

## CHAPTER 3

### RESEARCH DESIGN AND PROCEDURES

This chapter attempts to describe the research design and procedures employed in the collection and analysis of data in this study.

#### 3.1 Design of the Study

According to Matsumoto (1993) a method of tapping learners' cognitive processes involved in L2 use or L2 learning/acquisition which has become increasingly popular lately is the verbal-report. In fact, Ericsson and Simon (1980) explicitly propose within their human information processing that data obtained from verbal reports, if elicited and interpreted with care, are a valuable and reliable source of evidence about human mental processes. Similarly, Cohen and Hosenfeld (1981) highly recommend the use of "mentalistic" verbal-report for investigating L2 learning. Although Cohen's and Hosenfeld's proposal has been attacked by some L2 researchers, like for example Seliger (1983) based on the issue of the verification of verbal reports with actual internal processing the number of L2 researchers who have favoured verbal-report methodology is on the rise. This tendency among L2 researchers has been reflected most explicitly in

recently flourishing studies of learner strategies by Cohen (1990), O'Malley & Chamot (1990), Oxford (1990), Wenden (1991), Wenden & Rubin (1987).

At present, there are two forms of verbal reports in L2 research. They are known as concurrent and retrospective. First, in concurrent verbal reporting, the verbalization is done during a specific task given; hence the informant provides verbal self-reports while information is heeded, that is, while information is still stored in short-term memory (STM). On the other hand, in retrospective reporting, the verbalization is given after the completion of the task-directed processes or it may sometimes be unrelated to any specific task. As such, retrospective verbalizations require informants to retrieve information from long-term memory (LTM), which they must transfer to STM before they can report it. Second, the relationship between heeded and verbalized information is direct in concurrent reporting, whereas in retrospective reporting, there exist mediating processes in between attention to the information and its verbalization, which may modify the stored informations. In other words, the heeded information in retrospective verbalization becomes input to intermediate processes, and therefore the verbalized information is a product of such intermediate processing.

A verbal-report method of producing concurrent verbalization is the think-aloud protocol. This is a procedure in which informants/subjects are asked to tell researchers what they are thinking and doing while performing a task. They are usually instructed to keep thinking aloud, acting as if they are alone in the room speaking to themselves. However, they are discouraged from planning out what they say. Think-aloud verbalizations can either be tape or video-recorded and later transcribed. Their content is subsequently analyzed, and in many cases, coded for specific categories using those which have previously been developed by the researchers. Think-aloud procedures have been utilized to examine learners' ongoing cognitive processes and strategies in four major L2 areas, like translation, reading, writing, and testing.

The other type of verbal-reports is retrospective verbalization. This form requires subjects / informants to tell researchers what they have thought and done while performing a particular task that has already been completed. Some retrospective verbal-reports are made immediately after the task has been completed while others are given quite some time after a specific language learning task is completed or after several or many tasks have taken place. In still other cases, retrospective reports are not only unrelated to any specific task but

also being elucidated based on the learners' past experiences in general. Tools that can be used to elicit data for retrospective reports include interviews, discussions, speeches, conversations all of which require subjects to respond orally while questionnaires, diary-keeping, note-taking where data acquired are in the written form. According to Matsumoto (1993), the three major techniques for eliciting retrospective verbal-reports which have been proven useful in L2 research by recent studies of the past decade are questionnaires, interviews and diary-keeping.

The structured questionnaire is one that asks informants/subjects to agree or disagree, or to answer 'yes' or 'no' to a series of statements or questions, or to choose one out of a set of fixed alternatives. In L2 research, questionnaires have been used mainly in studies of learning styles and strategies, and in research on learners' belief, attitudes, and perceptions about L2 learning/acquisition. The structured interview is more or less a face-to-face administration of the structured questionnaire which involves the answering of a set of fairly straightforward, prearranged questions with a simple 'yes' or 'no'. Another similar procedure to the structured questionnaire is the formalized structured interview. In this kind of interview, informants are also exposed to identical stimuli, and in pursuit of generalized

