

Chapter Three

Methodology

This chapter consists of five sections. The first section provides characteristics of participants. The second section provides information about the instruments of the study, including listening tests and a questionnaire. The third section provides information about the teaching and testing procedures as well as the administration of the questionnaire of the main study. The fourth section sketches the pilot study. Data analysis is delineated in the fifth section.

Participants

Participants in the study were 76 fifth graders in total from two classes in a private elementary school in Taipei County, including 52 males and 24 females (See Table 3.1). The fifth graders were chosen because students in the fifth grade at this school had established not merely vocabulary concept but also the concept of sentence and discourse. Therefore, they were able to cope with tasks of listening to a passage and receiving instruction of top-down or bottom-up listening processing strategies. One of the two classes was treated with bottom-up pre-listening activities while the other class was treated with interactive pre-listening activities.

The two groups of participants shared similar backgrounds. First, they used the same English textbooks and workbooks, *Side by Side*, an all-skill English learning textbook that integrates listening, conversation, reading and writing, published by Pearson Longman. The Side by Side Gazette, a magazine-style section in the textbook, is presented in the style of a radio program and contains feature articles on real-life topics, including authentic listening tasks offering real-world experiences such as store announcements, telephone messages, advertisements and listening to news broadcasts. Second, all the participants had equally received approximately 530

hours of English instruction for nearly four years since the first grade, and their native language is Chinese. Third, the participants' English proficiency was similar because all the students were distributed based on their performance in the school's English proficiency test held at the end of every semester. The school's English proficiency test was designed and discussed by ten English teachers, including three teachers with over ten years of teaching experience, and two teachers with over five years of teaching experience. Based on the school's proficiency test, students were divided into four levels which are C, B, A and A-, ranging from proficient to less proficient. Participants in the present study were classified into A- level. Therefore, the instructional setting and learning environment of the participants were controlled accordingly.

Instruments

Instruments in the present study comprised two types of listening comprehension test and one questionnaire. One type of listening comprehension test was teacher-developed quizzes that were used after each session of listening teaching. The other type of listening test was a listening test adopted from the *Starters* level in the Cambridge Young Learners' English Test (hereby referred to as the Cambridge YLE Test) which is a standardized language proficiency test for young language learners from 7 to 12 years old developed by University of Cambridge ESOL Examinations (Cambridge ESOL).

Teacher-developed listening quizzes.

Teacher-developed quizzes (see Appendix A) were developed by the researcher based on the consideration of each listening practice text and the ability of the participants, and were reviewed by another English teacher with over ten years of teaching experience.

Each teacher-developed listening comprehension quiz took approximately 1.43 minutes on average, and it included five multiple-choice questions. The average speech rate was about 94 words per minute.

Cambridge YLE listening test.

There are three levels in Cambridge YLE Test, *Starters*, *Movers*, and *Flyers*. The level of *Starters* requires the test taker to receive at least 150 learning hours, the level of *Movers* requires 250 hours, and the level of *Flyers* requires 500 hours. The listening test adopted from the Cambridge YLE Test was used for pre-test and post-test so that learning achievement and progress of students under two different types of pre-listening teaching activities could be evaluated.

The listening test adopted from Cambridge Young Learners' English Test (see Appendix B) took about 18 minutes, including four parts with twenty-five items in total. In the first part, participants had to match the names with the characters in a picture based on the description of the CD. In the second part, test takers had to write down correct answers according to the listening passage. In the third part, test takers had to tick the correct picture. In the fourth part, test takers had to colour the picture based on the instruction of the CD. The average speech rate of the pre- and post-test was about 64 words per minute.

Questionnaire.

