行政院國家科學委員會專題研究計畫　成果報告

廣泛閱讀、猜字策略及偶發字彙習得相關性之探討

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計畫主持人：鄭錦桂

計畫參與人員：陳聿潔、蔡惠文

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行政院國家科學委員會補助專題研究計畫成果報告

廣泛閱讀、猜字策略及偶發字彙習得相關性之探討

計畫類別：■ 個別型計畫　　□ 整合型計畫
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成果報告類型(依經費核定清單規定繳交)：■精簡報告　□完整報告

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執行單位：中國文化大學英文系

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An Investigation of the Interrelationships among Extensive Reading, Word-Guessing Strategies, and Incidental Vocabulary Acquisition

Abstract

The purpose of this paper is to report the results of an investigation of the interrelationships among extensive reading, word-guessing strategies, and incidental vocabulary acquisition. The participants of this study were two English classes for college freshmen taught by the researcher at a university in Taiwan during the school year of 2002 (fall 2002-spring 2003). In both classes, the same English textbook was used for English-teaching purposes. In addition, they were required to read the same 12 graded readers for outside reading during the time of the study. However, one of the classes, called the ERWG group, was selected to receive training in class on how to guess the meaning of unknown words from context. The second class, called the ER group, was directly given explanations for the unknown words in the textbook without receiving any specific training on word-guessing strategies. The results of this study revealed: (1) the extensive reading program significantly increased the vocabulary size and reading proficiency of both groups; (2) the ERWG group made more significant improvement in word recognition than the ER group; (3) the word-guessing strategy training did not cause the ERWG group to make significantly more improvement in reading proficiency than the ER group; (4) neither of the two groups made significant improvement in their ability to guess the meaning of unknown words from context; (5) only the higher-proficiency readers in the ERWG group significantly improved their ability to guess meaning from context. The teaching implications of these findings are discussed at the end of the paper.

Keywords: extensive reading, incidental vocabulary acquisition, word-guessing strategies, context clues/contextual cues, language proficiency, vocabulary size, reading comprehension

中文摘要

本研究之主要目的在探討廣泛閱讀、猜字策略及字彙偶發習得間之相互關係，參與本研究之受測者為研究者在 91 學年度所教授之兩班大一英文學生，研究者在此兩個班級中使用相同之教科書。此外，他們亦需要閱讀 12 本相同的課

外讀物，但其中一組(ERWG 組)於課堂中另外接受由上下文如何猜測生字字義的訓練，而另一組(ER 組)同學若在課文中遇到生字，則是直接被告知生字的字義，而無接受任何猜字策略之訓練。研究結果顯示：(1)於此兩組中，廣泛閱讀之訓練均能顯著地提昇其單字量及閱讀能力；(2)ERWG 組之同學在認字之能力上比 ER 組有較顯著的提昇;(3)但猜字策略之訓練並沒有使 ERWG 組在閱讀能力上比 ER 組有更大之進步；(4)此兩組在以上下文猜測字義之能力上均無顯著之提昇；(5)而在 ERWG 組中具較高英文能力之閱讀者在經過訓練後，其猜字能力有顯著之進步。有關本研究成果在教學應用上之涵義將於文末探討。
關鍵詞：廣泛閱讀、偶發的字彙習得、猜字策略、前後文線索、字彙量、閱讀的理解

I. INTRODUCTION

A lot of research evidence has shown that to read well, one needs a vast amount of vocabulary. Hirsh and Nation (1992) pointed out that around 5000 words are required for readers to read short, unsimplified novels with reasonable ease. Similarly, Laufer's (1992) study indicated that 5000 words would provide 95% coverage of general academic readings and enable learners to read academic English with an adequate level of comprehension. However, Hazenberg and Hulstijn (1996) argued that the minimal vocabulary size needed for university studies is 10,000 word families. In second language reading, vocabulary knowledge also has a strong effect on reading comprehension. In Huang's study (2000), Taiwanese students' vocabulary knowledge accounted for 68% of their reading comprehension scores on the English text, and the 3000-word level was their threshold level of vocabulary knowledge for general comprehension of English texts.

