

CHAPTER III

RESEARCH METHODOLOGY

Setting and Population

The population of this study included 1,584 second-year students in six faculties; Humanities, Education, Management, Sciences and Computer Science, Industrial Technology, and Agriculture. They were in English and non-English majors who were studying in semester 2, academic year 2005, at Phetchaburi Rajabhat University, Phetchaburi Province, Thailand.

Samples

The samples of the main study consisted of 81 computer science students who were studying in the second year of their undergraduate program in the 2005 academic year. They were studying the English for Communication and Study Skills course for one semester or four months. The samples were selected by means of purposive sampling. Two intact groups were obtained according to the availability of the classes. One group (n = 45) studied in the teacher-directed FB-RR mode while the other group (n = 36) studied in the learner-directed FB-RR mode.

The participants were pre-tested with SLEP® test to determine the reading proficiency levels and were placed in high and low-proficiency subgroups. The analysis indicated that the pretest mean scores between both groups were not significantly different. The mean comparison is shown in Table 3.1.

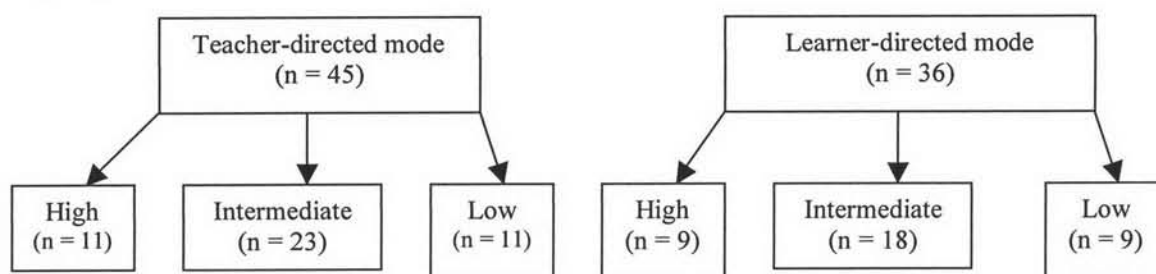
Table 3.1: Comparison of pretest mean scores

| Group | N | \bar{X} pretest | S.D. | t | df | Sig. (2-tailed) | Mean difference | Std. Error Difference |
|----------------------------------|----|-------------------|------|--------|----|-----------------|-----------------|-----------------------|
| Teacher-directed | 45 | 29.31 | 5.87 | | | | | |
| Learner-directed | 36 | 29.39 | 4.83 | | | | | |
| Pretest: Equal variances assumed | | | | -0.064 | 79 | .949 | .08 | 1.21 |

p > .05

It was found from the mean comparison that both teacher-directed and learner-directed groups were somewhat equivalent in their reading comprehension proficiency with the mean difference of .08, $t = .949$, and $p > .05$. In other words, the proficiency of both groups was not significantly different before the treatment. Because this study intended to examine specific subgroups of the samples, the pretest scores were sorted from the highest to the lowest respectively in order to place them into high and low-proficiency subgroups. Figure 3.1 represented the classification of the teacher-directed and learner-directed FB-RR groups and subgroups.

Figure 3.1: The classification of the teacher-directed and learner-directed FB-RR groups and subgroups



In the teacher-directed group ($n=45$), the high and low-proficiency subgroups referred to 25% of students who achieved the highest scores and 25% of those who achieved the lowest scores on the test. There were 11 students in the high-proficiency subgroup and 11 students in the low-proficiency subgroup. Twenty-three students were in the intermediate-proficiency subgroup. In the learner-directed group ($n=36$), the high and low-proficiency subgroups referred to 25% of students who achieved the highest scores and 25% of those who achieved the lowest scores on the test. So there were 9 students in the high-proficiency subgroup and 9 students in the low-proficiency subgroup. Eighteen students were in the intermediate-proficiency subgroup.

Research Design

In order to examine the teacher-directed and learner-directed FB-RR modes to teaching reading comprehension and to investigate their effects on students' reading comprehension, quantitative and qualitative research methods were implemented

measure to assess students' reading comprehension proficiency was the SLEP® test (see Appendix A) and a parallel form of SLEP® test. Students' test scores were used to estimate the statistical significance within and between modes and subgroups.

The study was conducted using '*the pretest-posttest quasi-experimental design*' (Isaac & Michael, 1981) comparing the English reading comprehension proficiency scores before and after using the Four-Blocks literacy framework with repeated reading. The design in Table 3.2 indicated that T represented the tests, whereas X represented the teaching modes.

Table 3.2: Representation of a research design

| | | | |
|---------|-------|-------|-------|
| Group A | T_1 | X_1 | T_2 |
| Group B | T_1 | X_2 | T_2 |

In this case, the X s were independent variables referring to the teaching modes used in this study. The X_1 represented the teacher-directed FB-RR mode whereas the X_2 represented the learner-directed FB-RR mode. The T_1 meant the pretest whereby the T_2 represented the posttest. The students' scores on these measures were dependent variables of the study.

In the experiment, the similar conditions in this experiment were 1) syllabus and lessons, 2) duration, and 3) pretest and posttest. On the contrary, the different conditions were 1) instructional mode, 2) classroom, 3) materials, and 4) sequence of blocks. Figure 3.2 summarized the similarities and differences between them.