A questionnaire (see Appendix C) was administered after the listening post-test for the interactive group. The main purposes of the questionnaire were to track when the listeners employ top-down and bottom-up processing, to understand listeners' general listening behaviors and to determine the effect of interactive pre-listening activities. There were no interactive pre-listening activities designed for the bottom-up group which may not be able to provide information about when the

listeners employ top-down and bottom-up processing as well as the effect of interactive pre-listening activities. Therefore, the questionnaire was administered merely for the interactive group rather for the bottom-up one. The questionnaire was adapted from the studies of Vandergrift *et. al.* (2006), Ockey (2007), and Cheng (1999) and was reviewed by two home-room teachers with more than five years of teaching experience for fifth graders. Students were asked to respond to items using a 6-point Likert scale ranging from “strongly disagree” to “strongly agree”. A scale without a neutral point was chosen so that respondents could not hedge. Items in the questionnaire were grouped into as well as organized by four categories, including bottom-up processing features, top-down processing features, the effect of interactive pre-listening activities and listening difficulty. However, to sustain respondents’ attention, some items were randomly interwoven with others. No negatively worded description was used in the consideration of young respondents’ cognition and comprehension.

Procedures

There were four steps in the procedures (see Figure 3.1). First, a pre-test was conducted. Second, teaching activities with teacher-developed listening quizzes were followed. The third step was the post-test. The fourth step was the administration of the questionnaire.

General procedures.

A pre-test adopted from listening test of Cambridge YLE Test was prepared for the two groups of participants to assure a similar starting level of the two groups. After fifteen sessions of teaching activities and teacher-developed quizzes, a post-test was prepared for the two groups using the same listening test as the one used in the pre-test so that the final learning achievement and progress can be evaluated.

During fifteen weeks throughout the semester, each session of forty-minute teaching activities was designed by the researcher and was reviewed by two experienced English teachers with over ten years of teaching experience. Teaching was implemented in the last class each week (see Appendix D), which included pre-listening activities, listening, and a teacher-developed listening quiz. The two classes in this study were instructed by the same teacher, the researcher, with two different listening processing methods, namely, bottom-up processing and interactive processing.

Bottom-up pre-listening activities in this study (See Table 3.2) included: a) vocabulary pre-teaching, b) finding differences between a written text and a taped account of the same events (Harmer, 2001), and c) on an answer sheet, circling one out of three word forms that contained in a sentence after listening to a series of sentences (Brown, 2001). Worksheets were designed for students to practice bottom-up listening, especially for activity b) and c) so that students can be familiar with the procedure of bottom-up processing (see Appendix E). All the worksheets were designed by the researcher and were reviewed by two experienced English teachers with over ten years of teaching experience.

Interactive pre-listening activities in this study (See Table 3.3) consisted of vocabulary pre-teaching (bottom-up pre-listening activity) and prediction of topic-related pictures (top-down pre-listening activity). Listening and self-designed listening comprehension quizzes followed after the implementation of pre-listening activities. Texts used for listening practice were adopted from the textbook, *Side by Side, Book One*.

For bottom-up activities, as shown in Table 3.2, vocabulary pre-teaching was arranged preliminarily in the fifteen sessions, seven of which were followed by asking

students to find out the difference between a written text and a taped account, five by asking students to circle one out of three word forms contained in a sentence, and three were arranged only with vocabulary pre-teaching. In vocabulary pre-teaching, the teacher showed the word card and said one sentence that contained the new word. The sentence was simple enough for students to understand. Then, students had to guess the meaning of the new word. The teacher had to provide assistance whenever learners needed help. After all the new words had been taught, the teacher passed out the worksheet and continued the next bottom-up pre-listening activity. Vocabulary pre-teaching was necessary for the reason that most of the vocabulary items were content words in the following listening texts, and students needed to understand the meaning of these words to ensure their fluency of listening processing (Berne, 1995; Raphan 1996; Rost, 2002).

For interactive activities, as shown in Table 3.3, vocabulary pre-teaching was implemented preliminarily in a total of fifteen sessions, and was followed by prediction of topic-related pictures. The researcher initiated brainstorming for vocabulary by showing students the continued illustrations, eliciting suggested vocabulary, and then showing these word cards until the scene was well described. Using pre-taught vocabulary in the process of prediction not only attempted to help students memorize vocabulary with stronger impression but also to cultivate their ability of associating vocabulary with certain topic. Such arrangement was based on the consideration of comparability and consistency with the other group which was treated with bottom-up pre-listening activities.

