CHAPTER THREE

RESEARCH METHODOLOGY

Introduction

This chapter describes the methods and procedures used in identifying the English language needs of the engineers and engineering managers. It describes the sample, instrument and analysis of data.

The Sample

The aim of this research is to identify the English Language Needs of engineers and managers in a multi-national company. For this purpose the representative samples of subjects who could identify the English Language needs were selected at random by the researcher. The subjects for the study comprised Engineers and Engineering managers.

Engineers

This group comprised 26 (58%) engineers out of a total of 45 engineers who are working in Samsung Electronics Display Malaysia (SDMA) with a B.Sc. degree or Diploma in engineering fields such as Electronics, Mechanics and Physics and so on. All the engineers who participated in the survey have worked more than one year. The aim of this research is to identify the needs of engineers in real job situations so that a suitable English Language Programme can be designed for such students.

The representative sample was selected at random from each age group by the researcher. The researcher used this representative engineers sample in order to obtain a more complete picture of the future English language needs of engineering students /

graduates. (Details of the background characteristics of the Engineers are provided in chapter 4.)

Engineering Managers

This group comprised eight (42%) engineering managers, out of 19 managers who are working in SDMA, with a B.Sc. degree or Diploma in engineering fields such as Electronics, Mechanics and Physics and so on. All the managers who participated have more than 10 year work experiences. Also all of them had other company experiences. Futhermore, being in assistant / senior mangement positions, they determine the tasks or work to be carried out by the engineers. It was felt that they would be able to give a clearer indication of the language skills that the engineers are expected to have in order to do their jobs efficiently and effectively. (Details of the background charateristics of the Engineering managers are provided in chapter 4)

The Instrument

The instrument used for gathering information for this research consists of self-constructed questionnaires for engineers and managers. In developing the questionnaire, several sources were made use of including Mackay (1976), Richterich and Chanceral (1972), Mackay and Bosquet (1981), Yalden (1982), Hawkey (1980), Zoughouland Hussein (1985), information from general manager and discussion with engineering lecturers and other course lecturers dealing with engineering students. The questionnaire for engineers and managers consisted of 14 items which attempted to elicit information regarding the expectation of the English language skills which they require from engineering students / graduates. The questionnaire was used as instrument for these reasons:

(1) it could be administered to a large number of people.

(2) the identity of the subject need not be revealed, hence there would be greater

willingness on the part of the subjects to give information which they would, otherwise, not be willing to do so.

(3) it is time saving.

In developing the questionnaire the researcher made use of several sources. The intention of sending out the questionnaire was to find out the specific communication problems and to elicit information. A frequency ordinal scale (always, sometimes, seldom, never) and a proficiency scale (very good, good, average, poor) and an ordinal scale (very important, important, not so important, not at all important) was used to analyse the responses. In addition, positive and negitive responses were also taken into consideration. The questionnaire for engineers and managers consisted of 14 items which attempted to find out the perceived English Language needs of the engineers. The participants had either to tick the appropriate box, rank their preferences or state their views. They were encouraged to answer all the questions. Item 1.0 - 1.3 were to elicit the background information on the engineers and managers. This concerned variables were age, education and working experience. Item 2 - 14 were to identify the following: -

(1) use of the four English language skills both within and outside the company

(2) with whom they used English and what sub-skills they used

(3) the frequency of English usage with reference to the 4 major skills:

   Listening, Speaking, Reading and Writing.

(4) the proficiency of English usage with 4 major skills

(5) the importance of English usage for various purpose

(6) their opinion of English usage in terms of knowledge of English

(7) their impression of English language skills required to do the engineering job

(8) English language skills which are more important in order to carry out

   their job well

These items would help Engineers / Engineering managers to identify the functions

of English usage. For item 2 Engineers / Engineering managers had to rank in order of importance the four English Language skills. For items 3-6 Engineers / Engineering managers had to rank in order of the importance of the English Language skills and sub-skills. Item 7 was to find out if they felt, they were adequately prepared to writing (function) well in English. Item 8 was an attempt to find out and rate their proficiency of the English language skills. Items 9-10 were to identify the job-related as well as general language skills they would prefer, should an English Language Programme be introduced. Items 11-14 were to find out what English language skills they have a good command and whether engineers/managers would want or suggest an English Language Programme at their workplace.

Methods of Analysis

A descriptive approach has been taken by the researcher to state the English Language needs of the engineers / managers. The responses to the items on the questionnaire were analyzed separately item by item, using frequency counts and percentages and rank order relationships. Comments and responses which could not be quantified are included where they are found to be relevant.

In cases where the two groups were asked the same question, the results were compared to see if there were similarities or differences in their viewpoints. In cases where differences existed, an attempt was made to discuss the issues that led to such differences based on interpretation of available data and the observation of the social / cultural milieu.