Figure 3.2: Similarities and differences between the two sample groups

| Similar conditions | | |
|---|------------------------|--------------------------------|
| 1. Syllabus and lessons 2. Duration 3. Pretest and posttest | | |
| Different conditions | | |
| | A | B |
| Mode | Teacher-directed FB-RR | Learner-directed FB-RR |
| Classroom | Normal classroom | Self-access classroom |
| Materials | Normal handouts | Independent learning materials |
| Sequence of blocks | Fixed blocks | No fixed block |

Some learning conditions of both groups were similar. For example, both followed English foundation syllabus which was scheduled for 12 weeks. Two sets of 10 lesson plans for two classes contained similar objectives and contents. The course focused particularly on reading, writing, and study skills. In addition, the same tests were administered to both groups.

The differences between the two groups were due to the modes of instruction. Group A was taught with the *teacher-directed FB-RR* whereas group B was taught with the *learner-directed FB-RR*. The differences included classroom settings, learning materials, and sequences of blocks. Group A studied in a normal class where the teacher prepared paper-based handouts. Students learned together at the same pace. In group B, the teacher set the class like a self-access learning classroom. The materials and answer keys came with the simple directions printed in Thai which helped students learn independently. Students had choices in starting with any block. The time keeping was a major concern for students in this group. During the class, the teacher walked around, monitoring and guiding when they needed. This allowed students to learn at different pace.

Research Process

A development of two instructional modes (teacher-directed FB-RR and learner-directed FB-RR) for university students comprised two phases.

Phase I The development of an English reading comprehension instruction had six following stages.

- Stage 1 Explore and study the basic concepts and related documents
- Stage 2 Construct two instructional modes
- Stage 3 Construct the instructional manual, lesson plans, and instruments
- Stage 4 Verify the effectiveness of the instructional manual, lesson plans, and instruments
- Stage 5 Pilot the instruction
- Stage 6 Revise the lesson plans and instruments

Phase II The implementation of the FB-RR instruction had three stages.

Stage 1 Prepare the experiment

Stage 2 Conduct the experiment

Stage 3 Evaluate the effectiveness of the instruction

The research process was illustrated in Figure 3.3.

Phase I The development of an English reading comprehension instruction was as follows.

Stage 1 Explore and study the basic concepts and related documents

This stage aimed to explore and study the theories and basic concepts underlying second language reading. The theories and concepts the researcher explored were as follows.

1.1 Reading comprehension

Reading comprehension was a key skill in this study. In second and foreign language reading, the interactive models of reading respond to the question of how vocabulary skills relate to comprehension. So chapter two reviewed the basic concepts of reading comprehension.

1.2 Models of the reading process

First and second language reading models were studied concerning bottom-up, top-down, and interactive models. An understanding of reading models provided insights to the theory underlying reading acquisition.

1.3 Balanced reading instruction

Balanced reading instruction entails the combination of bottom-up and top-down reading models. A balanced reading program includes authentic literature, independent reading, writing, and other skills-based instruction.

1.4 Four-Blocks literacy framework

Four Blocks is a literacy framework of balanced reading. The Four-Blocks framework includes four well-organized blocks of guided reading, self-selected reading, working with words, and writing.

1.5 Repeated reading

Repeated reading is an effective strategy that builds reading fluency and comprehension. The review of repeated reading and related research provided some effective techniques that supported a balanced reading program.

1.6 Autonomous learning

Autonomous learning is a learning in which the student's capacity for autonomy is extended and displayed. For this study, autonomous learning was closely associated with *individualization*. It was a mode of instruction in which students were expected to work their way at their own pace through materials prepared by the teacher.

Stage 2 Construct two instructional modes

A reading comprehension instruction was constructed using Four-

Blocks literacy framework and the repeated reading. To construct the instruction, the following steps were conducted.

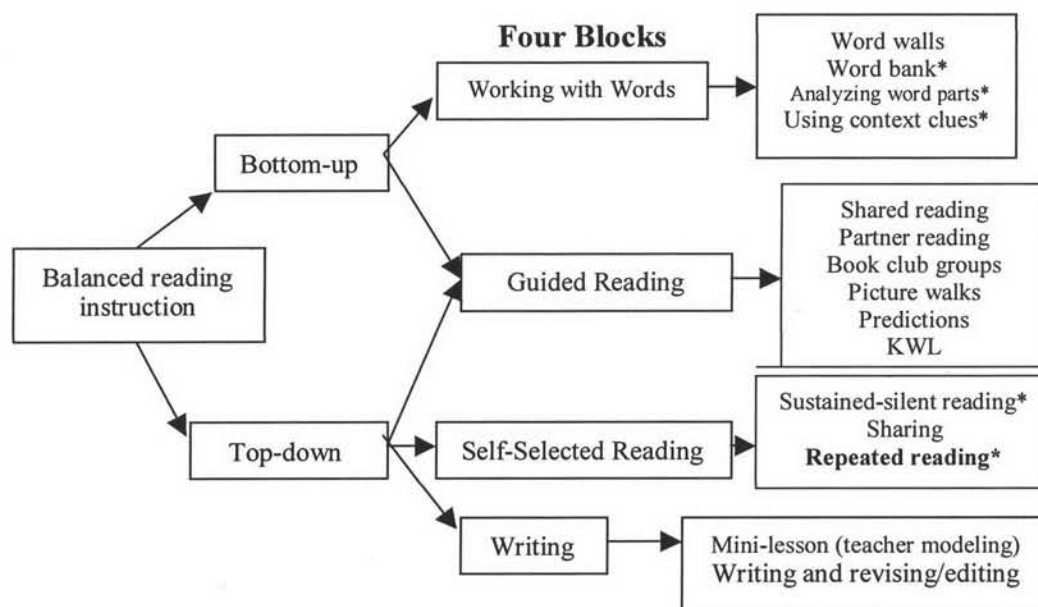
2.1 Compile and analyze the information gained from stage one

The information gained from stage one as well as the data from related research were compiled and analyzed. The advantages and disadvantages of activities in each block were investigated.