Despite the fact that vocabulary knowledge plays such an important role in reading comprehension, some research studies have revealed that Taiwanese students' English vocabulary size seems considerably small. Chen (1998, 1999) conducted two studies to measure the vocabulary size of Taiwanese college students and found that most students only reached the 2000-word or 3000-word level. Huang's study (2001a) showed that only 24.28% of 416 non-English-major technological university juniors reached the 2000-word level, 12.74% of them reached the 3000-word level, and 0.96% of them reached the 5,000 word level, and 1.68% of them reached university word level. Given the great quantity of vocabulary required for effective reading and the limited vocabulary size of Taiwanese students, it appears necessary to find an effective way to help the students in Taiwan acquire a large amount of vocabulary quickly.

Much research evidence has shown that extensive reading is one of the effective ways to facilitate language learners' vocabulary acquisition (Cho & Krashen, 1994;

Hafix & Tudor, 1989, 1990; Kuo, 2001; Nagy, Herman, & Anderson, 1985). For instance, the study of Nagy, Herman, & Anderson (1985) investigated whether 57 eighth grade students of average and above average reading ability acquired measurable knowledge about unfamiliar words while reading natural texts. The results suggested that a moderate amount of reading would lead to substantial vocabulary gains.

A study conducted by Kuo (2001) produced similar findings. In this study, there were two groups of subjects; one group studied a vocabulary booklet outside English classes, while the other group read the graded simplified readers. The results indicated that extensive reading was more effective to increase students' vocabulary.

However, there are studies which show that extensive reading does not always work. In their overview of the research on the effectiveness of SSR (Sustained Silent Reading), Wiesendanger and Birlem (1984) concluded that the effect of SSR on word recognition and reading comprehension appears inconclusive. What contributes to the success or failure of extensive reading programs? It seems that more studies in this area are needed.

Furthermore, As Huckin and Coady (1999) pointed out, there are still many unsettled questions concerning the relationship between extensive reading and incidental vocabulary acquisition, i.e., vocabulary learning that occurs through extensive reading, with the learner guessing at the meaning of unknown words. To name a few, how does incidental vocabulary acquisition occur? What contextual cues or word-guessing strategies do learners use to decipher the meaning of unknown words? Do students need to be taught explicit strategies for guessing, or do they pick them up on their own? Do students of different proficiency levels respond to the training differently? To investigate these unresolved issues, the following study was conducted.

II. THE PURPOSE OF THE STUDY

This study was intended to investigate how EFL college students in Taiwan acquire vocabulary incidentally in extensive reading. Specific research questions addressed in this paper are:

(1) Do the participants of this study make significant improvement in their English vocabulary through extensive reading?

(2) Do the students who receive extensive reading plus word-guessing strategy training (the ERWG group) make significantly more improvement in their English vocabulary than those who learn only through extensive reading (the ER group)?

(3) Do the participants of this study make significant progress in their English reading proficiency?

(4) Do the students in the ERWG group make significantly more improvement in their English reading ability than those in the ER group?

(5) Do the participants of this study make significant improvement in their ability to guess the meanings of unknown words from context?
(6) Do the students who receive the word-guessing strategy training make significantly more improvement in their ability to guess the meaning of the unknown words from context than those without such training?
(7) Do participants of different language proficiency levels respond to the strategy training differently?

III. RESEARCH METHODOLOGY

3.1 Participants

Two groups of EFL college freshmen in Taiwan participated in this study. Both groups were taught by the researcher, and the same textbook was used. In addition, they were required to read the same 12 simplified graded readers for outside reading during the school year of 2002 (fall 2002-spring2003). However, one of the classes was selected to receive training in class on how to guess meaning of unknown words from context, using examples from the textbook used in class, but not from the graded readers. The second class was directly given explanations for the unknown words in the textbook without receiving any specific training on word-guessing strategies.

