

Chapter 3

Methodology

The Context and Subject of the Study

This study involved 22 prelingually hearing-impaired pupils, age ranging from 7 to 10 years old. All of them were diagnosed as having bilateral severe to profound hearing loss from birth. Because their hearing losses were being detected early, they were being fitted with bi-aural hearing aids worn behind the ears. Hearing-aids are meant to amplify sounds, thus providing these hearing-impaired children with additional clues to the sounds they picked up and as well as assisting them in auditory training. In addition to hearing-aids, these children were using the FM System (frequency modulation) in the classroom. FM transmissions allow a hearing-impaired pupil to receive the teacher's instruction from any location in the classroom area and relatively good sound reproduction and clarity.

These pupils were studying in two special classes: 11 of them in their second year and another 11 of them in their fourth year of schooling. They were enrolled in the school since age 6 or 7 after at least two years of early intervention in developing speech using Cued Speech. They followed the normal school curriculum, taught by two trained teachers of the deaf. All subjects were taught by the two class teachers using Cued Speech, except for subjects, such as Religious and Moral Studies, Art and Physical Education were taught by three temporary teachers in the mainstream. This is to adhere to the issue of integration, where special needs pupils are being integrated with the normal pupils for certain subjects

The two full-time class teachers have undergone a year's training for the hearing-impaired in the local teachers' training college and have more than ten years of teaching experience. The other three were temporary teachers, newly employed by the school. As such, they have no experience in teaching either the normal children or the hearing-impaired.

The medium of instruction used by the teachers and pupils in school is Bahasa Malaysia, and both parents and teachers use this medium of language to convey and exchange information with their hearing-impaired children. Since these pupils were studying in a national school, therefore it requires them to learn and speak the national language, i.e. Bahasa Malaysia.

For children who were admitted into this programme in the school, they need to fulfill the following criteria :

- a) they possess some residual hearing in order to learn speech reading
- b) they must use amplification full time from the time of diagnosis
- c) they must have been enrolled in the early intervention programme at an early age, and
- d) have parents actively involved in the habilitation process

This parental commitment is very important as either one of the parent must accompany the child for the lessons to ensure success. Furthermore, this home-based early intervention programme is fundamental to parents as they are encouraged to learn the cues first to enable them to learn how to communicate with their effectively as well as teaching them speech at the same time.

Research Instruments

This study was conducted using the following:

1. Interviews
 - a) Semi-structured interviews with parents (See Appendix 2)
 - b) Semi-structured interviews with teachers (See Appendix 3)
 - c) Semi-structured interviews with pupils (See Appendix 4)

2. Reading Tests
 - a) Burt Word Reading Test (see Appendix 5)
 - b) Holborn Reading Scale (see Appendix 6)
 - c) NFER-Nelson Group Reading Test 6-12 (see Appendix 7)
 - d) Spelling Test (see Appendix 8)
 - e) Speech Test (see Appendix 9)

The question of the semi-structured interviews were piloted among the first group of Malaysian parents and their hearing-impaired children who have undertaken this mode of communication to help them in their learning. Relevant changes were made after getting the feedback from them. The pupils' interview was piloted among twenty-two pupils in a local primary school in Klang Valley. This was to ensure that the questions were pitched at their level of understanding as well as easier to conduct as they were not required to write any written response. Therefore, these interviews did not pose any

problems either to the parents or the pupils. The data for this study was collected from three different sources, namely, the teachers', parents' and the pupils' feedback. Thus, more than one source of data collection were used. This multi-approach of data collection, known as triangulation, is for the purpose of cross-checking, comparing data and to produce as full and balanced a study as possible (Bell, 1987). As Gietz and LeCompte (1983, cited in Johnson, 1992, p 90) put in,

'triangulation prevents the researcher from relying on initial impression and help to correct bias, and enhance the development valid constructs during the study'.

Description of the interview

A semi-structured interview was used in this study as it allowed flexibility in that the interviewer had a general idea of the course of the interview and what should come out from it (Nunan, 1992). According to Dowsett (1986, cited in Nunan, 1992, p 149), the semi-structured interview:

'... is quite extraordinary – the interactions are incredibly rich and the date indicate that you can produce extraordinary evidence about life that you don't get in structured interviews or questionnaire methodology – no matter how open-minded and qualitative you think your questionnaires are attempting to be...'

The interviews were designed to examine the feedback from the parents and teachers and how hearing-impaired students respond to this method of instruction and the strategies they employ to enhance their learning, i.e. reading ability. Thus, the interview questions were structured according to the following categories.

Categories	Question Number
Pupils age/Teachers experience	1,2
Type of communication mode	3,4
Preference of communication mode	5,6
Perception of speech	7,8
Hearing-aids management	9,10,11
Interest in reading	12,13,14
Academic progress	15

The interview questions consisted of closed and open-ended questions. Thus, opportunities were given to the respondents to express their opinions and or give suggestions in this open-ended questions. The responses to the open-ended questions provided useful information which were likely to reflect what the respondents intended to say more accurately (Nunan, 1992). Closed questions were used in the interviews because the responses to them were easier to compile and to analyze.

The main data collected for this study came from various sources, i.e teachers, parents and from the pupils themselves. The aim of designing this interview was to collect as much information as possible and it is hoped that the analysis from this section would facilitate the interpretation of findings.

Description of the test

The Reading Tests were the main research instrument of this study. Reading tests were conducted with the intention of getting the reading age of the children. The reading ages were only indicators as they state the individual reading ages measured against their chronological ages. Thus, various types of tests were conducted to get results.