2.2 Specify the instruction and its components

The Four-Block literacy framework with repeated reading (FB-RR) was derived. Within the Four Blocks, there were working with words, guided reading, self-selected reading, and writing. The activity in Working with Words block was word walls. The activities used in the Guided Reading block were shared reading, partner reading, book club groups, picture walks, predictions, KWL, and graphic organizers. The activities in Self-Selected Reading block were repeated reading and sharing. And the activities in Writing block were modeled writing, writing, and revising/editing. Besides the Four Blocks' activities, the researcher added other activities which were proved to be effective. The additional activities were *sustained-silent reading*, *word bank*, *analyzing word parts*, and *using context clues*. These activities promoted reading and vocabulary proficiency for second language learners. The FB-RR and its components were illustrated in Figure 3.4.

Figure 3.4: FB-RR instruction development



Note: * refers to the additional activities that were included in this instruction.

Stage 3 Construct the instructional manual, lesson plans, and

The instructional manual was constructed to guide the teacher when instruments

using the instruction in the English foundation course. There were two types of lesson plans, one for the teacher-directed FB-RR, and the other for the learner-directed FB-RR. For each mode of FB-RR, 10 lesson plans were designed specifically for the course English for Communication and Study Skills. Furthermore, there were supplementary materials prepared for each lesson.

Stage 4 Verify the effectiveness of the instructional manual, lesson plans, and instruments

The checklists were constructed to evaluate the effectiveness of the instructional manual, lesson plans, and instruments. The quality of them was obtained by nine experts in reading and language education. There were three experts validating the instructional manual, three experts validating three lesson plans, and the other three experts validating six instruments. Then the instructional manual, lesson plans, and instruments were revised after being validated by all nine experts (see the list of experts in Appendix L).

4.1 The instructional manual was validated by three experts concerning the rationale, the theoretical framework, components, activities, assessment and evaluation. The scores in Table 3.3 were shown in grade level.

Table 3.3: The validation of the instructional manual

| | Expert A | Expert B | Expert C | Total |
|------------------------------|----------|----------|----------|-------|
| 1. Rationale | 4.00 | 3.00 | 3.25 | 3.41 |
| 2. Theoretical framework | 4.00 | 2.50 | 3.00 | 3.17 |
| 3. Components | 3.50 | 2.83 | 3.17 | 3.17 |
| 4. Instructional activities | 3.33 | 2.83 | 3.17 | 3.11 |
| 5. Assessment and Evaluation | 3.20 | 3.00 | 3.60 | 3.26 |

Note: Grade 3.50–4.00 = very good, 2.50 – 3.49 = good, 1.50 – 2.49 = fair, 1.00 – 1.49 = poor

In Table 3.3, the results in the checklists shown that the average grades of all items were between 3.11 and 3.41. It implied that each issue was at a good level. However, the experts gave some comments for adapting the manual.

Expert A suggested that “the course objectives in the theoretical framework should be more observable. The words ‘recall’ and ‘understand’ were difficult to measure.” So the word ‘recall’ was changed to ‘pronounce’ and ‘write,’ and the word ‘understand’ to ‘use in context’ instead.

Expert B suggested that “students should collect word bank and submit their notebooks at the end of the semester. Moreover, each word can be used as a cue in composing a sentence.” Actually, this lesson plan had that aim of word bank set at the first place, but it didn’t show to the experts. So the course assignment was rewritten clearly. (See the instructional manual in Appendix H).

4.2 The experts validated three lesson plans as follows.

4.2.1 “Brush It Away” lesson plan

The lesson plan and worksheets used in two groups were validated by three experts. The aspects focused on the overall plan and each single block. The scores shown in Table 3.4 were analyzed in grade levels.

Table 3.4: The validation of “Brush It Away” lesson plan

| | Teacher-directed | | | | Learner-directed | | | |
|--------------------------|------------------|-------------|-------------|-------------|------------------|-------------|-------------|-------------|
| | Expert D | Expert E | Expert F | Total | Expert D | Expert E | Expert F | Total |
| 1. Overall | 4.00 | 3.11 | 3.56 | 3.56 | 3.56 | 3.33 | 4.00 | 3.63 |
| 2. Working with Words | 3.50 | 4.00 | 3.50 | 3.67 | 3.50 | 4.00 | 4.00 | 3.83 |
| 3. Guided Reading | 3.00 | 4.00 | 4.00 | 3.67 | 3.50 | 4.00 | 4.00 | 3.83 |
| 4. Self-Selected Reading | 3.50 | 2.00 | 4.00 | 3.17 | 4.00 | 2.00 | 4.00 | 3.33 |
| 5. Writing | 4.00 | 4.00 | 3.50 | 3.83 | 3.50 | 4.00 | 3.50 | 3.67 |

Note: 3.00 – 4.00 = yes, 1.50 – 2.99 = unsure, 0.00 – 1.49 = no

The analysis of checklist in Table 3.4 showed that the average grades of the teacher-directed group’s lesson plan were between 3.17 and 3.83. It implied that the overall plan and every single block contained the important characteristics in constructing this lesson plan. Similarly, the average grades of the learner-directed group’s lesson plan were between 3.33 and 3.83. It implied that the overall plan and every individual block contained the important characteristics. However, the experts also gave some comments for revising “Brush It Away” lesson plan.