3.2 Training Procedures for the Word-Guessing Strategy Training

To train the participants in the ERWG group to use word-guessing strategies, the researcher first gave an orientation on the differences between intensive reading and extensive reading. Then there was a two-hour training on what kinds of contextual clues students could attend to when encountering new words and what steps they could take to solve the word problems. After the training, the students were given opportunities in class to apply these new skills to guess the meanings of unknown words they encountered in their regular English textbook

3.3 Instruments

There were five types of instruments used to collect the data of this study. The function of each type of instrument is explained as follows:

(1) Reading Proficiency Tests. Two equivalent reading proficiency tests designed by the Language Training and Testing Center in Taipei were used as the pretest and the posttest to measure the participants' reading proficiency before and after the experiment. Each of the tests contained forty items and took about 45 minutes for students to complete.
(2) A Vocabulary Level Test. A vocabulary levels test was employed as the pretest and the posttest to assess the participants' English vocabulary size before and after

the experiment. This vocabulary test included five sections. Sections 2-5 were derived from Paul Nation's Vocabulary Levels Test (1990) and were used to assess 2000 word level, 3000 word level, 5000 word level, and University Word Level (the specialized vocabulary of university texts) respectively. Section 1, assessing 1000 word level, was constructed by Huang (2001b) using the same format as Nation's Vocabulary Levels Test.

(3) Strategy Use Assessments. To assess the participants' word-guessing ability and their strategy use, two assessments were created and used before and after the experiment. The first assessment required the participants to write down the Chinese definitions for 14 words without any contextual information. Then the participants read a 985-word reading passage that contained the same 14 vocabulary items. After reading the passage, they took the second test, in which they had to write down the Chinese definitions for the same 14 words, choose the strategies they had used to understand the meanings of the words, and make any explanations for their word-solving behaviors if necessary. As for the scoring method, the participant got one point for each correct answer. Then subtracting the score on the test without context from the score on the test with context yielded an estimate of the participant's ability to guess meaning from context.

(4) Short surveys. A short survey was administered each time the participants were expected to complete a graded reader. The questions on the survey were concerned with the participants' opinions about a particular book, e.g., its vocabulary and syntactic difficulty levels.

(5) Final questionnaire. A questionnaire was administered at the end of the experiment to assess students' attitudes toward the one-year program of extensive reading, word-guessing strategy training, and comprehension quizzes.

VI. Results

(1) Do the participants of this study make significant improvement in their English vocabulary through extensive reading?

Based on the results of paired-samples t-tests (see Table 1 & 2), both groups made significant improvement in word recognition at the 1000-word level and 2000-word level. In addition, the ERWG group also made significant progress at the 5000-word level and in the total vocabulary knowledge. The results suggest that the extensive reading program did significantly facilitate the participants' vocabulary acquisition, at least at the 1000-word and 2000-word levels.

Table 1. The ERWG Group's Vocabulary Pretest Scores vs Posttest Scores (the paired-samples t-tests)

	Pretest (N=56)	Post test (N=56)	T	P

	Mean	Sd	Mean	Sd		
1000-word level	13.63	3.2	14.8	2.38	3.245	0.002*
2000-word level	9.95	3.99	11.38	3.75	3.3	0.002*
3000-word level	8.64	4.74	9.45	4.37	1.92	0.06
5000-word level	2.88	3.71	4.09	4.52	2.46	0.017*
university word level	2.25	3.28	2.79	4.08	1.23	0.225
Voc. Total	37.34	15.58	42.5	16.15	4.12	0.000*

* means P<0.05 and statistically significant differences exist

Table 2. The ER Group's Vocabulary Pretest Scores vs Posttest Scores (the paired-samples t-tests)

	Pretest (N=69)		Post test (N=69)		T	P
	Mean	Sd	Mean	Sd		
1000-word level	14.81	2.14	15.59	1.71	3.21	0.002*
2000-word level	11.51	2.63	12.39	2.37	3.55	0.001*
3000-word level	10.07	3.73	10.19	3.75	0.37	0.714
5000-word level	3.13	3.24	2.7	3.49	1.37	0.176
university word level	1.67	2.77	1.16	2.65	1.83	0.071
Voc. Total	41.19	10.94	42.03	10.04	1.27	0.209

* means P<0.05 and statistically significant differences exist

(2) Do the students who receive extensive reading plus word-guessing strategy training (the ERWG group) make significantly more improvement in their English vocabulary than those who learn only through extensive reading (the ER group)?

