

## CHAPTER 4

### RESULTS AND DISCUSSION

This chapter presents the findings and discussion of the research study. The statistical results of the data from the three research questions will be presented and discussed one by one. The first section is devoted to the data analysis on the phonemic awareness (PA) skills of the subjects. The performance of these underachievers on word recognition (WR) and spelling tests will be the focus of the second section. An analysis of the attitude questionnaire of these subjects before and after the instruction will appear in the last section.

In each section, in order to understand if the two instructional approaches benefited the EFL underachievers, paired-samples t-tests were employed to compare the pre- to posttest gains on PA, WR and spelling tests, as well as the attitude questionnaire within each group. Moreover, independent-samples t-tests were conducted to compare the differences between the two groups before and after the instruction in their PA, WR and spelling scores, and their attitude questionnaire.

#### Phonemic Awareness Skills

In order to answer the first research question—Is nursery rhyme instruction effective in developing *phonemic awareness* of EFL underachievers at elementary level?, the subjects' development in phonemic awareness (PA) before and after the instruction was investigated. (Paired-samples t-test and independent-samples t-test were employed as statistical instruments. Paired-samples t-tests compared the subjects' performance before and after the treatment in the same group while independent-samples t-tests were used to compare the subjects' performance in PA between the two groups in pretest and posttest.) The subsequent two sections provide

findings of the within-group and the between-group comparisons as well as the researcher's interpretation of the results.

#### Comparisons of the Within-group Development

We shall examine the results for each of the two groups first.

Table 4.1 demonstrates the results of a paired-samples t-test of pretest and posttest for the experimental group on PA performance. The results showed that after the twelve-week instruction, the mean of the **total scores** for the nursery rhyme group increased more than 21 points, from 37.17 to 58.72. The development of overall PA skills for the nursery rhyme group is very significant statistically ( $t = -9.139, p < .001$ ).

*Table 4.1 Within-group Comparisons of the **Experimental Group** on PA Test (N = 18)*

Subtest		<i>M</i>	<i>(SD)</i>	<i>t</i>
Rhyme detection (10)	Pretest	7.72	1.49	-2.969**
	Posttest	9.06	1.00	
Oddity tasks (10)	Pretest	7.11	1.75	-3.833**
	Posttest	8.33	1.09	
Phoneme blending (10)	Pretest	5.67	2.72	-3.086**
	Posttest	8.11	.96	
Phoneme segmentation (29)	Pretest	14.50	7.90	-5.318***
	Posttest	24.67	2.35	
Phonemic manipulation (10)	Pretest	2.17	2.12	-11.510***
	Posttest	8.56	1.69	
<b>Total (69)</b>	Pretest	37.17	10.50	-9.139***
	Posttest	58.72	5.02	

*Note.* 1. Maximum score is given in parentheses after each task.

2. \*\* $p < .01$  \*\*\* $p < .001$

Also displayed in Table 4.1 is the progress made by the experimental group in the five subtests. Results showed that nursery rhyme instruction had significant effects

on the experimental group in their performance on all the five subtests: *rhyme detection* ( $t = -2.969, p < .01$ ), *oddity tasks* ( $t = -3.833, p < .01$ ), *phoneme blending* ( $t = -3.086, p < .01$ ), *phoneme segmentation* ( $t = -5.318, p < .001$ ), and *phonemic manipulation* ( $t = -11.510, p < .001$ ). The possible explanation for the progress is that all the five levels of PA were properly sequenced and explicitly taught in the experimental group.

Next, for the development of the control group, Table 4.2 presents the results of a paired-samples t-test of pretest and posttest on their performance of PA. The results indicated that after the twelve-week phonics instruction, although this group did not make as much progress as the other nursery rhyme group, they still improved significantly in their PA skills ( $t = -5.697, p < .001$ ), with the **total scores** increasing around 12 points, from 37.44 to 49.17.

*Table 4.2 Within-group Comparisons of the Control Group on PA Test (N = 18)*

Subtest		<i>M</i>	( <i>SD</i> )	<i>t</i>
Rhyme detection (10)	Pretest	7.83	1.72	-.134
	Posttest	7.89	1.53	
Oddity tasks (10)	Pretest	7.11	2.14	-1.445
	Posttest	8.00	1.61	
Phoneme blending (10)	Pretest	5.11	2.49	-4.278**
	Posttest	7.61	1.04	
Phoneme segmentation (29)	Pretest	13.89	5.98	-3.489**
	Posttest	19.67	4.84	
Phonemic manipulation (10)	Pretest	3.50	2.73	-5.136***
	Posttest	6.00	3.43	
<b>Total (69)</b>	Pretest	37.44	10.44	-5.697***
	Posttest	49.17	8.89	

*Note.* 1. Maximum score is given in parentheses after each task.

2. \*\* $p < .01$  \*\*\* $p < .001$

Furthermore, the results revealed that although no significant differences were found in the two subtests of *rhyme detection* ( $t = -.134, p > .05$ ) and *oddity tasks* ( $t = -1.445, p > .05$ ), after the twelve-week instruction, the control group made considerable progress in the other three subtests: *phoneme blending* ( $t = -4.278, p < .01$ ), *phoneme segmentation* ( $t = -3.489, p < .01$ ), and *phonemic manipulation* ( $t = -5.136, p < .001$ ).

In comparing the two tables, we find that after the nursery rhyme instruction, the experimental group improved significantly on the mean scores of their PA tests as well as on all the subtests. It is evident from Table 4.2 that the control group also showed significant improvements on the total scores. The findings are in substantial agreement with the studies of Ball & Blachman (1991), Lundberg et al. (1988), and Wu (2005), which indicated that phonemic awareness can be taught and children can be trained in PA skills.

