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Lexical Discovery and Consolidation Strategies of Proficient and Less Proficient EFL Vocational High School Learners

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The analysis on the use of lexical discovery and consolidation strategies that have been researched within the area of vocabulary learning strategies (VLS) have not sufficiently drawn the interest of EFL practitioners with regard to vocational high school learners. The results, however, are expected to have implications for the design of vocabulary tasks and instructional materials for EFL learners. The present study investigates EFL vocational high school learners' use of lexical discovery and consolidation strategies with questionnaires, where the use of the learners' lexical discovery strategies were further validated with the think-aloud methodology by asking samples of proficient and less proficient learners to report on their reading process while reading L2 texts that had not been exposed to the learners. The results indicated that there were significant differences between the two groups of learners in the employment of 11 of the strategies which were in the categories of determination, social, memory, and metacognitive strategies, but not for cognitive strategies. The pattern of strategies indicated that different lexical discovery and consolidation strategies were employed relatively more by one proficiency group than another. The study suggests some implications for how strategy-based instruction can be implemented in EFL classrooms.

[lexical discovery strategies/ lexical consolidation strategies/ vocabulary proficiency/ think-aloud methodology]

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I. INTRODUCTION

While skills/strategies-based instruction has already been widely advocated in many contexts (e.g., Hudson, 2007; Pressley & Harris, 2006; Zhang & Goh, 2006), there is still some lack of awareness on how learners are attending to the task of vocabulary learning in spite of our hype with self-directed or autonomous learning that have been stressed in our support for communicative teaching approaches. The learning of new vocabulary is often relegated to be completed outside the classroom so that we may need to question how well we have actually been able to facilitate our learners to become more self-conscious about the strategies they may or may not be using. Moreover, researchers and practitioners' interest particularly in the Korean context have primarily remained with regular-track students so that learners in vocational high schools have rarely received the attention that they deserve. Also, lexical proficiency of the EFL students has not sufficiently been considered by practitioners and researchers, which is information needed for the teaching of learners at different stages of L2 learning. The gap in research motivates us to take interest in EFL Korean Vocational High School learners' preference of vocabulary learning strategies (VLS) with regard to lexical proficiency. The strategies are researched via the use of learner voice (i.e., how learners report their own perceptions regarding actual use of VLS) to examine how L2 learners discover the meaning of unknown words (i.e., discovery strategies), and integrate and consolidate newly acquired vocabulary (i.e., consolidation strategies). The results are expected to provide implications on how teachers and practitioners can attend to the teaching of vocabulary for learners at different levels of proficiency.

II. BACKGROUND

1. Classification of Vocabulary Learning Strategies

Although consensus on the taxonomy for VLS has not come to complete agreement, several classification systems can be recognized for their various patterns of VLS. Ahmed (1989) classified the 38 strategies his Sudanese learners used into five macro-strategies for memorization, practice, dictionary use, note-taking, and group-work. Gu and Johnson (1996) organized 91 VLS strategies in their study of Chinese students into two major categories: metacognitive and cognitive. Schmitt (1997, 2000) recognized the overlap of cognitive, metacognitive, memory and social functions in 58 VLS in his adaptation of Oxford's (1990) more general SILL (Strategy Inventory for Language Learning) classification and added determination of meaning strategies under his

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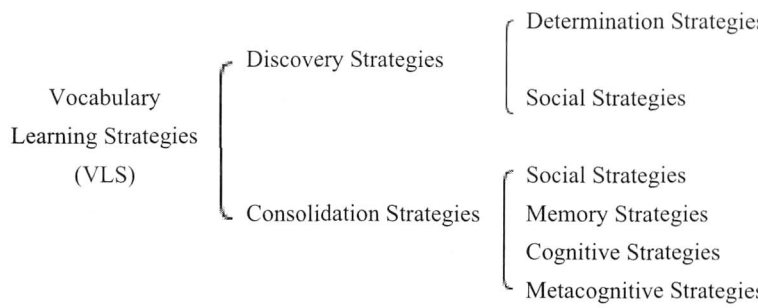
overarching distinctions between discovery strategies (i.e., strategies for learning what an unknown word means) and consolidation strategies (i.e., strategies for both learning word meaning and integrating it into the vocabulary). In the context of the present study, we utilized Schmitt's classification of VLS for its comprehensive coverage in order to examine the EFL learners' preferences in using VLS, and it was based on Japanese learners whose educational system and the characteristics may be similar in some ways to the participants of the present study. Figure 1 illustrates the main classification scheme proposed by Schmitt which consists of discovery and consolidation strategies.

FIGURE 1

Taxonomy of Vocabulary Learning Strategies (Schmitt, 1997)



2. VLS of Proficient and Less Proficient Learners

The present study also takes interest in collecting information of L2 learners' use of strategies with regard to L2 proficiency. In an earlier study, Hosenfeld (1977) (as cited in Cohen & Macaro, 2007) found that good readers read at the phrase level, keeping the meaning of the passage in mind while skipping unessential words and guessing from context rather than using the glossary. By contrast, her poor readers read word-by-word often losing the meaning of sentences, rarely skipped words and used the glossary as the primary VLS rather than guessing from context. Sanaoui (1995) by use of daily written records and oral interviews noted that the successful students actively monitored and reviewed the vocabulary words they were learning (e.g., by use of spare time while jogging, driving, or waiting to practice newly learnt words they were learning). Unsuccessful learners were found to be less systematic, motivated, or disciplined (i.e., doing little or no work which was not required by the course and hardly spent any time reviewing vocabulary.) By utilizing vocabulary tests and a proficiency test as measures of success, Kojic-Sabo and Lightbown (1999) associated more frequent and elaborate

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strategy use, including practicing vocabulary outside of the classroom, with higher levels of vocabulary learning whereas lack of self-reported effort was linked to poor performance. Using a think-aloud protocol, direct observation, and a structured interview to collect data and scholastic records to determine learning success, Ahmed (1989) found that the good learners were distinguished from the unsuccessful learners by their frequent use of the 'practice' strategies, including using new words in real and imagined context, asking for tests, asking for assistance, using written sources to verify knowledge, and self-testing. On the other hand, two groups of less successful learners 'showed little awareness of what they could learn about new words, and they did not show any interest in learning words in context. Each new word was learnt as if it had no relationships with any previously learnt words' (p. 9). In general they used fewer strategies, and used other less elaborate clusters of strategies than more successful students, indicating that learners' VLS repertoire can be inadequate or even counterproductive.

Another group of researchers, Gu and Johnson (1996), who collected VLS data from Chinese university students, found contextual guessing, skilled use of dictionaries, note-taking, paying attention to word formation, contextual encoding and activation of newly learnt words' (p. 643) to correlate positively with both general proficiency and vocabulary scores. In a similar vein, Fan (2003) used a VLS questionnaire and a simultaneous vocabulary test in her study with Hong Kong ESL students. More proficient students reported planning their vocabulary learning both inside and outside class and used both guessing strategies in concert with their knowledge of grammar and morphology and, dictionary strategies, including consulting English definitions, pronunciation, derived forms, and appropriate usage of the new words. The results of studies on VLS in relation to proficiency level of learners indicate in general that the more proficient learners have requisite knowledge needed to effectively apply a greater range of strategies than their less proficient peers.

