

CHAPTER THREE

METHODOLOGY

This chapter is composed of four sections. The first section provides a description of participants of the study. The following section illustrates the instruments of Hidden Figures Test, General English Proficiency Test and interview. Next, the procedure of this study is presented. The last section deals with data analysis.

3.1 Participants

The researcher took eight classes of the third grade students along with their English teachers in one public junior high school in Hsin-chu City as her participants. This school was similar to most of other junior high schools in Taiwan in many aspects. First, students in this junior high school were normally distributed under the policy of educational authorities, except for some gifted students. Second, English was a required subject at this school, in which regular examinations and quizzes were administered each semester. Third, the major goal of the school was to help students enter senior high school successfully.

The total number of the students was 242, of which 118 (49%) students were male and 124 (51%) students were female. Four teachers who had taught these students for over one year were selected as participants for this study. They were all female, with the experience of teaching language for three to twenty three years. They were chosen as participants not based on their teaching experiences, backgrounds or educational training, but simply on the time they spent on teaching these students from their second grade to their third grade.

3.2 Instruments

The present study used Hidden Figures Test (Wu, 1974), General English Proficiency Test (GEPT) as well as interview to investigate the relationship between FI/FD cognitive styles and students' English performance.

3.2.1 Hidden Figures Test

To distinguish the participants' field independence-dependence cognitive style, Hidden Figures Test (HFT) was used. Developed by Messick in 1962, HFT was published in the same year by American Education Testing Service (ETS), the world's largest private educational testing and measurement organization and a leader in education research.

Reliability and validity have been assessed in several ways. Boersma (1968) reported test-retest reliability coefficient of HFT at 0.63. Shapiro (1970) reported the split-half reliability coefficient of HFT at 0.58~0.80, and Dai (1976), 0.86. Reported validity was measured by correlating the rotating-room test (RRT) and the rod-and-frame test (RFT), resulting in 0.50 for RRT and 0.51 for RFT (Wu, 1974). HFT is considered as an appropriate measurement with high reliability and validity for teenagers and adults (Chen, 1991; Wu, 1974). So it seems safe to conclude that HFT is an appropriate measure.

The test required the participants to perceive a simple geometric figure within a larger, more complex design which served to obscure the simpler shape. The participants had to overcome the organizational context, "disembedding" discrete, relevant information from the "field." The participant's ability to separate a simple figure, which was embedded in a larger and more complex figure, indicated the extent to which the participant was field independence or field dependence.

HFT was a paper-and-pencil test composed of two sections with sixteen

questions each. Each section was tested for 10 minutes. Instead of following J. J. Wu's (1974) suggestions for using multiple choices to answer the questions, this researcher adopted Y. Y. Wu's (1987) advice requiring participants to outline a simple geometric figure to avoid their guessing at will. The participant was given one point for each item he/she answered correctly. The score ranged from zero to thirty two. A higher score represented field independence while the lower score indicated field dependence. In labeling field independent subjects and field dependent subjects, however, this researcher adopted J. J. Wu's (1974) way of labeling. He suggested two ways of labeling field independent subjects and field dependent subjects. In one way, the obtained HFT scores above the median of the overall scores were labeled as field independence, while those below the median of the overall scores were labeled as field dependence. The other way was to label the upper 27% of the students as field independence and the lower 27% as field dependence based on their HFT scores. For the smaller number of the student and teacher participants, the present research adopted the first way to label field independence and dependence subjects.

3.2.2 General English Proficiency Test

General English Proficiency Test (GEPT) is an EFL testing system currently used in Taiwan by the Language Training & Testing Center (LTTC), supported by the Ministry of Education. Many studies have been carried out to evaluate the validity and the reliability of GEPT and it has been claimed to have high reliability and validity (Chin & Wu, 2000, 2001; Gong, 2002; Lai, 2003).

GEPT is a criterion-referenced four skill tests with multiple levels to assess the general English proficiency of people in all walks of life (Gong, 2002). The system assesses five levels of English proficiency, namely, elementary, intermediate, high intermediate, advanced and superior levels. The elementary level is designed to assess

the competence of junior high school-graduate EFL students; hence, it was chosen to be the assessment tool for students' English performance of listening, reading and writing in the present study.

For the elementary level of GEPT, the listening test contained 30 multiple-choice questions; it was divided into three main parts: picture-description, question-answering, and dialogue. The total score of this section was 120. The reading test contained 35 multiple-choice questions with three main parts, namely, vocabulary and structure, cloze passages, and reading comprehension. The total score of this test was also 120. The writing test was composed of two parts. The first part included sentence re-writing, sentence combination, and sentence unscrambling while in the second part, examinees were required to write an around 50-word composition describing the given pictures. The total score of this test was 100.

