Chapter Four

Results

This chapter deals with the results of the study. Three sections are presented in this chapter, in the sequence of answering each research question. First, how various teaching techniques have influence on students' vocabulary learning in control group (CG) and experimental group (EG) is explored. Next, group performance on word retention is brought to discussion. Finally, to what extent students with high English proficiency (HEP) and low English proficiency (LEP) have benefited from vocabulary learning techniques during shared storybook reading is looked upon.

Labeling (L) versus Labeling and Questioning (L+Q) of Novel Words and EFL Children's Vocabulary Acquisition

To answer research question (1) How do the two techniques—labeling alone and a combination of questioning and labeling of novel words, influence children's vocabulary acquisition, students' performance on vocabulary learning in CG was examined first.

Table 4.1

Statistic Findings on Children's Vocabulary Learning in CG

Vocabulary Test	Mean					Range of Words
(n=27)	Mean	SD	Difference	*t*-value	Sig.	Corrected
pretest	5.52	2.71	4.33	-4.531***	.000	1-11
posttest	9.85	4.70				3-20

*** p< .001

As Table 4.1 indicates, students' vocabulary learning had shown improvement

after L technique been applied during shared storybook reading sessions. The mean score of Picture Vocabulary Test (PVT) pretest was 5.52 (SD = 2.71), while the mean score of PVT posttest test was 9.85 (SD =4.70). The mean score of PVT posttest was higher than chance performance (the total score of PVT was 24, so the chance performance would result in a score of about 6). It indicated that students did acquire new vocabulary during shared storybook reading sessions and L technique was adequate to facilitate student's novel word learning.

Result of paired-samples *t*-test showed more details. Students' performance on receptive vocabulary had gained by 4.33 words. The significant difference was found in scores of PVT between pre- and posttest (t = -4.531, p = .000).

Next, how students' vocabulary growth been influenced by L+Q technique in EG was inspected. Table 4.2 presents the result.

Table 4.2

Statistic Findings on Children's Vocabulary Learning in EG

Vocabulary Test			Mean			Range of Words
(n=27)	Mean	SD	Difference	*t*-value	Sig.	Corrected
pretest	6.44	3.38	3.74	-4.292***	.000	2-16
posttest	10.19	5.20				4-23

*** p< .001

Table 4.2 shows that mean score of PVT pretest was 6.44 (SD = 3.38), while mean score of PVT posttest test was 10.19 (SD =5.20), respectively. Again, the outcome of receptive vocabulary gain was also positive in EG when the technique of L+Q of novel word was practiced. The result of PVT posttest test was higher than chance performance. A total of 3.74 words were gained in the posttest, and there was a

significant difference between mean score of pre- and posttest (t = -4.292, p = .000).

In order to gain more insight into students' vocabulary acquisition between CG and EG, independent-samples *t*-test was conducted to compare mean scores of PVT posttest of the two groups. As Table 4.3 displays, it had not yet reached significant level between vocabulary performance of CG and EG (t = -.458, P >.05).

Table 4.3

Comparison of CG & EG on Vocabulary Learning

Levene's Test for Equality of Variances				
F	P	*t*-value	Sig.	SE of Diff
.269	.606	-.458	.649	1.294

The result suggested that both techniques (L alone and L+Q) performed during shared storybook reading sessions benefited students' receptive vocabulary acquisition. When questioning was added to labeling, it didn't build up EFL students' receptive vocabulary learning.

However, we must not ignore the gap of students' vocabulary acquisition within the two groups. Posttests of both CG and EC identified gaps in students' vocabulary knowledge. Gaps widened further in posttest scores. For CG, standard deviation moved from 2.71 in the pretest to 4.70 in the posttest; range of words corrected also changed from 10 to 17 words (see table 4.1). The same situation was found in EG as well. Standard deviation of EG moved from 3.38 in the pretest to 5.20 in the posttest; range of words corrected had changed from 14 to 19 words (see table 4.2). Whether vocabulary teaching techniques had different affects on students of diverse vocabulary knowledge will be illustrated in details in the later section.