Having reviewed the classifications for VLS and studies that have been conducted with attention to L2 proficiency level of learners, the following research questions were posed for the present study:

1. With regard to the use of lexical discovery and consolidation strategies within the area of vocabulary learning strategies (VLS), what are the preferences for the different types of strategies among the vocational high school EFL learners? Here the preferences were operationalized by asking learners to report on the frequency of using the strategies through which we were able to examine the patterns of strategy use.

2. How do the actual use of strategies and preferences differ between the proficient learners in comparison to the less proficient learners? The actual use of the strategies

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became visible to us during the think-aloud reading task and the retrospective interviews.

3. If there are differences in the preference of strategies between the proficient and less proficient learners, what does the strategy pattern indicate as to how strategy instruction should be conducted to improve the less proficient learners' strategic competence in the use of lexical discovery and consolidation strategies? Research questions 2 and 3 will jointly be discussed due to their close relevance.

III. METHOD

The present study was designed to investigate the use of lexical strategies that EFL vocational high school students use to discover word meaning in receptive tasks, and consolidate lexical knowledge once they have been exposed to new words. The second part of the study consisted of conducting a think-aloud reading task and retrospective interviews to examine the use of the lexical discovery strategies for when the meaning of new or partially known words are met in the process of L2 reading.

1. Context and Participants

The 74 participants, who were from a vocational high school located in the area of Seoul, were an intact group of learners from 3 classes. The learners were considered feasible for the study on the use of VLS since there is continuous interest in English among the students and demand for TOEFL classes in the school, where a portion of the students may be aiming to enroll in universities abroad. At the time of study, one of the researchers of the study was co-teaching with a native-speaker teacher in the school. According to the questionnaire information collected on the learners' background profiles, practically no strategy-based instruction had existed for the learners.

In order to distinguish the participants into proficiency groups for investigating the use of VLS, the students were divided into three groups (i.e., high, mid, and low) according to a natural divide based on their vocabulary proficiency (see later instruments). For finer analysis, however, 26 students from the mid-proficiency group were excluded, which resulted in 24 learners for each of the high and low proficiency groups, who will be respectively referred to as the 'proficient' and 'less proficient' learners hereafter in the context of the present study. For the second part of the study, four learners from each of the proficient and less proficient groups were randomly selected for the think-aloud reading tasks in order to gain finer views of the learners' VLS.

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2. Instruments

1) Vocabulary Size Test

The Vocabulary Size Test in the bilingual form (Nation, 2010) was used to measure the students' vocabulary proficiency (downloaded from http://www.victoria.ac.nz/lals/staff/paul-nation.aspx), mainly by testing the subjects' receptive vocabulary knowledge. The test was originally developed to provide a reliable and comprehensive measure of a learner's vocabulary size by selecting word items at each band from the 1st to the 14th 1,000 word families, which is based on the development of the fourteen 1,000 BNC word lists (Nation & Beglar, 2007). In effect, each word would represent a sample of 100 words at each level and so learners' scores are multiplied by 100 to roughly estimate their total vocabulary size. According to Nation and Beglar, acquiring around 8,000 word families is considered an important threshold level for learners who wish to deal with a range of unsimplified spoken and written texts. Considering this, the 10,000 word level was considered the appropriate target for the vocabulary proficiency test, and the test was conducted with paper and pencil. The following presents the fifth item in the 1st 1,000 word band. As can be seen, the target word is provided in a non-defining context with four options:

miniature: It is a miniature.
a. 아주 작은 모형
b. 현미경
c. 아주 작은 생물
d. 대쉬 마크 (-)

However, in order to minimize the probability of guessing by the learners, we added a fifth option 'don't know' (잘 모르겠음), but we acknowledge that we may still be limited in completely removing the possibility of any guessing by the learners. The vocabulary size test was conducted during a regular class session after the participants were briefly informed on the nature of the study.

2) Strategy Questionnaire for Lexical Discovery and Consolidation of Vocabulary

The taxonomy of vocabulary learning strategies (VLS) devised by Schmitt (1997) was used as a platform to retrieve the relevant lexical discovery and consolidation strategies that seemed most applicable to our learners. Schmitt's VLS inventory, which contains 58 strategies, was originally compiled through multiple sources (i.e., vocabulary reference books, reports on vocabulary study, teacher's review of strategies, surveys). The two

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major strategies are discovery and consolidation strategies, but our questionnaire was modified based on one of the researchers' experience in teaching and after having conducting informal interviews on the learners' usual vocabulary learning skills and strategies. The final strategy questionnaire resulted in 39 strategy items. See later *IV. Results and Discussion* for the details of the items.

The questionnaire consisted of two main vocabulary strategy categories: discovery strategies and consolidation strategies. While there was a total of 39 questionnaire items, 7 items were presented to investigate how learners coped with situations when they meet meaning unknown word problems (i.e., discovery strategies), and 32 items were asked to examine learners' use of strategies for consolidating knowledge of words once the learners have encountered them. The subcategories for discovery strategies are determination strategies (DET) and social strategies (SOC). The consolidation strategies consist of social strategies (SOC), memory strategies (MEM), cognitive strategies (COG), and metacognitive strategies (MET). The strategy questionnaire was presented on 5-point Likert scales for the learners to mark (i.e., 5 = almost always used, 4= often used, 3 = sometimes used, 2 = rarely used, 1 = almost never used) which was to be used later for the calculation of means, frequencies and differences in the use of strategies between different proficiency groups. Also, to obtain information on the learners' educational backgrounds (e.g., learning styles, instruction on vocabulary), nine questions were inserted before the actual questionnaire on lexical discovery and consolidation strategies.

3) Think-aloud L2 Reading Task

In addition to collecting responses from the strategy questionnaire, four learners from each of the proficient and less proficient groups were randomly selected to conduct think-aloud (TA) reading tasks and retrospective interviews to triangulate results from the strategy questionnaire regarding differences between two proficiency groups. The text "Sand and Stone" was selected for the task and it was made sure that the learners had never seen the text before (See Appendix 1 for the complete reading passage). It was also checked from a different group of similar learners that the text was slightly above their proficiency level (i.e., *i*+1) so that there would be vocabulary problems to notice (Schmidt, 1990, 1993), and solve with the use of strategies in the process of L2 reading.

3. Procedures

Data collection for this study was collected over three days. On the first day, there was administration of the vocabulary size test and the questionnaire on vocabulary learning

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strategies (i.e., lexical discovery and consolidation strategies). The session for data collection, which was conducted under the supervision of the English teacher, lasted for 50 minutes. After there was a brief explanation on the purpose of the instruments, 30 minutes was devoted to the vocabulary size test and 15 minutes was provided for the questionnaire on the lexical strategies.