To investigate the group mean difference between the ERWG group and the ER group in the vocabulary pretest scores and posttest scores, and improvement scores, three sets of independent-samples t-tests were conducted.

The results presented in Table 3 indicate that before the experiment, the participants in the ER group recognized more words than those in the ERWG group at the 1000-word level and the 2000-word level.

Table 3. Vocabulary Pretest results (Independent-samples t-tests)

	ERWG (N=68)		ER (N=75)		T	P
	Mean	Sd	Mean	Sd		
1000-word level	13.68	3.12	14.85	2.10	2.62	0.010*
2000-word level	9.84	3.93	11.35	2.63	2.67	0.009*
3000-word level	8.57	4.49	9.92	3.75	1.93	0.055
5000-word level	2.87	3.71	3.21	3.25	0.59	0.556

university word level	2.24	3.32	1.65	2.71	1.14	0.256
Voc. Total	37.19	15.13	40.99	10.84	1.71	0.090

* means P<0.05 and statistically significant differences exist

The data in Table 4 indicate that after the experiment**,** the participants in the ER group recognized more words than those in the ERWG group only at the 1000-word level. In other words, the difference between these two groups in the mean scores at 2000-word level has been reduced after the experiment.

Table 4. Vocabulary Post test results (Independent-samples t-tests)

	ERWG (N=56)		ER (N=71)		T	P
	Mean	Sd	Mean	Sd		
1000-word level	14.8	2.78	15.56	1.71	2.01	0.047*
2000-word level	11.38	3.75	12.39	2.41	1.77	0.080
3000-word level	9.45	4.37	10.23	3.82	1.05	0.295
5000-word level	4.09	4.53	2.79	3.62	1.75	0.083
university word level	2.79	4.08	1.20	2.65	2.52	0.013*
Voc. Total	42.50	16.15	42.17	10.44	0.13	0.894

* means P<0.05 and statistically significant differences exist

Finally, the results in Table 5 suggest that both groups made the same amount of improvement at the 1000-word level, 2000-word level, and 3000-word-level. However, the participants in the ERWG group made significantly more improvement in word recognition than those in the ER group at 5000-word level, university word level, and in the total vocabulary knowledge. Therefore, overall speaking, the ERGW group did make more significant improvement in word recognition than the ER group.

Table 5. Vocabulary Improvement Scores (Independent -samples t-tests)

	ERWG (N=56)		ER (N=69)		T	P
	Mean	Sd	Mean	Sd		
1000-word level	1.18	2.72	0.78	2.02	0.9	0.368
2000-word level	1.43	3.24	0.88	2.07	1.09	0.278
3000-word level	0.8	3.13	0.12	2.62	1.31	0.192
5000-word level	1.21	3.7	-0.43	2.64	2.81	0.006*
university word level	0.54	3.26	-0.51	2.3	2.02	0.046*
Voc. Total	5.16	9.38	0.84	5.51	3.05	0.003*

* means P<0.05 and statistically significant differences exist

(3) Do the participants of this study make significant progress in their English reading proficiency?

(4) Do the students in the ERWG group make significantly more improvement in their English reading ability than those in the ER group?

The data in Table 6 show that the two groups were not significantly different from each other in their reading proficiency before and after the experiment. In addition, both groups made significant improvement after the treatments. Finally, the word-guessing strategy training did not cause the ERWG group to make significantly more improvement in reading proficiency than the ER group.