Because the blocks were not separated clearly, the sets of blocks were then separated clearly using a table. The important skill focuses and the activities were also listed out.

An expert suggested that the directions in the learner-directed lesson plan were redundant and in English language. As a result, the English directions were printed in the native (Thai) language. In addition, the messages were made shorter and clearer.

It was commented that there were too many activities in the Working with Words block which might take too long time. As a result, the block was revised by omitting the word wall activity.

4.2.2 “Travel in Phetchaburi” lesson plan

The lesson plan and worksheets (see Appendices I and J) used in two groups were validated by three experts. The aspects focused on the overall plan and on each single block. The scores shown in Table 3.5 were analyzed in grade levels.

Table 3.5: The validation of “Travel in Phetchaburi” lesson plan

| | Teacher-directed | | | | Learner-directed | | | |
|--------------------------|------------------|-------------|-------------|-------------|------------------|-------------|-------------|-------------|
| | Expert D | Expert E | Expert F | Total | Expert D | Expert E | Expert F | Total |
| 1. Overall | 3.33 | 3.11 | 4.00 | 3.48 | 2.22 | 2.67 | 4.00 | 2.96 |
| 2. Working with Words | 3.00 | 4.00 | 4.00 | 3.67 | 1.50 | 4.00 | 4.00 | 3.17 |
| 3. Guided Reading | 3.00 | 4.00 | 4.00 | 3.67 | 1.50 | 4.00 | 4.00 | 3.17 |
| 4. Self-Selected Reading | 2.00 | 2.50 | 4.00 | 2.83 | 2.50 | 2.00 | 4.00 | 2.83 |
| 5. Writing | 3.50 | 4.00 | 4.00 | 3.83 | 1.00 | 4.00 | 4.00 | 3.00 |

Note: 3.00 – 4.00 = yes, 1.50 – 2.99 = unsure, 0.00 – 1.49 = no

Table 3.5 showed that the average grades of the teacher-directed group’s lesson plan were between 2.83 and 3.83. It implied that the overall

plan and every individual block contained the important characteristics except the Self-Selected Reading block. The learner-directed group’s lesson plan had the average grades between 2.83 and 3.17. It implied that three blocks contained the important characteristics, except the overall plan and the Self-Selected Reading block. The issues were related to length and content of the passage.

An expert suggested that the content was not updated. As a result, the researcher revised the content of Phetchaburi province by consulting the lesson book, *English for Tourism in Phetchaburi* (Nakjan, 2005). The passage was also commented that it was too long. So the content passage was divided into two lesson plans and named another one ‘*Attractions in Phetchaburi.*’

One expert stated that there were too many activities in the Guided Reading block. So the ‘book club groups’ was moved out from this lesson and was put it in another lesson plan.

It was commented that the paragraph writing activity in the Writing block was too difficult for the early lesson. Thus, the activity was moved to the further lesson.

There were some weaknesses about language and directions in Self-Selected Reading block. The directions in the activity were very in detail and printed in English. They might make students confused. So the directions were printed in Thai. They were also made itemized and written in short and concise sentences.

4.2.3 “Eye Jokes” lesson plan

The lesson plan and worksheets used in two groups were validated by the same three experts. The aspects focused on the overall plan and each single block. The scores shown in Table 3.6 were analyzed in grade levels.

Table 3.6: The validation of “Eye Jokes” lesson plan

| | Teacher-directed | | | | Learner-directed | | | |
|--------------------------|------------------|----------|----------|-------------|------------------|----------|----------|-------------|
| | Expert D | Expert E | Expert F | Total | Expert D | Expert E | Expert F | Total |
| 1. Overall | 3.78 | 3.11 | 3.78 | 3.56 | 3.78 | 3.33 | 3.78 | 3.63 |
| 2. Working with Words | 4.00 | 4.00 | 4.00 | 4.00 | 3.50 | 4.00 | 4.00 | 3.83 |
| 3. Guided Reading | 3.50 | 4.00 | 4.00 | 3.83 | 3.50 | 4.00 | 4.00 | 3.83 |
| 4. Self-Selected Reading | 3.50 | 2.00 | 4.00 | 3.17 | 3.50 | 2.50 | 4.00 | 3.33 |
| 5. Writing | 3.50 | 3.50 | 4.00 | 3.67 | 4.00 | 4.00 | 4.00 | 4.00 |

Note: 3.00 – 4.00 = yes, 1.50 – 2.99 = unsure, 0.00 – 1.49 = no

In Table 3.6, the results from the checklists indicated that the average grades of the teacher-directed group’s lesson plan were between 3.17 and 4.00. It implied that the overall and every single block contained the important characteristics. Similarly, the average grades of the learner-directed group’s lesson plan were between 3.33 and 4.00. It implied that the overall and every single block contained the characteristics. However, the experts also noted some comments for revising “Eye Jokes” lesson plan.