On the second and third day of the study, four learners from each of the proficient and less proficient groups were randomly selected for TA reading tasks, and retrospective interviews were conducted for any idiosyncratic behavior noted during the TA task. As a demonstration, the researcher played them a TA recording of a person thinking-aloud in L1 (Korean) while making an itinerary of a business trip. It was told in this session that the language to be used during the verbalization could be chosen by the subject at their convenience. There were a few more practice exercises for warm-up with multiplication math problems (Ericsson & Simon, 1993).

After a training session, the learners were presented with a reading passage and asked to think-aloud. As a whole, the TA and retrospective interviews, which are qualitative methods of inquiry, allowed the researchers to triangulate the results of the questionnaire, and also investigate the proficient and less proficient learners' actual cognitive process of using strategies.

In the retrospective interviews, the learners were asked questions on the kinds of strategies they had employed during the think-aloud reading task, but questions were sometimes asked intermittently during the reading task when the learners' TA comments were found to be vague or when the learner fell silent. As a whole, each student was given 20 minutes for a reading TA task.

4. Data Analysis

The responses collected from the learners via the VLS questionnaires were coded and analyzed with SPSS 17.0. The frequencies, means, and inferential statistics were calculated for any mean differences in the use of strategies between the two proficiency groups with independent samples t-test.

In order to validate the questionnaire data, TA protocols collected from the readings tasks were transcribed for repeated readings and coding of strategies, which were continuously checked for inter-rater reliability and validity between the two researchers. In a similar way, interviews conducted with the learners were transcribed to validate the findings of the VLS questionnaire and TA reading task protocols.

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IV. RESULTS AND DISCUSSION

1. Vocabulary Size Test and Proficiency Groups

As previously mentioned, the learners' proficiency was measured through the vocabulary size test. Table 1 presents the results on scores of the three different proficiency groups which were calculated by multiplying a 100 to the raw scores of the vocabulary size tests. Learners were divided into three different proficiency groups based on division of scores.

TABLE 1

Vocabulary Size of High, Mid, and Low Proficiency Groups

Groups	N	Min	Max	Mean	SD
High Prof. Learners (= Proficient Learners)	24	3400.00	5400.00	4195.83	609.69
Mid Prof. Learners	26	2400.00	3300.00	2865.38	307.17
Low Prof. Learners (= Less Proficient Learners)	24	1000.00	2300.00	1804.17	389.51

The high proficiency group learners had a vocabulary size range of 3,400 ~ 5,400 words, the mid group 2,400 ~ 3,300 words, and the low proficiency 1,000~2,300 words. However, for our purpose of comparing the lexical strategies of high and low group learners, we excluded data gained from the mid proficiency group which resulted in 24 learners being in each group. In fact, according to Nation and Beglar (2007), a vocabulary size of 8,000 words is needed for L2 learners to read unsimplified texts, a size of 6,000 words to watch and understand 98% of children's animation movies, and a size of 7,000 words to understand 98% of spoken English. In comparison, it can be seen from the mean scores of both the proficient and less proficient learner groups that the learners in the present study would have substantial difficulty comprehending authentic English texts or for conversing successfully with native speakers of English. As such, since the learners even in the high proficiency group cannot genuinely be labeled as such, we refer to each of the groups of learners in more relative terms, that is, the 'proficient' and 'less proficient' learners.

2. Overall Frequency of Lexical Discovery and Consolidation Strategies of L2 Learners

This section answers research question 1: With regard to the use of lexical discovery and consolidation strategies within the area of vocabulary learning strategies (VLS),

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what are the preferences for the different types of strategies among the vocational high school EFL learners? When the frequencies of the use of strategies were examined regardless of the proficient and less proficient groups, results were produced as in Table 2.

TABLE 2
Overall Frequency of Lexical Discovery and Consolidation Strategies

(*n*=48)		Min	Max	Mean	Rank	SD
Discovery Strategies	Determination Strategies	1.00	4.75	**2.95**	*1*	.752
	Social Strategies	1.00	4.00	2.43	*5*	.659
Consolidation Strategies	Social Strategies	1.00	4.50	2.17	*6*	.808
	Memory Strategies	1.21	4.00	2.61	*4*	.617
	Cognitive Strategies	1.00	4.00	2.70	*2*	.661
	Metacognitive Strategies	1.00	4.67	2.61	*3*	.794

The calculation of descriptive statistics of the lexical strategies indicated that the most frequently used strategies among the L2 vocational high school learners were determination strategies which involve discovering meaning of words by structural knowledge, such as through parts of speech, affixes and roots, guessing from context, and appealing to reference materials. However, the mean of 2.95 needs to be interpreted with caution since its semantic value is more or less equivalent to 'sometimes' (3.00) according to the 5-point Likert scale that was provided to the learners in the questionnaire.

TABLE 3
Discovery (Determination and Social Strategies)

		Min	Max	Mean	Rank	SD
DET (1~4)	1. Analyze part of speech	1	5	2.85	*3*	1.130
	2. Analyze affixes and roots	1	5	2.81	*4*	1.142
	3. Guess from textual context	1	5	**3.63**	*1*	1.178
	4. Use the dictionary	1	5	2.52	*5*	1.203
SOC (5~7)	5. Ask teachers for an L1 translation	1	5	3.10	*2*	1.077
	6. Ask teacher for paraphrase or synonym of new word	1	4	2.06	*7*	.909
	7. Discover new meaning through group work activity	1	5	2.13	*6*	1.044

* *Note*: DET= Determination Strategies; SOC= Social Strategies

In fact, as seen in Table 3, guessing from textual context was the most frequently used determination strategy. The strategy that ranked second was a social strategy, such as in asking the teacher for an L1 translation, which seems to have been preferred among the learners for its strength in obtaining direct access to the meaning of the word.

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With the analysis of consolidation strategies, which consist of social, memory, cognitive and metacognitive strategies, we examine the consolidation strategies in two clusters (i.e., social and memory strategies; cognitive and metacognitive strategies). The results on their descriptive statistics are illustrated in Tables 4 and 5.

TABLE 4
Consolidation Strategies (Social and Memory Strategies)

			Min	Max	Mean	SD
SOC (8~9)	8.	Study and practice meaning in a group	1	4	1.83	.834
	9.	Interact with native-speakers	1	5	2.50	1.092
MEM (10~28)	10.	Study word with a pictorial representation of its meaning	1	5	2.77	1.259
	11.	Connect word to a personal experience	1	5	2.56	1.165
	12.	Associate the word with its coordinates	1	5	**3.12**	1.142
	13.	Connect the word to its synonyms and antonyms	1	5	2.81	1.045
	14.	Use semantic maps	1	5	2.10	1.574
	15.	Use 'scales' for gradable adjectives	1	5	2.40	.984
	16.	Group words together spatially on a page	1	4	2.04	.898
	17.	Use new word in sentences	1	5	2.40	1.086
	18.	Group words together within a storyline	1	5	1.88	.914
	19.	Study the spelling of a word	1	5	**3.73**	1.026
	20.	Study the sound of a word	1	5	**3.94**	.976
	21.	Say new word aloud when studying	1	5	2.77	1.153
	22.	Image word form	1	5	**3.04**	1.254
	23.	Use Keyword Method	1	5	2.52	1.185
	24.	Affixes and roots (remembering)	1	4	2.48	.967
	25.	Part of speech (remembering)	1	5	2.52	1.031
	26.	Paraphrase the word's meaning	1	5	2.38	.937
	27.	Learn the words of an idiom together	1	5	2.27	1.026
	28.	Use physical action when learning a word	1	5	2.00	.945

* *Note*: SOC= Social Strategies; MEM= Memory Strategies

The social and memory strategies that can be noted for their relative high frequency were in the order of 'study the sound of a word', 'study the spelling of a word', 'associate the word with its coordinates', and 'image word form'. It seems that most learners regarded the process of analyzing the phonemic and structural aspects of a word

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as a prerequisite for the consolidation of lexical knowledge. Also, the way learners associate the word with its coordinates shows how learners may be involved in the process of relating and anchoring new lexical items to previously learned items in their mental lexicon.