Table 6. Reading Proficiency Test Results

Pretest results	ERWG (N=68)		ER (N=75)		T	P
	Mean	Sd	Mean	Sd		
	53.01	17.12	57.16	13.35	1.60	0.113
Post test results	ERWG (N=56)		ER (N=71)		T	P
	Mean	Sd	Mean	Sd		
	74.68	20.53	75.34	14.99	0.20	0.840
ERWG Pretest vs Posttest	Pretest (N=56)		Post test (N=56)		T	P
	Mean	Sd	Mean	Sd		
	54.54	16.97	74.68	20.53	9	0.000*
ER Pretest vs Posttest	Pretest (N=69)		Post test (N=69)		T	P
	Mean	Sd	Mean	Sd		
	58.22	12.77	75.09	14.81	10.24	0.000*
Improvement	ERWG (N=56)		ER (N=69)		T	P
	Mean	Sd	Mean	Sd		
	20.14	16.75	16.87	13.69	1.18	0.242

* means $P<0.05$ and statistically significant differences exist

(5) Do the participants of this study make significant improvement in their ability to guess the meanings of unknown words from context?

(6) Do the students who receive the word-guessing strategy training make significantly more improvement in their ability to guess the meaning of unknown words from context than those without such training?

The data in Table 7 indicate that both groups were able to gain significantly from the context of the reading passage in the pretest as well as the posttest.

Table 7. Word-guessing strategy assessment results (paired-samples t tests)

ERWG Pretest	Nocontext (N=63)		Context (N=63)		T	P
	Mean	Sd	Mean	Sd		
	2.22	1.85	3.79	2.65	6.9	0.000*
ER Pretest	Nocontext (N=76)		Context (N=76)		T	P
	Mean	Sd	Mean	Sd		
	2.68	1.73	5.35	2.42	13.45	0.000*
ERWG Posttest	Nocontext (N=51)		Context (N=51)		T	P
	Mean	Sd	Mean	Sd		
	2.63	1.9	4.73	2.17	8.21	0.000*
ER Post test	Nocontext (N=69)		Context (N=69)		T	P
	Mean	Sd	Mean	Sd		
	3.63	1.94	5.58	2.06	11.45	0.000*

* means P<0.05 and statistically significant differences exist

However, the data in Table 8 show that the neither of the two groups made significant improvement in their ability to guess the meanings of unknown words from context. In fact, the participants of the ER group did not gain as much from the context as they did at the beginning of the study. In other words, their ability to guess meaning from context actually became worse, not better.

Table 8. Improvement Scores in Word-guessing Ability

ERWG	C1-NC1 (N=51)		C2-NC2 (N=51)		T	P
	Mean	Sd	Mean	Sd		
	1.54	1.80	2.10	1.82	1.79	0.08
ER	C1-NC1 (N=68)		C2-NC2 (N=68)		T	P
	Mean	Sd	Mean	Sd		
	2.73	1.74	1.97	1.41	2.90	0.005*

* means P<0.05 and statistically significant differences exist

(7) Do participants of different language proficiency levels respond to the treatments differently?

In order to understand how participants of different language proficiency levels respond to the treatments, a medium-split test was conducted to divide each group into two subgroups: higher-proficiency readers and lower-proficiency readers. Then a series of paired-samples t-tests were conducted to examine each group's

word-guessing ability before and after the experiment and to determine whether or not any group made significant improvement in their ability to guess meaning from context.

First of all, the data in Tables 9 and 10 show that in both groups, both higher-proficiency and lower-proficiency readers were able to gain significantly from context before and after the experiment

Table 9. The Word-Guessing Ability of the Participants in the ERWG:
Lower-Proficiency Readers vs Higher-Proficiency Readers

Pretest (Lower Proficiency)	Nocontext (N=32)		Context (N=32)		T	P
	Mean	Sd	Mean	Sd		
	1.66	1.32	2.81	1.83	3.81	0.001*
Pretest (Higher Proficiency)	Nocontext (N=31)		Context (N=31)		T	P
	Mean	Sd	Mean	Sd		
	2.81	2.14	4.79	3.00	6.09	0.000*
Post test (Lower Proficiency)	Nocontext (N=23)		Context (N=23)		T	P
	Mean	Sd	Mean	Sd		
	1.98	1.12	3.04	1.72	3.67	0.001*
Post test (Higher Proficiency)	Nocontext (N=26)		Context (N=26)		T	P
	Mean	Sd	Mean	Sd		
	3.19	2.29	6.19	3.32	8.83	0.000*

* means P<0.05 and statistically significant differences exist

However, Table 11 shows that in the ERWG group, only the higher-proficiency readers made significant improvement in their ability to guess meaning from context, while the lower-proficiency readers behaved about the same as they did on the pretest.

