1000-word online documents containing pre-selected academic English.

Initially, students spent 50 minutes at the beginning of the Spring 2006 term taking a vocabulary pre-test online in the Robert Henderson Language Media Center (the LMC). The pre-test consisted of multiple-choice cloze questions for nearly 200 vocabulary words selected from the Coxhead (2000) *Academic Word List*. Given the purpose of the ELI, as well as the future plans of most students in the ELI, such a word list seemed suitable for the pre-test. That is, knowledge of the words appearing on the list is indispensable in any university or college program of study. Before students can succeed in a degree program, there are certain basic words they need to master, many of which appear on the *Academic Word List*.

When students took the vocabulary pre-test, they were instructed to answer as many questions as they could in the 50-minute period. They were judged to have finished the test when they answered approximately 70 questions incorrectly. The 70 questions they answered incorrectly revealed the vocabulary words they did not know, which words in turn became their “target” words for the semester.

Most importantly, the readings chosen for students included their target words. In addition, the individualized readings each student received were subjected to a selection algorithm based on several criteria, including reading topic, length and grade-level (following Collins-Thompson & Callan, 2004). All readings were culled from the Internet, and target words in each reading were appeared in blue, and they were bolded to attract student attention. Each

reading contained 1-3 target words and readings were individualized. In other words, a student's readings were selected to match the student's reading level (either grade level 6, 7 or 8) to ensure that unknown vocabulary did not constitute more than 5% of any text (Juffs et al., April, 2006).

For approximately 10 weeks, students went to the LMC for 20 minutes twice a week during Reading 4. They read documents and answered multiple-choice cloze vocabulary items and multiple-choice comprehension questions appearing after each reading. Crucially, and in contrast to Hulstijn, Hollander, and Greidanus (1996), students were instructed to read for both comprehension and for vocabulary development. Such directions were given to students to ensure that students engaged in explicit learning of target vocabulary. In other words, specific instructions to the students to learn new vocabulary were essential to establish the conditions that would promote the use of explicit learning mechanisms.

As mentioned previously, each reading contained between 1 and 3 target words. If a student correctly answered a post-reading vocabulary question about a target word, a reading with at least one new target word would appear. A student was never presented with the same document twice, and the documents were ordered to provide students with exposure to target words they had seen in previous documents (based on their responses to post-reading vocabulary questions) and target words they had not encountered in earlier texts.

Student readings were formatted to contain hyperlinks to definitions of each of the target words. Students were encouraged to click on a target word in order to see its definition, which appeared in a separate window. The definitions came from an online version of the *Cambridge Advanced Learner's Dictionary*. In fact, students were capable of looking up any word, be it target or non-target, that appeared in a reading. If a word was a non-target word, they could

click on the word, and then copy and paste it into a box at the bottom of their screen. The definitions for non-target words were from the same source, and students were advised to use the resources and supplementary information at their disposal.

Students were also told they could write down any and all information about a given text while reading. Once they completed a reading, they had to answer 2-3 multiple-choice cloze questions focusing on the target words that had appeared in the reading, after which they had to answer a multiple-choice comprehension question. While answering the questions, students were not permitted to access any dictionary definitions. Students were required to answer two vocabulary questions correctly for each word after having seen a minimum of two readings containing the target word in question. Such a measure ensured that knowledge of a word was attained. Students were also given the opportunity to provide feedback about the content of each reading after answering the questions. In this way, the REAP program constantly refined its search parameters based on student input.

In the twelfth week of classes, students were given a two-part vocabulary post-test. In the first part, they were given 10 target words for which they were asked to produce sentences, which was a familiar vocabulary activity for the students. In the second part of the post-test, students were presented with 40 multiple-choice cloze questions testing acquisition of another 40 target words (for results of the study, see Juffs et al., June, 2006).

Within this research framework, the current project was undertaken. Specifically, it was hypothesized that students would encounter a myriad of unknown words in their readings quite distinct from their target words. That is, the pre-selected target words of concern to researchers from both Carnegie Mellon University and the University of Pittsburgh would not be the only words playing a part in student vocabulary-learning outcomes.

While students were told to try to learn their target words, they were not told they had to learn any non-target words. They were given the chance to learn new non-target words as they saw fit. In effect, while concentrating on reading and acquiring target vocabulary, they had the opportunity to employ incidental learning mechanisms in their interaction with non-target vocabulary. In acquiring non-target vocabulary for the purposes of trying to learn target vocabulary, as well as to improve their reading skills, they could engage in both incidental vocabulary learning of non-target words and explicit vocabulary learning of target words. Both kinds of learning would take place within an “instructionally enhanced” context (Hulstijn, Hollander, and Greidanus, 1996), though in contrast to many previous studies, such a context would be computer-based.

2.3 RESEARCH QUESTIONS

Of chief importance in this study was the degree to which students would take advantage of computer-assisted opportunities for incidental vocabulary learning while performing online reading tasks. The study necessarily addressed a more fundamental question: How would students learn new words in the course of completing computer-based reading tasks? Lastly, and most importantly for this study, how was the learning of non-target words related to the learning of target words?

In this thesis, the acquisition of target words was of secondary importance (for a related study with this focus, see Juffs et al., June, 2006). At issue was how students approached vocabulary learning in general. Prior to the study, it was unclear how students would make use of supplemental materials and what would determine their choices in doing so.

In an earlier study (see Juffs et al., April, 2006), students frequently used the online dictionary to look up the meanings of target words. In fact, students accessed 71% of all the definitions available to them on average, and yet, such behavior did not correlate with mastery of words ($r = .16$, n.s.). The best predictor of word mastery (as defined by 2 correctly answered post-reading vocabulary questions) was number of texts read ($r = .86$, $p \leq .0001$). In other words, students reading more texts mastered more words, though the time spent clicking on hints had almost no effect on word mastery (Juffs et al., April, 2006). If students were not benefiting from looking up target words, it may have been because they were not actually making use of target-word definitions. But what were they doing while reading? They were either unable or unwilling to learn target-word definitions. It became apparent that students were not gaining a substantial learning advantage by using the online dictionary. In other words, students were not achieving a desired learning outcome. They resisted their language-learning task and instead participated in a 'counter-task' (Lantolf & Thorne, 2006, p. 238)

In this context, a decision was made to allow students to look up any word in the online dictionary. Perhaps students had been focusing their attention on non-target words, or maybe they had other preferred (and unknown) methods of using the program. It was clear that students were likely not using the REAP program the way they had been expected to, and it was also apparent that the instruments to gather data about students' behavior in the LMC were lacking. As a result, REAP was modified to allow students to look up the meaning of any word, and the number of clicks of both target and non-target words was recorded.

Because quantitative data alone would provide an incomplete picture of student vocabulary-learning behavior, qualitative data collection instruments were introduced. Students could be valuable sources of information about their own vocabulary-learning techniques.

Teacher feedback, researcher observations and student-student interviews would all play a part in detailing patterns of student behavior that could not be discerned from an analysis of quantitative data such as number of target or non-target words seen.

Several questions arose in the course of such a study. The following questions were all pertinent:

- a) How would students approach vocabulary learning in terms of strategies and practices?
- b) Would students use additional information from dictionaries to learn non-target words if given the opportunity?
- c) Would students use different strategies for learning target words and other words?
- d) Did any correlation obtain between explicit (i.e., target) and incidental (i.e., non-target) vocabulary learning?

Different data collection instruments addressed these questions. On the next page, Figure 1 details the particular instruments used in this study, as well as the data they provided and the research questions they related to. A selection of several different instruments, each to be discussed in turn in section 2.1, constituted a kind of data triangulation procedure that ensured the overall reliability of the data.

| Instrument | Research Question(s) Addressed | Data or Measurement Provided |
|---------------------------------------|---------------------------------------|---|
| 1 Student Survey and 2 Questionnaires | a), b) | Student impressions of vocabulary learning and reading in L1 and L2 |
| Student-Student Interviews | a), b), c), d) | Student impressions of vocabulary learning, the online reading program, and reading in English |
| Student Notes | a), b), c) | Students' methods of learning new vocabulary in English |
| Written Teacher Feedback | a), b), c) | Teachers' perceptions of student vocabulary-learning behaviors in and out of the Language Media Center |
| Researcher's Notes | a), b), c) | Subjective observations/ impressions of student reading in the Language Media Center and of all attendant behaviors (e.g., note-taking, asking the teacher questions, etc.) |
| Electronic Logging Feature of REAP | a), b), c) | Online report of student clicks and look-ups (quantifiable student clicking and look-up behavior) |
| Vocabulary Pre- and Post-tests | d) | Target and non-target word acquisition |

Figure 1. Data Collection Instruments and Their Research Purposes

Each of the research questions could be clarified. For the sake of convenience, the first question could be somewhat simplified by considering the answer to the following question: What behaviors did adult intermediate ESL students engage in while trying to learn new vocabulary? Such learners likely employed different methods for acquiring new words. Perhaps some relied on note-taking or other visual representations of unknown words, while others learned new vocabulary by asking an instructor about unknown words. Still others may have preferred to look up the meanings of unknown words in dictionaries, while others may have tried to use strategies like guessing meaning from context, activating background knowledge, or focusing on a word's grammatical form in order to figure out its meaning.

It was quite likely that intermediate learners took advantage of several of these techniques. Nonetheless, one issue for the present study was whether there was any pattern or regularity to the approaches that such students, or even groups of students, adopted in learning new vocabulary in English. In other words, it may have been that learners from particular native-language (L1) backgrounds or learners with a particular learning style functioned similarly with respect to the means they relied on to acquire new vocabulary.

In view of such considerations, it was important to ask whether students would use online vocabulary-learning tools of their own accord. While students in this study had the chance to use an online dictionary to learn the meanings of words they had been explicitly instructed to attend to, would they use the same tool to learn what other unknown words meant? It may have been that students would consider knowledge of non-target words helpful in their efforts to learn target vocabulary. Likewise, students may have considered non-target words insignificant or even distracting. Essentially, the way that students used the dictionary to look up non-target and

target words (i.e., student look-up behavior) would reveal how students employed both incidental and explicit vocabulary-learning mechanisms to their advantage (or disadvantage).

Students may have decided that different strategies would prove useful in learning target and non-target words. Student approaches to the learning of these two different kinds of words may have depended on the relative difficulty of each. It was believed that students would use information about non-target words to help them figure out what target words meant, but this did not preclude the possibility that they would focus on different aspects of non-target and target words. Perhaps they would tend to ask teachers about non-target words while using the online dictionary to learn target words. On the other hand, maybe they would look up the meanings of non-target words in the vicinity of target words, which they would then try to learn using contextual clues.

One of the crucial questions for the study was whether a correlation obtained between target and non-target word learning. That is, how would incidental and explicit learning be related? Perhaps more non-target word learning would accompany relatively greater target-word acquisition, or maybe there would be no relationship between the non-target and the target word-learning students engaged in.

In the context of this study, the degree to which students would attend to words other than the target words during online reading tasks was uncertain. The question of just how students might have learned non-target words, or if they even paid attention to them, was a complicated one. For instance, a student might have learned non-target words in several ways. Alternatively, a student might not have learned any non-target words. Moreover, such results were not necessarily generalizable.

To the extent that students attended to and learned non-target words, the results of the study would relate directly to Schmidt's (1994) contention that learning cannot occur without attention. The behaviors that students engaged in while learning new vocabulary were fundamental to this study. If the students were learning vocabulary, how were they doing so? What were they thinking, what were they doing, and how were they reporting what they were doing to others? And crucially, if they considered their time using the REAP program productive, what was it about the program that facilitated student vocabulary learning of target and/or non-target words?

With regard to the treatment conditions described, several predictions were made about student performance and behavior. The acquisition of target vocabulary was thought to depend on student comprehension of non-target words. It was hypothesized that students would use information about non-target words to assist them in their target-vocabulary tasks. It may have been the case that knowledge of non-target words surrounding target words would aid students in making lexical and semantic connections that facilitated target-word acquisition. In line with such reasoning, a strong positive correlation between non-target and target-vocabulary acquisition was posited, at least up to a particular critical threshold. For those students who knew the meanings of very few of the words surrounding target words, it was reasoned, target-word acquisition would be minimal. In such a scenario, such students would have too many gaps in their word knowledge and too few resources to be able to acquire a considerable number of target words.

In effect, students learning more non-target words were predicted to learn more target words, though only up to a point. Student accuracy on measures of target vocabulary knowledge should have correlated strongly with non-target vocabulary acquisition up to some critical point.

After a certain threshold, the acquisition of additional non-target words might have led to a decrease in the number of target words acquired. Such a threshold may have depended in part on the general language proficiency of the student (measured in this case by the MTELP score). The finite nature of the student's language-learning resources, including processing power, attention and memory, may also have been important.

It was thought that students spending much of their time learning as many non-target words as they possibly could would likely perform as poorly with respect to target-word acquisition as those who paid little or no attention to non-target words. In such cases, it was plausible that temporal and cognitive constraints (Sweller, 1988; 1994) would lead to students' acquiring relatively fewer target words.

In effect, the distribution of target words acquired versus non-target words acquired should have been more or less nonlinear. That is, target-word learning should have reached some maximum value for a moderate value of non-target word learning. Additionally, the amount of non-target word acquisition occurring in the study should have been much less, on average, than that of target-word acquisition. While there may have been some exceptions, the explicit instructions to focus on target words coupled with the way the words appeared should have led to relatively greater student attention to target words. It should also be pointed out that students answered cloze questions testing their knowledge of target words (for which they received feedback) after each reading, while they answered no such questions and received no feedback pertaining to non-target words. Greater attention and in general, more cognitive resources devoted to target words should have translated to differential target and non-target vocabulary learning. In terms of predicting how many target and non-target words students learned, general language proficiency should have provided some indication of such information.

3.0 METHOD

3.1 PROCEDURES

At the beginning of the study, it was necessary to collect information about the language backgrounds of the 13 students (out of 37) who agreed to participate in the qualitative part of the larger study ($n = 34$; see Juffs et al., June, 2006). In the initial survey, students identified their L1s. They were also asked about their previous experience with English, both in terms of formal classroom instruction and time spent living or traveling in an English-speaking environment. It was necessary to collect such information in order to ensure that everyone in the study was truly an intermediate ESL student. Immediately following the completion of the surveys, students were assigned a number (from 1-13). Numbers were used to label student data and protect student identity.

Students then completed two questionnaires in English detailing their attitudes and approaches to reading and vocabulary learning in their L1 and in English. The questionnaires provided a preliminary indication of students' ideas about their own vocabulary-learning behavior, and the questions were designed to make students feel comfortable sharing their ideas and opinions about language learning. The questionnaire also provided a means of gathering language data about students. Such data could then be compared to data gathered from student-student interviews, teacher reports and classroom observations. In effect, several methods of data collection assured the reliability of the data.

Subsequently, the researcher observed students reading in the LMC at least once a week for 10 weeks. Careful notes were taken about students' observable language-learning behaviors, including the questions students asked their teachers, the words they wrote down in their notebooks and their interaction with classmates. Perhaps most importantly, observations were also made about students' use of the online dictionary for both target and non-target word lookups. In some cases, copies of student notes and vocabulary logs were made and analyzed for insight into student vocabulary-learning behavior.

Near the end of the term, participants were asked to conduct informal interviews with each other on the subject of their time in the LMC. They were given a list of questions about their experiences with the REAP program, which was meant to prompt students to talk about their vocabulary-learning skills, strategies and behaviors in the context of the online reading they were doing. Students were paired and took turns asking each other questions for approximately 20 minutes, which resulted in nearly 2 hours' worth of audiotaped interviews that were then transcribed by the researcher.