3.2.2.1 Graders of GEPT

The listening and reading tests in the format of multiple choices were scored by the researcher. For the scoring of the writing test, including the researcher herself, the other two English teachers were recruited for the assessment. The assessment was done based on the criteria set up by LTTC.

The two recruited teachers for the scoring of the writing test were colleagues of the researcher at a municipal junior high school in Hsin-chu City. Both of them had more than 4-year experience in language teaching and got their master degrees in teaching English as foreign language overseas. They were familiar with the criteria and standard of GEPT tests; thus, they were regarded as qualified graders of GEPT. Before the scoring, this researcher along with the other two graders had had a thorough discussion about the evaluation of the writing test.

3.2.2.2 Evaluation Criteria for the Writing Test

Samples of the writing test were assessed based on the criteria set up by LTTC. These criteria were closely followed by the three graders throughout the scoring process. In addition, the grading criteria were thoroughly discussed by the graders. The examinee's score was decided by the average of the three scores given by the three graders.

The criteria for the writing test are presented below.

Criteria for the Writing Test:

- (1) Items: sentence re-writing, sentence combination and sentence unscrambling

Grade	Criteria
2	Correct
1	Some errors, but the main structure is correct
0	Too many errors; nothing/virtually nothing is written

- (2) Composition

Grade	Criteria
5	The content is appropriately expressed; very few errors in grammar and the usage of vocabulary
4	Most of the content is expressed properly; though errors occur in grammar and the usage of vocabulary, the content is comprehensible.
3	Topic questions are answered approximately, but the ideas of the content are not fully expressed
2	Parts of the topic questions are answered, but the content is not expressed comprehensibly and may cause misunderstanding; errors appear in grammar and the

	usage of vocabulary; patient reading is required
1	Only one question or main point is answered; errors in grammar and the usage of vocabulary are abundant, seriously affecting readers' comprehension
0	Nothing/Virtually nothing is written in the composition

3.2.3 Interview

The main concern of the use of interview was to provide a clear description and explanation for the relationship between FI/FD cognitive styles and students' English performance in listening, reading and writing. Interviews were conducted to both student participants and teacher participants in order to probe into the concerned issue.

The interview with 4 teacher participants included the topics of how they taught the language. For the student participants, 30 FI and 30 FD students were randomly selected for interview. The interview involved the topics of their perceptions of how they learned English and their perceptions of the teacher's instruction. Part of the interview referred to a previous study by Renninger and Snyder (1983), who studied the effects of cognitive style on perceived satisfaction and performance among students and teachers.

The interview was tape-recorded and then transcribed by this researcher.

3.3 Procedure

HFT was first conducted by this researcher to the English teachers who had taught their third grade students for over one year. Among these teachers, those who scored the highest and the lowest grades in HFT were selected as the teacher participants of the present study. Two of them who got the highest score of HFT were

classified as field independence and another two of them who got the lowest score were identified as field dependence. Each of the teachers had two classes of third grade students whom they had taught for more than one year. Thus, the eight classes of students were chosen as the student participants of the study.

Then, HFT was conducted by the researcher to the eight classes of third grade students. The researcher first contacted their homeroom teachers and English teachers respectively and explained the purpose of the study as well as the administration procedures and later, HFT was conducted by the researcher together with their teachers in the classroom; their teachers were required to conduct HFT together with the researcher in order to reduce any possible uneasiness that the students might feel from the unfamiliar presence of the researcher. The students were told that it would take them 20 minutes to finish HFT and that the results of HFT could help their teachers and them understand more about how they learned English, which could also facilitate the teachers' teaching and their language learning. The test results would be confidential; only the researcher and their teachers would know their performance in this test. Hence, the students were able to perform the test comfortably and attentively.

After HFT, the participants of the eight classes took GEPT at the same time. Students were told that the result of GEPT would serve as a part of their academic assessment, so that students would take the tests seriously. Students were also informed that it would take them 20 minutes to finish the listening test, 35 minutes the reading test, and 40 minutes the writing tests.

Finally, the interview was conducted to the 4 teacher participants, 30 FI students and 30 FD students for further explanation for the study.

3.4 Data analysis

After the tests of HFT and GEPT were collected, the scoring was performed by

the researcher and the other two English teachers. When the scores of HFT and GEPT were gathered, these data were computed through the Statistical Packages for the Social Science (SPSS) for window 11.0 for statistical analyses. Descriptive statistics was conducted to explain students' English performance in the listening, reading and writing test. Pearson product moment correlation was used to explain any significant relationship between student-teacher cognitive styles and students' English performance. An acceptable significance level was set at .05 or less for data analysis.

Finally, interviews were conducted to student participants and teacher participants to acquire more data for an in-depth explanation for the study. The interview findings were categorized for three parts, including FI/FD students' learning preference, FI/FD teachers' teaching preference and students' perception toward their teachers with regard to the satisfaction with the teachers' teaching method, teaching effectiveness, and the teacher's personality.