

Chapter Three

Methodology

3.1 Introduction

This chapter discusses the methodology of the research. Methodology refers to the branch of philosophy that analyzes the principles and procedures of inquiry in a particular discipline, Neuman (1997). Methodology also can be properly referred to as the theoretical analysis of the methods appropriate to a field of study or to the body of methods and principles particular to a branch of knowledge (Blaikie, 1993). In other words, this chapter is an account of procedures, the number of subjects, their characteristics, the techniques used for data collection, and the data analysis methods.

3.2 Subjects

The subjects who participated in this study are 140 Iranian female students majoring in English. All of them are junior students in the Azad University Center Branch in Tehran and Garmsar. Due to incomplete responses, data gathered from 23 students were eliminated. The remaining 117 students were the main subjects of the study. These students received brief instructions on learning strategies based on Oxford (1995) and O'Malley, et al (1985). The instructions involved some brief definitions for language learning strategies. Also, some examples were presented to make subjects more familiar with these strategies. The description of the subjects is shown in table.3.1

Table 3.1 Description of Subjects

University	Number	BA
Azad University (Tehran Branch)	80	+
Azad University (Garmsar Branch)	60	+
Total	140	

Note: + means the variety exists

3.3. Instruments

The two instruments used to collect data from the subjects included:

- a) A test entitled GEFT (Group Embedded Figure Test) (**Appendix A**).
- b) A questionnaire on language learning strategies called (SILL) Strategy Inventory for Language Learning (**Appendix B**).

3.3.1. The Group Embedded Figure Test (GEFT)

The first instrument used in this research was the Group Embedded Figure Test (GEFT). This test was developed by Oltman, Raskin, and Witkin (1971), and was used to assess subjects, their degree of field independence and field dependence cognitive style. Each item is composed of a complex picture with a specific simple picture embedded in it. The subjects are required to identify these simple pictures in a given time (12 minutes). It is supposed that those who tend to rely on external cues are less able to find the simple figure and therefore are field dependent, and those who rely on internal cues are more likely to be able to find the figure, hence, they are field independent.

As Stanfield and Hansen (1983) point out GEFT is a group-administered test that requires the subject to outline a simple geometric shape within a complex design. The subject must locate or separate the relevant information from the contextual field and restructure it to design the correct shape.

In theory, this task discriminates the extent to which the person perceives analytically and is able to identify the relevant information within the organized field. This was based on Witkin, et al. (1977:130) finding that "bodily and visual cues usually coincide with each other, but when they do not, people rely on either one of the two".

Regarding the organization of GEFT booklets, it is worth mentioning that each booklet includes three sections, regardless of the initial pages, which require students to fill in the identifying information. The initial booklet pages also contain accurate directions along with some examples to illustrate the procedure for subjects.

The first section, which has a time limit of 3 minutes, includes 7 easy problems for practice (this section is intended to familiarize students with this test). However, the items are not included in the total score. The second and third sections, which are the body of the GEFT booklets, include 9 items each with a time limit of 6 minutes. Based on the number of correct answers given by the student, the scores on GEFT may range from 0 (the most field dependent) to 18 (the most field independent).

Table 2.3 Time allocated for GEFT sections

Part	Time Allocated (minutes)	No. of items
I	3	7
II	6	9
III	6	9
Total	15 minutes	25

3.3.1.1. GEFT Validity

The criterion validity of the GEFT with respect to the earlier Witkin's Embedded Figure Test was reported to be satisfactory by Witkin et al. (1977). Split-half reliability of the original GEFT was reported by Lawson (1977) to be 0.88. In

Krishnaveni's (1988) study, 66 subjects yielded a split-half reliability of 0.82. A KR-20 reliability of 0.85 was reported by Mac Kenna (1991) for the same GEFT version.

In a study by Tan (1993) using the same GEFT, the Pearson product-moment correlation was computed in the test-retest procedure and a correlation coefficient of 0.88 was reported for the GEFT. The total score on the GEFT provides a measure of field dependence/ independence. Each item in section II and section III will be awarded one point only on correct response .The maximum obtainable score is 18 points. A high score indicates that the student is more field independent while a low score indicates that he is more field dependent. The scores of the GEFT will be used to categorize the students into three cognitive style groups according to the classification scheme used by Shymnasky and Yore (1980) as shown in table 3.3.