While students were reading online documents, their dictionary use was logged electronically by REAP. That is, the total number of non-target and target words they looked up, the tokens they looked up, and the number of times they looked up words, among other statistics, were recorded for subsequent analysis.

As yet another data collection measure, participants completed a non-target vocabulary production task at the end of the term. Specifically, students were asked to write sentences for ten non-target words. The sentences students generated were graded by the researcher and the ELI Reading Curriculum Supervisor, according to a 3-point scale that was also used to assess the

analogous production task constituting the second part of the target-word post-test (see Appendix A).

As a final data collection measure, the three Reading 4 teachers were asked to provide written feedback to the researcher about their observation of student use of the REAP system. Once again, as with the student-student interviews, the directions for such feedback were structured very loosely in order to preclude the researcher's excluding valuable information from the teachers by suggesting, either implicitly or explicitly, that a certain kind of analysis or perspective was desired or even required.

3.2 PARTICIPANTS

In Spring 2006, 37 students placed into Reading 4 in the ELI at the University of Pittsburgh. These students did so either by testing into the course (on the basis of their MTELP Reading scores) or by successfully completing Reading 3. Of these students, 13 chose to participate in the present study.

The participants were all non-native speakers of English who in most cases had been studying English for more than 5 years. Eight had come to the United States to improve their English skills prior to enrolling in a bachelor's or master's level degree program in the United States or in another Anglophone country. Two others had come with the intention of returning to their home country to complete an undergraduate or graduate degree. And 3 students had accompanied a spouse whose work had brought him or her to the United States.

The L1 of most participants was Arabic. In fact, 4 of the participants were Arabic speakers, though Spanish, Russian, Japanese, Korean and Chinese were also represented as

mother tongues. The ages of the participants ranged from 18-37. As such, all were classified as adult ESL students, and in most cases, participants had begun studying English as adults.

At the time of the study, all participants resided in the Pittsburgh area. None had lived in the United States for more than 2 years. Additionally, two of the participants spoke English along with their L1 at home, while the rest spoke their L1 exclusively.

4.0 RESULTS

The preliminary questionnaires students filled out were aimed at revealing, among other things, their attitudes and approaches to vocabulary learning in English. For the purposes of this study, student opinions about the usefulness of dictionaries as vocabulary-learning aids were especially important. In fact, most students (11 out of 13) indicated that they believed a dictionary to be a useful (and advisable) tool for those learning new words in English (see Table 1).

A few patterns emerged out of all the participants' responses. First of all, most students identified a connection between vocabulary knowledge and reading proficiency. However, students seemed to be divided in their opinions of how much they focused on unknown words when reading. Four students agreed that they focused on unknown vocabulary when reading, while 2 disagreed. The remaining 7 neither agreed nor disagreed (see Table 2).

The questions that students were asked seemed to affect how they used REAP. After all, though students initially were divided on the question of how much they concentrated on unknown words when reading, this difference of opinion disappeared in the course of the study. In their student-student interviews, for instance, participants framed their interaction with the REAP program in terms of vocabulary learning (for complete transcripts of student-student interviews, see APPENDIX B). In fact, nearly every data-collection measure employed during the study indicated that all participants concerned themselves with vocabulary learning, though

how they did so varied. In other words, all students appeared to pay attention to unknown vocabulary while reading even after student self-reporting had suggested otherwise. Assuming that students' preliminary ideas about their reading focus were correct, either the REAP program altered student behavior or students modified how they read in light of the questions they had been asked or the directions for reading they had been given by their instructors. A combination of factors may also have been responsible for the discrepancy between initial student data and subsequent results. For instance, student learning that resulted from vocabulary and strategies work in the Reading 4 classroom, student ideas of teacher and research expectations and the use of REAP could all have contributed to the lack of congruence between the earliest student-reported data and later data.

The concepts of activity theory may partly explain such results. Specifically, in the context of a dynamic activity system, student motivations, goals and behavior were continually changing. During their time using REAP, students were influenced by their interaction with instructors and the power that instructors exercised in directing student behavior (Lantolf & Thorne, 2006). Additionally, student use of REAP necessarily affected attitudes about language-learning. In other words, the tool students used was one node within a complex array of dynamic interactions that shaped language learning. Even as students interacted with REAP, the program altered how they learned new words.

Table 1. Student Attitudes Toward Dictionary Usage

| Statement | Strongly Disagree | Disagree | Neither Agree Nor Disagree | Agree | Strongly Agree |
|--|-------------------|----------|----------------------------|-------|----------------|
| 4. A dictionary should be used to learn the meanings of new English words. | 0 | 0 | 2 | 8 | 3 |

Table 2. Self-Report of Attention to Unknown Words

| Statement | Strongly Disagree | Disagree | Neither Agree Nor Disagree | Agree | Strongly Agree |
|---|-------------------|----------|----------------------------|-------|----------------|
| 6. When I read something in English, I focus my attention on the words I do not know. | 0 | 2 | 7 | 4 | 0 |

With respect to the student questionnaires, the results of the second largely supported those of the first. Perhaps the most significant finding from both questionnaires was that most students (9 out of 13) believed that some type of explicit learning mechanism contributed to optimal acquisition of vocabulary in English. In this instance, students were asked to respond to the following open-ended question: “What is the best way to learn new words in English?” All responses that mentioned dictionary use, note-taking, asking an instructor questions or any other technique or tack judged to be a kind of explicit learning mechanism were included in this total (for the first two questionnaires in their entirety, see APPENDIX C).

The question that arises is whether student self-assessment was accurate. One way to approach this question is to ask what students were actually doing while reading in the LMC? Were they focusing on unknown vocabulary? If not, what were they concentrating on? In order to try to answer these questions, weekly observations of students in the LMC were undertaken. Students were also asked to conduct audiotaped interviews with each other, and teachers were asked to provide the researcher with written comments about the reading sessions in the LMC.

4.1 STUDENT OBSERVATIONS

The researcher's observations went a long way toward clarifying what students were doing while they were reading. In the course of the term, two groups of students emerged: those who took notes about vocabulary and those who did not. Students 3, 5, 7, 8, 9, 10 and 11 composed the former group, while students 1, 2, 4, 6, 12 and 13, constituted the latter group. Throughout the term, the students' note-taking behavior did not change.

In fact, none of the students in the latter group ever began to take notes. The striking fact about the students who took notes was that not a single one was a native speaker of Arabic. However the Arabic speakers were learning new vocabulary, be it target- or non-target vocabulary, it was not through recording such words graphically. The two native speakers of Russian, the two Spanish speakers, a Korean speaker, a Chinese speaker and a Japanese speaker took notes in the lab. The four Arabic speakers, along with two Korean speakers, did not record any notes. The following figure provides a more precise picture of the notes each student did or did not take.

Table 3. Content of Student Notes

| Student | L1 | Content of Notes |
|---------|----------|---|
| 1 | Arabic | N/A |
| 2 | Arabic | N/A |
| 3 | Russian | (Mostly) target and a few non-target words and their definitions |
| 4 | Arabic | N/A |
| 5 | Japanese | A few target and non-target words and definitions; some L1 translations |
| 6 | Korean | N/A |
| 7 | Spanish | Some target and non-target words and definitions; some L1 translations |
| 8 | Chinese | A few target and non-target words and definitions; many L1 translations |
| 9 | Spanish | Some target and some non-target words and definitions; some L1 translations |
| 10 | Korean | A few target and non-target words and definitions; a few L1 translations |
| 11 | Russian | (Mostly) target and a few non-target words and their definitions |
| 12 | Korean | N/A |
| 13 | Arabic | N/A |

By and large, the students who did not take notes instead asked their teachers questions about vocabulary. Curiously, the two vocabulary-learning strategies appeared to be mutually exclusive for everyone but student 7. In effect, those students taking notes on vocabulary seldom asked their instructors vocabulary-related questions. On the other hand, those students who frequently asked questions never took notes on vocabulary, with the exception of student 7. For most readings, this student took notes for 2-3 minutes and asked 3-4 vocabulary questions.

In fact, the three Reading 4 teachers were aware of this basic dichotomy. With respect to those who preferred to take notes, teachers often could not tell if the time in the LMC was well spent. With those students who asked questions, no such difficulty was encountered. One teacher commented on the questions students asked in the following terms:

I really enjoyed using the questions students posed to me as time to maximize individual teaching points. Each individual question asked allowed me to reinforce reading and vocabulary strategies on a one-to-one basis with the student. I could see if they were applying

the strategies learned in class. (Teacher A, personal communication, 4/7/06)

For the most part, teachers believed both groups of students found the time in the LMC worthwhile. A second teacher noted that “students seemed to enjoy the opportunity [to use REAP] overall” (Teacher B, personal communication, 4/11/06). Teachers also had definite ideas about the purpose of the lab sessions. Often, they communicated their ideas to students, who were no doubt influenced in their interaction with REAP by the comments teachers made. For instance, the last teacher I spoke with framed the sessions in the LMC in terms of the “goal”, which was, in her words, “to get students to learn vocabulary” (Teacher C, personal communication, 4/20/06). Comments made to this effect to students may have played a role in student decisions to attend to vocabulary, either by taking notes or by asking questions. In addition, the fact that all three teachers encouraged note-taking and questions in the LMC almost certainly had an impact on student behavior. Recall that the number of texts read correlated strongly with the number of target words mastered in the larger study ($r = .86$, $p \leq .0001$; see Juffs et al., April, 2006). Essentially, asking questions or taking notes affected the number of documents students were able to read. Such behaviors likely increased the total number of readings students completed. In effect, if students had not asked questions or taken notes, they would have tried to figure out the meaning of unknown words in other, more time-consuming ways. As a result, they would have read fewer documents unless they decided to skip all unknown vocabulary. On the basis of the student behavior observed in this study, the possibility that the students would have chosen to ignore unknown words entirely is unlikely.

4.2 STUDENT-STUDENT INTERVIEWS

In order to gather more information about student vocabulary-learning habits, and in order to see if the observations of students were reliable, audiotapes of student-student interviews were analyzed (for the complete transcripts of all student-student interviews, see APPENDIX C).

Again and again, students commented on their tendency to either ask the teacher questions about vocabulary or take notes. Their comments were borne out by the earlier observations of their behavior. In the following exchange, for instance, two students who were never observed taking notes discuss their reluctance to do so:

1: Do you write down anything in the lab?

2: Sometimes, sometimes. But it's very rare.

1: I don't write anything. I just try to, I try to develop my reading skills. I don't have time for taking notes. I just, I try to understand the word from the context, or to solve [sic] the [vocabulary] questions. (Interview Between Students 1 and 2, 3/28/06)

Other student-student interviews also supported observations made by the researcher. For instance, student 3, a Russian speaker who was observed taking copious notes, commented, "I write down all new words...when I write down [new words], I try, it's like touchtile member [sic], so long for touchtile member, for remember these words" (Interview Between Students 3 and 4, 4/4/06). Evidently, this student considered herself a tactile learner who benefited from writing words down.

Student-student interviews also provided other important qualitative data. All interviewees indicated that they were more likely to read documents they found interesting. Additionally, students reported that they used the online dictionary more often or asked more questions in the course of reading interesting texts. As student 1 explained, "If the reading is not

interesting, I will not ask questions to the teacher” (Interview Between Students 1 and 2, 3/28/06). Student 4 agreed, “If I, if we, have right of [sic] or able to choose our topic, it’s better. Because we will choose the topic we are, which we are interesting [sic] to read it [sic]” (Interview Between Students 3 and 4, 4/4/06). Student 6 also noted that the difficulty and the interest level were inextricably linked. He also stated, “If I interested in that article [sic], I read carefully” (Interview Between Students 5 and 6, 4/4/06). The students reiterated that when a document was “better”, they were more thorough readers. They would also pay more attention to vocabulary, either by taking more notes, asking more questions or using the online dictionary more. In other words, students indicated that they were more motivated to use the REAP program and the online dictionary when they were interested in what they read.

Students suggested that they be given a choice of readings in order to have sufficient motivation to read and learn vocabulary in the LMC. For example, student 3, a mother of two, wanted to choose what she read in order to avoid articles similar to the one she read. She declared, “But for me, oh, like mother, it was very, difficult to read [an article about a bomb that killed several children]. And watch this picture. Of dead children. Because I understand how it’s difficult to get children and raise children [sic]” (Interview Between Students 3 and 4, 4/4/06).

Students clearly articulated their desire to be able to choose their own topics. In many cases, they gave concrete examples of topics they disliked, as with student 9, who expressed a distaste for articles about politics (Interview Between Students 9 and 10, 4/11/06). In fact, all students interviewed said a lack of interest led to less engagement with the program.

Several other factors negatively affected student behavior. Besides uninteresting readings, other aspects of the program were objectionable. An overwhelming majority of

students said that the target words in the readings were not useful. For the most part, students echoed the sentiments of student 9, who claimed the words were “so technical” (Interview Between Students 9 and 10, 4/11/06). Such words, she clarified, were words “you don’t use in your normal vocabulary, because some of them they are so difficult, maybe to pronounce [sic]” (Interview Between Students 9 and 10, 4/11/06). At least 4 of the 10 interviewees also mentioned the strategy of focusing only on target words (and not reading at all) in order to answer the post-reading vocabulary questions. Not surprisingly, students reported employing such a strategy more often when faced with uninteresting or difficult readings.

Two students also commented on the conditions in the LMC. Student 2 complained about the noise, noting, “If the teachers make noise, I can’t concentrate” (Interview Between Students 1 and 2, 3/28/06). Student 4 expressed a preference for Windows operating systems, stating, “It’s difficult when you are using the Apple Macintosh to copy the [non-target] word and put it into the box to get the fact” (Interview Between Students 3 and 4, 4/4/06).

The student-student interviews revealed student attitudes about REAP that quantitative data did not address. In effect, student-student interviews revealed that the topics of readings, the format of the online dictionary and other features of REAP, the behavior of teachers, the difficulty of readings, the questions asked after each reading and the kinds of words students were given all affected student vocabulary learning.

The student-student interviews also bolstered the case for an analysis of the students in terms of two groups with distinct vocabulary-learning habits. The question that the neither the researcher’s observations nor the student-student interviews could resolve, however, was whether there were any link between the kinds of words students in each group were focusing on. For instance, were those students who tended to ask questions about vocabulary

concentrating on non-target words while the note-takers attended to target words? For this question, the logging feature of REAP proved indispensable.

Such a question was significant for several reasons. If some such dichotomy (i.e., note-takers vs. students asking questions) existed, then given the instructions students received, the note-takers would appear to have favored explicit vocabulary learning while those asking questions preferred to learn vocabulary incidentally. That is, students who recorded information about target words made conscious efforts to learn words that they had been instructed to learn. On the other hand, students asking questions were focusing their attention on words that they had not been instructed to learn. Students were not explicitly instructed to learn non-target words. If they made conscious efforts to learn non-target words, they learned such words incidentally, given the explicit directions to learn the target words that appeared in the readings. Note that no implicit vocabulary learning occurred, since students were not told simply to read for meaning (contra Hulstijn, Hollander, & Greidanus, 1996).

4.3 ONLINE DICTIONARY USE

All students were seen using the online dictionary on several occasions. Moreover, all students who participated in student-student interviews explicitly mentioned using the online dictionary, if for no other reason than the nature of the guide questions in these interviews (see APPENDIX D). But how much were students actually using the online dictionary? How many non-target words were they looking up? The REAP program was designed with just such questions in

mind. In fact, the program was designed with several logging features to record the number of target and non-target words each student looked up. In addition, the program tracked the specific non-target words students looked up (for a complete list of the non-target words each student looked up, see APPENDIX E).