As for the subtest performance, the above findings suggested that the explicit phonics group made no significant progress in *rhyme detection*. Although the ability to detect rhymes is considered the easiest task of PA (Adams, 1990; Chard & Dickson, 1999), the control group made a mere 0.6 point increase, from 7.83 to 7.89 (see Table 4.2). However, this is not the case with the nursery rhyme group. The experimental group made significant progress in the *rhyme detection* with the mean scores increasing from 7.72 to 9.06 (see Table 4.1).

This finding seems to confirm the claim made by Lindamood (1994) about the development of PA. That is, for many children the awareness of phonemes does not develop spontaneously; it needs to be taught (Lindamood, 1994, cited in Hempenstall, 2003). As is evident from the foregoing analysis, without explicit instruction, the subjects made no progress on the level of PA which is held to be the easiest.

The results of the within-group comparisons showed that both groups improved significantly after the twelve-week instruction. Whether nursery rhyme instruction is more effective in promoting phonemic awareness than explicit phonics teaching were further investigated in the following section.

#### Comparisons of the Between-group Development

All the 36 subjects took a PA test to capture their initial levels before the instruction. Independent-samples t-tests were performed to compare the performance of the two groups in the pretest.

Statistics for students' performance in the PA pretest were presented in Table 4.3. The data collected from the two groups was analyzed and compared so as to understand if the prior PA abilities of the two groups were homogenous. As is evident from Table 4.3, no statistically significant differences existed between the two groups with regard to the *total score* of PA ( $t = .080, p > .05$ ). In another word, in terms of PA, the two groups were homogeneous before the treatment.

Differences on the five subtests of the two groups in the pretest were also determined by independent-samples t-tests. No significant differences were found between the two groups on *rhyme detection* ( $t = .207, p > .05$ ), *oddity tasks* ( $t = .000, p > .05$ ), *phoneme blending* ( $t = -.638, p > .05$ ), *phoneme segmentation* ( $t = -.262, p > .05$ ), and *phonemic manipulation* ( $t = 1.637, p > .05$ ).

Table 4.3 Comparisons Between the Two Groups in PA Pretest

Subtest		Experimental group (N=18)	Control group (N=18)	<i>t</i>
Rhyme detection (10)	<i>M</i> ( <i>SD</i> )	7.72 (1.49)	7.83 (1.72)	.207
Oddity tasks (10)	<i>M</i> ( <i>SD</i> )	7.11 (1.75)	7.11 (2.14)	.000
Phoneme blending (10)	<i>M</i> ( <i>SD</i> )	5.67 (2.72)	5.11 (2.49)	-.638
Phoneme segmentation (29)	<i>M</i> ( <i>SD</i> )	14.50 (7.90)	13.89 (5.78)	-.262
Phonemic manipulation (10)	<i>M</i> ( <i>SD</i> )	2.17 (2.12)	3.50 (2.73)	1.637
<b>Total (69)</b>	<i>M</i> ( <i>SD</i> )	37.17 (10.50)	37.44 (10.44)	.080

Note. 1. Maximum score is given in parentheses after each task.

2.  $p > .05$

However, in the overall PA performance of the posttest, the progress of the experimental group was much greater than the control group (see Table 4.4). The t-test showed that the comparison value was -3.973 ( $p < .001$ ). Thus, after the twelve-week nursery rhyme instruction, the experimental group outperformed the control group in PA skills.

Besides, it is obvious that there were significant differences between the experimental group and the control grouping in three subtests: *rhyme detection* ( $t = -2.710, p < .05$ ), *phoneme segmentation* ( $t = -3.943, p < .001$ ), and *phonemic manipulation* ( $t = -2.836, p < .05$ ). No significant differences were found in the other two subtests: *oddity tasks* ( $t = -.729, p > .05$ ) and *phoneme blending* ( $t = -1.499, p > .05$ ), however.

*Table 4.4 Comparisons Between the Two Groups in PA Posttest*

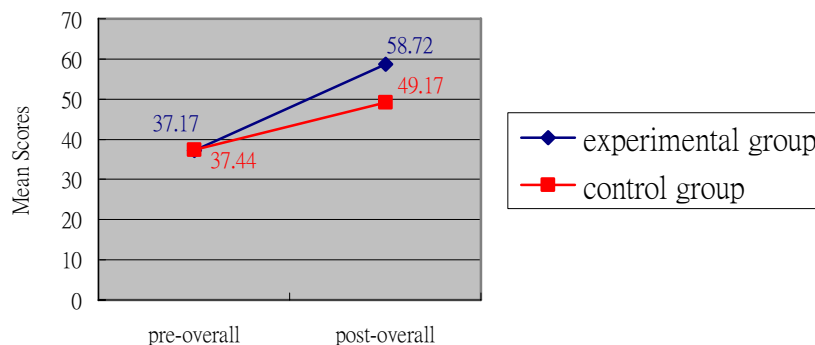
Subtest		Experimental group (N=18)	Control group (N=18)	<i>t</i>
Rhyme detection (10)	<i>M</i> ( <i>SD</i> )	9.06 (1.00)	7.89 (1.53)	-2.710*
Oddity tasks (10)	<i>M</i> ( <i>SD</i> )	8.33 (1.09)	8.00 (1.61)	-.729
Phoneme blending (10)	<i>M</i> ( <i>SD</i> )	8.11 (0.96)	7.61 (1.04)	-1.499
Phoneme segmentation (29)	<i>M</i> ( <i>SD</i> )	24.67 (2.35)	19.67 (4.84)	-3.943***
Phonemic manipulation (10)	<i>M</i> ( <i>SD</i> )	8.56 (1.69)	6.00 (3.43)	-2.836*
<b>Total (69)</b>	<i>M</i> ( <i>SD</i> )	58.72 (5.02)	49.17 (8.89)	-3.973***

Note. 1. Maximum score is given in parentheses after each task.