Burt Word Reading Test

The Burt (Rearranged) Word Reading Test, published by Hodder and Stoughton was used. In this test, a word list, which consists of 110 individual words was given to the child, and he was asked to read as many words as he can. The test is stopped when he has made ten consecutive errors. Then his reading age was calculated by totaling the number of words read correctly and measured against the score chart.

Holborn Reading Scale

Next, the Holborn Reading Scale, published by Harrap, was conducted similarly to get the child's reading age. There are 33 sentences in this test. The pupil was required to read aloud each sentence in order and be stopped when he has made four errors. At the end of each line of the sentences, there is a four-digit number. This shows the reading age of the pupil, where the first two digits refer to years and the last two to months. Such a device obviates the need for calculation.

NFER-Nelson Group Reading Test 6-12

The GRT 6-12 is designed for pupils aged between six to twelve. It is a multiple-choice test of 48 items, consisting of an introductory set of picture recognition questions, followed by sentences which have to be completed. This test is a means of monitoring standards of reading and investigating the range of reading attainment in class or in a school. For the purpose of this research, only the first items (vocabulary and grammar) were being used.

Spelling Test

The Spelling Test devised by Margaret L. Peters, was carried out to seek their memory on the words they are familiar with or not seen or read before. In addition, it is also to test the pupils' ability to write words correctly by using phonics or letter- sound relationships. Each word is read twice and the meaning of it is given in a sentence. The test contained 67 words of increasing difficulty. The test administered is stopped after the student made ten consecutive errors. The total number of correct responses is measured against the score chart.

Speech Production Test

The Speech Production Test was modified from Dale, D.M.C. (1982) which focuses on the consonant articulation (initial, medial and final consonant blends, vowels and diphthongs) for children aged from 4 to 12 years of age to elicit speech sounds for speech development. This test consists of 17 common English vowels and diphthongs which required the children to sound the letters individually.

The test assesses the pupil's ability to say 25 consonants in the 25 words given by showing a picture card one at a time. The aim is to give the pupil the best possible opportunity to say each test phoneme as intelligibly as possible in a word. 23 of the 25 consonants tested are in the initial positions and 1 is medial (measure) and 1 is final (ring) – since these sounds do not occur in initial positions in English. If the initial sound is said perfectly by the pupil on one or more of the three trials, it is scored as correct.

When 40% or more is achieved on this test, much of the pupil's speech will be intelligible, even to those unfamiliar with the speech of deaf children.

Research Procedure

After planning and designing interview questions, arrangements were made for conducting the interviews and tests. All the tests were done individually, except for the NFER-Nelson Test which was conducted in a group. Interviews were carried out during pre-arrangements with parents and teachers. Parents were able to respond quickly and comfortably. Parent interviews were conducted individually or in pairs or in small groups of three due to time constraints, as some of the parents were working while others were satisfied with one-to-one interview. The interviews were all conducted after school hours. There was no problem with the interviews with the teachers. Only two of the trained teachers responded with ease while the other three had not much to respond as they were still new to teaching.

Limitations of the study

The study is not without its limitations. Firstly, the questions investigated in this study were limited to speech production and reading abilities of hearing-impaired pupils. Admittedly, there may be other factors that contribute to reading skills which were not investigated. Second, the subjects in this study consisted of only a small sample of hearing-impaired pupils of the total hearing-impaired population in the country. As such, the statistical analysis of the data obtained may not represent conclusive evidence about the success of the reading skills of these hearing-impaired children.

Given that, the list of reading tests conducted is by no means exhaustive and the sample size limited, the results of this study can only be regarded as tentative and may not be true reflection of the whole school-age hearing-impaired population.

Another limitation concern is the data elicitation which are the results of the test that only gave the reading ages of the pupils and may act as a basis of intervention which provides information for teaching strategies later on. Hence, certain aspects of the study might have been overlooked.

Initial planning of the questions, took up a lot of time, as there were so many areas to cover. Questions were first drafted in the form of questionnaires for parents and teachers. However, it was soon found out that some parents were not good in reading and writing, therefore it was changed to interviews to suit them. As for the pupils, they were too young to fill out questionnaires and the teachers, there were only five respondents, two were not a problem at all, but the other three were not able to provide valuable responses as they had only a few months of teaching experience. Altogether the number of respondents was too small for a questionnaire to be conducted. As such, questionnaires were omitted and interviews were opted instead.

Conducting reading tests were much more simpler. It was initially difficult as reading tests were not easily available locally and the choice of reading tests is limited. Once the appropriate tests were selected, then the administration of the tests began. The tests were carried out easily and quickly. One setback was that, English is not their main language, and the Year Two pupils have only studied the language for six months, while the Year Four have studied the language for slightly more than a year only. Due to this short time of instruction, the number of questions in the NFER-Nelson test was reduced from number one to number twenty only which only consist of vocabulary and grammar.

Finally taking field notes all the time, will give a very clear idea on how these hearing-impaired pupils' language is developed. No doubt valuable information can be

collected, it may seem biased. Nevertheless the data collected was analyzed, interpreted and discussed within the constraints or limitations mentioned above.

It is maintained, however, that the study has yielded several interesting insights on the reading abilities of these pupils. It is felt that, this is itself a good starting point for initiating discussions to find out other abilities of these hearing-impaired pupils, eg. writing skills. It also serves as a base for further research of such nature.