Several interesting facts emerge from an analysis of the student lookups. First of all, student 10 looked up the most non-target words in the study (lookup information was not available for student 12). She looked up almost 60 more non-target words than the next student, and 150 more non-target words than student 5. So, though student 10 took relatively few notes on vocabulary, she looked up the most non-target words, as well as the most target words. She was clearly the most invested in using the online dictionary to learn the meanings of non-target words.

The behavior of student 10 resulted in enhanced learning. She acquired productive knowledge of the second-most target words of any student (as measured by the target-word production task) and the third-most non-target words (as measured by the non-target word production task). Only student 2 fared better on the former and only students 6 and 8 did so on the latter, as Table 4 shows.

Table 4. Student Target and Non-Target Word Production Scores

| Student | Target Word Production Score (out of 30) | Non-Target Word Production Score (out of 30) |
|-----------------|--|--|
| 1 | 17 | 6 |
| 2 | 22 | 3 |
| 3 | 12 | 7 |
| 4 | 8 | 4 |
| 5 | 2 | 0 |
| 6 | 7 | 10 |
| 7 | 15 | 4 |
| 8 | 6 | 11 |
| 9 | 11 | 3 |
| 10 | 17 | 9 |
| 11 | 13 | 8 |
| 12 ¹ | N/A | N/A |
| 13 | 15 | 4 |

Among students who did not take any notes, several frequently asked vocabulary-related questions. Many such questions pertained to non-target vocabulary. Not surprisingly, two such

students, students 4 and 13, concentrated almost exclusively on non-target words when using the dictionary. Another student who asked several questions about non-target vocabulary also looked up a relatively high number of non-target words. Tables 5 and 6 illustrate non-target and target lookup totals and averages, respectively, for each student.

Table 5. Student Target and Non-Target Lookup Totals

| Student | Target Lookups (Total) | Non-Target Lookups (Total) | Percentage of Non-Target Lookups |
|---------|------------------------|----------------------------|----------------------------------|
| 1 | 84 | 46 | 35.4% |
| 2 | 28 | 13 | 31.7% |
| 3 | 31 | 21 | 40.3% |
| 4 | 23 | 119 | 83.8% |
| 5 | 81 | 2 | 2.4% |
| 6 | 57 | 55 | 49.1% |
| 7 | 84 | 80 | 48.8 % |
| 8 | 80 | 58 | 42.0% |
| 9 | 90 | 93 | 50.8% |
| 10 | 108 | 152 | 58.4% |
| 11 | 25 | 9 | 26.5% |
| 12 | N/A | N/A | N/A |
| 13 | 7 | 47 | 87.0% |

Table 6. Student Target and Non-Target Lookups Per Reading

| Student | Target Lookups Per Reading | Non-Target Lookups Per Reading | Total Lookups Per Reading |
|---------|----------------------------|--------------------------------|---------------------------|
| 1 | 2.9 | 1.6 | 4.5 |
| 2 | 1.2 | 0.6 | 1.8 |
| 3 | 1.9 | 1.3 | 3.2 |
| 4 | 1.8 | 9.2 | 11.0 |
| 5 | 2.7 | .07 | 2.8 |
| 6 | 3.2 | 3.1 | 6.2 |
| 7 | 1.9 | 1.8 | 3.7 |
| 8 | 4.7 | 3.4 | 8.1 |
| 9 | 2.1 | 2.2 | 4.3 |
| 10 | 2.7 | 3.8 | 6.5 |
| 11 | 1.8 | 0.6 | 2.4 |
| 12 | N/A | N/A | N/A |
| 13 | 0.5 | 3.6 | 4.2 |

So how did the two previously mentioned groups of students differ in their clicking behavior? In other words, on average, did note-takers look up more non-target words than the students who primarily asked vocabulary-related questions? And whose percentage of non-target word lookups was greater? In response to the second question, those students taking notes had a 38.5% non-target lookup percentage on average. This percentage was calculated by adding up the non-target lookup percentages for students 3, 5, 7, 8, 9, 10 and 11 ($40.3 + 2.4 + 48.8 + 42.0 + 50.8 + 58.4 + 26.5 = 269.2$) and dividing the total by 7. Interestingly, for those students not taking notes, the percentage was considerably higher at 57.4%. The non-target lookup percentages for students 1, 2, 4, 6 and 13 added up to 287 ($35.4 + 31.7 + 83.8 + 49.1 + 87.0$), which was then divided by 5. Note that no data was available for student 12, who left the ELI before the end of term. Had student 12 continued, her data would have been included with that of students 1, 2, 4, 6 and 13, since she did not take any notes.

The non-target lookup averages suggest that the relationship between note-taking and non-target lookups was a complex one. With the exception of students 4 and 13, no student who only asked questions had a non-target lookup percentage higher than 50%. And if students 4, 5, and 13 are not considered, then the non-target lookup percentages among the note-takers and the students asking questions are nearly even. Of course, data from particular students cannot simply be ignored. Consequently, one must acknowledge that a difference in non-target lookup behavior does obtain between note-takers and students asking questions, though much of the difference is due to students 4, 5 and 13. It is also important to note that differences in non-target lookup behavior are only apparent among the students in the study. In other words, such differences are not generalizable, particularly in light of the small number of participants ($n = 13$). Nonetheless, it is important to note that for the students in the study, 2 of the students (students 4 and 13) who only asked questions focused almost exclusively on non-target words when they used the online dictionary. In the case of student 4, observations revealed that most non-target words looked up appeared in the vicinity of target words, whereas the non-target words looked up by student 13 were words sprinkled throughout the readings.

In terms of another important measure, that of total lookups per document read, striking differences were found for the students taking notes and those asking questions. On average, the note-takers looked up 1.9 non-target words and 2.5 target words per document. The students who did not take notes looked up 3.6 non-target words and 1.9 target words per document. In effect, students in the second group looked up nearly double the number of non-target words compared to those that note-taking students looked up. On the other hand, students taking notes looked up significantly more target words (nearly 32%² more) than students who did not take notes. Again, the same caveat is in order. From the averages that were calculated, it was evident

that most of the difference in non-target lookups between the two groups derives from students 4, 5 and 13. If these three students are not included, the calculated difference drops from 89.5% to 22.2%.³ A difference between the two groups is still apparent, but its magnitude is much less than it was formerly. For target word lookups, however, the original conclusion is inescapable. Regardless of whether or not students 4, 5 and 13 are excluded, students that took notes looked up a greater number of target words than did students who took no notes.

While individual students could be placed into one of two subgroups on the basis of their methods of learning vocabulary, it is true that there were important differences among individuals, differences for which such a classification scheme may be inadequate. In order to gain a clearer understanding of such differences, individual results of vocabulary post-tests had to be analyzed.

4.4 TARGET AND NON-TARGET VOCABULARY POST-TESTS

At the end of the term, students took a target vocabulary post-test consisting of two parts. In the first part, students were asked to write sentences for a set of 10 randomly chosen target words in order to demonstrate they knew the meaning of the words. They had 15 minutes to complete the task. They then had to answer 40 multiple-choice cloze questions (identical in format to the vocabulary questions they answered after each reading). Both tasks were performed on the computer using the REAP software. One week later, the participants in the study were asked to write sentences for each of ten non-target words, just as they had done for target words. This particular test was in a paper-and-pencil format, but otherwise, it was very similar to the production task for target words. The production tasks for both target and non-

target words were then graded by the researcher and the Reading 4 Curriculum Supervisor. As mentioned previously, scores for individual items ranged from 0 to 3 according to a pre-established rubric that the researcher and the Reading 4 Curriculum Supervisor had agreed on.

Specifically, a score of 0 was assigned if a student produced mere nonsense or left the item blank. Student sentences that indicated a knowledge of the form of the word and syntactic accuracy in the use of the word, 1 point was given. If the word appeared in a semantically appropriate context, another point was awarded, as for “acknowledge” in the following sentence: “I will acknowledge him.” Lastly, if a sentence shows a student knows the meaning of a word in addition to where and how to use it, 3 points were given (for the grading rubric for the production tasks, see Appendix A).

For nearly every student, target vocabulary production scores were significantly higher than scores for the non-target vocabulary production task. However, somewhat surprisingly, no linear relationship obtained between non-target and target production scores ($r = -.018$, $p = .477$).

Table 7. The Relationship Between Target and Non-Target Production Scores

| | | Target Production Score | Non-Target Production Score |
|-----------------------------|---------------------|-------------------------|-----------------------------|
| Target Production Score | Pearson Correlation | 1 | -.018 |
| | Sig. (1-tailed) | | .477 |
| | N | 12 | 12 |
| Non-Target Production Score | Pearson Correlation | -.018 | 1 |
| | Sig. (1-tailed) | .477 | |
| | N | 12 | 12 |

As the scatterplot in Figure 2 shows, there seems to be no correlation between the two variables. In effect, the variables in question had no linear relationship in the study. Non-target production scores bore no relation to target production scores, though this finding had meaning only in the context of the study and was not generalizable.

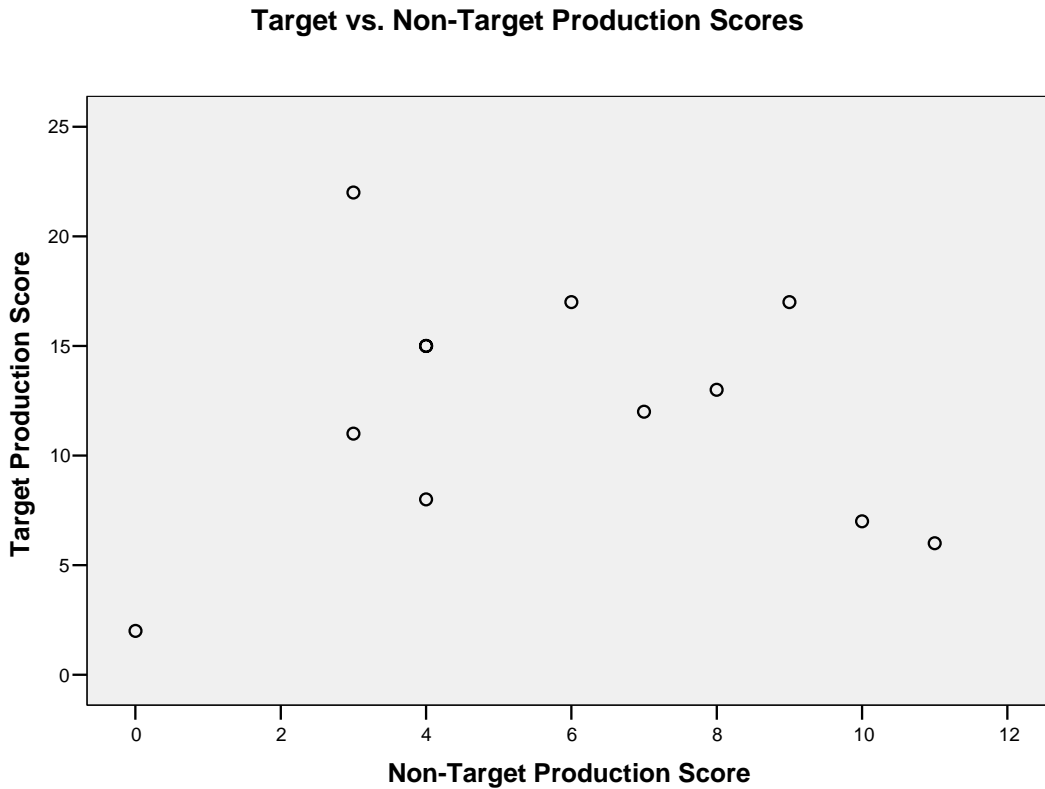


Figure 2. Target versus Non-Target Production Scores

Several other variables were analyzed to see if there were any meaningful correlations relating non-target words and general student clicking behavior (for all descriptive statistics and

correlations, see Tables 8-18 in APPENDIX D). As has been shown earlier, several students, particularly some of those who did not take notes during their sessions in the lab, seemed to focus on non-target words both online and in student-teacher interaction. Not surprisingly, non-target word lookups correlated strongly ($r = .91, p < .01$) with total lookups. In essence, the more non-target words a student looked up, the more total words he looked up overall. Though such a result may seem intuitive (i.e., looking up more non-target words means that a student will look up an increasing number overall), note that no such strong positive correlation obtained between target lookups and total words looked up.

Several other interesting facts emerged from an analysis of the data associated with non-target word lookups. First of all, no correlation between non-target word lookups and target word cloze and production test scores was observed. In other words, students who looked up relatively more non-target words did not receive consistently higher or lower scores on target word cloze and production tasks than other students. Second, there appeared to be no correlation between the number of non-target words students looked up and their scores on the non-target vocabulary production task. That is, students who used the online dictionary to find out what a number of non-target words meant were not necessarily able to translate that knowledge into useful production. In other words, students who looked up relatively more non-target words did not transfer their knowledge to other domains. In effect, students failed to learn robustly, at least as far as the criterion of transfer (VanLehn, 2006) was concerned.

As for time on task, there was a relatively weak negative correlation between non-target word lookups and the number of documents completed, perhaps an expected result if one assumes that time spent reading definitions of words means less time for students to read

documents. Why such an effect was not seen for target words may be related to the relative difficulty of target and non-target words.

With regard to the non-target production task, an interesting effect was observed. Essentially, the best predictor ($r = .57, p < .05$) of a high score on the non-target production task was a relatively high number of target words looked up. Simply put, when students looked up more target words, they did better on the non-target production task. In fact, the number of non-target words students looked up had no effect on their scores on the non-target vocabulary post-test.

Lastly, general language proficiency, a variable thought to have a dramatic impact on student performance on the post-tests, did not appear to play a decisive role in this study. In actuality, student proficiency, as measured by MTELP scores, correlated only moderately (and negatively) with student non-target production task scores ($r = -.394, p = .102$). However, such a correlation was not significant. Had the result been significant, a higher student score on the initial Michigan Test (used for placement purposes) would have been associated with a lower score on the non-target production task.

The correlations that have been mentioned are the only meaningful ones pertaining to non-target word lookups or non-target word production scores. Though there are meaningful correlations not involving non-target word variables these correlations lie outside the scope of this study and are best interpreted in the light of another, related study (Juffs et al., 2006).

5.0 DISCUSSION

5.1 THE MEANING OF THE RESEARCH FINDINGS

The results of the study provided intriguing answers to the four research questions. The research questions appear below:

- a) How would students approach vocabulary learning in terms of strategies and practices?
- b) Would students use additional information from dictionaries to learn non-target words if given the opportunity?
- c) Would students use different strategies for learning target words and other words?
- d) Did any correlation obtain between explicit (i.e., target) and incidental (i.e., non-target) vocabulary learning?

Questions a) and c) were somewhat related. In response to a), students generally took notes or asked questions about unknown vocabulary words. Student 7 engaged in both of these practices, though she was the only one to do so. Students also used the online dictionary to look up both target and non-target vocabulary they encountered in readings. But as the student-student interviews revealed, a range of factors influenced how students approached their vocabulary-learning task. In the language of activity theory, student activities were dynamic processes involving individual learning goals and outcomes that were often separate from the desired learning goals and outcomes. Specifically, students tended to read less carefully, look up fewer target and non-target words, and even skip readings altogether when they judged readings

to be difficult or uninteresting, or both. When students read articles they found offensive or emotionally troubling, their learning was disrupted. When they came upon target words they thought were difficult, infrequent, technical or otherwise useless, they resisted looking up their meanings. Additionally, some students indicated that external conditions, such as the noise level in the LMC or the type of computer they used, impacted their reading and vocabulary-learning behavior.