2. \* $p < .05$  \*\*\* $p < .001$

Taken together with the results from research question 1, the effects of nursery rhyme instruction on the development of PA skills on EFL underachievers are discussed in two dimensions: the overall performance of the two groups and the performance for each of the five levels of PA.

First of all, with regard to the overall performance, Figure 4.1 below graphed the developmental patterns of the two groups in *PA total scores* from the pretest to the posttest. The experimental group made sharper curve with greater progress in the scores of PA tests whereas the developmental curve of the control group was more gradual. These findings appear to suggest that nursery rhyme instruction has considerable merits on the performance of PA.



*Figure 4.1* Developmental curves of the two groups in PA tests

The findings support claims of some researchers that nursery rhymes help promote PA (Adams & Bruck, 1995; Beck & Juel, 1995; Mattingly, 1984) (all cited in Yopp & Yopp, 2000: 132). Bryant et al (1990) suggested that PA roots in traditional rhyming and word games. By reciting nursery rhymes repeatedly, children can develop sensitivity toward the sound structure and the units of sound composing spoken language (Adams & Bruck, 1995; Danielson, 2000).

In addition, the fact that the nursery rhyme group did evidence more significant gains in PA than did the control group seems to suggest that PA is prerequisite for phonics (Griffith & Olson, 1992). In comparing the materials and instruction of the two groups (see the section of Materials and Instruction), we find that in the nursery rhyme group, PA was practiced through a variety of aural/oral activities after a nursery rhyme had been introduced and before the letter-sound relationships were formally presented. On the other hand, in the explicit phonics group, PA training was incorporated into the teaching of sound-letter correspondences and was often associated with the alphabetic letters. Since PA is an understanding of the sound structure of spoken language, nursery rhymes appeared to enrich the subjects' oral language and thus provided a solid foundation for PA instruction.

Secondly, to get a clear picture of the improvements of the two groups in terms of the five levels of PA, the average raw scores on the pre- and posttest of PA in each



subtest are transferred into percentage of correctness (see Table 4.5). Before the instruction, the subjects already had certain levels of PA. It is worthwhile noting that the percentage of correctness for the five levels of PA in this study conforms to the hierarchy of task difficulties of PA for native speakers of English (Adams, 1990; Blevins, 1997) and for EFL learners in Taiwan as well (Lin, 2005). The subjects from both group scored the highest in rhyme detection and the lowest in phonemic manipulation. The five levels of PA ranked from the easiest to the hardest for underachievers are: rhyming, oddity tasks, phoneme blending, phoneme segmentation, and phonemic manipulation.

As is evident from Table 4.5, the subjects from both groups scored the highest in the subtest of *rhyme detection*, with 77.2% correct for the experimental group and 78.3% for the control group. The percentage descended noticeably from *rhyme detection* to *oddity tasks*, to *phoneme blending*, to *phoneme segmentation*, and finally, to the most difficult subtest—*phonemic manipulation*.

*Table 4.5 Percentage of Correctness in Pre- and Post- PA Tests for the Two Groups*

Subtest		Experimental group (N=18)	Control group (N=18)
Rhyme detection	Pretest	77.2%	78.3%
	Posttest	90.6%	78.9%
Oddity tasks	Pretest	71.1%	71.1%
	Posttest	83.3%	80.0%
Phoneme blending	Pretest	56.7%	51.1%
	Posttest	81.1%	76.1%
Phoneme segmentation	Pretest	50.0%	47.9%
	Posttest	85.1%	67.8%
Phonemic manipulation	Pretest	21.7%	35.0%
	Posttest	85.6%	60.0%

Figure 4.2 below more specifically graphed the percentage of correctness for the PA subtests in the pretest. The graph shows a downward tendency in the percentage of correctness among the five subtests. This phenomenon existed in both groups, suggesting that the complexity increases with every subtest for EFL underachievers. *Rhyme detection* appeared to be the easiest of the five PA tasks whereas *phonemic manipulation* seemed to be the most sophisticated.

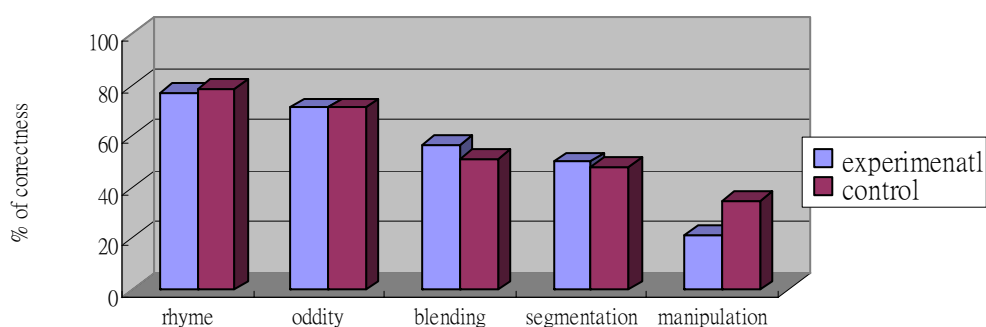


Figure 4.2 Percentage of correctness for the two groups in PA pretest

After the twelve-week instruction, however, this tendency no longer existed in the experimental group. The percentage of correctness boosted to over 80% for every subtest in the posttest (see Figure 4.3 below). In contrast, in the posttest percentage of the control group, we still find the general descending tendency on the five subtests with one exception. The percentage of correctness for the first ranked *rhyme detection* (78.9%) is slightly lower than that of the second ranked *oddity tasks* (80.0%) in the overall posttest performance of the control group.