Within the category of social and memory strategies as a whole, 'study and practice meaning in a group' resulted to be least practiced strategy among the learners perhaps due to the restrictive classroom environment where they do not have opportunities to work in groups for vocabulary learning. This may indicate how most of the learners treated vocabulary learning primarily to be an independent task without the awareness that vocabulary learning can become more efficient with cooperative tasks (Nation, 2001).

Within the category of cognitive strategies, verbal or written repetition strategies were preferred over the other consolidation strategies (see Table 5). In connection to the learners' use of memory strategies as seen previously (i.e., study the spelling of a word, study the sound of a word), a possible pattern of strategy use is that 'repeating' may have been used as a follow-up strategy after the learners had analyzed the sound and form of words to be learnt. Although repetition is a mechanical means to study vocabulary, verbal and written repetition are common strategies, that have been used all over the world, to reach high levels of proficiency (Schmitt, 1997).

TABLE 5
Consolidation (Cognitive and Metacognitive Strategies)

			Min	Max	Mean	SD
COG (29~36)	29.	Verbal repetition	1	5	**3.46**	1.148
	30.	Written repetition	1	5	**3.75**	1.082
	31.	Take teachers' notes in class	1	5	**3.19**	1.179
	32.	Use the vocabulary section in your textbook	1	5	2.77	.994
	33.	Listen to tape of word lists	1	4	1.67	.694
	34.	Put English labels on physical objects	1	3	1.52	.583
	35.	Keep a vocabulary notebook	1	5	2.65	1.229
	36.	Use English-language media (songs, movies, newscasts, etc.)	1	5	2.63	1.123
MET (37~39)	37.	Testing oneself with word tests	1	5	2.63	1.231
	38.	Skip or pass new word	1	5	2.56	1.029
	39.	Continue to study word over time	1	5	2.65	1.041

* *Note*: COG= Cognitive Strategies; MET= Metacognitive Strategies

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In addition to repetition, 'taking teachers' notes in class' for the learners seemed to be another favored strategy in comparison to strategies such as 'using the vocabulary section in your textbook' or 'listening to tape of word lists'. Again it seems that the students were more attentive to information that was relatively easier to access, such as the teachers' notes, rather than the vocabulary sections in a textbook which may not be available with explanations on definitions or exemplary sentences, particularly in many of the national curriculum-based textbooks. Another practical limitation is that it would be rare to find tape of word lists that accompany instructional materials since the students were using curriculum-based textbooks at the time of the study. On the other hand, strategies such as 'put English labels on physical objects' did not rank high on the list of strategies due to its impracticality. The overall analysis on the frequency of discovery strategies (i.e., determination and social strategies) and consolidation strategies (i.e., social, memory, cognitive, and metacognitive strategies) described so far, however, only demonstrates the learners' general preference toward the use of strategies so that there was need to conduct analysis based on different proficiency levels.

2. Lexical Discovery and Consolidation Strategies regarding Vocabulary Proficiency

This section answers research question 2: How do the actual use of strategies and preferences differ between the proficient and less proficient learners? A preliminary examination of the strategies between the proficiency groups indicated significant differences for Determination Strategies of Discovery Strategies; and Social, Memory, and Metacognitive Strategies of Consolidation Strategies when calculated by independent t-tests with Bonferroni Correction[1] ($p < .008$) (see Table 6). The difference in the mean scores indicated that the strategies had been used more frequently by the proficient learners. Inferential tests were conducted respectively on the subcategory strategies of discovery and consolidation strategies to further examine the differences.

[1] To ensure that the cumulative Type I error is below .05, Bonferroni Correction was conducted. That is, instead of using .05 as the criteria value for significance of each test, .05 is divided by the number of tests conducted (Field, 2009).

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TABLE 6
Difference in Discovery and Consolidation Strategies between Proficiency Groups

Category	Items (Total Points)	Subcategory	Prof	Mean	SD	t	Sig.
Discovery Strategies	1-4 (20)	Determination Strategies	Prof	**10.833**	1.85	4.697	.000*
			Less Prof	7.750	2.62		
	5-7 (15)	Social Strategies	Prof	9.708	2.33	-.268	.790
			Less Prof	9.917	3.02		
Consolidation Strategies	8-9 (10)	Social Strategies	Prof	**5.208**	1.50	4.436	.000*
			Less Prof	3.458	1.21		
	10-28 (95)	Memory Strategies	Prof	**55.417**	8.43	3.877	.000*
			Less Prof	44.042	11.63		
	29-35 (35)	Cognitive Strategies	Prof	20.125	3.83	1.719	.093
			Less Prof	17.875	5.13		
	36-39 (20)	Metacognitive Strategies	Prof	**11.750**	2.17	3.098	.003*
			Less Prof	9.167	3.46		

1) Discovery Strategies

(1) Determination Strategies

Within the category of Determination Strategies (DET) (See Table 7), the results indicated that it was the proficient learners that were more frequent in 'analyzing parts of speech, or affixes and roots of words' when attempting to discover meaning of a newly met word in the process of reading, and both occurred at significant levels ($p < .0125$). The results are in accordance with how the higher proficiency learners in Fan's (2003) study who used their knowledge on parts of speech, stems, and affixes more frequently when trying to predict the meaning of newly encountered words. As such, the difference in the strategy pattern seems to have occurred due to the less proficient learners' lack of knowledge on the construct of words.

Further analysis with the independent t-test by Bonferroni Correction also showed a difference between the proficient and less proficient learners in the frequency of 'guessing from textual context' as a determination strategy. At this point, it is considered necessary to examine the learners' use of strategies from a qualitative approach since there were particularly many instances of the TA protocols that illustrated comparative views between the proficient and less proficient learners in the use of 'guessing from context.'