In response to b), students did use information from the online dictionary to learn non-target words. However, it was dictionary information about target words that facilitated student learning of non-target words. In other words, students transferred target-word knowledge to a new domain in a way that suggests students demonstrated robust learning, at least according to the criterion of transfer. For the most part, students made less use of dictionary information about non-target words and more use of dictionary information about target words when they acquired non-target words.

The degree to which students attended to non-target and target words depended in part on their overall vocabulary-learning strategies and practices. In response to c), students did use different strategies for learning non-target and target words. Students who were note-takers took notes on target words and looked up target words in the online dictionary. They took relatively fewer notes on non-target words and looked up relatively fewer non-target words. Students who asked their teacher questions usually inquired about non-target words. They never took notes (with the exception of student 7) and they mostly looked up non-target words in the online dictionary. Nearly every student in the study (student 7 was the only exception) either took notes or asked questions. The two practices were mutually exclusive, though it was not clear why. Interestingly, no native Arabic speaker in the study took notes. It may have been the case that

Arabic speakers chose not to write down words because they encountered difficulties with the graphic forms of words. They may have preferred to learn words aurally in light of difficulties with the sound-symbol correspondence of English. Cultural practices may also have influenced such a decision, to say nothing of individual learning styles.

With regard to d) it was thought that information about unknown non-target words, which often appeared in the vicinity of target words, would provide students with additional information to tackle unknown target words. Up to a point, students would benefit from additional information gathered about non-target words when learning target words, though if they had too little information about unknown non-target words, or if they spent too much time and had too much information about unknown non-target words, their learning of target words would be impaired.

In fact, this result was not what post-test production tasks revealed. Recall that the two production tasks were used to measure the number of target and non-target words acquired. In this study, non-target word learning was unrelated to target word learning. Whether such a result holds for other ESL students is unclear.

A somewhat unexpected result emerged when the number of target word lookups proved to be moderately correlated with non-target production task scores. This was perhaps the most surprising finding in the study, and in some ways, the most important. At the beginning of the study, the assumption that non-target acquisition would affect target acquisition was not expanded sufficiently to take into account all the ways in which non-target and target acquisition could affect each other. Specifically, the prediction was made that student accuracy on measures of target-word knowledge would be very strongly correlated with both the number of non-target words students clicked on and the time spent reading the definitions of non-target words.

While such a correlation did not imply causality, the thinking was that non-target word acquisition would boost target word acquisition, at least up to a point. In other words, the relationship between the two kinds of acquisition was conceived of in unidirectional terms. Non-target word clicking behavior was thought to correlate with target word acquisition, while the possibility that target word clicking behavior would correlate with non-target word acquisition was not considered, even though the original prediction allowed for such a possibility.

One might think that non-target words would provide support for students' learning newer, less frequent target words. Where unknown non-target words appeared, if students used the dictionary to learn the meanings of these words, they would be able to expand their vocabularies, make connections between different words and consequently use more strategies and context to learn target words. Provided students did not overdo the attention and the resources they devoted to non-target words, they could increase their target-word acquisition by taking a difficult vocabulary task and simplifying it with intermediate steps and a combination of bottom-up and top-down processing. The critical assumption underlying all the hypotheses about the usefulness of acquiring a particular amount of non-target vocabulary when being asked to learn about target vocabulary was that the non-target vocabulary was easier, rather than harder, than the target vocabulary. If non-target vocabulary were harder than the target vocabulary, then the number of unknown words in reading might have constituted much more than 5% of the text. Students may have been overwhelmed by words they did not know, and they may not have had enough clues from context to learn new words or even to figure out which words they ought to have learned.

In general, just such confusion arose among the participants in the study. Indeed, the standard deviation of many of the variables in the study, such as number of documents read and

non-target lookups per document, took on very large values relative to the mean. In other words, students responded to the reading task in drastically different ways (see Table 8 in APPENDIX D).

Part of the difficulty for students stemmed from the difficulty of the non-target words. Even as students were attending to target words in their readings, they were encountering non-target words like “synod”, “claimant”, “chad” and “remunerate” (also see APPENDIX E for the complete list of non-target words each student looked up). In fact, the reason that students who looked up more target words had higher non-target production scores may have been that students were actually using information about target words to figure out the meanings of non-target words. At this point, such a statement is simply a conjecture. Nonetheless, given the difficulty of many of the non-target words, it is hard to imagine that intermediate ESL students could have learned very many of these words without first learning at least some of the unknown words (i.e., target words) surrounding them.

Consequently, the anticipated vocabulary bootstrapping effect may actually have worked in reverse. Students looked up and in many cases, learned, target vocabulary, which enabled them to acquire knowledge of non-target words. As evidence for such an assertion, it should be pointed out that of the 1617 non-target words students looked up, 703 were considered to be at Level 10 or higher in the Living Word List (http://orleans.lti.cs.cmu.edu/eli-spring06/teacher/lookups_by_grade.php), well beyond the likely vocabulary level of the average intermediate ESL student. An additional 139 lookups did not appear in the Living Word List, which, if nothing else, indicates the infrequency (and greater difficulty) of these words. A perusal of some of the words students looked up (see Appendix E), such as “forfeiture”, “bondholder” and “downturn” also supports this conclusion.

Given relatively difficult non-target words, including “sectarian”, “ad hoc” and “riff”, it should not be altogether surprising that a positive correlation did not obtain between non-target acquisition and learner proficiency. Such words could have been too difficult even for more-proficient learners. In other words, there could have been a floor effect for many of the non-target words. Such an effect seems plausible, particularly in light of the low scores on the non-target production task. One student received a 0, two received 3s, and the highest score was an 11 (see Table 19 in APPENDIX F).

5.2 PEDAGOGICAL IMPLICATIONS

If the non-target words were too difficult for many of the students, then several facts are clear. For students to learn many of these non-target words, they had to spend considerable time learning target words. Indeed, in this study, among those students who focused primarily on non-target words (i.e., the students who did not take notes), scores were lower on the non-target production task than for those students who focused primarily on target words, even when students in the former group were much more proficient. In fact, the student with the lowest proficiency in the study learned the most non-target words (student 8, who scored 11/30 on the non-target production task and who received a 36 on the MTELP).

So, documents intended to provide opportunities for students to learn new non-target words required additional readability and difficulty indices to ensure that non-target material is potentially within their grasp. Furthermore, if documents with difficult non-target material were encountered, students should have been encouraged to focus mainly on the target words. In

other words, students should have marshalled even greater resources for explicit vocabulary learning. Students were explicitly told to focus on the target words, but many were still spending too much time and attention looking at non-target words. It may be that such time and attention is useful if preceded by careful attention to target words. But one thing is clear: students in the study learned target words and applied such knowledge when trying to learn non-target vocabulary, and not vice versa. Perhaps the best strategy for learning more non-target words was not to focus on non-target words. Rather, it was to focus on target words even more, or else to alter the kinds of non-target words to which students were exposed or the documents students are asked to read.

6.0 CONCLUSION

Participants exhibited several interesting behaviors. Students made use of both explicit and incidental learning mechanisms in the course of the study, but their use of each depended on several factors. Generally, students tended to take notes or ask questions while in the LMC, though one student did both. Students also attended to non-target words to varying degrees. It was not obvious what motivated students to adopt particular vocabulary-learning approaches, though several variables affected student use of the REAP program. Text difficulty, target word difficulty, teacher instructions, and reading topic, among other factors, affected learning outcomes. To a certain extent, student activities (Lantolf & Thorne, 2006) had outcomes distinct from those the researcher and the instructors had intended.

Overall, the students who took the fewest notes were Arabic-speaking students. Additionally, higher-proficiency students scored worse than lower-proficiency students on the non-target word production task. Target word lookups and non-target word production scores proved to be correlated positively, while many of the other expected statistical relationships between target and non-target learning were not present.

Contrary to expectation, non-target word lookups did not correlate with target word acquisition. Students did not appear to learn target words faster or better by attending to non-target words. As a result, the relationship between the explicit and incidental learning students

engaged in remains unclear. The relative effectiveness of each, as well as the optimal balance of explicit and incidental learning in such a context, is an open question.

Further research needs to be conducted on the relationship between student L1s and vocabulary-learning behaviors. It may be that a student's L1 is a useful predictor of the preferred method of learning new vocabulary. In terms of learning vocabulary, most students did relatively poorly on both target and non-target production tasks. It may be that seeing dictionary definitions, asking questions about words or taking notes is insufficient. Students may need to be presented with other possible approaches to vocabulary-learning. Perhaps students could receive additional information about unknown words, including a word's pronunciation or an example of how the word might be used.

At this point, the possibility remains that students were using contextual cues to figure out the meaning of unknown words, even if they looked them up. More specifically, it is still very possible that target and non-target word learning may be related, even if it is not clear how or under what conditions. The next step in the study could be to try to relate some of the non-target words more directly to the list of target words. That is, non-target words that many students looked up could be added to some students' target word lists. Texts could be selected to ensure that half the students read a document where such a word remained a non-target word, while the other half read the same document, though with the word now appearing as a target word. Post-test production scores for this item could be compared for these groups to see which learning condition was more beneficial. The vocabulary-learning styles of students (i.e., whether they took notes, asked questions, etc.) would determine their assignment in 1 of the 2 groups.

Alternatively, half the students could be given an equal number of exercises on non-target and target words they had looked up. This half could also be instructed to spend roughly the

same amount of time looking up target and non-target words, and then tested to see which words they had learned best.

As far as remedial action is concerned, the current study could have been improved in several ways. Online dictionary entries should have included the pronunciation of words to provide students with another piece of information about a word. Not only may the correct pronunciation of a word have triggered knowledge of the word in someone who knew a word but did not recognize it visually, it may also have enabled students to make connections between new words and familiar ones. The pronunciation of a word could have been a vital part of learning a word, particularly for auditory learners.

Students should also have been given delayed production tasks for both target and non-target words to see if any robust learning occurred. Also, documents with fewer difficult non-target words need to be found. If the grade level of readings could have been tailored to students, then the problem of making sense of words like “expatriate” and “endgame” would have lessened. Students should have been given the opportunity to see additional information about a word if they decided they still did not understand the meaning of a word even after having seen its dictionary definition. Specifically, each definition could have been followed by the question, “Do you still have questions about the meaning of this word?” If students clicked on “yes”, they could have been given more information about the word, and they could even have chosen what they wanted to see, including sample sentences, etymological entries, related forms, synonyms and antonyms.

A future study with a larger number of students would also be useful. The current study provided valuable information about the vocabulary-learning behavior of the 13 participants, but the results of the study were not generalizable. This study was nonetheless extremely important,

particularly in light of the detailed qualitative data it produced. However, given the small size of this study ($n = 13$), a larger study that controlled for L1 would complement the current study nicely.

APPENDIX A

GRADING RUBRIC FOR NON-TARGET AND TARGET VOCABULARY PRODUCTION TASKS

Students are graded on a 0-3 scale according to the following guidelines:

- 1) A blank or meaningless response will get a grade of zero.
- 2) A point will be given to sentences in which the target word is used correctly according to syntactic and morphological constraints.
- 3) Another point will be given to sentences in which the target word fits semantically but does not necessarily demonstrate knowledge of the word. For example, the sentence “The car was very expensive” does not demonstrate knowledge of “expensive”.
- 4) Another point will be given to sentences that demonstrate that the student knows the meaning of the word.

This means that a fully correct response, as a native speaker might produce, merits 3 points. A sentence may receive two points if the word is used grammatically and makes sense semantically but does not demonstrate knowledge. A sentence may also receive two points if knowledge of the word is demonstrated, but a grammatical error occurs involving the target word. Note that spelling and grammar errors not involving the target word do not affect the score for a sentence.

APPENDIX B

TRANSCRIPTIONS OF STUDENT-STUDENT INTERVIEWS (*VERBATIM*)

B.1 INTERVIEW BETWEEN STUDENTS 1 AND 2

1: Okay, we have some questions about how helpful is the online dictionary in learning words?

1: In my opinion, I think it's not that helpful. If you mean the online dictionary that we use during reading, uh, I think, that's, that's an easy dictionary. That's okay. But if you mean the NW, I think the name of it's NW...

2: I think they are talking about the one that we use.

1: Yeah, the one that we use in the lab. With the words in blue.

1: I think that's helpful. What do you think?

2: Yeah, absolutely. And that's why you can use this dictionary for other words. It's not only for the blue ones.

1: Okay.

1: Okay, how difficult is using an online dictionary?

1: It's easier than using other dictionary.

2: Uh, actually, there is one point.

1: Uh huh?

2: You cannot double click the word, so it will be highlighted and pasted for you. You have to use, you have to drag the mouse. Usually our computers, once you double click a word, it will be highlighted for you, you right click on the mouse button and copy and paste in the dictionary. And you can look up different words. But here you can click only the blue ones.

2: If you want some other words, you have to drag the mouse and then you have to copy and paste it.

1: Or sometimes you have to type it.

1: Which computer that you are using?

2: It's the one, what do you mean?

1: I mean, the Mac lab?

2: Yeah.

1: Maybe you are taking about the lab?

2: It's the only one we are going with our teachers, all the time.

2: It's not the lab.

1: Strange.

2: I don't know.

1: Ok, let's go. What kinds of things about words do you write down?

2: I don't know, what kinds...

1: Do you write down anything in the lab?

2: Sometimes, sometimes. But it's very rare.

2: I don't write anything. I just try to, I try to develop my reading skills. I don't have time for taking notes. I just, I try to understand the word from the context, or to solve the questions.

1: Uh huh.

1: Okay, what information is most important for you in dictionary entry? Entry?
Dictionary entry?

2: Say that again?

1: Okay. What information is most important for you in dictionary entry? Entries.

1: What does that mean?

2: It's the words that you use to enter for the dictionary.

2: I have no idea. Skip it.

2: Okay. Ah, how do you learn new words?

1: I don't have a specific way, but actually, when I learn new words when I write it. I cannot learn it from just reading.

2: Uh huh.

1: Yeah. I write it, I memorize it.

2: That is not the case for me. They are talking in general, 'How do you learn new vocabularies?' For me, whenever I face a new word, in the box, especially in the reading, the listening, I have a very small note, I translate it into my language, and then when I have the time, every now and then, I get back to my notes and I memorize it.

1: Oh, okay.

2: And just I, I read the *Pitt News* [a University of Pittsburgh student publication]. And I underline some word, and I put in my note. And also, sometimes, I know the word that I want in

Arabic, in my own language. So, I try to find a translation for this word because of the importance of this word. I look up in the dictionary, and then, I write it down.

1: Ah, do you think, ah, using an online dictionary is an appropriate way to learn English?

2: Well, actually, yes, there is a big debate about this. Some people are saying it's no good. From my personal experience, I think it's very helpful for me. If I want to learn English to English, there will be still a gap. Of course, if I have it in my own language, it will be a lot faster for me.

1: I learn it always. Because sometimes we don't have vocabulary for some words.

2: I don't know.

1: Well, I can suggest that. (laughs)

2: Okay, um.

1: Um, does this ever change?

2: The way of learning?

1: The way.

2: No. And it will never change.

1: It will never change.

2: No.

1: For me, okay, I think I change it when I came here. I just start to write the word, in English, and then the translation of this word. In English, of course.

2: Uh huh, uh huh.

1: It's not translation, it's just explanation. In English. Okay, uh, how does reading on the computer affect your vocabulary learning?

2: Actually it doesn't affect anything for me. If it's a book or newspaper, it's the same.

1: Yeah. I think it affects vocabulary learning. But I don't think it has a, uh, major effect. I think it's just, ah, improving my reading skills, that's all.

2: Okay, what kinds of readings help you the most with vocabulary learning?

1: Say that again?

2: What kinds of readings help you the most with vocabulary learning?