The experts commented that the reading passage was too long for the limited time. In addition, it was noted that the content contained some cultural specific issues. So some parts were omitted. Preferably the content that had less cultural specific issue was selected.

4.3 The experts validated six instruments as follows.

4.3.1 The FB-RR learning logs

Two types of learning logs (see Appendices D and E) were validated by three experts. In the logs, there were six questions for the teacher-directed group and seven questions for the learner-directed group. The focused aspects were idea or content of the lesson, organization of the plan, word choice, syntax or sentences, and writing conventions as shown in Table 3.7.

Table 3.7: The validation of learning logs

| Teacher-directed and learner-directed | | | | |
|---------------------------------------|----------|----------|----------|-------|
| | Expert G | Expert H | Expert I | Total |
| 1. Ideas/Content | 4.00 | 4.00 | 4.00 | 4.00 |
| 2. Organization | 4.00 | 4.00 | 4.00 | 4.00 |
| 3. Word choice | 4.00 | 4.00 | 4.00 | 4.00 |
| 4. Syntax/Sentences | 4.00 | 4.00 | 4.00 | 4.00 |
| 5. Writing conventions | 4.00 | 4.00 | 4.00 | 4.00 |

Note: 3.00 – 4.00 = yes, 1.50 – 2.99 = unsure, 0.00 – 1.49 = no

In Table 3.7, the results from the checklists indicated that both two learning logs had similar grades. The average grades of every item were at 4.00 level. It implied that every part contained the important characteristics that measured students' opinions. Nevertheless, an expert suggested that the format was too structured. For this reason, some items were reduced and were left more open-ended answers.

4.3.2 The FB-RR questionnaires

Two types of questionnaires (see Appendices B and C) were structured Likert scales. They were validated by three experts. In the questionnaires, there were 20 questions for the teacher-directed group and 23 questions for the learner-directed group. The focused aspects were idea or content of the lesson, organization of the plan, word choice, syntax or sentences, and writing conventions as shown in Table 3.8.

Table 3.8: The validation of questionnaires

| Teacher-directed and learner-directed | | | | |
|---------------------------------------|----------|----------|----------|-------|
| | Expert G | Expert H | Expert I | Total |
| 1. Ideas/Content | 4.00 | 3.50 | 4.00 | 3.83 |
| 2. Organization | 4.00 | 3.00 | 4.00 | 3.67 |
| 3. Word choice | 4.00 | 0.00 | 4.00 | 2.67 |
| 4. Syntax/Sentences | 4.00 | 2.00 | 4.00 | 3.33 |
| 5. Writing conventions | 4.00 | 2.67 | 4.00 | 3.56 |

Note: 3.00 – 4.00 = yes, 1.50 – 2.99 = unsure, 0.00 – 1.49 = no

In Table 3.8, the results from the checklists revealed that both questionnaires gained similar grades. The average grades of every item were between 2.67 and 3.83. It implied that every part, except the '*word choice*' contained the important characteristics that measured students' attitudes toward the FB-RR instruction. The expert H rated the '*word choice*' as zero because the word '*and*' should not be used in an item. Moreover, some words might be difficult for students. The experts also gave some comments for adapting the questionnaires.

One expert noted that the rating choices were misplaced at the bottom of the page. As a result, the rating choices were moved up to the top under the direction.

The expert suggested that each item should measure only one aspect. So the conjunction '*and*' should not be used in a sentence. For example, an item "*I moved into reading quickly and stayed engaged,*" should be separated as two ideas, "*I moved into reading quickly,*" and "*I stayed engaged in reading.*" Another item, "*I engaged in different stages of the writing process: completing first draft, revising, and editing,*" should be separated as two ideas, "*I engaged in completing first draft,*" and "*I engaged in revising, and editing.*"

The expert also suggested that some phrase was unclear to measure. The sentence "*I spelled words correctly in everything I write*" was too difficult to measure. So the phrase was changed to "*in the assignment.*"

4.3.3 The FB-RR observation forms

Two types of observation forms (see Appendices F and G) were structured four-scaled form. The observable levels consisted of *not observed*, *need improvement*, *satisfactory*, and *outstanding*. The forms were validated by three experts. In the forms, there were 17 questions for the teacher-directed group and 23 questions for the learner-directed group. The focused aspects were idea or content of the lesson, organization of the plan, word choice, syntax or sentences, and writing conventions as shown in Table 3.9.

Table 3.9: The validation of observation forms

| | Teacher-directed and learner-directed | | | |
|------------------------|---------------------------------------|----------|----------|-------|
| | Expert G | Expert H | Expert I | Total |
| 1. Ideas/Content | 4.00 | 3.00 | 4.00 | 3.67 |
| 2. Organization | 4.00 | 2.00 | 4.00 | 3.33 |
| 3. Word choice | 4.00 | 0.00 | 4.00 | 2.67 |
| 4. Syntax/Sentences | 4.00 | 2.00 | 4.00 | 3.33 |
| 5. Writing conventions | 4.00 | 2.67 | 4.00 | 3.56 |

Note: 3.00 – 4.00 = yes, 1.50 – 2.99 = unsure, 0.00 – 1.49 = no

In Table 3.9, the results from the checklists showed that both observation forms had similar grades. The average grades of every item were between 2.67 and 3.67. It implied that every part, except the ‘*word choice*’ contained the important characteristics that measured students’ behaviors in the FB-RR instruction. The expert H rated the ‘*word choice*’ as zero because the word ‘*and*’ should not be used in an item. Moreover, some words might be difficult for the teacher to observe. The experts also gave some comments for adapting the forms.