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TABLE 7
Difference in Determination Strategies between Proficiency Groups

Categories	Strategy Type	Prof	Mean	Rank	SD	t	Sig.
DET (*p < .0125)	1. Analyze part of speech	Prof	3.58	(2)	.776	5.873	.000*
		Less Prof	2.13	<4>	.947		
	2. Analyze affixes and roots	Prof	3.17	(3)	.963	2.238	.000*
		Less Prof	2.46	<3>	1.215		
	3. Guess from textual context	Prof	4.08	(1)	.776	2.900	.006*
		Less Prof	3.17	<1>	1.341		
	4. Use the dictionary (without any attempt to guess)	Prof	2.21	(4)	.932	-1.846	.071
		Less Prof	2.83	<2>	1.373		

Note: DET = Determination Strategies; Numbers in ( ) indicate rank for proficient learners, and numbers in < > indicate rank for less proficient learners

In the following, proficient learner #2 (H2) reports on how she tried to use contextual cues to decode the meaning of unknown words while reading. The accompanying retrospective interview showed how she was successful in her attempt. The target sentences are: *At some point, they had a big argument, and Cathy insulted Jane. Jane felt bad, but, without saying anything, she wrote in the sand: Today my best friend insulted me.* The conventions of the think-aloud protocols are presented in Appendix 2.

Proficient learner #2:

H2: At some point [uh ...which point? They had a big ARGUMENT uh.. and CATHY insulted JANE. Ah they had a big argument and CATHY insulted JANE]

R: What do you do when you meet an unknown word during the process of reading?

H2: when I still don't get it by looking at the context I roughly try to .. when I saw the word ARGUMENT I knew it was something like fighting, and when I saw INSULT I knew perhaps I was on the right track…

Here we can see how the proficient learner was able to guess the meaning of an unknown word from contextual cues. In the protocol, the learner was able to predict what 'argument' meant from the word 'insult' that came after the problem word.

Alternatively, another high proficiency learner (H4), when having met an unknown word, momentarily continued to read on after having attempted to guess, and tried to infer the meaning of the problematic word from the context. That is, as demonstrated in the following, the H4 learner initially takes a guess at the meaning of the unknown word by referring to contextual cues, but when the word reappears, the learner re-evaluates the

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meaning of the word as a way to check on its meaning. The target sentence in the following is: *At some point, they had a big argument, and Cathy insulted Jane. Jane felt bad, but, without saying anything, she wrote in the sand: Today my best friend insulted me.*

Proficient learner #4:

H4: AT SOME POINT [at some point they BIG ARGUMENT that is they had a big argument. And CATHY JANE is INSULT? ..can't remember what it is.. is it to insult since there was a big argument...I'll just pass for now...Jane felt bad <H4 learner continues to read>]
<Later says>

H4: Today my best friend insulted me. Right, I think 'insult' is the correct meaning.

The H4 learner at first discovers the meaning of the word 'insult' with the aid of the aforementioned 'argument.' Later, when the problem word reappears, he attempts to check if his prediction is correct. As such, we can see how the high proficiency learner delayed his attempt to guess the meaning of the unfamiliar word by later trying to understand the word within the extended context of the reading passage.

In contrast, as seen previously in Table 7, although the less proficient learners reported on their use of 'guessing from context' as a second ranking strategy, the actual think-aloud task revealed that some learners either did not attempt to guess the meaning of unknown words from contextual cues and proceeded to read on, or failed to decode the meaning of an unknown word in spite trying to 'guess from context.' See the following TA protocol of a less proficient learner (L4) where the target sentences are: *At some point, they had a big argument, and Cathy insulted Jane. Jane felt bad, but, without saying anything, she wrote in the sand: Today my best friend insulted me. The two friends continued walking until they found a deep well. The hot desert sun had made them thirsty, so they decided to stop for a drink.*

Less proficient learner #4:

L4: At some point [at point, they BIG AR.. What's this? BIG? They BIG, they had something, so CATHY did something to JANE. Did CATHY take something? So Jane felt bad, but BUT but WITHOUT SAYING, is this something said, SAYING ANYTHING? Nothing is said, uh nothing is said. Jane felt, bad, but did not say anything, so she wrote. Uh.. in the sand, today my best friend took away something.]

L4: <Later says>
The hot dessert <instead of saying 'desert'> [ah, there is also the SUN? Oh a hot dessert sun? HAD MADE they made. They, what is THIRSTY? It made them tired]

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As can be seen in the protocol, the less proficient L4 learner when seeing the word 'argument' connects this word to the verb 'had' as in 'having ownership' where the word 'argument' is regarded as a physical object to the learner. In a similar way, she infers the meaning of 'insult' as in 'having ownership' when she comments "Did Cathy take something?" As such, although there is the need to make use of contextual cues when trying to guess the meaning of unknown words, it can be seen from the L4 learner that she was not able to do so to retrieve the correct meaning of the target word. Instead, even when the word' insult' reappeared in the text, she was not able to notice how she had previously mistranslated the word 'insulted' (i.e., in 'Cathy insulted Jane') and continued to translate the sentence as 'Today my best friend took away something' rather than 'Today my best friend insulted me.' Later in the protocol, we can also see how the L4 learner was still not completely successful when inferring the meaning of 'thirsty.' The learner is only able to vaguely guess the meaning of 'thirsty' by inferring that the 'hot sun' had made them tired. See the following protocol for how another less proficient learner relies on her background knowledge to infer the meaning of a problem word, however, which results to be unsuccessful. Here the target sentence is: *Jane replied.*

Less proficient learner #1:

L1: [JANE, how do you read this? <appealing to the researchers as referring to 'replied'>
R: Re-plied
L1: Replied [repul? Is it repul?] <saying the word as in the Korean loanword for 'reply'> <Later>
R: [I noted how you said 'repul' for REPLIED. Would you be able to explain what you mean by that?]
L1: [Repul, you know how we say repul, how we tag repuls. That's what I mean.]

As can be seen in the think-aloud protocol and interviews, the less proficient writer was able to infer the meaning of the word 'replied' from how he knew the pronunciation of the loanword 'reply' as in 'repul.' However, the protocol shows that employment of the strategy was unsuccessful. In the following, we can see how the less proficient learner L3 is completely off track in guessing the meaning of 'edge' when using her background knowledge of how the word is usually used in L1, again as a loanword. See the following protocol reported by a less proficient learner where the target sentence is: *As Jane leaned over the edge of the well, she slipped and fell in.* Here the problem is that she uses her knowledge of a loanword 'edgy' (as in describing someone to be 'chic') to infer the meaning 'edge' and does not realize that 'edgy' is an adjective as in 'characterized by tension'.

Less proficient learner #3:

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L3: As Jane leaned over the [EDGE? Is this not EDGY? EDGY? She nicely EDGY.. JANE was very edgy]

As a whole, we can see that the less proficient learners also used strategies to infer the meaning of words from the context, but limited access to knowledge of contextual L2 words often paralyzed their decoding process. At other times, the less proficient learners inappropriately made use of their knowledge of loanwords or background knowledge that was not related to the content so that they ended up decoding words and the content in farfetched ways. In contrast, the pattern of strategy use by the proficient learners indicated them to be relatively successful in the use of contextual cues and background knowledge. The comparative analysis of strategy use indicates that, in a similar way to the proficient learners, the less proficient learners may need to be trained to consider the use of multiple sources, such as via cues from preceding or succeeding words, background knowledge, and also by evaluating the meaning of words when it reappears in the latter part of the reading passage.