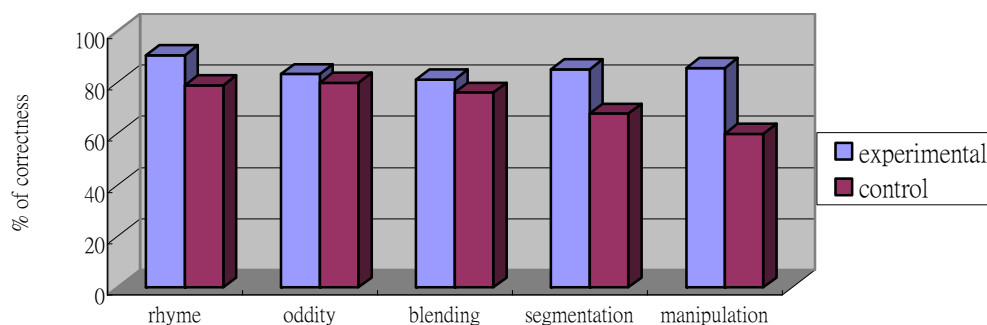


Figure 4.3 Percentage of correctness for the two groups in PA posttest

The main factor which may explain why the nursery rhyme instruction facilitated the development of PA thoroughly on every subtest is that the five levels of PA were carefully sequenced from simple to complex and were explicitly taught in the context of nursery rhymes. On the other hand, though PA is also addressed in *Let's Study Phonics*, the teaching material for the control group, the focus was mainly placed on the levels of oddity tasks and phoneme blending. This may be the reason why the nursery rhyme group did not significantly outperform the phonics group in these two subtests (see Table 4.4).

After the instruction of letter names and letter sounds, oddity tasks were introduced early when introducing consonants and short vowels, such as *p*. The subjects had to circle the words that began with /p/ sound (see Figure 3.6). As presented in the previous section, although the phonics group made no significant difference on oddity tasks, the percentage improvement (71.1% in the pretest to 80.0% in the posttest) was similar to that of the nursery rhyme group (71.1% in the pretest to 83.3% in the posttest) (see Table 4.3). Like oddity tasks, phoneme blending was also explicitly taught in the phonics group. The percentage change of the phonics group (51.1% in the pretest to 76.1% in the posttest) resembled that of the nursery rhyme group (56.7% in the pretest to 81.1% in the posttest).

To sum up, analysis of the data in this section confirmed that both the nursery rhyme instruction and the explicit phonics training were effective in improving phonemic awareness of EFL underachievers. Moreover, the results of the between-group comparisons showed that the subjects who received nursery rhyme instruction showed greater improvements than the subjects who received phonics instruction.

## Word Recognition and Spelling Skills

To answer the second research question—Is nursery rhyme instruction effective in promoting *word recognition and spelling abilities* of EFL underachievers at elementary level?—we turned to the results of word recognition (WR) and spelling tests prior to and after the treatment. The WR test consisted of two subtests—real word recognition (RWR) test and pseudo word recognition (PWR) test. Again, paired-samples t-tests were applied to compare the within-group development of WR and spelling while independent-samples t-tests were used to compare the between-group development of these two tests.

### Comparisons of the Within-group Development

Table 4.6 presents the progress of the experimental group in WR and spelling skills. In the pretests, they averagely scored very low: 6.39 in the **RWR** pretest, and 5.33 in the **PWR** pretest. After the twelve-week nursery rhyme instruction, the mean scores in the posttests increased considerably: from 6.39 to 19.28 for **RWR**, and from 5.33 to 19.39 for **PWR**. The examination of t-tests yielded the value -9.284 ( $p < .001$ ) for the **RWR** test and -9.637 ( $p < .001$ ) for the **PWR** test. The results indicated significant progress in WR skills for the experimental group.

*Table 4.6 Within-group Comparisons of the Experimental Group on WR and Spelling Skills (N = 18)*

Test		<i>M</i> (max= 29)	<i>(SD)</i>	<i>t</i>
RWR (28)	Pretest	6.39	7.39	-9.284***
	Posttest	19.28	7.18	
PWR (30)	Pretest	5.33	5.68	-9.637***
	Posttest	19.39	8.68	
Spelling (30)	Pretest	3.72	3.91	-8.656***
	Posttest	16.17	8.41	

*Note.* 1. Maximum score is given in parentheses after each task.

2. \*\*\* $p < .001$

In addition, Table 4.6 shows that prior to the nursery rhyme instruction the subjects in the experimental group scored a low 3.72 on average in the *spelling* pretest. However, the mean score increased to 16.17 after training. The value of paired-samples t-test was -8.656 ( $p < .001$ ) which attained the significant confidence level. As a result, the experimental group improved significantly in the spelling ability after treatment as well.

On the other hand, Table 4.7 illustrates the progress made by the control group in WR skills. The mean scores were 6.11 for the *RWR* pretest and 5.44 for the *PWR* pretest. In the posttests, the mean scores increased to 10.39 and to 12.67 respectively. Significant differences were found in WR skills of the control group as well with  $t$  value -3.062 ( $p < .01$ ) for the *RWR* test and -4.990 ( $p < .001$ ) for the *PWR* test.

Table 4.7 Within-group Comparisons of the *Control Group* on WR and Spelling Skills ( $N = 18$ )

Test		$M$ (max= 28)	( $SD$ )	$t$
RWR (28)	Pretest	6.11	7.81	-3.602**
	Posttest	10.39	7.59	
PWR (30)	Pretest	5.44	8.56	-4.990***
	Posttest	12.67	8.07	
Spelling (30)	Pretest	3.56	5.59	-5.187***
	Posttest	8.94	6.86	

Note. 1. Maximum score is given in parentheses after each task.

2. \*\* $p < .01$  \*\*\* $p < .001$

Meanwhile, the control group was promoted in spelling ability, too. As shown in Table 4.7, the subjects' average mean scores in the *spelling* tests progressed from 3.56 in the pretest to 8.94 in the posttest. Computation of within-group t-test yielded the value -5.187 ( $p < .001$ ). Therefore, subjects in the control group also achieved significant progress in their spelling ability.