An expert noted that the rating choices were misplaced at the bottom of the page. So the rating choices were moved to the top under the direction.

In addition, one expert suggested that each item should measure only one aspect. So the conjunction ‘*and*’ should not be used in a sentence. For example, an item “*Students had available wide variety of materials of different types and on different levels,*” should be separated as three ideas, “*There were a wide variety of materials,*” “*The materials were in different levels,*” and “*Students had sufficient materials.*” Another item “*Students moved into their reading quickly and stayed engaged,*” should be separated as two ideas, “*Students moved into their reading quickly,*” and “*Students stayed engaged in the activity.*”

The expert commented that the sentence “*After reading, the activity focused on comprehension and helped students learn and think*” was redundant. To avoid this, the sentence was rewritten as “*After reading, the activity helped students learn and think.*”

In summary, the instructional manual had the average grade of 3.22 which was indicated as ‘good’. The “Brush It Away” lesson plans had the average grades of 3.58 for the teacher-directed group and 3.66 for the learner-directed group. It implied that both lesson plans contained the good characteristics. The

average grades of “Travel in Phetchaburi” lesson plans were 3.50 for the teacher-directed group and 3.03 for the learner-directed group. Both lesson plans implied the good characteristics. The “Eye Jokes” lesson plans had the average grades of 3.64 for the teacher-directed group and 3.72 for the learner-directed group. Similarly, both lesson plans contained the good characteristics. For the learning logs, the average grade in both groups was 4.00 which indicated very good characteristics. The questionnaires had the average grade of 3.41 which also implied good characteristics. The observation forms in both groups had the similar grade of 3.31. It also indicated good characteristics. Figure 3.5 presented the average grades of the instrument validation.

Figure 3.5: The average grades of the instrument validation

| Instruments | Average grades | |
|---|------------------|------------------|
| | Teacher-directed | Learner-directed |
| 1. Instructional manual | 3.22 | |
| 2. “Brush It Away” lesson plans | 3.58 | 3.66 |
| 3. “Travel in Phetchaburi” lesson plans | 3.50 | 3.03 |
| 4. “Eye Jokes” lesson plans | 3.64 | 3.72 |
| 5. Learning logs | 4.00 | 4.00 |
| 6. Questionnaires | 3.41 | 3.41 |
| 7. Observation forms | 3.31 | 3.31 |

All instruments contained good to very good characteristics. However, they were revised according to the experts’ suggestions and prepared for the pilot study.

Stage 5 Pilot the instruction

To confirm that the two instructional modes were effective, a pilot study was carried out for three weeks prior to the main study. The samples in the pilot study consisted of 92 second year sciences major students, studying in two classes at Phetchaburi Rajabhat University. Both groups were studying the English for Communication and Studying Skills course. One group received three teacher-directed FB-RR lesson plans, and the other group received three learner-directed FB-RR lesson plans.

The pilot study reduced the number of treatment errors, because unforeseen problems revealed in the pilot study were overcome in redesigning the main study. It was possible to get feedback from participants and other persons involved that led to improvements such as in alternative instruments and procedures.

After the pilot study, the English comprehension proficiency tests and the FB-RR questionnaires were analyzed for the reliability. The scores on SLEP® test and a researcher-made parallel form were calculated with the method of *Kuder-Richardson formula 20* (KR-20) to find out a reliability coefficient based on the number of test items ($k = 71$). As a result, the correlation coefficient (r) of the SLEP® test was 0.5154, while the correlation coefficient (r) of the researcher-made parallel form was 0.5711. Concerning the questionnaires, the reliability values were estimated by Cronbach's *alpha coefficient* (α). The alpha coefficient values were equal to 0.833 in the teacher-directed FB-RR questionnaire and equal to 0.793 in the learner-directed FB-RR questionnaire.

Stage 6 Revise the lesson plans and instruments

The materials were revised after the pilot study. The problems found in the pilot study were printed language. The language use in materials was all in English. Even though the directions were in simple English, they were not as communicative as in a native language. Some students were not able to follow the directions and always asked the teacher what they had to do. As a result, most directions in the worksheets, the questionnaires, and the learning logs were printed in Thai.

Phase II The implementation of the FB-RR instruction had the following

Stage 1 Prepare the experiments

1.1 Specify the population and samples

The population of this study consisted of 1,584 second-year students who were studying in six faculties in semester two, academic year 2005 at Phetchaburi Rajabhat University, Phetchaburi Province, Thailand. The samples of the main study were 81 second-year students who were studying in two classes of computer science major. They were appropriate equivalent groups, taking the English for Communication and Study Skills course. The purposive sampling was used in the following stages

1.1.1 The SLEP® English reading comprehension proficiency test was administered to the two sample groups. Then, the scores on test were arranged in order respectively in order to place the samples in two proficiency subgroups. The high-proficiency subgroup referred to 25% of students in a class who achieved the highest scores on the test. On the other hand, the low-proficiency subgroup referred to 25% of students in a class who achieved the lowest scores the on test.