(2) Social Strategies

With regard to social strategies, although 'discovering new meaning through group work activity' had not appeared to be a popular strategy when we analyzed the overall mean for examining the frequency in the use of strategies (see previous section *2. Overall Frequency of Lexical Discovery and Consolidation Strategies of L2 Learners*), the results as indicated in Table 8 shows that the proficient learners, in comparison to the less proficient learners, are significantly more interested in using the strategy when having the opportunity to work in groups. Nevertheless, the mean of 2.50 overall indicates that the strategy itself is not used to a great extent by the proficient learners.

TABLE 8
Difference in Social Strategies between Proficiency Groups

Categories		Strategy Type	Prof	Mean	Rank	SD	t	Sig.
SOC (*p < .016)	5.	Ask teachers for an L1 translation	Prof	2.88	(1)	.992	-1.494	.142
			Less Prof	3.33	<1>	1.129		
	6.	Ask teacher for paraphrase or synonym of new word	Prof	2.13	(3)	.850	.473	.639
			Less Prof	2.00	<2>	.978		
	7.	Discover new meaning through group work activity	Prof	2.50	(2)	.978	2.642	.011*
			Less Prof	1.75	<3>	.989		

Note: SOC = Social Strategies; Numbers in ( ) indicate rank for proficient learners, and numbers in < > indicate rank for less proficient learners

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2) Consolidation Strategies

(1) Social Strategies

An examination of the social strategies for consolidation (See Table 9) indicated generally that it was the proficient learners that depended more on the use of strategies for the consolidation of vocabulary knowledge. Although the mean scores reported for the frequency of social strategies indicated that they were preferred in the same order by both groups, statistical tests conducted with independent t-tests by Bonferroni Correction indicated that there were significant differences ($p < .025$). This indicates how the proficient learners may be interested in using strategies to 'study and practice meaning of newly learnt words in a group' as well as utilize newly acquired words in the process of 'interacting with native-speakers.' The process that the proficient learners are likely to go through by using social strategies relates to how learners may be better able consolidate their vocabulary knowledge while obtaining opportunities for noticing (Schmidt, 1990, 1993) the words that they need to use in interaction, and retrieving the words they need to use (Chon, 2009), which are prerequisites for automatization of instant lexical retrieval.

TABLE 9
Difference in Social Strategies for Consolidation between Proficiency Groups

Categories		Strategy Type	Prof	Mean	Rank	SD	t	Sig.
SOC (*p < .025)	8	Study and practice meaning in a group	Prof	2.29	(2)	.806	4.532	.000*
			Less Prof	1.38	<2>	.576		
	9.	Interact with native-speakers	Prof	2.92	(1)	1.018	2.836	.007*
			Less Prof	2.08	<1>	1.018		

Note: SOC = Social Strategies; Numbers in ( ) indicate rank for proficient learners, and numbers in < > indicate rank for less proficient learners

(2) Memory Strategies

With regard to memory strategies (See Table 10), we found that the most frequently used strategies were in the order of 'Study the sound of a word', 'Study the spelling of a word', and 'Associate the word with its coordinates' when examined regardless of proficiency groups.

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TABLE 10
Difference in Memory Strategies for Consolidation between Proficiency Groups

Categories		Strategy Type	Prof	Mean	Rank	SD	t	Sig.
MEM (*p < .003)	10.	Study word with a pictorial representation of its meaning	Prof	3.00	(8)	1.251	1.269	.211
			Less Prof	2.54	<5>	1.250		
	11.	Connect word to a personal experience	Prof	2.83	(9)	1.090	1.639	.108
			Less Prof	2.29	<8>	1.197		
	12.	Associate the word with its coordinates	Prof	3.46	(3)	.977	2.095	.042
			Less Prof	2.79	<3>	1.215		
	13.	Connect the word to its synonyms and antonyms	Prof	3.13	(6)	1.035	2.151	.037
			Less Prof	2.50	<6>	.978		
	14.	Use semantic maps	Prof	2.29	(18)	.908	.822	.415
			Less Prof	1.92	<16>	2.041		
	15.	Use 'scales' for gradable adjectives	Prof	2.58	(13)	.929	1.331	.190
			Less Prof	2.21	<12>	1.021		
	16.	Group words together spatially on a page	Prof	2.50	(15)	.834	4.082	.000*
			Less Prof	1.58	<18>	.717		
	17.	Use new word in sentences	Prof	2.75	(10)	1.032	2.366	.022
			Less Prof	2.04	<13>	1.042		
	18.	Group words together within a storyline	Prof	2.33	(17)	1.007	3.988	.000*
			Less Prof	1.42	<19>	.504		
	19.	Study the spelling of a word	Prof	4.17	(2)	.637	3.239	.002*
			Less Prof	3.29	<2>	1.160		
	20.	Study the sound of a word	Prof	4.25	(1)	.637	2.318	.025
			Less Prof	3.63	<1>	1,160		
	21.	Say new word aloud when studying	Prof	3.13	(6)	.676	2.215	.032
			Less Prof	2.42	<7>	1.135		
	22.	Image word form	Prof	3.29	(4)	.992	1.395	.170
			Less Prof	2.79	<3>	1.213		
	23.	Use Keyword Method	Prof	3.17	(5)	.955	4.476	.000*
			Less Prof	1.88	<17>	1.474		
	24.	Say new word aloud when studying	Prof	2.67	(12)	1.049	1.355	.182
			Less Prof	2.29	<8>	.947		
	25.	Part of speech (remembering)	Prof	2.75	(10)	.917	1.563	.125
			Less Prof	2.29	<8>	.999		

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26.	Paraphrase the word's meaning	Prof	2.50	(15)	.897	.923	.361
		Less Prof	2.25	<11>	1.122		
27.	Learn the words of an idiom together	Prof	2.58	(13)	.933	2.194	.033
		Less Prof	1.96	<14>	.944		
28.	Use physical action when learning a word	Prof	2.04	(19)	.929	.302	.764
		Less Prof	1.96	<14>	1.042		

Note: MEM = Memory Strategies; Numbers in ( ) indicate rank for proficient learners, and numbers in < > indicate rank for less proficient learners

When the characteristic of the strategies are examined, we can see how these strategies are compulsory for any vocabulary learning to take place. However, there was in fact a significant difference found for 'study the spelling of a word' ($p < .003$), which may indicate how the proficient learners may be more conscious about the form of the word when consolidating lexical knowledge. Additional significant differences were found for 'Group words together spatially on a page', 'Group words together within a storyline', and 'Use the Keyword Method'. In fact, the significant difference for the 'keyword method' demonstrates how the proficient learners may be more eager to use means of association as a way to strengthen lexical knowledge of newly learnt words in comparison to the less proficient learners.