The results discussed thus far indicated that both groups made very significant progress on WR and spelling skills between their pretests and the posttests (see Table 4.6 and Table 4.7). Both instructional approaches had significant effects on the two groups regarding WR and spelling abilities.

To compare the effectiveness of nursery rhyme instruction and phonics teaching in improving the subjects' WR and spelling abilities, independent-samples t-tests were used to compare the group means in the pretests and posttests respectively. The results are presented in the next section.

#### Comparisons of the Between-group Development

To understand the initial level of performance of WR and spelling skills before the instruction, the subjects took the RWR, PWR, and spelling pretests.

Independent-samples t-tests were performed to compare the performance of the experimental group and the control group. Table 4.8 shows that the differences between experimental and control groups in **RWR** ( $t = -.110, p > .05$ ), **PWR** test ( $t = -.302, p > .05$ ), and **spelling** test ( $t = -.104, p > .05$ ) were not significant before the treatment. In another word, subjects in the two groups were similar in their WR and spelling abilities before the twelve-week instruction.

*Table 4.8 Comparisons Between the Two Groups in WR and Spelling Pretest*

Test		Experimental group (N=18)	Control group (N=18)	<i>t</i>
RWR (28)	<i>M</i>	6.39	6.11	-.110
	<i>(SD)</i>	(7.39)	(7.81)	
PWR (30)	<i>M</i>	5.33	5.44	-.302
	<i>(SD)</i>	(5.68)	(8.56)	
Spelling (30)	<i>M</i>	3.72	3.56	-.104
	<i>(SD)</i>	(5.59)	(3.91)	

*Note.* 1. Maximum score is given in parentheses after each task.

2.  $p > .05$

Contrary to the pretest results, the t-test results showed that for the posttests, the comparison value for **RWR**, **PWR**, and **spelling** tests were -3.609 ( $p < .01$ ), -2.407 ( $p < .05$ ), and -2.823 ( $p < .01$ ) (see Table 4.9). The progress of the experimental group was much greater than that of the control group and the results reached a significant confidence level in these tests. Hence, the experimental group significantly outperformed the control group in the WR and spelling skills after the instruction of nursery rhymes.

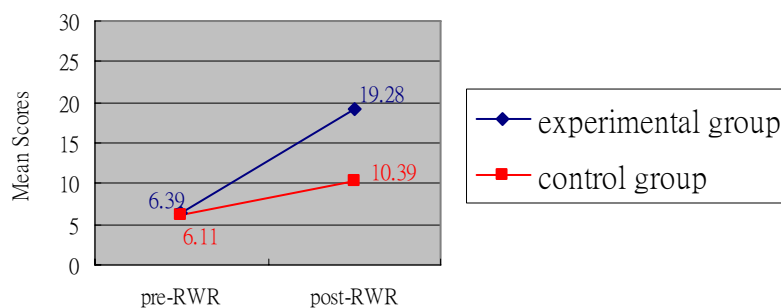
*Table 4.9 Comparisons Between the Two Groups in WR and Spelling Posttest*

Test		Experimental group (N=18)	Control group (N=18)	<i>t</i>
RWR (28)	<i>M</i>	19.28	10.39	-3.609**
	( <i>SD</i> )	(7.18)	(7.59)	
PWR (30)	<i>M</i>	19.39	12.67	-2.407*
	( <i>SD</i> )	(8.68)	(8.07)	
Spelling (30)	<i>M</i>	16.17	8.94	-2.823**
	( <i>SD</i> )	(8.41)	(6.86)	

Note. 1. Maximum score is given in parentheses after each task.

2. \* $p < .05$  \*\* $p < .01$

Figure 4.4 shows the developmental curves of the two groups in **RWR** between pretest and posttest. Compared with the control group, the experimental group evidently made greater progress in their ability to read out real word after the twelve-week instruction.



*Figure 4.4 Developmental curves of the two groups in RWR tests*

As shown in Figure 4.5, the curves of the two groups in *PWR* test were similar to those in the *RWR* tests (see Figure 4.4). Compared to the control group, the experimental group gained greater improvement on *PWR* ability after their twelve-week nursery rhyme training.

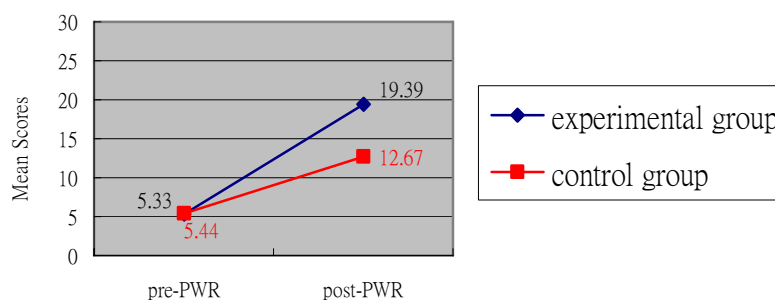


Figure 4.5 Developmental curves of the two groups in PWR tests

As is shown in Figure 4.6, the developmental curve of the experimental group reflects a sharp increase of mean scores between the *spelling* pretest and posttest. Compared to the experimental group, the control group also had a rising but smoother performance curve.

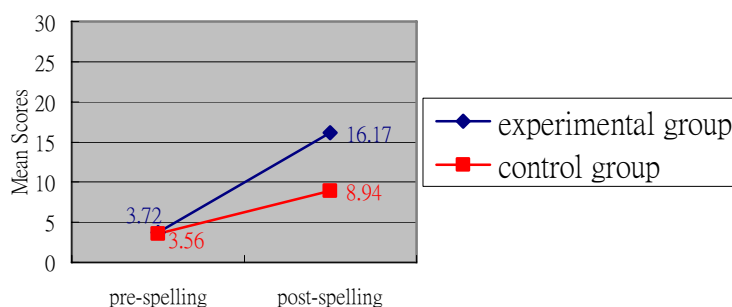


Figure 4.6 Developmental curves of the two groups in spelling tests

The above results answer the second research question and confirm that a balanced reading instruction is effective in promoting WR and spelling abilities of children with reading disabilities. The findings were similar to the study of Abbott, Reed, Abbott, and Berninger (1997). In their study, components of reading and writing were integrated and provided in each lesson in a balanced fashion, including phonological awareness, phonics, word families, sight words, oral reading of text,



comprehension, hand-writing, spelling, and composition writing. The sixteen subjects in their study gained significant improvement in spelling as well as real word and pseudo word identification.