statements and is normally carried out on a large number of people. The unstructured interview, on the other hand, runs the highest risk of being coloured with researcher's bias but it is most sensitive to the context of verbal interaction between the researcher and the respondent. Fortunately, it is also a research tool which allows the greatest scope for the interview to probe, introduce unprepared new material into the discussion, negotiate, and expand the interviewee's response, hence creating a more 'equal' relationship between researcher and the informant. The semi-structured interview, in which the researcher makes use of an interview guide lies, according to Bernard (1988) and Fowler (1988), between the two interviewing techniques in the degree of structuring, the extent of objectivity and reliability, the degree of negotiation allowed between the interviewer and interviewee, and the degree of equality developed in the interviewer-respondent relationship. Interviews are usually tape-recorded with note-taking concurrently done, transcribed, and later their contents analyzed by interviewers/researchers. In some cases, these are followed with quantification of the collected data.

The last technique for eliciting retrospective verbal-reports to be discussed here is diary-keeping. This techniques has been proven useful in tapping learners' mental states and cognitive processes

involved in L2 learning/acquisition. Diary-keeping involves five major steps which can be started with the provision of an account of the diarist's personal L2 learning history. This is then followed by systematic recording of events, feelings, and so on about the current L2 learning experience by the diarist. Next come the revision of journal entries for public perusal, analysis of the diary data for significant patterns and events by the researcher and finally, the interpretation and discussion of the factors deemed as important to L2 learning experience.

In view of the above discussion, the researcher felt that the method of study most feasible for her work was the case study. Beside this, for reasons stated earlier, she chose to analyze her subjects' concurrent verbalizations elicited through the think-aloud procedure which she had obtained by means of cassette-tape recording. These verbalizations were later transcribed, analyzed and coded (see method of analysis for details). In addition, data gathering is also to be facilitated by observing the subjects as they wrote researchers notes down their behaviours. On completion of their writing, the subjects were asked to answer another set of questionnaire about composing in the narrative and argumentative genres. After this, they were requested to participate in unstructured interviews with the

researcher and finally their written products were closely examined. The examination of the written essays was carried out in two stages. One was to determine the subjects' pattern of revision and the other was to evaluate them on the basis of their ability to write in the two genres effectively.

### 3.2 Pilot Study

Before the actual study was carried out, a pilot study was conducted with the intention of discovering problems that had not been foreseen besides uncovering possible shortcomings in the procedures to be utilized for collection of data. The pilot study was administered on four form five students from ordinary day school whom the researcher were teaching then. The essay titles used in this prior study were identical to those used in the study proper. It was felt that there was no need to fear any 'prior knowledge' effect where the writing assignments were concerned in case the assignments used in the pilot study were made known to the subjects of the actual study as there was no chance for this to occur for subjects of the actual study were selected from two different fully-residential schools situated about seventy-five kilometres from one another.

While administering the pilot study, some shortcomings were identified. One was the difficulty in audio-recording the subjects' verbalizations due to reasons that either the tape-recorder was inadequately sensitive to the sounds produced by subjects or that subjects were not speaking loud enough to be recorded. This problem was resolved by providing subjects with a small, portable and highly multi-directional-speakered tape-recorder. Another problem which had arisen from using the audio-recording method faced by the researcher was timing the various writing behaviours of her subjects. Therefore, the researcher decided to only observe and check the presence of the behaviours mentioned in section 3.5 by ticking them off against a modified checklist adapted from Lee's (1985) exploratory study.

Unfortunately, the pilot study did not fail to uncover the hard truth of the inability of the subjects to participate in an interview which was fully conducted in the target language. As such, the researcher had to code-switch into Bahasa Melayu in order to make herself understood and vice-versa allowing the subjects to express themselves using the national language which is also their mother-tongue. The researcher also provided the Bahasa Melayu equivalent of each the question. The

researcher realizes that the national language is sometimes useful in work involving English Language..