As seen previously, the significant difference between the proficiency levels with 'study the spelling of a word' illustrates how the proficient learners were seen to be relatively frequent in analyzing or paying attention to the spelling of words. In fact, the problems due to remembering words that are similar in phonological, graphic, and/or morphological features that are prone to cause lexical confusions in learners of English were seen to be the sources of problems when trying to learn words. This type of problem has been documented to occur sometimes due to synforms, which is a common problem where learners may twist the interpretation of the context on the basis of what a word looks like (Laufer, 1991). The following is an instance of 'studying the spelling of a word' as a strategy by the proficient H3 learner where the problem is that he confuses the word 'slip' with 'sleep' as can be found in the retrospective interview. The H3 learner, however, soon solves the problem with help from his background knowledge, which can be considered a strategy in itself. The target sentence in the following is: "As Jane leaned over the edge of the well, she slipped and fell in."

Proficient Learner #3:

H3: As... Jane [leaned. on sth sth edge edge on well…on the edge of the sell. She *sleep ….. slipped and fell.*]

R: [How did you know that it had to be SLIPPED? You were first going to say 'she

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sleep' and then you changed your mind. Why?]

H3: [I thought it was that she had fallen asleep. But I knew it sounded a bit strange; *I talk to my friends for usually saying that we slip and fall from* a motorcycle.]

As a whole, we can see how learners pay attention to form of words in the process of reading to distinguish between synforms. This type of decoding process also occurred with the less proficient learners when they experienced problems retrieving the correct meaning of the word in connection to form of words, but their attempts often resulted to be unsuccessful.

(3) Cognitive Strategies

The questionnaire results did not produce any significant differences in the use of cognitive strategies between proficiency levels. However, as seen in Table 11, the descriptive results generally demonstrated the proficient group learners to be the more frequent users of strategies (with the exception of 'written repetition'). Nonetheless, the order of preference in both groups for using strategies did not differ extensively since 'verbal and written repetitions' were the most frequently used strategies followed by 'taking teacher's notes', 'keeping a vocabulary notebook' or 'using the vocabulary section' in textbooks. Here although rote repetition can be considered a basic strategy, it has been noted to be an effective strategy for learning a great deal of vocabulary in a short time (Nation, 1982). Other researchers have also found (Cohen & Aphek, 1981; O'Malley & Chamot, 1990) repetition to be the most commonly mentioned strategies among L2 learners.

Although the questionnaire on the lexical cognitive learning strategies did not allow us to see a significant difference between proficiency groups, one of the proficient learners in the retrospective interviews reported on how she had used cognitive strategies for consolidation of lexical knowledge. She described how she had purchased one of the vocabulary workbooks published by EBS (Education Broadcasting System) to keep a vocabulary notebook where she tried to keep a daily note of 20 new words, wrote additional notes while watching the educational program, and then tried to learn them.

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TABLE 11
Difference in Cognitive Strategies for Consolidation between Proficiency Groups

Categories	Strategy Type	Prof	Mean	Rank	SD	t	Sig.
COG (*p < .003)	29. Verbal repetition	Prof	3.71	(1)	.859	1.530	.133
		Less Prof	3.21	<2>	1.351		
	30. Written repetition	Prof	3.63	(2)	.924	-.797	.429
		Less Prof	3.88	<1>	1.227		
	31. Take teacher's notes in class	Prof	3.42	(3)	1.100	1.359	.181
		Less Prof	2.96	<3>	1.233		
	32. Use the vocabulary section	Prof	2.88	(5)	.797	.722	.474
		Less Prof	2.67	<4>	1.167		
	33. Listen to tape of word lists	Prof	1.83	(6)	.702	1.696	.097
		Less Prof	1.50	<6>	.659		
	34. Put English labels on physical objects	Prof	1.63	(7)	.576	1.245	.219
		Less Prof	1.42	<7>	.584		
	35. Keep a vocabulary notebook	Prof	3.04	(4)	1.083	2.335	.024
		Less Prof	2.25	<5>	1.260		

Note: COG = Cognitive Strategies; Numbers in ( ) indicate rank for proficient learners, and numbers in < > indicate rank for less proficient learners

(4) Metacognitive Strategies

With regard to metacognitive strategies (see Table 12), it was generally the proficient learners that were more frequent in the use of strategies as indicated in the other strategy groups. However, the order in which the strategies were preferred between groups differed to some extent. It was testing oneself with word tests that the proficient learners most frequently employed while the same strategy was the least used by the less proficient group. On the other hand, skipping or passing a new word was the least used strategy among the proficient learners while this was the most favored strategy among the less proficient learners. In connection to the proficient learners' use of skipping unknown or partially known words in the process of reading that accompanied guessing from contextual texts (Refer back to *1) Discovery Strategies, (1) Determination Strategies* for the think-aloud protocols on discovery strategies), we saw how learners momentarily skipped or passed a new word when needing to ignore the problem word. In some instances, however, the learners may come back to trying to infer the meaning of the problem word when it reappears in the later text. On the other hand, the less proficient learners seem to have skipped or passed a new word without an awareness that it may have to be re-evaluated for its meaning, such as when the problem word reappears

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in the succeeding text for understanding the main idea of a reading passage.

TABLE 12
Difference in Metacognitive Strategies for Consolidation between Proficiency Groups

Categories		Strategy Type	Prof	Mean	Rank	SD	t	Sig.
MET (*p <. 0125)	36.	Use English-language media (songs, movies, newscasts, etc.)	Prof	3.00	(2)	.978	2.432	.019
			Less Prof	2.25	<3>	1.152		
	37.	Testing oneself with word tests	Prof	3.25	(1)	1.032	4.053	.000*
			Less Prof	2.00	<4>	1.103		
	38.	Skip or pass a new word	Prof	2.58	(4)	.929	.139	.890
			Less Prof	2.54	<1>	1.141		
	39.	Continue to study word over time	Prof	2.92	(3)	.929	1.847	.071
			Less Prof	2.38	<2>	1.096		

Note: MET = Metacognitive Strategies; Numbers in ( ) indicate rank for proficient learners, and numbers in < > indicate rank for less proficient learners

The statistical analysis conducted for independent t-tests with Bonferroni Correction produced a significant difference mainly for 'Testing oneself with word tests' between proficiency groups. The pattern of strategy use points to how the proficient learners may be more metacognitively aware in monitoring their vocabulary learning process, and interested in self-verifying their acquisition of target vocabulary knowledge by simulating testing situations. In fact, in the background questionnaire that queried whether the students had a particular strategy for learning vocabulary, one of the students wrote that she liked to write either the meaning or the word itself to test herself, and that she would do a lot of repeated writing until she was sure she had learnt the target word. In practice, she said she used an A4 sized paper to write the meaning on one side and the target words on the other, and tested herself as she turned the page back and forth until she was sure that she had learnt the words. As such, it can be seen how the less proficient learners in comparison to the proficient learners are using strategies not only at a lower rate, but that they may also need to be trained to self-initiate opportunities for themselves to retrieve target words, such as through communicative tasks that promote authentic interaction.