To sum up, both labeling and questioning techniques supported EFL children's vocabulary learning during shared storybook reading. Both CG and EG made significant progress on vocabulary acquisition. However, EG did not outperform CG on receptive vocabulary learning, which means that the additional questioning technique didn't accelerate EFL children's novel word acquisition.

Vocabulary Retention Affected by Labeling versus Labeling and Questioning

To answer research question (2) How do the two techniques—labeling alone and a combination of questioning and labeling of novel words, affect children's retention of vocabulary gain during shared storybook reading, mean score of PVT delayed posttests between CG and EG were compared through independent-samples *t*-test. Table 4.4 has the result.

Table 4.4

Comparison of PVT Delayed Posttest between CG & EG

PVT Delayed Posttest (n=27)	Mean	SD	t-value	Sig.
CG (L)	8.85	4.87	.203	.840
EG (L+Q)	9.41	5.27		

First, we took a preliminary look at the table. We noticed that both students in CG and EG performed well in PVT delayed posttest. In CG, mean score of the delayed posttest was 8.85 (SD=4.87). When comparing to its posttest, there was only 1 word in decline (from mean score of 8.85 to 9.85). It meant that students in CG remembered 95.8% of the words learnt from storybook reading. On the other hand, mean score the PVT delayed posttest in EG was 9.41. It had only declined .78 words (from mean score of 10.19 to 9.41). In another word, students in EG retained 96.7%

of the words acquired during storybook reading sessions. The result signified that both L and L+Q were effective techniques for students to maintain what they had learned from the storybooks.

Then, *t*-value was examined. Apparently, there were no significant differences between the two groups (t = .203, p = .840＞.05). It implied that L+Q technique didn't promote better vocabulary retention comparing to labeling.

In conclusion, both L and L+Q techniques were helpful for EFL children to retain their vocabulary gained form previous shared storybook reading sessions. However, L+Q technique applied during shared storybook reading did not make any significant difference from L alone. In other words, the questioning technique did not enhance EFL children's vocabulary retention.

Labeling, Labeling and Questioning and EFL Children's English Proficiency

To answer research question (3) How do the two techniques—labeling alone and a combination of questioning and labeling of novel words, affect children with high English proficiency (HEP), and low English proficiency (LEP) in EFL context, statistic analysis will be compared and explained.

Development of HEP and LEP's Vocabulary Gain in Different Groups

To start with, preliminary examination of HEP and LEP's performances on PVT tests were viewed, and results from control group (CG) and experimental group (EG) are presented separately. In the look of HEP and LEP's performance in CG, Table 4.5 is presented. It is clear that HEP upgraded their vocabulary knowledge from PVT pre- to posttest. It had increased 6.8 words in mean score from pretest (M=5.70, SD=3.20) to posttest (M=12.50, SD=5.52). When it moved to delayed posttest, HEP showed 2.3

words in decline (M=10.20, SD=5.59).

Table 4.5

Descriptive Analysis of HEP & LEP's Performances of PVT in CG

Results of PVT		N	Mean	SD	Std. Error Mean
HEP	Pretest	10	5.70	3.20	1.012
	Posttest	10	12.50	5.52	1.746
	Delayed Posttest	10	10.20	5.59	1.769
LEP	Pretest	9	5.67	2.06	.687
	Posttest	9	7.89	2.15	.716
	Delayed Posttest	9	8.00	4.39	1.462