The possible reason for the success of nursery rhyme instruction may be that the nursery rhymes the subjects have been familiar with prepared them for the phonemic awareness and phonics exercises to come. In this study, skills needed for decoding and encoding were attended to in the context of meaningful texts. The subjects were initially engaged in listening to, singing, or mimicking the nursery rhymes. The researcher pointed to and guided the subjects through the texts while rereading the nursery rhymes (see Appendix F for a sample page of a nursery rhyme). Phonemic awareness tasks were sequenced following the levels of complexity and nurtured through a variety of aural and oral activities (see Appendix F Activity 6-1). Letter names and letter sounds were emphasized using the contextualized vocabulary the subjects had been exposed to. As is demonstrated in the section of Materials and Instruction, the word taken from the nursery rhyme *wall* was used to introduce the letter name and sound of the letter *w*. Word recognition and spelling skills were reinforced through onset and rime phonics drills when introducing analogous words of the rhyming words (see Appendix F Activity 6-4).

This process corresponds to the “whole-to-parts” phonics instruction presented by Moustafa and Maldonado-Colon (1999). Their strategy addresses phonics skills after a story has been read to, with or by children. Through shared reading with predictable and engaging stories, children are familiarized with the language. While the teacher read to and with young learners, they point to the print. As children can read the story by themselves, they have learned the one-to-one matching of spoken words and printed words. This process allows the learners to recognize a lot of printed words and provides a basis for the following phonics lessons. Since the words being

studied are taken from the contexts meaningful to the children, they are hence more memorable.

In the present study, word recognition and spelling skills were approached following the model of moving from “whole-to-parts.” At first, in a fun and engaging way, the nursery rhymes introduced the underachievers to oral language and oral vocabulary of English. In doing so, they were exposed to the language and vocabulary of English orally first, similar to the acquisition process of young L1 learners. As our EFL subjects learned to recite the nursery rhymes, they had acquired the contextualized vocabulary along the way. Next, the subjects learned to do the one-to-one mapping between the spoken words and the printed words in reading the texts. Finally, the subjects practiced decoding and encoding skills with the words through all sorts of rhyming games and drills. Based on the findings of the study, this approach catering for both meaning and skills seems to be more effective than explicit phonics which merely stresses skills.

In sum, the within-group comparisons showed that both the nursery rhyme instruction and the explicit phonics training were effective in promoting the WR and spelling abilities of the EFL underachievers. Moreover, the nursery rhyme group significantly outperformed the explicit phonics group in these two measures.

### Questionnaire of Attitudes Toward Learning English

To answer the third research question—Is nursery rhyme instruction effective in improving *learning attitudes* of EFL underachievers at elementary level?, the subjects in both groups took the questionnaire of attitudes toward learning English prior to and after the instruction. The attitude questionnaire was composed of three subscales—“usefulness of English”, “fondness of English”, and “confidence in learning English.” Paired-samples t-tests were used to compare the within-group

performance and independent-samples t-tests compared the between-group performance.

#### Comparisons of the Within-group Attitude Changes

The overall scores of the pretest and posttest of attitude questionnaire for the experimental group were first compared. The subjects displayed significantly positive attitudes after the nursery rhyme instruction. The mean scores increased from 56.83 in the pretest, to 75.22 in the posttest and the paired-samples t-test value was -4.154 ( $p < .01$ ) (see Table 4.10).

*Table 4.10 Within-group Comparisons of the Experimental Group on Attitude Questionnaire (N = 18)*

Subscale		<i>M</i>	( <i>SD</i> )	<i>t</i>
Usefulness (24)	Pretest	15.33	6.44	-3.486**
	Posttest	20.78	2.73	
Fondness (44)	Pretest	24.78	8.39	-3.576**
	Posttest	32.83	6.86	
Confidence (32)	Pretest	16.72	4.43	-3.744**
	Posttest	21.61	4.13	
<b>Total</b> (100)	Pretest	56.83	16.15	-4.154**
	Posttest	75.22	12.68	

*Note.* 1. Maximum score is given in parentheses after each task.

2. \*\* $p < .01$

The attitude questionnaire was further scrutinized in terms of the subjects attitudes toward “usefulness of English”, “fondness of English”, and “confidence in learning English.” As is apparent in Table 4.10, the subjects’ learning attitudes in the experimental group changed positively after the instruction in all the three subscales: “*usefulness of English*” ( $t = -3.486, p < .01$ ), “*fondness of English*” ( $t = -3.576, p < .01$ ), and “*confidence in learning English*” ( $t = -3.744, p < .01$ ). Since the three

subscales were intended to investigate the cognitive and affective components of learning attitudes, the results showed that the subjects obviously were positively reinforced in cognitive and affective perception of learning English.

On the contrary, the results of the control group in their pretest and posttest of attitude questionnaire revealed no significant difference with the  $t$  value .277 ( $p>.05$ ). There was even a slight decline in the posttest total scores (from 62.17 to 61.11). The result indicated that the control group was not positively promoted in their attitudes toward learning English as a whole<sup>1</sup> (see Table 4.11).