Table 3.3.Categorization Scheme of GEFT score

Cognitive style	GEFT score (points)
Field –dependent	0 – 9
Intermediate	10 – 13
Field -independent	14 – 18

3.3.2 SILL (Strategy Inventory for Language Learning)

One of the most prevalent ways to assess the use of language learning strategies is to use a questionnaire (otherwise known as an inventory or a summative rating scale) by Oxford & Burrystock (1995:1). The strategy questionnaire currently most often used around the world is the Strategy Inventory for Language Learning (SILL) by Oxford (1996: 25).

The SILL Oxford, (1986) was first designed as an instrument for assessing the frequency of strategy used by the students at the Defense Language Institute in Monterey. It has two versions; one version that has 80 items is produced for English speakers who are learning a foreign language. The second version, which is used in this study, which is composed of 50 items, is for ESL/ EFL learners.

This questionnaire (the fifty-item version) of the SILL has been translated in Arabic, Chinese, French, German, Japanese, Korean, Russian, Spanish, Thai, and Ukrainian. This testifies to the worldwide use of the instrument. Students are required to answer these SILL items on a five-point Likert scale ranging from "Never" or "Almost never true", (indicated by the number 1) to "Always" or "Almost always true" (indicated by the number 5). In 1989, the questionnaire underwent a factor analysis. Oxford &Burry stock (1995:5) classified this strategy under six categories:

1. **Memory Strategies**, include grouping, imagery rhyming, and structured reviewing (9 items).
2. **Cognitive Strategies**, which comprise strategies like reasoning, analyzing, summarizing (which are reflective of deep processing), and general practicing (14 items).
3. **Compensation strategies** (to compensate for limited knowledge), among these strategies are guessing meaning from the center and using synonyms and gestures to convey meaning (6 items).
4. **Metacognitive strategies**, such as paying attention, consciously searching for practice opportunities, planning, for learning tasks, self -evaluating, and monitoring error (9 Items).

5. Affective strategies (emotional, motivation related) , which include anxiety reduction, self -encouragement, and self -reward (6 items).

6. Social strategies, which include asking questions, cooperating with native speakers and becoming culturally aware (6 items).

Some of these strategy types in the fifty item questionnaires have some subdivisions. The cognitive strategy section of the SILL, which is used here, is also composed of four sets (Merrifield, 1996).

- I - Practising (e.g. repeating or formal practice with sounds and writing systems);
- II - Receiving and sending messages (getting the idea quickly and using resources);
- III - Analyzing and reasoning (deducing, analyzing expressions, and translating);
- IV - Creating structure (note taking and summarizing)

Psychometric qualities of SILL questionnaire as reported by Oxford and Burrystock (1995), and Ehrman and Oxford (1988) are presented below:

3.3.2.1. SILL Utility

This inventory has been widely used in order to reveal the relationship between strategy use and language performance, to compare strategy use at different points (before and after treatments), to compare the strategy used in males vs. female, to make a linkage between strategy use and underlying learning styles, and to tailor classroom instruction to match individual differences.

3.3.2.2. SILL Reliability

Reliability refers to the degree of precision of accuracy of scores on an instrument. In the case of SILL (version 7.0 used in this study), reliability is based on Cronbach's alpha to obtain the consistency. Cronbach has been defined by

Nunnally, Bernstein, (1994) as “.....This coefficient may be applied to a series of items destined to be aggregated in a single score. It estimates reliability in the framework of the domain sampling model. According to Oxford & Burrystock (1995), the high internal consistency reliability reported for the SILL was ranked from 0.91 to 0.94 when it was conducted among learners. In this study, the Cronbach’s Alpha for internal consistency was 0.92. Table 3.4 showed the Cronbach alpha reported in Oxford (1991).