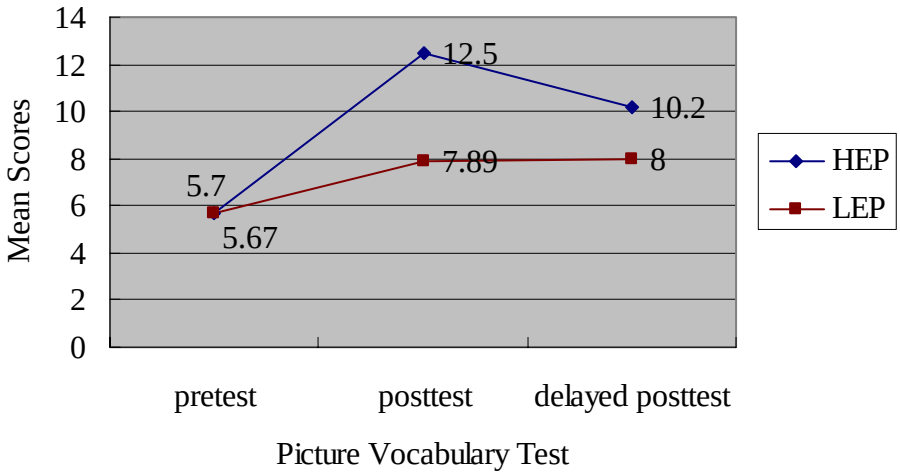
In the case of LEP in CG, 2.22 words were gained from pretest (M=5.67, SD=2.06) to posttest (M=7.89, SD=2.15). Besides, words learned from shared storybook reading were maintained with LEP. The score of its delayed posttest (M=8.00, SD=4.39) were even higher than those of posttest. Figure 2 further illustrates the result in graphic.

We see that before L technique was implemented to CG, both HEP and LEP did not differ in their knowledge toward the target words. Then the gap started to apart. HEP made stiffer rise between PVT pre- and posttest. Then the line dropped from posttest to delayed posttest. On the other hand, LEP made a gradual progress, but the knowledge of the target words stayed with LEP.

The result of HEP and LEP's performance of PVT implied that L technique assisted both HEP and LEP in vocabulary acquisition, but the question remained with its effect on word retention to students with different initial English ability.

Figure 2

Developmental Progress of HEP and LEP's Performances of PVT in CG



Next, the result of EG's performances in PVT tests is displayed in Table 4.6.

Table 4.6

Descriptive Analysis of HEP & LEP's Performances of PVT in EG

Results of PVT		N	Mean	SD	Std. Error Mean
HEP	Pretest	10	6.70	3.97	1.257
	Posttest	10	13.20	4.85	1.533
	Delayed Posttest	10	13.00	4.99	1.578
LEP	Pretest	9	4.89	2.03	.676
	Posttest	9	6.78	1.56	.521
	Delayed Posttest	9	5.67	2.23	.745

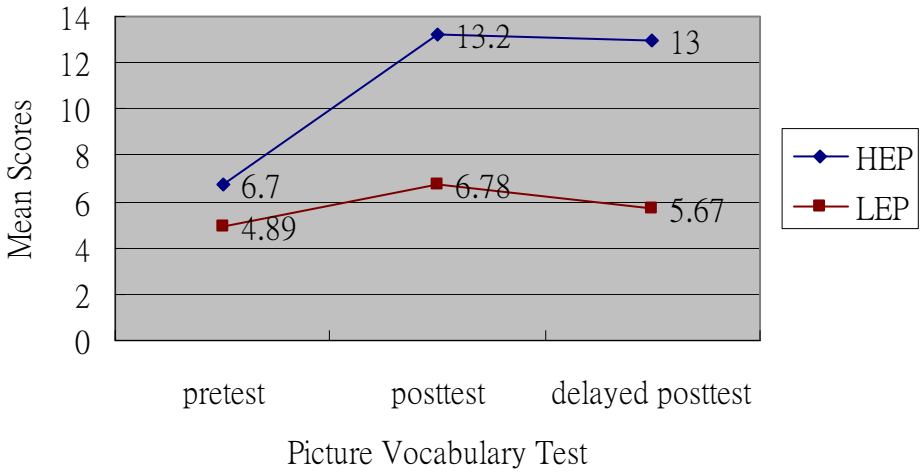
As we look at the table we find that in HEP, the mean score increased by 6.5 words from pretest (M=6.70, SD=3.97) to posttest (M=13.20, SD=4.85). The differences were only .2 words in mean score between posttest and delayed posttest (M=13.00, SD=4.99). It seemed that L+Q technique optimized HEP's vocabulary acquisition during shared storybook reading. What's more, this vocabulary knowledge

stayed with HEP in delayed posttest. Students in HEP were able to recall what they had learnt. The differences were only .2 words between HEP's post- and delayed posttest.