### 3.3 Subjects of the Study

The four form five students who volunteered to participate in this study were then studying in two different Islamic fully-residential schools. Two of the boys K and H were from Kolej Islam Sultan Alam Shah whilst the other two A and F were from Sekolah Menengah Agama Persekutuan, Kajang. At the time the study was conducted, H and F were pursuing their upper secondary education in the Science subjects whereas A and K were following Religious Studies - Principle of Account class. It is also worth mentioning here that all four of them took up Arabic Language which was a compulsory subject in their schools. The fact that these students were learning another foreign language then should also be taken into consideration as this would carry the implication of the interference of another language besides that of their own first language.

The following are factors leading to their selection as the subjects of this study : Firstly, like the researcher, the subjects too were comfortable with her. This was because the students from Kolej Islam

Sultan Alam Shah were her own students whilst the other two from Sekolah Menengah Agama Persekutuan Kajang are her nephews. As such they were deemed desirable in view of the close rapport and trust between them and the researcher, which was crucial to case study method of research. Secondly, their ability to follow a flexible schedule facilitated by the researcher and the commitment demanded upon them. Thirdly and most importantly, was, of course, their willingness to participate in this study.

On the other hand, the initial selection of the subjects and their designation as good language learners were based on the researcher's knowledge of their class work and their English language performance in the Penilaian Menengah Rendah (PMR) Examination as well as Cloze B Test. Cloze B is an aptitude test administered on form four students in both schools for the purpose of discriminating them into sets of similar proficiency level. All the four subjects had obtained A for their English at PMR level. As for the Cloze B Test, K, H, A, and F had scored 125, 100, 100, 108 respectively out of total marks of 147.

### 3.4 Procedures

#### 3.4.1 Elicitation of Information on the Composing Process

Each subject was scheduled to spend between four to five hours of uninterrupted time to complete the writing assignment which was immediately followed by an interview. These sessions were conducted over four weekends from 8.30 a.m. to 1.30 p.m.

Since all of the subjects required to write two essays each, four weekends were needed for them to complete their assignments. All the four subjects were made to write a narrative essay on the first two weekends. While writing they were also required to complete a Process Log. When they had completed these two tasks, they proceeded to answer a questionnaire. On completion of this task, they were next interviewed. On the following two weekends, a similar procedure was carried out, only this time, the subjects were instructed to write an argumentative essay. The rationale behind all these is the researcher did not want to burden the subjects with the task of writing two essays at one go for fear that it would tire them or make them confused with what was expected of them.

Below are the titles of the two writing assignments:-

- i) My first day in the present school.
- ii) Living in a village is better than living in a city.

There were two major constraints that the researcher had to face while formulating the above writing assignments. For one, with regard to subject-matter, these two titles must be within the scope of the subjects' existing knowledge. For another, it was felt that they should also be manageable for them as they should neither be too difficult nor should they be too easy so as to cause them to be uninterested and thus cursorily dealt with by them.

On the other hand, artificial constraints of the task environment should be kept to the minimum by not forcing either word or time limit on the subjects. Subjects were allowed to make use of the whole morning in each case with the hope that the writings would reflect their natural composing processes. Next, they were told not to remove any papers but to number the sheets of papers on which they had written so as to keep track of the changes made particularly at the planning stage. In addition, they were also instructed not to erase any of words they had written but merely to draw a line across them and inserting the changes above the crossed words.

As for the process of audio-taping, the subjects were requested to verbalize their thoughts virtually into the tape-recorder. This procedure was carried out with one individual subject at a time. This was also to facilitate the researcher who had placed herself about two feet away from the writer to observe and note their overt facial expressions and gestures throughout the entire writing process. During these observations, the behaviours that occurred were ticked off against a prepared checklist (details of the checklist utilized can be viewed in Appendix H). Short notes were also made on particular behaviours which needed clarification at the follow-up interviews.

As it is the aim of this study to uncover what the writers actually did while they were engaged in dealing with the task, the researcher had no choice but to closely observe the individual writer from the moment they were presented with the assignment till the time when they signalled that they were ready to hand in their drafts. The length of time that elapsed between the presentation of the task and commitment of thought to paper was noted for each subject. Unfortunately, once writing commenced, the task of timing each behaviour mentioned in the checklist was abandoned, instead, only their occurrences were noted.