Test procedures.

To ensure the reliability of pre-test, post-test and 15 teacher-developed tests, the same testing procedures were administered for both tests. Participants were allowed to

have question preview by taking a look at listening comprehension questions in advance. There were stereo sets for playing CDs in each classroom, ensuring the quality of sound perceived by test takers. Windows and doors were closed to avoid noise disturbance during the test. Participants were reminded by teachers to listen and answer questions carefully. Before taking the test, students were informed that the CD would be played twice, just like the listening examinations they usually take at school.

Administration of the questionnaire.

The questionnaire was administered in a quiet classroom and the researcher, same as the instructor, explained the purpose of the questionnaire and reminded respondents that there were no right or wrong answers regarding this questionnaire. The researcher answered participants' questions whenever they did not understand the meaning of the sentence descriptions and provided help when they needed it.

Pilot Study

To ensure the validity and reliability of the main study, a pilot study was administered for listening teaching as well as the questionnaire.

Pilot study for listening teaching.

Two classes, 72 fifth graders in total (See Table 3.4), were treated respectively with interactive and bottom-up pre-listening activities on each Friday for fifteen English class sessions, with pre-test and post-test which were adopted from Cambridge Young Learners' English Test. In each class session, 40 minutes were used in teaching listening.

For bottom-up pre-listening activities in the pilot study, as shown in Table 3.5, seven sessions were implemented with vocabulary pre-teaching along with asking students to circle one out of three word forms that contained in a sentence. Four sessions were implemented with vocabulary pre-teaching and then asking students to

find out the differences between a written text and a taped account. And one session was arranged only with vocabulary pre-teaching. Three sessions were implemented by asking students to complete worksheets which contained firstly, the activity of circling one out of three word forms that contained in a sentence and secondly, the activity of asking students to find out the differences between a written text and a taped account in the purpose of enhancing students' ability of distinguishing different acoustic inputs.

For the fifteen interactive pre-listening activities in the pilot study, as shown in Table 3.6, six sessions were implemented with vocabulary pre-teaching and prediction of topic-related picture; three sessions were implemented with vocabulary pre-teaching and brainstorming over a certain topic; one session was implemented with vocabulary pre-teaching and making inferences after listening to a series of sentences; four sessions were implemented with circling one out of three word forms contained in a sentence and brainstorming over a topic; one session was implemented with circling one out of three word forms that contained in a sentence and then with making inferences.

The result of the pilot study showed that interactive pre-listening activities are not as effective as bottom-up pre-listening activities. Students treated with interactive pre-listening activities made an averaged progress of 12.71%, the percentage of the difference between post-test and pre-test while students treated with bottom-up pre-listening activities made an averaged progress of 19.01%.

The reasons why interactive pre-listening activities are not as effective as bottom-up pre-listening activities could be outlined as follows: first, the combination of different pre-listening activities was too complicated to show the significant differences between these two types of pre-listening activities. Second, the schema of

children under 12 might not be sufficient for them to relate to when using top-down processing because of their limited living experiences and English vocabulary. Third, only one topic-related picture used in each listening session was not sufficient to stimulate children's thinking. Fourth, EFL learners are less exposed to the target language as native speakers are (Kelly, 1991); for these reasons, top-down processing which is used largely by native speakers are not as effective as bottom-up processing for EFL learners.

Based on the experience of the pilot study, the procedure of the main study was modified in the following aspects: (1) simplifying the combination of different pre-listening activities; (2) revising topic-related pictures; each set of topic-related picture replaced by three or four continued illustrations for the purpose of activating learners' prediction more effectively (see Appendix F).

Pilot study for the questionnaire.

Seven students, including four males and three females were chosen for the pilot study based on their performance of the YLE listening post-test to ensure the validity of the questionnaire for different levels of listeners. Three of the seven students were chosen from the group of low achievers, three from the group of intermediate achievers, and one from the group of high achievers. The researcher explained how to answer the questionnaire and read each item with some necessary explanation to ensure the respondents' understanding.