Table 3.4. The Cronbach reliability alpha for the SILL

Cronbach	Nationality	Researcher
.94	Chinese	Yang ,1992
.92	Japanese	Watanabe, 1990
.91 and .99	Korean	Oh, 1992; Park, 1997

3.3.2.3. SILL Validity

Content validity of SILL was, according to Oxford (1995:7) determined by professional judgment. Empirical validity of SILL was determined via examining the relationship between the SILL and language performance. The validity index for different relations of this inventory was calculated by some researchers all around the world (e.g. Wen and Johnson, 1997; Takeuchi, 1993).

Construct validity of the inventory was computed through various statistical procedures. One example for these attempts is that of Watanabe (1990) who found a Correlation, $F_{.30}$ (p. - 0005 -001) between proficiency self-rating and SILL (cited in Oxford, & Ehreman, 1995). More statistical information has been reported in Oxford and Ehreman (1995:8 -11) for different kinds of validity.

The SILL questionnaire used in this study was translated into Persian by a group of students in 1995, and then it underwent several revisions by some (Ph.D, MA, BA) students, and also some lecturers of Farsi and English. After all these revisions, a pre-print sample of the translated SILL was given to several university students to identify any problems in the questionnaire. The final form of the questionnaire, then, was then retyped and duplicated to be used in the study (See appendix C).

3.3.2.4. Advantages and Disadvantages of SILL

Oxford and Burrystock (1995:2) noted some advantages and disadvantages for the student's completed summative rating scales. They stated:

"These self-report scales are easy and quick to give, provide a general assessment of each student's typical strategies across a variety of possible tasks, maybe the most cost effective mode of strategy assessment, and are almost completely no threatening when administered using paper and pencil or computer under conditions of confidentiality. Moreover, many students discover a great deal about themselves from taking a strategy scale. However, disadvantages of the SILL and other strategy scales are that they do not describe in detail the language learning strategies a student uses in response to any specific language task."

3.4. Design of the study

The study attempts to find the degree of relationship between field independence/dependence and learning strategies employed by Iranian University students majoring in English. The students answered one questionnaire for strategy use identification (SILL) and one for field independence / dependence (GEFT) .

According to Farhady (1995), there are three major research designs, descriptive, correlational, and experimental. The present study is both descriptive and correlational: descriptive because one of the goals is to determine the frequency of strategy used by Iranian students for learning English as a foreign language and correlational because it aims at finding the meaningful relationship among the variables under study.

3.5. Procedure

It must be mentioned that referring to the priority of the administration of the GEFT and the SILL, following much consultation, the researcher decided to administer the GEFT first because she wanted to decrease the student's sensitivity to the research. The time allocated for the GEFT test was 15 minutes, which was done after the first break in their university class on 13 May 2002. The Researcher distributed the GEFT booklet among the subjects.

After the GEFT booklets were given to the students, the researcher asked the students to finish the test within fifteen minutes, according to its manual. The researcher asked the students to fill in the identifying information on the cover page. It is notable that the information thus provided was absolutely necessary for the research study purpose. Second, they were requested to start reading the directions, which included two items that illustrated the procedure. Third, after the directions had been read, the student began the first section, which contained 7 items with a time limit of 3 minutes.

After the allotted time, the students started to work on second and third parts which have complex figures. As mentioned earlier the last two sections contained 18 figures and each had a time limit of 6 minutes. After a 10 minute break, the researcher asked them to start answering the SILL questionnaire as the next step.

There was no time limit for the SILL questionnaire. The researcher asked the students to respond without any time constraint because she wanted the students to respond appropriately without being under pressure for greater reliability.

There was a difference in the amount of time taken by the students to answer the SILL questionnaire. The average time taken was between 15-30 minutes. Before conducting the tests, the purpose of this study was explained to the students because the explanation will reduce the anxiety.

3.6. Data Analysis

To answer the research questions asked in this study, different statistical technologies were used. After conducting and scoring the tests, the raw data was coded for computer analysis. The data analysis was completed with the use of various programs from the Statistical Package for Social Science (SPSS).

3.7. Summary

In this chapter, the design of the study followed certain steps, moving through the topic and purpose of the research, description of subjects, describing instruments that the researcher had used, design of the study, procedure and statistical methods. However, the finding and their interpretation are dealt with in the next two chapters.