Immediately on completion of the writing task, they were asked to complete a questionnaire. After that, the subjects were interviewed regarding their writing behaviour noted as these were still fresh in their minds. For this purpose, the researcher adapted and utilized the questions listed in the Process Log designed by Faigley et al (1985 : pp : 173- 174) (See Appendix F). The same log was employed by Lee May Eng (1985) in her study of the composing processes, but unlike her, the researcher had, like Faigley, instructed her subjects to make their entries at the pre-writing stage, during and after writing. Lee has argued that this procedure would serve to only interrupt the flow in subjects' thought and writing. However, the researcher shares a similar opinion with Faigley et al (1985) who believe and insist on data retrieved from short-term memory. Since it was anticipated that the subjects would face difficulties in understanding the questions as well as expressing themselves in the target language, the log was accompanied by its Bahasa Melayu version and the subjects were also told that they could use this language to answer the questions. An interview was conducted following the process of composing which was meant to elicit information to either confirm or clarify the ones obtained in the procedure described above.

Taking into consideration all the faults and weaknesses of introspection as a research tool, the following precautionary measures had been undertaken. Firstly, Lee (1985) claims that composing-aloud protocol only serves to cause subjects to sustain heightened consciousness as they would have to orchestrate three different operations at one and the same time. These operations include to be aware of what they were thinking of, to verbalize these thoughts and lastly to put words on the paper. To solve this, the researcher, had for sometime, prior to this study, trained the subjects to keep a diary. Studies such as Bailey (1983, 1991), Lowe (1987), Matsumoto (1989), and Rubin and Henze (1981) have proven that diary-keeping assists the L2 learning process by serving as an instrument for learners to self-reflect, self-analyze and self-evaluate by helping the informants to be aware of their own learning styles and strategies by raising their consciousness of language learning. Secondly, according to Lee, for verbal-report technique to work effectively, the subjects would have to be highly articulate and confident in the target language. She is concerned that the subjects might become so overwhelmed with the demands of the writing task and transforming their ideas into writing that they would not be able to carry out the procedures of verbal-protocol analysis expected of them. Thus, the researcher tried to lessen the subjects' burden by providing them with the Bahasa Melayu version of the

Process Log and allowing them to answer the questions in the log using the same language. The third and last of Lee's claim is that making the subjects aware of their own composing process contributes artificiality to their composing processes. The researcher, however, argues that if we were to adopt such a negative view, then, why is there a need to carry out this study in the first place? It is because we need to be aware of these processes so that we can control them and use them to our advantage. Perhaps what the researcher has said is better expressed by Ericson and Simon (1980) below:

For more than half a century, and as the result of an unjustified extrapolation of a justified challenge to a particular mode of verbal reporting (introspection), the verbal reports of human subjects have been thought suspect as a source of evidence about cognitive processes.....verbal reports, elicited with care and interpreted with full understanding of the circumstances under which they were obtained are a valuable and thoroughly reliable source of information about cognitive processes. It is time to abandon the careless charge of "introspection" as a means for disparaging such data. They describe human behavior. To omit them when we are carrying the "chain and transit of objective measurement" is only to mark as terra incognita large areas on the map of

human cognition that we know perfectly well how to  
survey (p. 247).

### **3.4.2 Elicitation of Information on Composing in the Narrative and Argumentative Genres.**

For the purpose of acquiring this set of data, the researcher instructed her subjects to answer another set of questionnaire which was to be done after they had completed their writing. This questionnaire which is modelled from that of Ostler's (1980) consists of a section of multiple choice questions of a self-evaluating nature and another section of open-ended questions meant to assess the subjects' ability to write in the two genres. Information from this questionnaire is used after it is supplemented and complemented by data from the interviews executed at the end of each writing session. Samples of the questionnaire can be seen in Appendix F and G.

## **3.5 Methods of Analysis of Data**

### **3.5.1 Methods of Analysis for the Composing Process**

The following sets of data were obtained from the study:-

- i) the writing behaviours of the subjects.