*Table 4.11 Within-group Comparisons of the Control Group on Attitude Questionnaire*

Subscale		$M$	( $SD$ )	$t$
Usefulness (24)	Pretest	18.56	4.89	3.079**
	Posttest	15.33	5.61	
Fondness (44)	Pretest	25.83	8.50	-.175
	Posttest	26.22	9.37	
Confidence (32)	Pretest	17.78	5.33	-1.360
	Posttest	19.56	5.88	
<b>Total</b> (100)	Pretest	62.17	16.25	.277
	Posttest	61.11	19.32	

*Note.* 1. Maximum score is given in parentheses after each task.

2. \*\* $p < .01$

With regard to the three subscales, although the mean scores of the subscale of “*fondness of English*” increased from 25.83 to 26.22, and from 17.78 to 19.56 in the subscale of “*confidence in learning English*”, the paired-samples t-test results

<sup>1</sup> I am indebted to Professor Yin for calling my attention to the fact that while only one subject in the nursery rhyme group was recorded a drop in total scores; eight drops were recorded in the explicit phonics group (see Appendix M for raw scores). Meanwhile, seventeen subjects made progress in the nursery rhyme group, whereas nine subjects also scored higher in the phonic group (the other one had the same pretest and posttest scores). From the raw scores we can tell that in fact, not everyone in the phonics group developed negative perception toward the instruction (see Appendix N).

showed that the subjects' attitudes did not change significantly in the subscales of "*fondness of English*" ( $t = -.175, p > .05$ ) and "*confidence in learning English*" ( $t = -1.360, p > .05$ ).

Of special interest in Table 4.11 is the fact that the subjects' perception of "*usefulness of English*" changed significantly in reverse ( $t = 3.079, p < .01$ ). The mean scores decreased from 18.56 in the pretest to 15.33 in the posttest. The result indicated that the subjects' attitudes toward the "*usefulness of English*" changed negatively at the significant confidence level.

It is noteworthy that the results of the attitude questionnaire were distinctively different from those of the other performance tests administered to the subjects. The pre- to posttests comparisons showed that after the twelve-week instruction, both groups scored significantly higher in the PA, WR, and spelling tests. It is evident that both the nursery rhyme instruction and the phonics training were effective in enhancing the subjects' literacy abilities. However, paired-samples t-tests revealed that the nursery rhyme group boosted their attitudes toward learning English between pre- and posttests while the subjects in the phonics group did not.

When comparing the pre- and post attitude questionnaires, it was found that the overall attitudes toward learning English in the experimental group had significantly increased for the better. Furthermore, their attitudes toward "*usefulness of English*", "*fondness of English*", and "*confidence in learning English*" were significantly reinforced (see Table 4.10). In contrast, after explicit phonics instruction, the subjects in the phonics group demonstrated no significantly positive attitudes toward learning English. A closer examination of the three subscales revealed that the subjects had divergent attitudes toward learning English after phonics instruction as their attitudes toward "*usefulness of English*" changed negatively at the significant confidence level (see Table 4.11).

The students' negative perception toward "usefulness of English" may be attributed to the large amount of isolated, mechanical drills in letter-sound relationships in their phonics class. They may not appreciate the "usefulness of English" merely through drills and phonics rules without applying them in real language contexts. According to Pikulski, Templeton, and Chard (2000), a large number of phonics rules or generalizations do not guarantee children's reading growth. They caution that teachers should avoid teaching letter-sound relationships before providing real reading practice and avoid teaching phonics via rote memorization through drill and practice. The same point is noted in the report by the National Reading Panel (NRP) (2000):

Programs that focus too much on the teaching of letter-sound relations and not enough on putting them to use are unlikely to be effective in implementing systematic phonics instruction. Educators must keep the end in mind and ensure that children understand the purpose of learning letter sounds and are able to apply their skills accurately and fluently in their daily reading and writing activities." (p. 10)

To explore further, independent-samples t-tests were employed and analyzed to compare the effectiveness of the two different approaches to teaching reading.

#### Comparisons of the Between-group Attitude Changes

Before the instruction, the attitude questionnaire was administered with an intention to investigate the subjects' attitudes toward learning English. Despite the fact that the control group averagely scored slightly higher in the pretest of attitude questionnaire than the experimental group did with the total scores of 62.17 to 56.83, independent-samples t-test results revealed no significant difference between the two groups ( $t = .988, p > .05$ ).

*Table 4.12 Comparisons Between the Two Groups in Attitude Questionnaire Pretest*

Subscales		Experimental group (N=18)	Control group (N=18)	<i>t</i>
Usefulness (24)	<i>M</i>	15.33	18.56	1.691
	( <i>SD</i> )	(6.44)	(4.89)	
Fondness (44)	<i>M</i>	24.78	25.83	.375
	( <i>SD</i> )	(8.39)	(8.50)	
Confidence (32)	<i>M</i>	16.72	17.78	.646
	( <i>SD</i> )	(4.43)	(5.33)	
<b>Total</b> (100)	<i>M</i>	58.63	62.17	.988
	( <i>SD</i> )	(16.51)	(16.25)	

Note. 1. Maximum score is given in parentheses after each task.

2.  $p > .05$

The attitude questionnaire was further examined with regard to the three subscales. Again, the t-test results in Table 4.12 revealed that the differences did not achieve significant level in all the three subscales: “*usefulness of English*” ( $t = 1.691$ ,  $p > .05$ ), “*fondness of English*” ( $t = .375$ ,  $p > .05$ ), and “*confidence in learning English*” ( $t = .646$ ,  $p > .05$ ).

Table 4.13 presents the overall performance of the two groups in the attitude questionnaire after the twelve-week instruction. The results illustrated that in total, the experimental group averagely scored 75.22 while the control group averagely scored 61.11. The t-test value revealed significant difference between the two groups in the overall English learning attitudes in the posttest ( $t = -2.590$ ,  $p < .05$ ).