1.1.2 Every student in the teacher-directed and learner-directed groups was selected. However, the students with high and low proficiencies were specifically examined the effects of the FB-RR instruction on their reading proficiency. In the teacher-directed class (n = 45), there were 11 students in a high-proficiency subgroup and 11 students in a low-proficiency subgroup. Twenty-three students were in an intermediate-proficiency subgroup. In the learner-directed group (n = 36), there were nine students in a high-proficiency subgroup and nine students in a low-proficiency subgroup. Other 18 students were in an intermediate-proficiency subgroup (see Figure 3.1).

1.2 Construct lesson plans and instructional materials

The other seven FB-RR lesson plans and instructional materials were constructed for the teacher-directed and learner-directed groups.

1.3 Construct instruments for collecting data

The instruments for collecting data from the teacher-directed and learner-directed groups consisted of two types of learning logs, two types of questionnaires, and two types of observation forms.

Stage 2 Conduct the experiment

The duration of the experiment was 10 weeks with 2½ hours per week. The steps in conducting the experiment were as follows.

2.1 Pretest

The SLEP® English reading comprehension proficiency test, was administered to the participants. The answer sheets were scored and the participants of each group were placed in high and low-proficiency subgroups

2.2 Assign the instruction

During the treatment, the FB-RR instruction was taught to both groups for 10 weeks. One group was taught the reading comprehension through the teacher-directed mode, while the other group was taught through the learner-directed mode

In the teacher-directed FB-RR group, the teacher taught vocabulary, reading, and writing. The teacher helped students in applying reading strategies to other reading situations. The daily activities began with 1) Working With Words block (30 minutes), 2) Guided Reading block (35–50 minutes), 3) Self-Selected Reading block with repeated reading (40 minutes), and 4) Writing block (30–40 minutes).

In the learner-directed FB-RR group, the teacher prepared materials for independent study. The daily lesson was grouped as four blocks and the materials were put in different boxes. There were reading passages and worksheets with Thai or simple English directions. Students chose their place of study. They studied materials by themselves with specific time as in the teacher-directed FB-RR group. They normally worked with partners or in small groups. The teacher walked around and encouraged students to read independently. The samples of Self-Selected Reading materials were shown in Appendix N. In this mode, the sequence of blocks was not fixed. Students might start with any block, however, they were recommended to end with Writing block.

The teacher checked students' word bank books every two or three weeks in order to see their self-discipline and check their reading rate record (see reading rate chart in Appendix K). Students recorded their opinions on the instruction in two FB-RR questionnaires (see Appendices B and C) after the treatment. They also recorded their opinions on the four blocks in two FB-RR learning logs (see Appendices D and E) in weeks two, four, and seven. In addition, the teacher recorded students' performance during the lessons in two FB-RR observation forms (see Appendices F and G) in weeks one, four, seven, and ten. The teacher intended to use one instrument in one week. In week one, the teacher used the observation form to record students' behaviors. And in week two she had students reflected in the learning logs. But in week four and seven, the teacher used both observations and learning to confirm the triangulation. The treatment lasted for 10 weeks (30-fifty-minute periods)

2.3 Posttest

On the 11th week, both groups of students were post-tested with a researcher-made parallel form. Thirty-five items were derived from SLEP® sample test on the website, and 36 items were constructed by the researcher. This test had similar number of items, answer choices, categories of subjects, and duration to SLEP® test, form four, section two

Stage 3 Evaluate the effectiveness of the instruction

To evaluate the effectiveness of the instruction, a t-test was used to analyze pretest and posttest scores within and between groups and subgroups to determine whether the participants receiving the instructional method would have any differences in their English reading comprehension proficiency. Data from FB-RR learning logs, FB-RR questionnaires, and FB-RR observation forms were examined.

The outline of the research process was illustrated in Figure 3.6.

Research Instruments

There were nine main types of instruments for collecting data. These instruments included two types of FB-RR lesson plans for the teacher-directed and learner-directed groups, the English reading comprehension proficiency test and a parallel form, two FB-RR learning logs, two FB-RR questionnaires, and two FB-RR observation forms.

1. Two types of FB-RR lesson plans for the teacher-directed and learner-directed groups

Each type of FB-RR lesson plans comprised 10 units. Each weekly lesson was divided as four blocks: Guided Reading block, Self-Selected Reading block, Working with Words block, and Writing block. The repeated reading was incorporated in the Self-Selected Reading block. The daily instruction allowed 30-40 minutes for each block. All four blocks allowed 2½ hours each week. There were supplementary materials prepared for participants (see the instructional manual in Appendix H, and samples of lesson plans in Appendices I and J). In addition, the Self-Selected Reading materials were shown in Appendix N. The validation of the lesson plans was established by three experts in the field of EFL teaching. The assessment focused on overall lesson plan, content selection, time allocation, activity design, appropriate materials, and language use in the blocks. The results from the checklists revealed that there was no controversy among the experts' opinions although their suggestions were different in details. The lesson plans were modified according to the experts' comments.

2. The English reading comprehension proficiency test and a parallel form

The English reading comprehension proficiency test was a standardized test taken from the Secondary Level English Proficiency test (SLEP®) form four, section two (see Appendix A). SLEP® test was designed to assess the English proficiency of nonnative speakers at the secondary schools or community colleges around the world. Section two composed of two parts. Part one containing 12 items was designed to assess sentence comprehension by matching sentences with pictures. Part two containing 59 items measured vocabulary comprehension and reading comprehension. The test consisted of 71 items. The time required for the test was 45 minutes. It was administered before the study in order to assess students' reading comprehension and to place students in high and low-proficiency subgroups.