1: What kind? Ah, usually, reading magazine. Magazines. Yeah, it's the most effective way. For me.

2: I think sticking to books. For reading, listening. They are providing us with the academic words, and that's the words we are going to use, so,

1: Okay, yeah. Okay, what could be done to help you learn even more?

2: Even more?

1: Yeah.

2: Well, we should be given some TOEFL questions. It should be considered as one of the uh, uh required courses here in the ELI. It shouldn't be just as an elective course, if you want. So it should be required.

1: I think they are talking about the vocabularies.

2: Well, also, even if you see one TOEFL exam and you try to pass the reading section, the reading section is the most difficult one. I think they should take some of those sections in the reading exams. They should take some of those.

1: Oh, yeah, okay.

2: Because it's totally different.

1: Yeah, okay, okay.

1: Did you take the TOEFL exam?

2: Yeah, eight years ago.

1: Eight years ago?

2: Yeah, but I took it couple of weeks ago also.

1: Was it hard?

2: Yeah, it was. Reading section is always the most difficult section.

1: Oh, yeah.

1: Ok, are there advantage/disadvantage to the program?

2: Well, I will start with the advantage. Once you get used to it, it will help you in improving your reading skills. You will be able to read, to skim and scan fast. The first time that I read, I was trying to read every single line and translating every word that I didn't know. But I noticed I am spending too much time on that. Class after class, I learn that I should only skim and scan about the main idea and the vocabulary.

1: Yeah.

2: The disadvantage. The disadvantage is that there is always a noise in the lab. Especially from the teachers. They are talking with each other all the time. I can't concentrate on the reading. If the teachers make some noise, I can't concentrate. And the questions after each passage, when you are looking for the meaning of the word, it's utterly useless. Because there is no point.

1: Uh huh.

2: Because people think, 'Ok, it was in blue. It must be the answer.' But there is other vocabularies that can fit as the answer.

1: Yeah.

2: And sometimes, like I ask a teacher, 'Can this be the answer?' And the teacher says, 'It can, but this is more appropriate.'

1: Uh huh.

2: So you got the point?

1: I understand, yeah.

2: And the last question.

1: Yeah.

2: It is always a piece of cake. Because they are talking about something totally different, and they are putting one correct sentence. It is easy to get. For example, if they are talking about health insurance, one sentence about eating something, another sentence about weather, and only one sentence about health insurance. It's obviously easy to choose the meaning.

1: That's the point. Because some students don't read the passage at all.

2: Sounds like my classmate.

1: So that's it. That's it for that question.

1: Okay, so it's the last question. That's what most students do. It's strange.

2: Yeah.

1: It's strange. For me.

1: For me, I have noticed, since I use the program, I read faster. So that's good.

Especially on the Internet.

2: But what about disadvantage?

1: Well, most of the time, we cannot choose. I mean the readings from the Internet we cannot choose.

2: That's right. We cannot ever choose the reading we would like to do.

2: Ok, next. Do you ever ask the teachers questions in the Language Media Center?

1: No. Not all the time.

2: I don't.

1: It depends on the reading. If the reading is not interesting, I will not ask questions to the teacher?

2: I think they are asking about the vocabulary.

1: Oh, but usually I don't. Only when I don't understand something from the dictionary definition, like if there another word I don't know.

2: But you can find in the dictionary.

1: No, but if it is not in the dictionary or something.

2: Okay. What are the easiest and hardest parts of using the program?

1: For me, I think it would be length, the easiest.

2: Of the article.

1: Yes, of the article.

2: For me, it's the opposite.

1: Yeah?

2: Because if the topic is complicated, and it goes on and on, it is not easy to follow. Especially if it's a topic that I am not interested in, that makes it very, very difficult. But it depends on the topic, if the topic is interesting.

2: I think the hardest part is not using the program out of the class. Yeah, okay, maybe if we used it other times besides in the lab we would learn more. Looking up the words is easy, but if I want more reading practice with the program outside the class, I cannot have it. But the program is easy to use.

1: Yeah, the program is easy to use.

End of Interview

B.2 INTERVIEW BETWEEN STUDENTS 3 AND 4

3: Hi.

4: Hi.

3: Did you go to lab this semester for studying online dictionary?

4: Yeah, of course.

3: How helpful is the online dictionary for you?

4: Actually, the, it's effective. I found it effective, because it's easy to get the word and translate it, or get the meaning. So, for me, it's my opinion, I found it effective. What about you?

3: I learned many new words,

4: Um hmm.

3: But it was not so helpful because I'm, I was not used this word a lot in my, um, normal life. So, eh, when I met this word in other situation, I cannot recognize them. Yes, it's easy, I can see easy online dictionary, but, uh, I cannot recognize the later.

4: Okay.

3: But, uh, it was nice to know this words.

4: Yeah, yeah. But the way in general, this was, easy to get the meaning. It's not to difficult to, to know the meaning of this word. You just put it in the, this dictionary, and you get the meaning. Yeah, but...

3: Yes,

4: As you said, we cannot use it in the, our normal life, or daily life. Ok.

3: What kinds of things about words do you write down? Uh,

4: I'm...

3: Sometimes, for me, uh, I write down a lot.

4: Yeah.

3: I write down all new words, sometimes I knew, uh, I write down common words and later I recognize sometimes it's just different tense, or just different formal form

4: Uh huh.

3: Or something. But, uh, actually, yeah, when I write down, I try, it's like touchtile member, so long for touchtile member, for remember these words.

4: Yeah.

3: Because it's not so easy to new meaning from words. I cannot, uh, remember these words.

4: Yeah.

3: It's just and also, I wrote a lot of word, but then, it's more useful words for me.

4: Uh huh.

3: And then I...

4: The words which you are interesting on these words? Just you are interested to know it?

3: Yeah.

4: Yeah, not all word.

3: Yes, it's for me.

4: Yeah.

3: Yeah, it's for me.

4: That's great.

3: Because every time I read something, uh, I try to make list new words.

4: Uh huh.

3: And look meaning. And later, dictionary, or in Russian translator.

4: Yeah.

3: Because, when, some words have same meaning than other word, but have little different, like, color, you know?

4: Uh huh. Okay.

3: Sometimes it's, uh, for example, it's easy, but this easiest. Uh, so it's like one word, but some words can be just little, have different tone.

4: From Russian to English?

3: Yes.

4: Yeah.

3: I better understand Russian language because I, I,

4: You remember.

3: I feel, I feel.

4: Yeah.

3: I think when people talk, and use some vocabulary, they don't think about the word.

They feel something, and they explain.

4: Yeah.

3: They explain their, what they think in the word. But, it's like, analysis, it's not useful.

4: Uh huh. That's great. That's great.

3: Um, how do you learn new words?

4: Uh, actually I try to make eh, or, or think about a word, eh, which close to this word, in manner of spelling, or, or pronunciation. Eh, eh, if I found a word which is close to this word which I wish to learn it, it's make this more easy for, for me. Sometimes,

3: Yes.

4: It's, it's more difficult to learn a word if you cannot find a word is close to it.

3: Yes, you don't feel meaning.

4: Yeah.

3: Feel meaning.

4: Yeah.

3: And this word must be useful, very useful.

4: Yeah.

3: Because some words, it's only in special area it's you can use it.

4: Uh huh.

3: But,

4: Sometimes you will not use it.

3: Yes.

4: Yeah.

3: When I came to America two years ago, I knew maybe two words only.

4: Okay.

3: Yes. No grammar and never have learned English.

4: That's good. That's great.

3: And first what I learned, it was vocabulary. Basic vocabulary, people talk. I didn't know how spell it. I didn't know any rules, grammar rules. But I tried to use.

4: Uh huh.

3: But now, learn new vocabulary, it's difficult for me because it's not include in basic,

4: Yeah.

3: That people talk a lot of.

4: Uh huh.

3: Uh, what kind of reading helped you the most with vocabulary learning?

4: Uh, well, textbook very helpful for academic vocabulary learning. But I prefer read a newspaper. Because then, eh, I can learn more vocabulary.

4: Yeah.

3: New for me and what people used a lot.

4: Yeah.

3: But grammar, I think it's no good learn grammar from newspapers.

4: From newspapers, yeah.

3: Or academic writing. It's...

4: You will not take any, any

3: Any rules.

4: Yeah. Sometimes the newspaper's grammar or, or just to give you a news or something, without, without some attention for grammar.

3: Sometimes you confused.

4: Yeah, uh huh.

3: And what kind of, what could be done to help you learn even more? Uh, I told before. I learn more when I feel meaning. And it could be not just words what I see in the screen or monitor,

4: Uh huh.

3: It could be a picture.

4: Yeah.

3: Because, uh,

4: Illustration.

3: Illustration. That I remember not just the spelling, how it's spelled.

4: Yeah.

3: I should remember feeling of this word.

4: Yeah. It's more effective.

3: For me, for me. And also, or, give me translate to Russian. To my native language for I, it's like uh, glue and new word and picture with this new word, what I have in my native language.

4: Yeah.

3: It's like glue. What I can understand thing,

4: More, more, easier or more.

3: Yes.

4: Yeah. That's good. Advantages, disadvantages to the program?

3: It's new program, but I don't what advantage.

4: You know, for, for my opinion, there is one disadvantage. When you are using the Apple Macintosh. You know, there is two labs.

3: Uh huh.

4: One of them is Windows, and the other one is Apple Macintosh. It's difficult when you are using the Apple Macintosh to copy the word and put it into the box to get the fact.

3: Yes. I tried do it, too. It's not difficult. It's just, uh, you cannot do it.

4: Yeah, no, yeah. Sometimes, there is, uh, some ladies teach us, taught us, to use, uh, some buttons, yeah, to get this word, no. But in the Windows you just...

3: Copy?

4: Yeah, copy. It's more easier.

3: It's more comfortable.

4: Comfortable, yeah.

3: Sometimes I don't know meaning this word, and I should type.

4: Type.

3: Type this word. I lose a lot of time.

4: Uh huh.

3: And of course we have a lesson. And then, I cannot find meaning, because this dictionary not good...

4: Not good.

3: Not good enough.

4: Yeah, yeah.

3: Sometimes they don't have any words. It's British, and I type American version

4: Uh huh.

3: Of some words, and they just don't give me any definition. Yeah.

4: Yeah, so...

3: Yeah, so I meet this problem, too. Uh, how interesting are the lab session? It was interesting, but some topics was sometimes very boring. You just, you, uh, you feel you should read it. But it's so not interesting.

4: Yeah.

3: And you just do it. It's just, do it.

4: Uh huh.

3: And you don't, uh, care about your vocabulary, or... You just want finish.

4: Uh huh.

3: That's all. It's all.

4: Yeah. Yeah.

3: (laughs) And go away. Because, uh, or sometimes, there have one topic involved about dead children, it's like some bomb, and, uh, I was scared. Because I have a children.

4: (laughs)

3: No, you know. I don't want see it.

4: Yeah, yeah.

3: Yes, it's newspaper, but when I read newspaper, I choose topic what I want read.

4: Yeah, but that's the point.

3: And I will never read. I hear about, but I don't want see this dead children.

4: Uh huh.

3: It's, uh, it's painful for me.

4: Yeah, so the point, if I, if we, have right of or able to choose our topic, it's better.

3: Yes.

4: Because we will choose the topic we are, which we are interesting to read it.

3: Yes. Or some economic topics. I don't understand economies. Speak with me about in Russian language, I will not understand. It's no my area.

4: Uh huh.

3: It's not what I interesting in.

4: Yeah, yeah.

3: But I think they should give like, historical topics, or some geographical...

4: Yeah.

3: Some interesting areas.

4: Uh huh.

3: I think it's enough. And, uh, I read a lot of funny story about Russia. It was just war time, and now it's very changed, and I read, and I think probably it's American propaganda (laughs).

4: Uh huh (laughs).

3: It's what American children learn in school about my country. And it was not good, because it's, uh, international university.

4: Yeah.

3: And read some stupid things about my country, I don't want it.

4: Uh huh.

3: Some terrible things.

4: Yeah that's right.

4: How you want to remember what you have read? Ok, so, what do you think about this question?

3: Well, I remember interesting topics about history. And about beauty of some country. It's nice, it's pleasure, and it's...when somebody interested in reading something, they begin read.

4: Yeah, yeah.

3: And sometimes you want read more.

4: Uh huh.

3: But some readings, like this child pictures, don't want. I hate this thing.

4: Uh huh.

3: It's scary, because I have good imagination, and I can imagine my children, uh, killed by this bomb, or by this terrible things.

4: Yeah.

3: I don't want it. I don't want read, because I have good imagination.

4: Yes.

3: Maybe some people who have no children and live for their self, and have no responsibility, maybe, it's okay. Oh, it's interesting story. But for me, oh, like mother, it was very,

4: Difficult to read.

3: Difficult to read. And watch this picture. Of dead children. Because I understand how it's difficult to get children and raise children. And it's not just give food to children.

4: Yeah.

3: It's like mother. It's, it was very painful.

4: Yeah, that's right.

4: How does your time in Language Media Center help you achieve your reading and vocabulary goals? Um...

3: You do in the class.

4: Which, which question? Oh, you don't want read this question.

3: Oh, how does your time in the Language Media Center help you achieve your reading and vocabulary goals?

3: Uh, it's not interesting, I think sometimes it was not difficult, sometimes it was boring. But uh, it was not very helpful. Sometimes, some topics, some was. Some vocabulary was helpful because I can use this vocabulary in my life.

4: Uh huh.

3: But uh, most of the time, it was just, it was like mechanic work. Read and you answer question.

4: Uh huh.

3: And you take another topic. And you take another topic. You read, answer question. After class, you can forget all this new vocabulary, because it's not useful in your life.

4: Yeah.

3: In normal life, I go to store, I will not use.

4: You will not use this.

3: Use this.

4: Medical words, or...

3: Yeah.

4: Or some economical words.

3: Yeah.

4: Yeah.

4: Does the time spent in the lab relate to anything else you do in the class?

3: How important? For me,

4: Yeah.

3: Very helpful was this last paper, with my, uh, feedback of my vocabulary test by this program because I have, in this case, list of word what I should just learn.

4: Yeah. Okay that's good.

End of Interview

B.3 INTERVIEW BETWEEN STUDENTS 5 AND 6

5: So, so how helpful is the online dictionary in learning a word?

6: I think it is kind of inconvenient, inconvenient?

5: Uh huh. Why do you think?

6: Because, when I look up the dictionary,

5: Uh huh.

6: It makes, there, just one window.

5: Uh huh.

6: And then, if I want to look up another word,

5: Yes?

6: I have to close the window.

5: Ah.

6: And then I have to put the word

5: Again.

6: Yeah, again. And it's kind of inconvenient. Usually, when I use the, another online dictionary,

5: Uh huh.

6: Just I, I activate just one window.

5: Uh huh.

6: Then I put, I put into the word.

5: Uh huh.

6: I check meaning of the word. And then I can use the only one window.

5: Ah, I know. I use the Longman CD-Rom installed in my computer.

6: Yeah, yeah.

5: And only just one window.

6: Yeah.

5: So, it has a two parts or three parts. One part has just for instance, word, typing, and the other part show the meaning.

6: Yeah.

5: So not need to close each time.

6: Yeah. So, it's not convenient.

5: Convenient, no.

6: How about you?

5: I need, when I look into online dictionary, I want to check, ah, how can I say, pronunciation, too.

6: Okay.

5: Only meaning. So, pronunciation or stress, no.

6: Oh. Stress?

5: Yeah, yeah.

6: It is poor dictionary. (laughs)

5: Poor dictionary. (laughs)

5: Poor dictionary, yeah. (laughs)

6: Uh, I think, how difficult is using an online dictionary?