Table 10. The Word-Guessing Ability of the Participants in the ER Group:
Lower-Proficiency Readers vs Higher-Proficiency Readers

Pretest (Lower Proficiency)	Nocontext (N=37)		Context (N=37)		T	P
	Mean	Sd	Mean	Sd		
	2.19	1.28	4.81	2.18	9.96	0.000*
Pretest (Higher Proficiency)	Nocontext (N=37)		Context (N=37)		T	P
	Mean	Sd	Mean	Sd		
	3.05	1.88	5.85	2.60	9.25	0.000*
Posttest (Lower Proficiency)	Nocontext (N=34)		Context (N=34)		T	P
	Mean	Sd	Mean	Sd		

	3.12	1.57	5.04	1.92	8.70	0.000*
Posttest (Higher Proficiency)	Nocontext (N=33)		Context (N=33)		T	P
	Mean	Sd	Mean	Sd		
	4.08	2.20	6.14	2.15	7.66	0.000*

* means P<0.05 and statistically significant differences exist

Table 11. Improvement Scores of the ERWG in Word-Guessing Ability: Lower-Proficiency Readers vs Higher-Proficiency Readers

Lower Proficiency	C1-NC1 (N=23)		C2-NC2 (N=23)		T	P
	Mean	Sd	Mean	Sd		
	1.02	1.61	2.10	1.39	0.10	0.918
Higher Proficiency	C1-NC1 (N=26)		C2-NC2 (N=26)		T	P
	Mean	Sd	Mean	Sd		
	1.83	1.69	3.00	1.73	2.91	0.007*

* means P<0.05 and statistically significant differences exist

In contrast, the data in Table 12 indicate that in the ER group, the one that did not receive any training on word-guessing strategies, the higher-proficiency readers did not make any significant improvement in their ability to guess meaning from context. In addition, the lower-proficiency readers actually became worse at guessing meaning from context in terms of their performance on the posttest. In short, the strategy training did cause the higher-proficiency readers of the ERWG group to make significant improvement in their ability to guess meaning from context. However, it did not have a significant effect on the lower-proficiency readers.

Table 12. Improvement Scores of the ER in Word-Guessing Ability: Lower-Proficiency Readers vs Higher-Proficiency Readers

Lower Proficiency	C1-NC1 (N=34)		C2-NC2 (N=34)		T	P
	Mean	Sd	Mean	Sd		
	2.66	1.59	1.93	1.29	2.22	0.033*
Higher Proficiency	C1-NC1 (N=32)		C2-NC2 (N=32)		T	P
	Mean	Sd	Mean	Sd		
	2.89	1.88	2.14	1.50	1.74	0.092

* means P<0.05 and statistically significant differences exist

In order to understand why the lower-proficiency readers in the ERWG group did not benefit from the word-guessing strategy training, the researcher looked at the data on the short surveys and the final questionnaire. The data in Table 13 indicate that

most of the participants in the ERWG group had a positive attitude toward word-guessing strategies and the strategy training. For instance, 86% of the participants agreed that learning word-guessing strategies is important, and 62% of them thought that the strategy training is very practical. Moreover, although 64% of them agreed that they had acquired some word-guessing strategies naturally through extensive reading, 54% of them believed that some word-guessing strategies require teacher's explicit instruction. However, when asked to compare the effectiveness of using a dictionary and that of using word-guessing strategies, the participants judged the effectiveness of word-guessing strategies differently depending on the difficulty level of the text. When reading an easy text, only 13% of them agreed that using a dictionary is more effective than using word-guessing strategies. However, when reading a difficult text, 75% of them thought that using a dictionary is more effective than using word-guessing strategies. Therefore, it appeared that the difficulty level of the text had a significant effect on whether or not the participants would use word-guessing strategies while being engaged in extensive reading.