After the treatment, a researcher-made parallel form was administered to compare students' reading comprehension proficiency. Thirty-five items were selected from the SLEP® sample test on the website (www.ets.org/portal/site/ets), while 36 items were added by the researcher. The test content and construction were validated by the expert in the field of English language teaching. In order to ensure the test validity, the scores on SLEP® test and a researcher-made parallel form were calculated with the method of *Kuder-Richardson formula 20* (KR-20) to find out a reliability coefficient based on the number of test items ($k = 71$). As a result, the correlation coefficient (r) of the SLEP® test was 0.5154, while the correlation coefficient (r) of the researcher-made parallel form was 0.5711.

3. Two FB-RR learning logs

The two learning logs were open-ended questions utilized with the teacher-directed and learner-directed FB-RR groups (see Appendices D and E). The logs were validated by three experts in the areas of EFL teaching and language assessment.

After that, the logs were revised according to the experts' suggestions. In the logs, students described their learning experiences in the specific reading class, the difficulties they encountered, the thing they had learned, and whether they had the language skills needed to follow the instruction. Such information could help the teacher plan the instruction. In addition, students themselves could use the learning logs for self-assessment. The FB-RR learning logs were administered at the end of units two, four, and seven to collect students' comments and to receive suggestions to the FB-RR instruction

4. Two FB-RR questionnaires

Both teacher-directed and learner-directed FB-RR questionnaires were Likert scales. They were used to collect students' general impressions and satisfaction as a result of FB-RR instruction at the end of the treatment (see the questionnaires in Appendices B and C). Students evaluated themselves and recorded the feedback after the FB-RR instruction was employed. The data provided valuable information for planning and assessing the units and the whole instruction. The questionnaires were validated by three experts in the areas of EFL teaching and language assessment.

After that, the questionnaires were revised and utilized in the pilot study.

The reliability values of both questionnaires were estimated by using the method of Cronbach's *alpha coefficient* (α) at the set point of 0.70. In the teacher

directed FB-RR questionnaire, there were 20 items to be estimated for internal consistency. The alpha coefficient was equal to 0.833, showing good reliability. The learner-directed FB-RR questionnaire had 23 items. The alpha coefficient was equal to 0.793. Alpha values greater than 0.7 are considered acceptable (Nunnally, 1978).

5. Two FB-RR observation forms

The FB-RR observation forms were structured four-scaled which were adapted from Hall and Cunningham (2003). The forms were validated by three experts in the areas of EFL teaching and language assessment. After that, the forms were revised and utilized in the pilot study. After the pilot study, the forms were adapted for the main study. They were utilized to record students' performance in each block at the end of units one, four, seven, and ten (see the FB-RR observation forms in Appendices F and G).

Data Collection

The data collection was carried out with two sample groups at Phetchaburi Rajabhat University in semester two, academic year 2005. In the first week, the SLEP® English reading comprehension proficiency test was pretested to determine the levels of reading comprehension proficiency and place participants in high and low-proficiency subgroups.

Both groups received the treatment for 10 weeks, one using the teacher-directed FB-RR, and the other using the learner-directed FB-RR. During the treatment, the data were collected from the FB-RR learning logs in weeks two, four, and seven, and from the FB-RR observations in weeks one, four, seven, and ten.

After the treatment, the FB-RR questionnaires were administered. In the last week, the participants were posttested with a researcher-made parallel form of the SLEP® test to determine their reading proficiency.

Data Analysis

Data analysis for research questions 1, 3, 4, and 5

Research questions 1, 3, 4, and 5 were concerned with the effects of the FB-RR instruction on scores of students' English reading comprehension proficiency. For research question 1, the independent variable (IV) was two instructional modes: the teacher-directed FB-RR used in one group, and the learner-directed FB-RR used in the other group. The dependent variable (DV) was scores on the test. For research questions 3, 4, and 5, the independent variables (IVs) were two instructional modes and two levels of students' proficiency: high and low. The dependent variable (DV) was scores on the test. To analyze the data, the t-test (Hatch & Farhady, 1982) using paired samples test was conducted to determine the differences between the pretest and posttest scores within and between groups and subgroups.

Data analysis for research question 2

Research question 2 was concerned with the mean score differences between the two sample groups after receiving the two instructional modes. The independent variables (IV) were two instructional modes: the teacher-directed FB-RR and the learner-directed FB-RR. The dependent variable (DV) was the mean differences between the two sample groups. The t-test (Hatch & Farhady, 1982) using independent samples test was conducted to determine whether students receiving the different modes had any differences in their English reading comprehension proficiency.

Research question 6 was concerned with students' opinions on the two modes of FB-RR instruction. Data from FB-RR learning logs were analyzed qualitatively to collect students' attitudes, suggestions, and performance. The data from FB-RR questionnaires were analyzed using percentage, while the data from FB-RR observations were analyzed using numeric grade levels. The qualitative data were added to validate the results from the quantitative statistical analysis

Summary

The research was conducted using '*the pretest-posttest quasi-experimental design.*' The research was conducted with two groups of second year computer sciences students for 12 weeks. It compared the English reading comprehension proficiency scores before and after using the teacher-directed FB-RR and the learner-directed FB-RR among high and low-proficiency subgroups. Besides the lesson plans, seven main types of instruments were utilized to collect data. The effects of two FB-RR modes were evaluated by comparing mean (\bar{X}) of pretest and posttest scores, applying t-test, and analyzing qualitative data.