However, in LEP, the progress was not as salient. There was an incline of 1.89 words in mean score between pretest (M=4.89, SD=2.028) and posttest (M=6.78, SD=1.564). It depicted that students in LEP were not helped much with L+Q technique conducted during shared storybook reading sessions. Although LEP's gain was not as salient, result of its delayed posttest still reveled 1.11 word in decline (M=5.67, SD=2.24). L+Q seemed to show little help to LEP both in novel word learning and word retention. To illustrate the findings in graphic, Figure 3 pictures the developmental patterns of the two groups.

Figure 3

Developmental Progress of HEP and LEP's Performances of PVT in EG



It shows that HEP made a stiffer rise with more progress from pre- to posttest, while LEP made gradual development of the kind. Also, we could see that HEP seemed to manage what they've learned in retention test, but the same circumstance was not applicable in LEP.

Secondly, within group progress of HEP and LEP in PVT was examined. In order to find out how students' vocabulary knowledge was affected by L and L+Q used in the shared storybook reading sessions, each test was put into comparison.

HEP and LEP's vocabulary growth in CG were viewed by examining Table 4.7. The data indicates that HEP in CG not only made quite a move from pre- to posttest, it had reached significant level as well (t = -4.589, p = .001< .01). Same situation appeared in LEP in CG. LEP too made significant progress from pre- to posttest (t = -2.734, p = .026< .05).

Table 4.7

Result of Paired-Samples t-Test of HEP and LEP's Vocabulary Tests in CG

	Results of PVT	N	Mean Difference	SD	t-value	Sig.
HEP	Pretest - posttest	10	-6.80	4.69	-4.589**	.001
	Posttest - delayed posttest	10	2.30	3.77	1.928	.086
LEP	Pretest - posttest	9	-2.22	2.44	-2.734*	.026
	Posttest - delayed posttest	9	-.11	3.79	-.088	.932

* p< .05, ** p< .01

We may conclude that labeling was an effective technique to help students in learning vocabulary from listening to stories, regardless of students' diversity in English proficiency.

Then, within progress of EG is looked upon. As Table 4.8 reveals, the comparison between pre- and posttest in HEP (t = -5.130, p = .001< .01) strongly reached the significant level. Yet the significance was not found in comparisons in LEP. This echoed with the previous indication that HEP received more assistance with labeling and questioning technique in acquiring novel words during shared storybook

reading.

Table 4.8

Result of Paired-Samples t-Test of HEP and LEP's Vocabulary Tests in EG

	Results of PVT	N	Mean Difference	SD	t-value	Sig.
HEP	Pretest - posttest	10	-6.50	4.01	-5.130**	.001
	Posttest - delayed posttest	10	.20	3.01	.210	.838
LEP	Pretest - posttest	9	-1.89	2.57	-2.204	.059
	Posttest - delayed posttest	9	1.11	4.08	.818	.437

** p< .01

Comparisons of HEP and LEP's Vocabulary Gain Between Groups

In order to see the main effects teaching techniques had upon students with various English proficiency, between-group performances of HEP and LEP in PVT were evaluated. To assess the effects of vocabulary teaching techniques on students' comprehension of the 24 novel target words, scores of PVT tests were analyzed using 2 (teaching techniques: L vs. L+Q)× 2 (English proficiency: HEP vs. LEP) ANOVA, and the result is presented in Table 4.9.

Table 4.9

Result of ANOVA Statistic Analysis of HEP and LEP's Performance in PVT

PVT Tests		SS	DF	MS	F	Sig.
Pretest	Between Groups		3	5.260	.594	.623
	Within Groups		34	8.856		
Posttest	Between Groups		3	98.775	5.592**	.003
	Within Groups		34	17.663		
Delayed Posttest	Between Groups		3	92.984	4.519**	.009
	Within Groups		34	20.576		

** p< .01

As Table 4.9 indicates, the significant main effects were shown in posttest and delayed posttest ($F(3,34) = 5.592$, $p < .01$; $F(3,34) = 4.519$, $p < .01$) respectively. Then, pair wise comparisons utilizing a Tukey HSD procedure yield more details, and table 4.10 presents the result.