5: You said,

6: It is not difficult. It is easy to use the dictionary, online dictionary.

5: Uh huh, uh huh.

6: It just inconvenient.

5: Yeah.

6: It's easy right?

5: If I check the blue words, just click the words, so it's easy to use.

5: What kinds of things about words do you write down?

5: You didn't write down anything?

6: Yeah, I didn't write down anything. I just, I just, I just used the online dictionary.

5: Uh huh.

6: I just read article.

5: Uh huh. After I always write down the meaning, because after the reading, some ques-, some vocabulary ques-,

6: Uh huh.

5: I already forgot, so I need to look into my notes. So, I write down the meaning of words. Only blue ones.

5: Which information for you is most important in dictionary entries?

6: I think as you said, the pronunciation.

5: Ah, yeah, yeah. Most of time, I need examples.

6: Ah.

5: How to use the word. Because you usually use Longman dictionary. It shows some sentences with the word.

6: Yeah, sometimes, it is really hard to understand...

5: Uh huh.

6: What the word meaning is. So, sometimes I want to look up the example,

5: Yes, yes.

6: About that word.

5: Uh huh. How to use.

6: Yeah. Also, pronunciation symbols.

5: Uh huh.

5: Okay. How do you learn new words?

6: Sometimes, I learned new words in the textbook.

5: Textbook?

6: Textbook.

5: Yes, yes.

6: Or just I learn new words in normal conversation.

5: Really?

6: Just, it is easy to memorize.

5: Really?

5: Actually, I think I don't learn new words. (laughs) Because it is difficult to remember and new words is difficult to use.

6: Yeah, right.

5: So, reading, in the reading class, we have sometimes vocabulary tests. Ah, it's helpful for me to learn. Good opportunity for me to learn new words, but...

6: Because you have to memorize.

5: Yes, but after test, I, I...

6: Forgot everything. Yeah.

5: (laughs)

6: Same as me.

5: No, but sometimes vocabulary test is not good. Ah, my score is not good. I made a lot of mistakes.

5: Usually, conversation is difficult to write new words.

6: Even though I memorize new words, very academic words,

5: Uh huh.

6: It is very hard to use in conversation.

5: Uh huh.

6: Yeah, when I, when I look the word,

5: Uh huh.

6: I know the meaning of the word, but I can't come up with conversation, in normal conversation.

5: Yeah. So, before the test, how do you memorize new word? Before the test.

6: Before the test?

5: Yeah, how do you memorize?

6: You mean reading words?

5: Uh huh, reading.

6: So helpful the words I already knew.

5: Ah.

6: The next help, I just memorize.

5: Just seeing?

6: Yeah. Just maybe 10 minutes before the test.

5: Ah.

6: Just, I memorize short time.

5: Uh huh.

6: Just 10 minutes. I solved the problem question. (laughs)

5: Ah. Really? So quickly. So, do you translate the word into your...

6: My native language?

5: Your native language.

6: Yeah.

5: And memorize the meaning?

6: Yep.

5: So, teacher gave me a vocabulary English definition. So, I look English definition up.

It is difficult to remember.

6: Yeah, yeah.

5: So translate into my country to remember. Okay.

6: I don't, I can't understand the meaning of 'Does this ever change?'

5: 'Does this ever change?' This mean maybe, how do you learn new words. I don't know. Just skip.

6: Oh.

6: Ah, yeah.

5: What do you think?

6: I agree with you. Does learning new words ever change? I think.

5: Oh, oh, oh. Just guess?

6: This means, how to learn new words. Right?

5: I think.

6: I usually learn new words,

5: Yeah?

6: In TOEFL text, or another text.

5: But just look the words and remember the words?

6: No, no. At one time. Just one word.

5: Oh.

5: So, when I was a student, I write down, write down words.

6: Uh huh.

5: So, memorize by hand.

6: Oh.

5: Or, or say the words. Speak.

6: Uh huh.

5: So that's why I need a pronunciation example. In the dictionary.

6: Also, when you, if you use the word,

5: Yes?

6: In conversation.

5: Yeah?

6: It's really, helpful.

5: Helpful.

6: Yeah. To memorize.

5: How does reading on the computer affect your vocabulary learning?

6: Frankly speaking,

5: Yeah?

6: Is boring.

5: (laughs)

5: (laughs)

6: Reading on the computer, in the LMC,

5: What?

6: Is boring. (laughs)

5: (laughs)

6: Do you agree with me?

5: Ah, because, I think my reading skill, no, vocabulary skill, is not improving using this...

6: Yeah, using this...

5: Program.

6: Yeah, that's right.

5: But, I think it is good opportunity for me to see the words, because, blue words, but I still forget.

6: Ah.

5: And,

6: Usually the word, the blue one, the blue word,

5: Yeah.

6: It is, blue word is pretty, not difficult, this word.

5: Not difficult.

6: It's useful.

5: Uh huh.

6: If I, if we write that word, is very useful.

5: Yeah.

6: To speak English. But the rest of the word in the article,

5: Yeah?

6: Is really difficult. It is not interesting.

5: Sometimes so long.

6: Yeah, in my opinion, the computer,

5: Uh huh.

6: The reading on the computer,

5: Yes.

6: Didn't affect my vocabulary learning.

5: Didn't affect. Unfortunately, I agree. (laughs)

6: (laughs)

5: So, did you read this reading? Just, just skip.

6: Yeah. Actually, even though I didn't read all article,

5: Yeah.

6: I can solve the question.

5: Uh huh. Just guess?

6: Yeah. At first, I just look up the blue, meaning of the blue words.

5: Yeah, yeah.

6: And other question, about the main topic, or main sentence,

5: Uh huh.

6: Or title,

5: Title, yeah.

6: Only one sentences make sense. Another three is very,

5: Not make sense.

6: Yeah. Not close.

5: Not related.

6: Yeah.

5: Yeah, I agree.

6: If I read just title of the article,

5: Uh huh.

6: Just I can guess the answer.

5: Oh yeah, okay.

6: Uh huh, uh huh. Another three examples are very stupid. (laughs)

5: Oh, you made a mistake. (laughs) Don't say stupid.

6: Oh. Speaking mistake. (laughs)

5: Because I just focus on blue word.

6: Oh.

5: And then I try to answer, but sometimes, I make mistake, so it's not good. (laughs)

6: (laughs)

5: I can't imagine the answer, I can't guess. So, it's problem for me.

6: So, you can choose another question.

6: Another question.

5: Ah, I'm interested in, how do you, what do you type after the reading?

5: Sometimes, part of question, we should type in.

6: I just bring there, zero, zero.

5: Really?

6: Yeah, I don't want to comment there.

5: Uh huh.

6: So, I just, I can't skip, without put in something,

5: Yeah, yeah.

6: So, I just zero.

5: Number, you mean?

6: Yeah, number zero. And then I just,

5: Ah. How about like (unintelligible)?

6: Ah, the difficulty and interesting?

5: Yes.

6: Just, yeah. That is just depends on article.

5: Okay. So, all comments on question?

6: Yes.

5: What mean zero?

6: Nothing. Just for skipping.

5: Ah, sometimes it's difficult. So long.

6: Ah.

5: What do you think, what kind of reading material is helpful for you?

5: What do you...

6: It depends on article.

5: Uh huh.

6: If I interested in that article,

5: Uh huh.

6: I read carefully.

5: Uh huh. What kind of topic?

6: Uh, just about national, nation.

5: Nation?

6: Saudi Arabia, Japan, China.

5: Uh huh, uh huh.

6: Another, another article like financial, finance, and the word,

5: Do you like?

6: I don't like.

5: Yeah, yeah.

6: It's really hard to, understand.

5: Yeah, yeah.

End of interview

B.4 INTERVIEW BETWEEN STUDENTS 7 AND 8

7: So, we can start talking about – what do you think about the lab? -- Do you like the activity? Or, do you think it's helpful?

8: I think it's helpful reading some article. But I think it's difficult for me.

7: It's difficult?

8: Yeah.

7: But it's difficult for the vocabulary or it's difficult for, because it's too small things, what?

8: I think, uh, a lot of just vocabulary. Also, for me, the whole sentence, the meaning, maybe, all, um, I didn't understand, all clear.

7: And are you using the dictionary that they have?

8: Uh—

7: Sometimes, if you don't understand?

8: Uh, if some words, uh, uh, appear a lot of times—two times, three times...

7: Uh-huh.

8: I might look up it. In dictionary.

7: Ok. Me, ok, it depends. If, uh, sometimes if I know what the sentence is, if I can read other words that maybe can help me to understand the sentences--

8: Yes.

7: I just leave it like that. But sometimes, I try –

8: Yes.

7: To learn new vocabulary.

8: Guess or something?

7: Guess. Yes. Yes and no. Because sometimes I really try to, like, have more new words.

8: Yeah.

7: So, when I'm reading and the reading is interesting, and maybe it's something that I know that native people is gonna to use—

8: Yeah.

7: I try to know what it is.

8: Yeah.

7: But it depends on the word. Not everything, because I will stay there all the day, you know, like...

8: Some article don't have interesting article. Just look quickly.

7: That's another thing. That I don't know if...because sometimes you just can't skip the reading. And sometimes it's just like so boring, the reading, that you don't pay attention about the vocabulary.

8: Yeah, yeah.

7: So, I don't know if you remember that technique, like, like some questions, that were asking you, 'What do you think about this program and everything? You remember that--?

8: Uh, uh, you said about, uh, uh, article question?

7: Yeah. That they were asking...No, no, no. They were asking us about the program, if we liked the program and everything...

8: Oh, oh.

7: What will you like to have in the program.

8: Yeah. Difficult to describe this article.

7: Uh huh. Exactly. Or that they were saying maybe we can choose. If we, if you can choose what are you going to read, it will be –

8: Yeah.

7: It will be easier.

8: Yeah. That's good.

7: Because it's something that you like. So you're gonna pay attention.

8: Yeah.

7: Another thing?

8: You means just write more uh question and choice?

7: No, maybe that they have, at the beginning—

8: Ohhh.

7: They have like a menu, where you can said, 'Ok, today I'm gonna read about sports because I like sports.'

8: Ohhh.

7: Something like that.

8: Yeah, yeah.

7: So, it's something that I'm gonna read, because I wanna read it, so I'm gonna be so careful reading what I'm reading.

8: You, you just for title, you choice about some article.

7: Exactly. Before you start. Because sometimes it's something so boring, so you just said, "Okay, where are the words that I really need? I'm gonna read that, and then that's it."

8: I agree.

7: Are you?

8: Yeah. Because, for example, drug or some other topics, I don't know.

7: They have a lot of topics. A couple about war in there. Like that.

8: About the war, yeah.

7: Sometimes it's interesting, but other times it start being so boring.

8: Yeah. Yeah, I like some topic for young people, interesting, for history. Maybe, for man [inaudible].

7: Uh huh. Think so.

8: For woman, some topic interesting.

7: I think that is the first thing. Because from what I'm telling you, that like, sometimes, when I take note of vocabulary that I wanna learn—

8: Yeah.

7: That maybe they don't have in the blue, the blue letters, but it's vocabulary that I take. It's because it's a reading that I said, "Ok, this is a topic that I, I like. I normally talk about this. So maybe I'm gonna need this vocabulary." Sorry. (expectorates)

8: Do you take notes for this article?

7: I'm sorry?

8: Do you take notes for this article?

7: Uh, I take notes for the vocabulary.

8: Oh.

7: The, the words that I wanna learn, I take notes. Because if not, I am so sure that I'm gonna forget.

8: Every time?

7: Yeah.

8: Oh. Recently, I just take notes. But three class, before three class--

7: Uh huh.

8: I didn't take notes.

7: I see.

8: I didn't think it was too helpful to understand the vocabulary.

7: Yeah, I think, it helps. Sometimes because maybe, ok, you just put the word in that moment, and then, you can said, "What was that?"

8: Ah, you forget.

7: But when you write it, and so you are writing what it is, and then you're gonna read maybe again.

8: Yeah, yeah. You need.

7: Uh huh, uh huh.

7: So...

8: What is most important for your dictionary entries?

7: What kinds of words I want.

8: For focus English words.

7: What about, how do you learn new words? Different about the lab, what are we doing.

8: Sometimes I just look one words or meanings, and the others sometimes I don't look.

7: Um huh.

8: Except the ones appear many times, I take notes.

8: I think maybe these words for native language useful.

7: Um huh.

8: The words appear few times and the other words, uh, cause this word's meaning.

7: I know, for example, that if your son, he speaks so well English.

8: Yeah?

7: Yeah. Maybe sometimes he is speaking in English and you ask him something or ...things like that? Or you hear something and you ask him?

8: For speaking English, almost generally words. So, just for pronunciation skill.

7: Ah, okay. Okay.

7: Here. What kind of readings help you the most with vocabulary learning? That is what we were talking about. That it depends on the reading. You're gonna really learn something.

8: Yeah. One kind of like for hobby.

7: Yeah, yeah. Maybe readings that you're interesting in or maybe that something that is going on.

8: Yeah, yeah.

7: That you that all the people is talking about, I don't know something like that.

8: And if you're interested in this article for uh some story, you easy to learn that. If you not interested in this article, almost you read it and forgot it.

7: Exactly.

8: Yeah. (laughs)

7: Exactly. (pause) What do you think about the program that we are using? Like, what is good? What is bad?

8: I think it's good.

7: You think it's good?

8: Yeah.

7: Yeah?

8: Yeah, yeah, because ah, when you go back your house,

7: Uh huh.

8: Maybe you just learn grammar for test something.

8: You don't have enough time to really listen for concept, also improve your English.

7: Uh huh.

8: I think.

7: Yeah.

7: I think, okay. I think that I like the lab. I think it's easy to work with and everything. Sometimes, for me, it's a little bit difficult, the last part, when they ask you, you know that the first questions are vocabulary.

8: Yeah.

7: And then you see one that asks you what was all the reading about.

8: Yeah, yeah.

7: That is, I have problems there, when I don't read all the reading.

8: Yeah.

7: Because I'm not interesting in the reading, so I just look at the words, and then I just click on. When they ask me what about the reading, I don't know. (laughs)

8: Just for answer the question.

7: Exactly. And I don't know.

8: Yeah, yeah, yeah.

8: But for last part, uh, uh, how to describe this article's interesting?

7: Um hum.

8: How to answer this question?

8: It's difficult.

7: Uh huh, it's difficult sometimes.

7: Do you think the readings are difficult, or it's just because we don't like the readings?
Or they are really difficult?

8: Some article have interesting, I think.

7: Uh huh.

8: But some are long.

7: Uh huh.

8: Yeah, so long.

7: Uh huh.

8: So long.

7: When they are so long, yeah, sometimes it's ...

8: Uh, if I, if I this article I don't have interest in, I didn't concentrate this article.

7: Uh huh.

8: How about you?

7: The same. I'm the same way. I just -- It depends. How we said before. It just depends of the reading. If it's interesting, I'm gonna try to understand what they are saying,

8: Yeah, yeah.

7: But if not, I just leave it like that.

8: Oh, yeah, yeah.

7: Do you think that we can have more time in the lab? That maybe we need more time in the lab?

8: Maybe 1 a week?

7: How we're doing? We're doing like once a week, I think.

8: Yeah. One times a week.

7: Yeah, I think it's enough. Because we're doing other things that I think are important, so...

8: Do you think article needs some question to understand article's meanings?

7: Um huh.

8: Always before vocabulary? For reading?

7: Um, what else? Do you think that by your own you can learn a lot of vocabulary? Or you need someone to tell you all the time?

8: Some of the time? All of the time?