Twenty-three items were designed in the pilot study. Items which were less relevant to the purpose of the study were deleted, such as "I focus harder on the text when I have trouble understanding," "when my mind wanders, I recover my concentration right away," "after listening, I think back to how I listened, and about what I might do differently next time," and "I don't feel nervous when I listen to

English.” Wording for some items which was too difficult or abstract for respondents to understand was carefully changed with the advice from the two experienced home-room teachers; for example, “when I am listening, I relate my topic-related knowledge to the listening content (當我在聽時，我會運用與主題相關的知識與聽力內容做連結)” was revised as “I compare the listening content with topic-related knowledge that I had when I am listening (當我在聽時，我會把聽到的內容，和我所知道與主題相關的知識相互比較),” “the pictures discussed remind me of what I have heard (所討論的圖片讓我聯想到我曾經聽過的相關內容)” was revised as “the discussion of pictures reminds me of similar contents I heard before (在討論圖片時，我會想到，以前是否曾經聽過類似的內容),” and “I think that knowing every single word is the key to listening comprehension (我認為知道每一個單字的意思是聽力理解的關鍵)” was revised as “I think that knowing the meaning of every word is the key to listening comprehension (我覺得，知道每一個字的意思，是了解聽力內容的重要關鍵).”

Data Analysis

Data analysis was discussed based on two aspects: first, the performance of listening tests, including the pre-test, the 15 listening quizzes and the post-test, and second, the results of the questionnaire.

Data analysis for listening tests.

Descriptive as well as inferential statistics were administered for the listening tests. First, descriptive statistics was used to illustrate the performance of the two groups. Mean scores and standard deviations of two groups in pre-test, teacher-developed tests and post-test were calculated and investigated. Then, *t*-tests were conducted with Microsoft Excel based on statistical formulations to determine

whether there is a significant difference between the two groups in the mean scores in the following aspects: (1) pre-test, (2) post-test, (3) difference between pre- and post-test, namely, the progress of the participants, and (4) 15 teacher-developed listening quizzes.

Data analysis for the questionnaire.

Frequency description was used to illustrate the results of the questionnaire by considering the small sample size of merely 42 respondents. The 6-point Likert scale was categorized into two types of frequency: low frequency for scale 1, 2 and 3, and high frequency for scale 4, 5 and 6.