Table 4.10

Post Hoc Test Result of PVT Pretest

PVT	Category A	Category B	Mean Difference	Sig.
Pretest	HEP (L+Q)	LEP (L+Q)	1.81	.554
		HEP (L)	1.00	.875
		LEP (L)	1.03	.874
	LEP (L+Q)	HEP (L)	-.81	.933
		LEP (L)	-.78	.945
	HEP (L)	LEP (L)	.03	1.000

* $p < .05$

We can see that none of the groups differed significantly in the PVT pretest performance, which meant students had similar knowledge toward target vocabulary picked from the three storybooks. However, their knowledge of target vocabulary started to develop in divergent ways. Table 4.11 shows the outcome of students' performance in PVT posttest when different vocabulary teaching techniques were applied to CG and EG.

The significant differences were found in three pairs. They were HEP vs. LEP in L+Q group ($p = .011 < .05$), HEP in L+Q vs. LEP in L ($p = .045 < .05$), and LEP in L+Q vs. HEP in L group ($p = .027 < .05$). The overall result signified that HEP performed better in PVT after storybook reading sessions; regardless L or L+Q was practiced. However, there was an exception in CG, in which HEP didn't outperform LEP in posttest when L was used to help students learn new words. This suggested

that L was an effective technique to promote vocabulary acquisition for students with different initial English proficiency, both HEP and LEP.

Table 4.11

Post Hoc Test Result of PVT Posttest

PVT	Category A	Category B	Mean Difference	Sig.
Posttest	HEP (L+Q)	LEP (L+Q)	6.42*	.011
		HEP (L)	.70	.982
		LEP (L)	5.31*	.045
	LEP (L+Q)	HEP (L)	-5.72*	.027
		LEP (L)	-1.11	.943
	HEP (L)	LEP (L)	4.61	.099

* p< .05

Finally, delayed posttest scores were analyzed, and table 4.12 displays the result.

Table 4.12

Post Hoc Test Result of PVT Delayed Posttest

PVT	Category A	Category B	Mean Difference	Sig.
Delayed	HEP (L+Q)	LEP (L+Q)	7.33*	.007
Posttest		HEP (L)	2.80	.520
		LEP (L)	5.00	.096
	LEP (L+Q)	HEP (L)	-4.53	.151
		LEP (L)	-2.33	.697
	HEP (L)	LEP (L)	2.20	.718

* p< .05

Only one pair, HEP and LEP in EG, reached significant difference in their performance of PVT delayed posttest. It once again consented to the finding that L+Q technique not only benefited HEP in novel word learning, it also helped HEP in retaining the word knowledge. But similar result did not occur in CG when L

technique was used; HEP and LEP did not differ in their retention of vocabulary acquired. To add more numbers to the issue, mean differences of HEP in CG between post- to delayed posttest was 2.3 words comparing to .2 words of HEP in EG. Although in the inspection of table 4.12, HEP's delayed posttest scores in CG and EG did not reach significant difference (p=.520), it suggested that L+Q technique might promote HEP's word retention in EFL context. In another word, when new words are introduced with L+Q technique in shared storybook reading, EFL children with higher English proficiency not only acquire more vocabulary, but also might retain them better than children who only receive L technique.

In short, three findings were generated to explain the relationship between vocabulary teaching techniques and students' English proficiency. First of all, significant differences were found in PVT pre- and posttest scores between the following matches, they were HEP vs. LEP in the experimental group, HEP in the experimental group vs. LEP in the control group, and HEP in the control group vs. LEP in the experimental group. It suggested that HEP perceived vocabulary teaching techniques better and their progress was shown in the posttest. Second, L technique was effective for both HEP and LEP in novel word learning, but was not so for HEP's retention of the words gained. Finally, HEP was benefited the most from L+Q technique in novel word learning as well as word retention.