Table 13. The Attitudes of the Participants in the ERWG Group towards Word-Guessing Strategies and the Strategy Training

Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Disagree
Extensive reading has enhanced my word-guessing ability.	0	13%	40%	42%	4%
Learning word-guessing strategies is important.	0	4%	10%	69%	17%
I have acquired some word- guessing strategies naturally through extensive reading.	0	10%	27%	62%	2%
Some word-guessing strategies require teacher's explicit instruction.	0	21%	25%	46%	8%
The strategy training is very practical	0	4%	35%	58%	4%
When reading easy texts, using a dictionary is more effective than word-guessing strategies.	0	33%	54%	13%	0
When reading difficult texts, using a dictionary is more effective than word-guessing strategies.	0	2%	23%	63%	12%

This speculation was supported by the data of short surveys. The data in Table 14 show that about a half of the graded readers were considered to be either somewhat difficult or too difficulty by 40% or more of the participants in the ERWG group. In fact, toward the end of the school year, so many students complained about the

difficulty level of the reading texts that the researcher had to make the 12th book optional reading (That is the reason why Table 14 did not include the data on the 12th book.).

V. CONCLUSIONS AND IMPLICATIONS

In conclusion, the extensive reading program of this study significantly increased the vocabulary size of the participants in both groups, but the ERWG group made more significant improvement in word recognition than the ER group. Moreover, both groups made significant improvement in reading proficiency. However, neither of the two groups made significant improvement in their ability to guess the meanings of unknown words from context. The word-guessing strategy training also did not cause the ERWG group to make significantly more improvement in reading proficiency than the ER group. Only the higher-proficiency readers in the ERWG group benefited from the strategy training. One of the reasons why the strategy training was not effective in improving lower-proficiency readers' ability to guess meaning from context may be that some of the outside reading texts were too difficult for them to apply the strategies they had learned in class.

The implications drawn from the findings of this study is that it is beneficial to integrate extensive reading of graded readers into college English classes in Taiwan. It is even more beneficial to teach word-guessing strategies in conjunction with the extensive reading program. However, in order to encourage students to apply word-guessing strategies while they are engaged in outside readings, the difficulty level of the texts should be appropriate to the students.

Table 14. The Difficulty Levels of the Outside Reading Texts

Book	Stage Level	Vocabulary Difficulty				
		Too easy	Somewhat easy	Appropriate	Somewhat difficult	Too difficult
1	2	2%	23%	59%	16%	0
2	2	0	13%	79%	5%	3%
3	3	0	5%	72%	23%	0
4	3	0	5%	65%	31%	0
5	4	0	0	38%	51%	11%
6	4	2%	0	58%	38%	2%
7	3	0	4%	84%	13%	0
8	4	0	0	56%	40%	4%
9	5	0	0	25%	70%	5%
10	5	0	2%	40%	49%	9%
11	5	0	0	14%	55%	30%

Book	Stage Level	Grammar Difficulty				
		Too easy	Somewhat easy	Appropriate	Somewhat difficult	Too difficult
1	2	2%	19%	70%	9%	0
2	2	0	14%	76%	6%	3%
3	3	0	11%	78%	11%	0
4	3	0	6%	73%	21%	0
5	4	0	2%	44%	48%	7%
6	4	2%	5%	60%	32%	2%
7	3	0	4%	76%	20%	0
8	4	0	0	67%	32%	2%
9	5	0	0	39%	54%	7%
10	5	0	0	53%	40%	7%
11	5	0	0	23%	48%	29%

VI. Self Evaluation

Based on the findings generated by this research, the author produced a paper and presented it at an international conference, AFMLTA National Conference 2003: Languages Babble, Babel & Beyond, July 10-12, Hilton, Brisbane, Australia. The title of the paper is "Vocabulary Acquisition and the Development of Word-guessing Strategies through Extensive Reading."

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