Figure 3.1 Overall Procedures of the Study

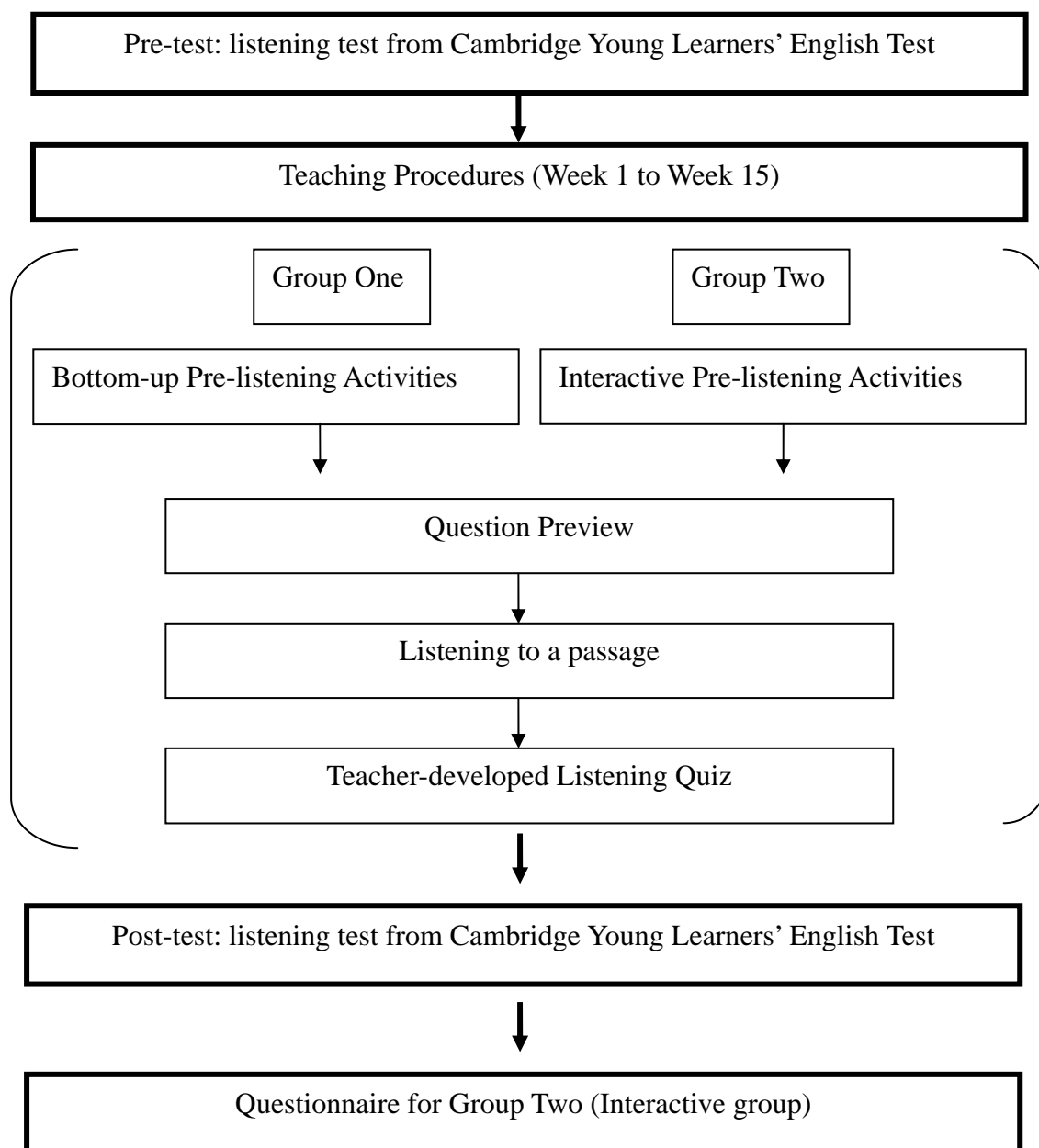


Table 3.1 Characteristics of Participants in the Main Study

Gender	Type of Groups Number of Participants	Bottom-up Group	Interactive Group	Total
	Male		22	30
Female		12	12	24
Total		34	42	76

Table 3.2 Arrangement of Bottom-up Pre-listening Activities

Start-up Activity	Follow-up Activity Number of Session	Finding differences between a written text and a taped account	Circling one out of three word forms contained in a sentence	Vocabulary Pre-teaching	Total
	Vocabulary Pre-teaching		7	5	3

Table 3.3 Arrangement of Interactive Pre-listening Activities

Start-up Activity	Follow-up Activity	Prediction of topic-related pictures	Total
	Number of Session		
Vocabulary Pre-teaching		15	15

Table 3.4 Characteristics of Participants in the Pilot Study

Gender	Type of Groups	Bottom-up Group	Interactive Group	Total
	Number of Participants			
Male		18	31	49
Female		11	12	23
Total		29	43	72

Table 3.5 Arrangement of Bottom-up Pre-listening Activities in the Pilot Study

Follow-up Activity Number of Session Start-up Activity	Circling one out of three word forms contained in a sentence	Finding differences between a written text and a taped account	Vocabulary pre-teaching	Total
Vocabulary pre-teaching	7	4	1	12
Circling one out of three word forms that contained in a sentence	0	3	0	3
Total	7	7	1	15

Table 3.6 Arrangement of Interactive Pre-listening Activities in the Pilot Study

Start-up Activity		Follow-up Activity	Top-down Pre-listening Activities			Total
			Prediction of topic-related pictures	Brainstorming over a topic	Making inferences after listening to a series of sentences	
Bottom-up Pre-listening Activities	Vocabulary pre-teaching		6	3	1	10
	Circling one out of three word forms contained in a sentence		0	4	1	5
Total			6	7	2	15