- ii) the subjects' think-aloud protocols.
- iii) the subjects' written products.
- iv) the subjects' answers to the questions in the Process Log.
- v) the subjects' answers to the questions in the background variable questionnaire.
- vi) the subjects' comments during the follow-up interviews.

Perhaps it would be wise to remind readers that the aim of this present study is two-pronged. The first of the two is concerned with the process of composing. As such, the process data which are used to determine the writing behaviours are of prime importance. And secondly, so are the product data from the subjects essays, and their responses to the Process Log and follow-up interview. The data from the subjects' responses to the Process Log and follow-up interview serve to provide information regarding the subjects' concerns and preoccupations when they wrote in the two kinds of genres-narrative and argumentative.

From the cassette-tapes and notes of her own observation, the researcher was able to identify, codify and quantify each subject's writing behaviours. Timing the duration of the main stages was done with a stopwatch and carried out by the researcher as she was

observing the subjects at a distance of two feet away. Eventhough this procedure might create certain uneasy feelings on the part of the subjects, she had to succumb to it as other means were unavailable to her at that time. However, she assured them that their true identities would be kept confidential.

As for the system of coding, the researcher finds that Lee's (1985) which was adopted and modified from Heuring's (1984), would be most appropriate for her purpose. This is because the techniques for gathering data are quite simple and that they contain a small number of categories. It would be a waste of time and energy to make final distinctions of behaviours as the focus of this study is more on genres rather than on the composing process alone.

Lee's coding system contains four major categories of behaviours. These are writing, pausing, reading and editing. She further divided these four broad categories into subcategories to encompass the behaviours which were coded and distinguished as below:-

### Writing

*Wa* - instances of actual writing of the text the subject is working on.

*Wb* - writing additional points, phrases, and so forth while engaged in producing a draft.

*Wc* - checking the spelling of words or testing out facts or rehearsing phrases before writing them down into the draft proper.

*Wd* - instances of writing points at the outlining phase.

### Pausing

*Pa* - pauses that appeared to be for purposes of thinking, mental planning, reviewing, and so on.

*Pb* - pauses for reasons such as getting a new sheet of paper, shuffling papers, adjusting writing position, nose blowing, coughing, stretching, et cetera; which may include thinking but displayed more physical action than *Pa*.

### Reading

*Ra* - reading parts of an abandoned start or attempt to recopy or rephrase what was already written earlier or another section of the draft paper.

*Rb* - rescanning or rereading parts of the text the writer is currently working on. This can range from a few words to entire paragraphs.

*Rc*- reading the entire draft after completing the essay or just before writing a conclusion of the essay.

*Rd*- reading / glancing at a pre-draft outline.

*Re*- reading / glancing at the topic.

### Editing

*E*- making changes in the text, characterized by physical activities such as writing over, adding words, crossing out words et cetera.

(Lee May Eng, 1985 ; 56 - 57)

After being coded, the behaviours of the four subjects were compared to ascertain their similarities and differences to those discussed in Chapter Two. Next, information from interviews and Process Log was viewed and incorporated in order to clarify the behaviours observed.

The written products were examined to fulfill two objectives. The first of these was to establish the number and second, the types of changes made. The former required the researcher to quantify the changes whilst the latter, to give a qualitative account of the nature of these changes. Again adopting the scheme put forth by Faigley and Witte (1981) in Lee (1985:57), the researcher classified changes into:-

i) **Surface - level changes.**

These are changes that have trivial effect on meaning of what is written. They can further be subdivided into :

- a) formal-changes - which refer to changes involving syntax (tense, verb-forms, number, modality et cetera) and also include copy-editing operation like spelling, abbreviations, punctuation, format and so on).
- b) meaning - preserving changes - are changes that reword the concepts in the text, however, have no significant effect on them.

ii) **Text-based changes.**

These changes are those which alter the original intended meaning of the message to be relayed to readers. According to the extent to which meaning is affected, coincidentally, these changes can also be subgrouped into:

- a) micro-level changes - these are changes which affect part of meaning but the overall thrust is maintained.
- b) macro-level changes - are changes that affect the overall meaning or the focus of the text.