V. CONCLUSION

The researchers were driven to conduct a study on vocabulary learning strategies of EFL vocational high school learners of English whose use of strategies has been

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neglected for investigation. The use of the lexical strategies was examined within the framework of discovery and consolidation strategies (Schmitt, 1997) with attention to vocabulary proficiency levels. Data collected through questionnaires, think-aloud reading tasks, and retrospective interviews indicated that the proficient and less proficient group of learners were respectively characterized by particular pattern of strategies. The results clearly indicated more frequent use of strategies by the proficient group learners, but certain discovery and consolidation strategies were underused or perhaps not within the strategy repertoire of the less proficient learners. For discovering the meaning of unknown words while reading (i.e., discovery strategies), the less proficient learners were not as frequent in analyzing parts of speech, affixes and roots of words, guessing from textual context, or discovering meaning through group work activities. The results point to how the underachieving L2 learners may need explicit instruction with parts of speech within the context of meaningful sentences, and training in being able to analyze newly encountered words by different affixes and roots preceded by instruction on high-frequency affixes and roots. Nation (2001) has also proposed how learners' attention should be directed towards words with the same stem and different prefixes and affixes and the effects they have on the alteration of the meaning of a word.

With regard to patterns of strategy use, it was found for both types of proficiency groups how guessing from textual context was used as a strategy as means for decoding the meaning of unknown words that they met in the L2 reading text. However, the strategies were used with different possibilities for successfulness as seen in the analysis of think-aloud and retrospective protocols. The proficient learners, even after having used contextual cues to guess the meaning of unknown words, continued to problematize the word, so that when the word reappeared in the later text, they re-evaluated its meaning to see if it still made sense. On the other hand, the less proficient learners, once after having guessed the meaning of the problematic word, abandoned seeing the word further as a problem, and often did not attempt to cross-check the meaning of the previous problematic word within the new sentence. It is this type of comparative analysis that would need to be brought to the learners' attention for strategy-based instruction in classrooms.

For consolidation of lexical knowledge, the less proficient learners did not seem to sufficiently utilize social strategies, such as, studying and practicing meaning in groups, or interacting with native speakers. We can see, however, that the social strategy type may not be amenable for self-initiation, particularly in the EFL context. Teachers will need to scaffold tasks such as by arranging students in groups or in various school

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discourse communities (e.g., English debate, English newspaper and English drama clubs) that will make use of L2. Also, the possibility of being able to interact with native speakers may rely on the circumstance of the learners' educational environment rather than on the learners' willingness to communicate. Again teachers are advised to situate learners in contexts for authentic use of L2 for communicative purposes.

Within the subcategory of memory strategies, the most commonly used strategies were 'study the sound of a word', 'study the spelling of a word', and 'associate the word with its coordinates' which can be considered the prerequisite strategies for the learning of vocabulary. The proficient learners' more dominant use of memory strategies, such as, 'group words together spatially on a page', 'group words together within a storyline', and 'use the Keyword Method' all demonstrate the learners' effort to place learning in more meaningful contexts so that words memorized this way will tend to be stored in the mental lexicon for improved levels of retention, where the retrieval process of a target word can become automatized (DeKeyser, 2001).

Another noticeable strategy among the proficient learners was the more frequent use of 'testing oneself with word tests.' This illustrates how teachers may need to be employ more classroom tasks in environments of low anxiety for consolidating the less proficient learners' lexical knowledge. Our usual procedure of vocabulary learning particularly in many contexts of L2 learning attests to how the task of learning words is often relegated to memorization outside the classroom. However, as we saw with the proficient group, learners may need to have their awareness raised on the effectiveness of self-created tests to check on their rate of successfulness for retention of newly learnt words. Nonetheless, it might be necessary to make explicit that the skills/strategies discussed so far may be best practiced based on understanding students' strengths and weaknesses in a particular aspect in L2 development (see e.g., Cohen, 1998; Zhang & Goh, 2006). For instance, the strategies popularly used by the proficient learners may not necessarily be adopted in unfailing ways since learners' previous experience and learning styles will tend to differ with various learning experiences.

VI. LIMITATIONS AND RECOMMENDATIONS

A methodological problem that can be recognized in the context of the current study is that the main instrument, the lexical discovery and consolidation strategies questionnaire, may not have allowed the researchers to exhaustively investigate the use of the lexical strategies since use of questions may trigger the 'self-flattery syndrome' where

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respondents report on what they think should be doing rather than on what they usually do. In order to overcome this potential methodological problem, we also employed think-aloud (TA) reading tasks and retrospective interviews, which may be the more authentic reflections of what learners actually do, mostly in trying to discover the meaning of new words in the process of reading. However, we were only able to include a limited number of subjects due to the laborious nature of the time and energy it would take to transcribe and analyze the TA protocols. As such, we considered it sufficient to adopt the think-aloud methodology with a sample of the respective proficient and less proficient learner groups (i.e., 16%) to triangulate the results of the questionnaire on lexical discovery and consolidation strategies.

The current study was also limited to investigating the lexical strategies of Korean vocational high school learners. For further inquiry, an area of research that can be proposed is in comparing the lexical strategies used by EFL learners of different school types: special purpose high schools, regular-track high schools, and vocational high schools. This kind of study is expected to provide taxonomy of lexical strategies that can be used in the area of vocabulary learning for explicit instruction with level-differentiated learners.

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APPENDIX A

Reading Text used for Think-aloud Task

Read and Think

Sand and Stone

Cathy and Jane were good friends. One day, they were walking through the desert together. At some point, they had a big argument, and Cathy insulted Jane. Jane felt bad, but, without saying anything, she wrote in the sand:

Today my best friend insulted me.

The two friends continued walking until they found a deep well. The hot desert sun had made them thirsty, so they decided to stop for a drink. As Jane leaned over the edge of the well, she slipped and fell in. Since Jane couldn't get out by herself, Cathy had to help her. After Jane was saved, she said nothing, but she wrote on a stone.

Today my best friend saved my life.

Cathy was curious, so she asked, "After I insulted you, you wrote in the sand, but this time you write on a stone. Why?" Jane replied, "When a friend hurts us, we should write it in the sand so that the winds of forgiveness can erase it. But when a friend does something good for us, we must write it in stone so that no wind can ever erase it."

APPENDIX B

Conventions for the Think-aloud Protocol

- Underlined text indicates the verbalization of what is or has been written by subject in English.
- Normal text indicates verbalization said or resaid in English.
- Series of dots….. indicates a pause in the subject's verbalization.
- Text in [square brackets] indicates verbalization in L1 that has been translated
- Text in CAPITAL LETTES indicate the problematic words in English.

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- Text in *italics* indicate the problematic words in Korean.
- Text in <pointed brackets> indicate researcher's comments about the subject's action to solve the vocabulary problem.
- Text in shaded blocks indicate loanwords of English used in Korean.
- Text in **block** letters indicate words emphasized when read by subject
-Numbers (e.g., nice2) indicate number of times words repeated.
- Space and numbers (e.g., a feel for words 2) indicate number of times a phrase repeated

Examples in: English
Applicable Languages: English
Applicable Level: Secondary

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