7: Like, for example, if you are reading, how we do in the lab, can you learn new vocabulary? Or you feel that you learn more vocabulary when you are in class, and for example, the teacher is telling you the vocabulary?

8: The teacher explains the new vocabulary in class, I think, is better.

7: Better. Yeah, sometimes.

8: And easy to remember.

7: Yeah, that's true.

8: For lab, that, just for a short time.

7: For that, I'm telling you for that is what I write down the words. Because if I just read it, and look at the dictionary, and then I continue reading, sometimes, okay, if it's a word that it really like makes me think about,

8: Yeah.

7: I'm going to remember. But it's just a normal word that I just hear once,

8: Yeah.

7: Or whatever, I just leave it. So, sometimes for me, if I want to learn it, I have to write it down. And like that, maybe when I'm reading sometimes my notebooks or something, I just can say, 'Oh yes, it's this.'

8: But if you don't go over this word?

7: Sometimes. When I'm so boring. I read again my notes.

8: Also, yeah easy to take note.

7: I think the better way to learn new vocabulary is when you're talking to an American.

7: Yeah.

8: And you just ask, 'What that means?'

7: Talking, that's easy.

7: That's the best. For me, that's the best way. It's the only way how I'm really going to leave it in my mind, all the time. 'Cause it's like, I said, 'Okay. I learned this. I learned this.' You know, like, and 'it was this, this.' I don't know.

8: (Laughs)

7: It's the easiest way to learn. Because sometimes, I like to read, but sometimes when I'm reading, I just forgot the words. But once, when someone explain me, I don't know why, I keep it.

8: Oh, oh.

8: You like your reading yourself, or in the class?

7: I like reading, normally, when I'm at home and everything, I try to read, the newspaper.

8: Oh, oh.

7: It's just for practice. And sometimes, it's, if it's something interesting, I read it. But sometimes, it's just practice that I would like to read it.

8: Sometimes, I read some article but I think I understand.

7: Um hmm.

8: You have some exam question to answer.

7: (Laughs)

7: I think it helps maybe.

8: Yeah, so I think if I uh, uh read some article, maybe article needs some question to answer.

7: Do you want to?

8: For reading. It's helpful.

7: Oh, that's true. Like comprehension.

8: Yeah. So I think for level, when we reading the vocabulary, and the reading article, we need to do,

7: Some questions.

8: Some questions.

7: Yeah.

8: It's helpful.

7: I agree. Yeah, that's true. Because I think that when it's not your language, you are so concentrate in reading, in understanding the words. So sometimes you don't pay attention what, what they are saying.

8: Yeah. You think, you seeing the words. I know this meaning.

7: Uh huh.

8: You just use your culture to understand this word.

7: That's true.

8: But sometimes, not correct.

7: I think it will be nice, yeah, to have more questions at the end of the readings.

8: Yeah.

7: Yeah.

8: Yeah, I think is useful.

7: Yeah, I'm so sure if 'John'[a Reading 4 teacher] or someone, at the end of the reading, asked me or asked you, 'What, what are you reading about?' All the people is going to say like, 'Uh, uh, I don't know.' (Laughs)

8: For reading class, the teacher don't always analysis the article. Just, I need a quiz. Uh.

7: Yeah.

8: Helpful. I want to understand this article.

7: Yeah, I think that will be a good point.

8: Yeah.

7: Or maybe, because I have like an idea that if they put like a menu, where you can choose the reading that you want to do, that's a way that I think it will be so nice.

8: Yes.

7: But also, if they put the same reading for all the group, and then, we can discuss it in class.

8: Yeah.

7: It will be good.

7: Because like that, you're saying, ok, you have to pay attention about what they are saying because then we're going to talk about that.

8: Uh. That's really to improve your reading, you know?

7: Uh huh. And like that, you can speak or whatever. I don't know which one, but the two of them, I think, the two will be good.

8: You want to take the TOEFL class, TOEFL test?

7: TOEFL? No, I'm not taking the TOEFL. Are you taking the TOEFL?

8: I'm not.

7: No, no, no, I'm not taking the TOEFL.

8: You think everyday learning vocabulary?

7: It will be good. I don't know if I'm learning that much. But it will be good if everyday I learn something. The big thing is that, of course you learn, but the thing is that I don't know if I remember all the time. That's the problem. I'm so sure that I'm learning, taking in things, all of the time. But I don't know if they stay with me. (Laughs)

8: How important is it to know vocabulary?

7: Which one [question] are we? Oh.

8: If you don't know this vocabulary, you listen this vocabulary, don't answer them, or, for when you listen, the teacher say something that, that the vocabulary you don't know, you don't understand...

7: Um hm. What I do,

8: I mean, I mean, if you don't know this vocabulary,

7: Um hm.

8: For your listening class, how to listen these words? It is difficult to understand.

7: Um hm. Sometimes it is.

8: Yeah.

7: It depends on the words, but sometimes it is.

8: If you listen some new vocabulary, how do you...?

7: How do you know what it is?

8: Yeah.

7: If I listen, it depends. If I'm with someone that I can ask, I ask what it is exactly. But if not, I just try to remember. Then I will ask a teacher or something. (Laughs)

8: What else?

7: Can we stop? (Laughs)

End of interview

B.5 INTERVIEW BETWEEN STUDENTS 9 AND 10

9: Ok, um. For me, is, was very helpful the online dictionary when I was working in the lab with the chapters. It was very helpful because sometimes you don't know the meaning of a word and is so quickly, so quickly to find this word in the online dictionary.

9: Was it easy?

10: It helped to me to find vocabulary or meaning or learning vocabulary to study. But sometimes, I want more, I want to learn more...vocabulary.

9: I think is not difficult to use the online dictionary. Everybody can use very, it's very easy to, to use, use this type of dictionary because you only need to write the word, uh, or maybe you can cut and paste the word.

10: Ah, yeah.

10: Yeah, I don't think too difficult to use the dictionary.

9: Yeah.

10: Uh huh.

10: How about next one? What information is most important for you in dictionary entries? You think the meaning?

9: I think more the ...

10: Part of speech?

9: The (*unintelligible*) is important, because sometimes it's important to know if it's a noun, a verb, or ...

10: Uh huh, yes.

9: Adjective. It's the most important...

10: Me, too. Part of speech. It's important for me.

9: Uh huh. Um, I learn a lot of new words, but after, I forget them, because it's difficult.

I learn, I learn the new word if I read this word in a context,

10: Uh huh.

9: I, I'm be able to understand the word. But after, it's so difficult for me to use these words in my, my speak. In my direct speak. Because some of the words, they are so specific and nobody using in the speaking language, you know?

10: Yeah (laughs). Yes. I think so. Um, I usually learn the new words with book. Or newspaper. Print newspaper is too difficult to me, sometimes. It's difficult topic. The politics or government issue. Yeah, it's very difficult.

9: I don't have a special technique to, to learn new words. You know I never writing piece of papers.

10: Yes.

9: That words, I don't. I think it's bad for me, but I think I learn new words about my speaking, every day. If I, sometimes I heard a word, I don't understand this word, and everybody use this word, every day, um, it must be good. You know, day by day, I am improving my English in new words, but I don't think there's a special technique to, to learn new words.

10: Yes. I think most important thing to use every day the word. Most word I forgot them. (laughs)

9: Most of the words is, they are so technic, you forgot.

10: Yes. (laughs)

9: The most important is if you, you realize this words, people use everybody.

10: Yeah.

9: In the normal life. Um, I think the readings on the computer sometimes were so bored.

10: Um.

9: Yeah, so bored. I don't think these are helpful technique to improve.

10: Yeah.

9: If you can choose the, uh,

10: Topic?

9: Topic.

10: Uh huh.

9: I think is more interesting.

10: More interesting, yeah.

9: Because sometimes the, the readings are very bored. I only read the two principles word, and you know, the after, the question?

10: Uh huh.

9: It's were too easy.

10: Yes.

9: Because one question is for one word, and second question is for second word.

10: Next word.

9: Yeah.

9: Maybe you can guess. Maybe sometimes I was wrong, because you are fifty per cent,

10: Yeah.

9: Of possibility, you know.

10: Yeah, yeah.

9: But it's the same technique. And after the questions, it's too easy, too.

10: Uh huh.

9: You don't need to, to read the whole document.

10: Yeah.

10: Sometimes I use just read ...

9: Maybe, a word, one word...

10: Uh huh.

9: It can be more effective if, after question, after reading were more difficult.

10: Yeah.

9: Because, um...

10: We choose the word.

9: Yes, you have more motivated to read the whole reading, and look, uh, a lot of words
in the dictionary.

10: Yeah.

9: But if not, you start to get bored, and to do a lot of lectures, you know?

10: Yeah.

10: Some topics easy, but most topics different.

9: Yeah.

10: Difficult.

9: And most of the topics, they are so boring. And so difficult. I think is, was better if they divide the topics, maybe politic, sports...

10: Uh huh.

9: Or...

10: Yeah.

9: I don't know, whatever. But if you can choose the topic that you really like.

10: Yes.

9: Ok. What difficult are the readings? Some of the readings are so difficult for me.

10: Which question?

10: Do you ask teacher a question? Do you ask teacher question?

9: I never ask question in the LMC.

10: Never?

10: Uh huh. Sometimes might ask the teacher to problem.

9: To help use the program?

10: Program problem.

9: Ah, okay. With the computer.

10: Yeah.

10: What's the hardest about the time you spend in the LMC?

9: Because sometimes you need to concentrate in the lab. For me, for reading, I need to concentrate.

10: Ah.

9: And if other people start to speak, or make laugh, I can't concentrate.

10: Yeah.

9: And the easiest is that two questions, that's all.

10: Yeah. It's too long.

9: The time?

10: The sentence and too long time.

9: Yes, maybe it's better if you only want to read, maybe twenty minutes, or half an hour.

10: Yeah.

9: But when you must read the, all

10: 50 minutes.

9: Yes, the full time of the class, it's,

10: Boring.

9: Yes, it's too much.

10: Yeah.

9: It's boring, because you never like the topics.

10: Uh huh. Yes. We don't choose the topics, so the topic is, I don't want to read.

(laughs)

9: Yes.

10: It's true. Not interesting.

9: Yes.

10: It's very boring.

9: How well do you remember what you have read?

10: Hmm?

9: Some of the topics I remember well because I interested in.

10: Yeah, yeah, yeah.

9: But if I don't interest, I,

10: Uh, huh. I never write.

9: No, I never write, too.

10: (laughs). How interesting are the sessions? Some topics interesting.

9: For me, yeah, some topic is interesting.

10: Most topic is boring, or difficult, or not interesting.

9: I think the point is good.

10: Yes, is good.

9: But needs a little bit changed, like, the students can choose the topics, or something like that.

10: Yes.

9: It's useful maybe for students that they are going to the university. Um, for learn new words. But you realize this word only in your reading. You don't use this words in your normal vocabulary, because some of them, they are so difficult, maybe to pronounce, or...

10: Yes.

9: They are so technical, you know?

10: Yeah, yeah, yeah, technical word.

9: But, in general, is good the program.

10: Yes, is good program, I know.

9: But the way that the, the way, it's bored.

10: Yeah.

9: And maybe...

10: You can choose topic.

9: Once a week is a lot.

10: And we don't print any topics, so we can learn again.

10: In my case, most word I forgot.

9: Serious?

10: Yeah.

9: Does the time I spend in the lab relate to anything else?

10: How difficult, difficult are the readings?

9: The readings, some of them, they are so difficult.

10: Yes. Too long sentence.

9: Uh huh.

10: (laughs)

9: And the vocabulary terms, like political terms, or law, that they're...

10: Yes.

9: Or...

10: Scientific issue, technical issues. I don't understand them.

9: But maybe it's a reading class, so for the vocabulary goals in reading class, it's good. I think the best part of the program is that you look at in the online dictionary.

10: Yeah, yeah.

9: And it's so quick, you know.

9: Uh, it's important for you the feedback?

9: For me, the feedback, yes, it's important, because,

10: Ah.

9: In my case, my personal case, it was not very important, because there are some days that I am very lazy, I don't effort a lot. (laughs)

10: Ah. (laughs)

10: But, I think, I don't know which dictionary is correct. Because they showed us the scores, so I'm not sure. But I think it's, the feedback is important.

9: Yes. Absolutely. It's so important the feedback, but...I think that...What kind of reading helped you the most with vocabulary learning?

10: What kind of reading?

9: Yes, what kind of reading?

10: Novels.

9: Novels? Newspapers.

10: Yes. How about you?

9: I think newspapers just is so important because, uh, the vocabulary in the newspapers is so different at the vocabulary in the television, or maybe the vocabulary that, the vocabulary that people use in the street.

10: How many times do you read a newspaper?

9: Not so much. (laughs)

10: (laughs) Me too. I read very few times.

9: Yeah.

10: And I just read, uh, interesting sections.

9: Uh huh.

10: Sports or music or relationship of children...

9: But I think they are going to put, uh, reading, like focusing in order to enter in the university.

10: Uh huh.

9: And maybe they would, maybe they can put topics like, uh, political, depends on your career.

10: Uh huh.

9: But the important thing is that you can choose the topic.

10: Yeah, yeah, yes.

9: You learn more vocabulary with, uh, with the reading program?

10: Sometimes I use total vocabulary, or another test, vocabulary, I use them. But this vocabulary is more difficult than test word. I think. (laughs)

9: Yes, most of them.

10: Yes, most of them I don't know. It's very difficult. It's not too easy. And sometimes use the sentence to understand the word, the word's meaning.

9: Uh huh.

10: Yes.

10: It's difficult to remember.

9: A lot of people, uh, has a good grades in the reading project, because they know this are tricky, you know?

10: Uh huh. Uh huh.

9: Because if there are two words in the lecture that they are highlight,

10: Yes.

9: And always after, the question are pick out of these two words.

9: And maybe you don't need to read nothing, only this.

10: Yeah.

9: The two words, and after, you can have a good grade.

10: Yes. A few days ago, I just read the vocabulary. And I, uh, take a questionnaire only.

9: Uh huh.

10: Not to read the topics or sentence.

9: Yes.

10: Yes, but it's almost ten correct.

9: But maybe you don't know nothing, and you have only used your short-term memory...

10: Uh huh.

9: And after you forgot.

10: Yeah, yeah, yeah.

9: For that. Maybe the reading project needs the after question, after the reading, more difficult. And you are more motivated because it's more difficult. And you need maybe to sum up the reading, or... Maybe don't read so much readings. Only one or two readings. But the after question were more difficult, it's that's more use.

10: Yes. I think so.

9: Because I know, on talk with friends, uh classmate, they only read the two words. The two highlighted words, and, uh, the title of the reading. And after they have a good grade, always in the feedback.

10: Oh, really?

9: Yes. But you don't need nothing more. For me,

10: Especially if they don't to read, they don't read it.

9: Yes, I try to read all the readings, for, you know in order to, to understand the main idea.

10: Yeah.

9: If I interested in the topic, but if they are a topic that I don't like, I only read the two principle words, and after, I try to do my, my best at...you don't need to, to read...

10: Whole sentence to read.

9: Yeah.

10: Yes, I think so.

9: I think basically, I speak a lot about ours opinion. So you need to say something more?

10: Yeah.

9: To sum up our opinion, I say that the reading project is good, but they need to change the after questions. The after questions. And they need to change that the student could be choose their topics.

10: Uh huh.

9: It's basically this.

9: But do you think they must change the program.

10: Yes, sure. If we choose the topic, it's more helpful.

End of Interview

APPENDIX C

INITIAL STUDENT QUESTIONNAIRES

C.1 STUDENT QUESTIONNAIRE 1

For each of the statements, circle only one (1) answer.