*Table 4.13 Comparisons Between the Two Groups in Attitude Questionnaire Posttest*

Subscales		Experimental group (N=18)	Control group (N=18)	<i>t</i>
Usefulness (24)	<i>M</i> ( <i>SD</i> )	20.78 (3.12)	15.33 (5.62)	-3.597**
Fondness (44)	<i>M</i> ( <i>SD</i> )	32.83 (6.86)	26.22 (9.37)	-2.416*
Confidence (32)	<i>M</i> ( <i>SD</i> )	21.61 (4.13)	19.56 (5.88)	-1.213
<b>Total</b> (100)	<i>M</i> ( <i>SD</i> )	75.22 (12.68)	61.11 (19.32)	-2.590*

Note. 1. Maximum score is given in parentheses after each task.

2. \* $p < .05$  \*\* $p < .01$

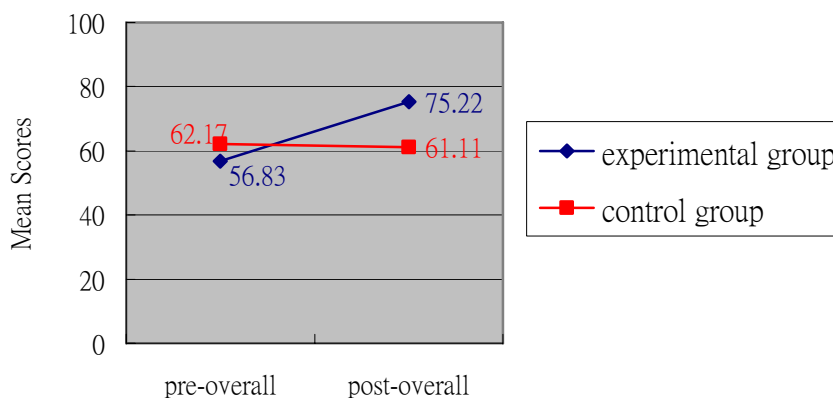
Moreover, the posttest scores of the subscales were analyzed respectively. The t-test results revealed that significant differences existed between the two groups in the subscales of “*usefulness of English*” ( $t = -3.597, p < .01$ ), and “*fondness of English*” ( $t = -2.416, p < .05$ ).

However, even though the experimental group scored higher on “*confidence in learning English*” (the mean scores increased from 16.72 to 21.61) than did the control group (the mean scores increased from 17.78 to 19.56), the between-group difference did not reach statistical significance ( $t = -1.213, p > .05$ ).

One possible reason may be that the subjects in the phonics group also became more confident in learning English after the phonics instruction. As presented above, though to a lesser degree, the phonics group also made significant improvements in their performance of PA tasks, WR and spelling skills. The isolated phonics drills did not change the subjects’ attitudes toward “*usefulness of English*” and “*fondness of English*,” yet they gained more confidence as they began experiencing success in reading.



Still, the learning attitudes of the nursery rhyme group toward English changed positively and met the criteria of significance as a whole while the phonics group did not. Figure 4.7 below exhibited a rising developmental curve for the experimental group while the curve for the control group reflected a slight dip in overall mean scores of attitudes.



*Figure 4.7* Developmental curves of the two groups in attitude questionnaire

The findings suggest, consistent with the studies of Chiang (2003), Hsu (2003), and Huang (2006), that the nursery rhyme instruction fostered the subjects' learning interest and improved their attitudes toward learning English. Also, the positive effects on English learning attitudes provided by the nursery rhyme group confirmed findings of previous studies that have showed that the children in a balanced reading program develop more positive attitudes toward reading (Duffy, 2001; Gunner, Smith, & Smith, 1999).

There are two factors which may explain why a balanced reading program using nursery rhymes inspired the subjects to the learning of English. First of all, a "low affective filter" (Krashen, 1987) and a positive language transfer helped create a conducive environment. As Thomas and Richard (1984) pointed out, the use of songs provided a fun, relaxed and non-threatening atmosphere to learning. The students gained confidence and positive attitudes in memorizing nursery rhymes with ease. In addition, in the present study, though the English nursery rhymes learned might be

new to the fourth-grade underachievers, the concept of rhyming was not. Before they studied English, they had learned numerous classical Chinese poems that rhymed<sup>2</sup>. Research suggests that when children can transfer prior experiences to acquire new knowledge or skills, learning will be meaningful to them and their motivation will increase (Ngeow, 1998).

Secondly, compared to the mechanical drills of phonics rules independent of meaning highlighted in the explicit phonics group, comprehensible nursery rhymes were used to engage the subjects in a variety of aural and oral activities from the beginning in the nursery rhyme group. This kind of instruction enabled the subjects to learn the oral language of English first which in turn served as a foundation upon which print awareness and language skills could be built. This process of learning is parallel to the one L1 learners experience in their acquisition of language. Phonemic awareness tasks and phonics drills were contextualized so that the subjects would consider what they had learned was meaningful and purposeful. This may be the reason why the subjects held positive perceptions toward the “usefulness of English” after the twelve-week nursery rhyme instruction.

### Summary

To summarize, the within-group comparison results showed that both the nursery rhyme group and the phonics group improved significantly in the measures of PA, WR, and spelling after the instruction. However, post-intervention data of the attitude questionnaire revealed significant improvements in attitudes toward learning English for the nursery rhyme group only. The findings suggest that nursery rhymes successfully promoted early literacy abilities and learning attitudes of the

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<sup>2</sup> I am grateful to my advisor, Professor Yin, for calling my attention to this point.

underachievers while the phonics instruction was effective in improving reading and writing abilities of the underachievers but not their learning attitudes.

As for the between-group comparisons, the nursery rhyme group outperformed significantly the phonics group in PA, WR, and spelling abilities as well as English learning attitudes in the posttests. The findings indicate that a balanced reading instruction which moved from whole text, to words, and then to word parts was more effective in promoting phonemic awareness, word recognition and spelling abilities, and learning attitudes of EFL underachievers than explicit phonics training that moved from the smallest parts to the whole.