1) Vocabulary knowledge is related to reading proficiency in English.

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

2) Most vocabulary words in English are learned through reading.

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

3) When reading in English, it is important to understand the meaning of every word.

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

4) A dictionary should be used to learn the meanings of new English words

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

5) Memorizing lists of words is a useful way to learn words in English.

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

6) When I read something in English, I focus my attention on the words I do not know.

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

7) If I do not know the meaning of a word in English, I usually look at the sentence or context the word appears in.

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

8) If I do not know the meaning of a word in English, I often look for a synonym, definition or other explanation of the word in the reading.

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

9) I learn new words best when I am tested on them.

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

10) Increasing my English vocabulary will help me to read better.

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

C.2 STUDENT QUESTIONNAIRE 2

Please answer each of the questions in the space provided. You may use the back of this sheet if you need to.

1) How do you learn new words in your native language? _____

2) How do you learn new words in English? _____

3) What is the best way to learn new words in English? _____

4) What is the worst way? _____

5) How do you choose words to learn in English? _____

6) What is most difficult about learning vocabulary in English? _____

7) How should vocabulary be taught to students in the ELI? _____

8) How do you read in your native language? _____

9) How do you read in English? _____

10) How do you become a good reader in English? _____

APPENDIX D

DESCRIPTIVE STATISTICS AND CORRELATIONS

Table 8. Target and Non-Target Descriptive Statistics

| | Mean | Std. Deviation | N |
|---------------------------------|--------|----------------|----|
| Target Production Score | 12.08 | 5.616 | 12 |
| Non-Target Production Score | 5.75 | 3.306 | 12 |
| Target Cloze Score | 67.428 | 17.5895 | 12 |
| Non Target lookups per document | 2.6058 | 2.42675 | 12 |
| Target Lookups per document | 2.283 | 1.0684 | 12 |
| Total Lookups per Document | 4.892 | 2.6511 | 12 |
| Completed Documents | 25.00 | 11.901 | 12 |
| Michigan Test Score—Reading | 7.67 | 2.807 | 12 |
| Michigan Test Score—Total | 62.17 | 11.408 | 12 |

Table 9. Target and Non-Target Production Scores

| | | Target Production Score | Non-Target Production Score |
|-----------------------------|---------------------|-------------------------|-----------------------------|
| Target Production Score | Pearson Correlation | 1 | -.018 |
| | Sig. (1-tailed) | | .477 |
| | N | 12 | 12 |
| Non-Target Production Score | Pearson Correlation | -.018 | 1 |
| | Sig. (1-tailed) | .477 | |
| | N | 12 | 12 |

Table 10. Total Lookups Per Document and Non-Target Lookups Per Document

| | | Non Target lookups per document | Total Lookups per Document |
|---------------------------------|---------------------|---------------------------------|----------------------------|
| Non Target lookups per document | Pearson Correlation | 1 | .919(**) |
| | Sig. (1-tailed) | | .000 |
| | N | 12 | 12 |
| Total Lookups per Document | Pearson Correlation | .919(**) | 1 |
| | Sig. (1-tailed) | .000 | |
| | N | 12 | 12 |

** Correlation is significant at the 0.01 level (1-tailed).

Table 11. Target Lookups Per Document and Non-Target Production Scores

| | | Non-Target Production Score | Target Lookups per document |
|-----------------------------|---------------------|-----------------------------|-----------------------------|
| Non-Target Production Score | Pearson Correlation | 1 | .573(*) |
| | Sig. (1-tailed) | | .026 |
| | N | 12 | 12 |
| Target Lookups per document | Pearson Correlation | .573(*) | 1 |
| | Sig. (1-tailed) | .026 | |
| | N | 12 | 12 |

* Correlation is significant at the 0.05 level (1-tailed).

Table 12. Michigan Test (Total) and Non-Target Production Scores

| | | Michigan Test Score--Total | Non-Target Production Score |
|--------------------------------|---------------------|-------------------------------|-----------------------------------|
| Michigan Test Score--Total | Pearson Correlation | 1 | -.394 |
| | Sig. (1-tailed) | | .102 |
| | N | 12 | 12 |
| Non-Target Production Score | Pearson Correlation | -.394 | 1 |
| | Sig. (1-tailed) | .102 | |
| | N | 12 | 12 |

Table 13. Target Cloze and Target Production Scores

| | | Target Cloze Score | Target Production Score |
|-------------------------|---------------------|-----------------------|-------------------------------|
| Target Cloze Score | Pearson Correlation | 1 | .539(*) |
| | Sig. (1-tailed) | | .035 |
| | N | 12 | 12 |
| Target Production Score | Pearson Correlation | .539(*) | 1 |
| | Sig. (1-tailed) | .035 | |
| | N | 12 | 12 |

* Correlation is significant at the 0.05 level (1-tailed).

Table 14. Target Cloze Scores and Target Lookups Per Document

| | | Target Cloze Score | Target Lookups per document |
|-----------------------------|---------------------|--------------------|-----------------------------|
| Target Cloze Score | Pearson Correlation | 1 | -.738(**) |
| | Sig. (1-tailed) | | .003 |
| | N | 12 | 12 |
| Target Lookups per document | Pearson Correlation | -.738(**) | 1 |
| | Sig. (1-tailed) | .003 | |
| | N | 12 | 12 |

** Correlation is significant at the 0.01 level (1-tailed).

Table 15. Target Cloze and Michigan Test Total Scores

| | | Target Cloze Score | Michigan Test Score—Total |
|---------------------------|---------------------|--------------------|---------------------------|
| Target Cloze Score | Pearson Correlation | 1 | .655(*) |
| | Sig. (1-tailed) | | .010 |
| | N | 12 | 12 |
| Michigan Test Score—Total | Pearson Correlation | .655(*) | 1 |
| | Sig. (1-tailed) | .010 | |
| | N | 12 | 12 |

* Correlation is significant at the 0.05 level (1-tailed).

Table 16. Target Production Scores and Target Lookups Per Document

| | | Target Production Score | Target Lookups per document |
|-----------------------------|---------------------|-------------------------|-----------------------------|
| Target Production Score | Pearson Correlation | 1 | -.512(*) |
| | Sig. (1-tailed) | | .044 |
| | N | 12 | 12 |
| Target Lookups per document | Pearson Correlation | -.512(*) | 1 |
| | Sig. (1-tailed) | .044 | |
| | N | 12 | 12 |

* Correlation is significant at the 0.05 level (1-tailed).

Table 17. Target Lookups Per Document and Michigan Test Total Scores

| | | Target Lookups per document | Michigan Test Score--Total |
|-----------------------------|---------------------|-----------------------------|----------------------------|
| Target Lookups per document | Pearson Correlation | 1 | -.646(*) |
| | Sig. (1-tailed) | | .012 |
| | N | 12 | 12 |
| Michigan Test Score--Total | Pearson Correlation | -.646(*) | 1 |
| | Sig. (1-tailed) | .012 | |
| | N | 12 | 12 |

* Correlation is significant at the 0.05 level (1-tailed).

Table 18. Michigan Test Reading and Michigan Test Total Scores

| | | Michigan Test Score--Total | Michigan Test Score— Reading |
|---------------------------------|---------------------|-------------------------------|------------------------------------|
| Michigan Test Score--Total | Pearson Correlation | 1 | .689(**) |
| | Sig. (1-tailed) | | .007 |
| | N | 12 | 12 |
| Michigan Test Score--Reading | Pearson Correlation | .689(**) | 1 |
| | Sig. (1-tailed) | .007 | |
| | N | 12 | 12 |

** Correlation is significant at the 0.01 level (1-tailed).

APPENDIX E

NON-TARGET TOKEN LOOKUPS

Student 1: fascist, socialism, whims, summary, outline, practically, astonishing, annex, asset, legitimate, absorb, forfeiture, devastated, perceive, defaulted, absorb, Iberian, bondholder, hype, overwhelming, fascism, assure, pace, essential, conservation, omit, collegiate, sovereignty, relevance, deployment, enterprise, declaration, substantial, absorbing, legitimate, omit, streamline, conditions, declaration, decade, occupy, equilibrium, garrison, sovereignty, enterprise, errand

Student 2: plaintiffs', artificial, synthetic, hitting, distort, annexations, onerous, insubordinate, placate, bovine, plaintiffs', abrupt, advocate

Student 3: exodus, plovers, threatened, strand, dire, folded, directives, churn sthg. out, churning, breed, plaintiffs, threatened, downturn, deliberate, witness, seemingly, margin, plain, harbour, clout, suspect

Student 4: sovereignty, bankrupt, abandon, greeted, deepening, animosity, claimant, executive, cleavage, unequivocal, hostess, accuse, sovereignty, assault, patriarchs, expel, insurgent, infraction, fled, behalf, dissents, innocence, dissenter, vows, constituency, safeguard, convicted, bankrupt, crisis, despicable, compromise, endanger, crucial, broadcasting, brutal, Sellotape, animosity, loom, dire, claim, trade, executive, factions, pathetic, endanger, regard,

fence, conciliate, pledge, astonishing, embrace, faction, controversial, glamorous, flee, sovereignty, hence, refugees, behave, clientele, amnesty, put, dissenters, rude, accord, patronize, supreme, insult, acquisitive, warfare, pledge, landslide, revenue, autonomy, clandestine, autonomy, null, betray, turmoil, critical, annoy, overwhelming, neo-, contrary, hatred, electorate, deepening, turnout, animosity, emerge, executive, latter, census, vigorous, shrine, wage, plural, addicted, neophyte, deception, referendum, controversial, radical, drastic, imprison, refugee, bourgeois, viable, embrace, viable, intellectual, infraction, quality, landslide, betray, setback, succeeded, trample, null

Student 5: sectarian, deficit

Student 6: poll, debate, prevail, vacancy, warfare, rated, reside, sought, brick, branded, expenditure, circumscribe, enhance, perspective, shy, executive, ratify, peninsula, perspective, propaganda, pending, commemoration, remunerate, revise, expertise, attorney, municipal, decree, ambience, column, charter, province, captive, convention, nonetheless, convene, ratify, deputy, mistreatment, resign, propaganda, captive, consultative, pawn, dung, pow, sip, unrest, monarchy, charter, committee, appoint, devastate, mandate, pow

Student 7: led, worth, knee-jerk, verge, rate, rather, among, range, wheat, bow, hence, beyond, restrain, willing, trigger, fasting, rub, greedy, Shiite, forward, within, yacht, held, ease, held, thus, freight, deed, defeat, restrain, settlers, otherwise, felons, onslaught, hence, added, divine, worshipping, further, content, anchor, ignite, striped, held, wisdom tooth, flirting, hiking, thus, overcome, booming, chamber, spread, unleashing, overwhelming, hosts, jarring, swallow, shame, led, worth, knee-jerk, verge, rate, rather, among, range, wheat, bow, hence, beyond, restrain, willing, trigger, faster, rub, greedy, Shiite, forward

Student 8: lack, bilingual, abandon, divide, deficit, Shiite, failure, democracy, launch, agenda, legislator, trade, heralded, adopt, likelihood, crisis, property, referendum, parliament, abuse, database, dominant, equity, substantial, Israel, experiment, upgrade, heritage, representative, civic, guide, amend, expansion, boom, investing, initiative, peseta, defend, concerns, parliamentarian, agency, provide, presence, perspective, booming, opted, expansion, buck, guild, constitution, misguided, tyrant, perspective, deploy, sovereign, misguided, reputed, exemption

Student 9: parishioner, abridge, draft, swift, survey, strength, raise, tan, commute, smoothly, grizzly (bear), incumbent, proud, polls, asset, kick, odds, bone, defeat, hawks, rates, wage, attorney, stuff, breach, portrayal, thunder, endorse, pastry, bishops, invest, commonwealth, strength, scar, thermal, hype, shekel, restrain, affordable, filibuster, frame, raise, flat, ballot, polls, elusive, spark, hence, assessment, challenge, thunderclaps, synod, remain, overture, beckon, birthright, embrace, bagpipes, relinquish, abridge, hugged, unwraps, among, mood, retrenchment, raisin, gunner, delay, grim, restrain, grizzle, settle, property, proudly, outburst, despair, odds, bone, endear sb. to sb., foresee, chairman, ballot, worthy, profit, polls, laden, arise, wages, charge, warm, deemed, upholstery, ad hoc

Student 10: faculty, recount, civic, sneak, recall, betrayal, ritual, currency, predominate, burst, covert, bind, impediment, committed, tactic, ensure, carnage, portal, treaty, adequate, enlargement, console, asset, dope, province, vulnerable, drawn, delegate, exploitation, conscious, transitional, evolve, obstruct, departure, go off, manufacture, arsenic, hyper, inquiry, crash, declare, go off, litigation, democrat, faculty, millennium, loath, chad, stimulus, howl, greed, isolate, cater, debate, diplomat, controversial, long-awaited, committed, spotlight, smuggle, outbreak, endgame, folk, explode, hideout, territory, geography, amnesty, defend, enforce,

horizontal, godfather, overcome, repulsive, enormity, wholesome, loss, enlarge, diplomatic, premise, console, attorney, confront, nun, undertake, reunite, consequently, committee, convention, hype, forbidden, underscore, conventional, approved, defend, decree, deter, enormity, associated, span, council, reconciliation, democracy, swing, millennium, deployment, democratization, isolationism, headway, recall, defendant, revalue, demographics, myth, riff, adjustment, altogether, electoral, bound, resist, barrier, aliens, enforce, godparent, gotta, disclose, console, guillotine, estranged, restrain, apocalypse, pornography, devise, affair, attempt, convention, enterprise, obstruction, contaminate, universal, committee, commitment, evaporate, deputy, approve, endorse, carnage, bitter, debate, loss, associate, prevailing

Student 11: surname, lashing, incessant, refill, envisage, introspection, reference, expatriate, endeavour

Student 12: N/A

Student 13: premises, controversial, delegation, filed, suit, provision, suppress, investigate, criticize, pre-emptive, pardon, collaborate, vise, tranquility, premise, limb, Belarus, premises, province, investiture, vigorous, critics, jaws, infraction, rival, liberalize, versatile, limp, theocracy, strained, premise, subversion, suitor, delegate, bevy, scapegoat, rally, perjury, insurgent, forfeiture, grooming, cattle, eagerness, impeach, apocalypse, hence, carnage

APPENDIX F

STUDENT NON-TARGET PRODUCTION SCORES

Table 19. Student Non-Target Production Scores

| Student | Non-Target Production Score (Out of 30) |
|---------|--|
| 1 | 6 |
| 2 | 3 |
| 3 | 7 |
| 4 | 4 |
| 5 | 0 |
| 6 | 10 |
| 7 | 4 |
| 8 | 11 |
| 9 | 3 |
| 10 | 9 |
| 11 | 8 |
| 12 | N/A |
| 13 | 4 |

NOTES

1. No scores were available for student 12, who dropped out of the ELI before the end of the term.

2. The calculation for the comparison of target word lookups is as follows: $[(2.5-1.9)/1.9] \times 100\% = 31.6\%$ more.

3. The differences are calculated in the following manner:

The non-adjusted difference = $[(1.3 + .07 + 1.8 + 3.4 + 2.2 + 3.8 + .6)/7] - [(1.6 + 1.8 + .6 + 3.1 + 3.6)/5]$ $[(1.6 + 1.8 + .6 + 3.1 + 3.6)/5] * 100\% = 89.5\%$ more

The adjusted difference = $[(1.3 + 1.8 + 3.4 + 2.2 + 3.8 + .6)/6] - [(1.6 + .6 + 3.1)/3]$ $[(1.6 + .6 + 3.1)/3] * 100\% = 22.2\%$ more

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