

Chapter Three: Methodology

The present study of the composing methods of students for scientific purposes is informed by the general principles of ethnography. Agar (1986 p.12) describes such a research design as one that ventures into "alien worlds" to understand it. The researcher's role in such a design is that of a newcomer or visitor who has to understand and learn the customs and habits of the new environment in order to clearly comprehend the phenomenon under study within that environment. Thus, fixed templates in the form of assumptions, hypotheses, measuring instruments and expected outcomes should not be the governing principles of the researcher at the point of entry into the community.

The above research design employed in the present study is supported by the use of a case study approach. Yin (1989 p.18) points out the pertinent fact that this approach is advantageous in answering research questions of "how" and "why". The emphasis then is not in deriving quantitative, statistically significant and generalisable results. Instead, it allows an in-depth investigation of a number of data sources from which a thick description or the "complex social phenomenon" (p.18) may be obtained and understood.

A typical aspect of the case study approach and ethnographic design is the cross-checking of the data obtained from one source with other sources. This

"triangulation" of data ensures that the element of subjectivity in the design does not distort the findings obtained.

The present case study, therefore, was a situated, qualitative study of four novice writers who are students at the University of Malaya. The study aimed to find out the ways in which these students adjusted their composing to conform to the norms of the text and the expectations of their academic community. This was done by examining the revisions of the writers in composing papers for presentation at conferences and seminars.

Additionally, the students and their supervisors were interviewed. A discussion was also held with one of the deputy deans of the Institute of Advanced Studies where the writers are enrolled as students. A wide range of information from details of individual writing behaviours to the general conventions of the texts were elicited from these interviews and discussion.

The following sections of this chapter give more information of the subjects, the type of texts written, the data collection methods and the analyses.

3.1 The Subjects

Flower et al (1986) have noted that decisions and choices exercised by expert writers in composing may have become automated as a result of these writers

writing the same kinds of texts again and again. Thus the processes of expert writers may not be obvious to a researcher. Furthermore, researchers have also noted that the composing decisions taken by experts may occur below the level of consciousness so that even the writers themselves may not be aware of these decisions (Johns 1990, p.13).

The target group for this study was novice writers at the postgraduate level. As nonnative users of the language they were deemed to have attained a threshold competence in the writing of texts for academic purposes as a result of the training that they would have received from their undergraduate courses. However, on the continuum of writing skills from novice to expert , it was assumed that they were nearer to being novices. This was a fairly important consideration for the study as it was thought that their struggles to conform with community expectations would be more apparent making their processes more explicit. The charting of these processes was operationalised through the revisions that they made to improve their text.

These four postgraduate writers in the present study are students of the discipline of microbiology at the Institute of Advanced Studies, University of Malaya. The aims of the study were explained to these students and assurances were given that their identities would be held confidential in the course of the study. For purposes of confidentiality, the four students are referred to as SR, SL, CL and DN.

SR and CL are doctoral students each pursuing research in fungal and algal studies respectively. They are students of the M.Phil programme at the Institute of Advanced Studies which they have successfully converted and upgraded to a Ph.D programme under a scheme allowed at the Institute. SL and DN are students of the M.Biotech programme at the Institute of Advanced Studies. Their line of research is in the upgrading of by-products from the production of palm oil.

Gender was equally represented in the study with two females and two males.

The table represents the information of the four writers given above.

Table 3.1

Case	Initials	Level	Sex
Case study 1	SR	Ph.D	Female
Case study 2	SL	M.Biotech.	Female
Case study 3	CL	Ph.D	Male
Case study 4	DN	M.Biotech.	Male

The homogeneity of the group is reflected in their stage of education. They are all postgraduate students essentially at the first level of research as students of Masters' programmes. In the cases of SR and CL the area of research in the Masters' programmes has been converted to the doctoral stage. The short papers which are examined in this study were prepared for different conferences and have been accepted for presentation at those conferences.

This is the first time SR, SL and DN have written a paper of this nature. CL has written a similar paper for a previous local conference.

The four subjects are all nonnative users of English. For one of the doctoral students, SR, English is the primary language as she had attended English-medium educational institutions throughout her educational career. SL, CL and DN may be referred to as second language users of the language since the medium of instruction in the institutions that they attended was a language other than English. All three, however, use English in their daily interactions and as the language of choice in most situations.

3.2 Text

The texts referred to in this study are short papers. Professor T.K.Mukherjee, one of the Deputy Deans of the Institute of Advanced Studies, explained that generally the use of short papers in conferences have increased of late to cope with the numbers of papers submitted for presentations at these events. The presenters of short papers are given a limited time of between seven to fifteen minutes for their presentation.

Short papers are condensed versions of a larger study. They are complete papers in the sense that they may have a short abstract at the beginning of the papers followed by the usual sections of Introduction, Materials and Methods,

Results and Discussion as well as Conclusion. These sections are followed by a short list of references most pertinent to the study reported as well as charts and tables used in the study. Since there are constraints on the number of pages and time allocated, only the most important aspects of the study are highlighted in these papers. There are two main types of short papers presented at conferences: oral papers and poster papers. The common denominator in these papers is that they are all written to be read.

Oral papers are presented through the medium of speech. Non-verbal visual materials in the form of charts, graphs and tables may be used to facilitate the presentation. The textualised material from this presentation may then be published in the condensed form in the book of proceedings or in the book of abstracts of that conference. Oral papers published in this manner for limited circulation are referred to as extended abstracts.

There are two subtypes of the poster papers: oral posters and plain posters. Oral posters are presented verbally to the audience as well as by displaying the text on posters. Thus the audience may first listen to the highlights of the study and its findings as presented by the speaker. The same information will also then be displayed along with pertinent charts, graphs and table as well as references in the exhibition area for such posters.

Presenters of the second subtype of plain posters, however, are not required to give an oral presentation of their findings. The study and its findings are displayed and they may be required to answer clarification questions of other participants on an informal basis.

The short papers used in this study have been presented at different conferences. SR's paper is an extended abstract presented at the Sixteenth Malaysian Microbiology Symposium organised by the University of Science Malaysia (USM) ; SL's is a poster paper presented at the International Symposium on Environmental Biotechnology organised by the University of Waterloo in Canada. CL's and DN's papers were used as oral posters at the International Symposium on Bioproducts Processing organised by the Institute of Advanced Studies, University of Malaya; their papers were also published in the book of abstracts of the conference.

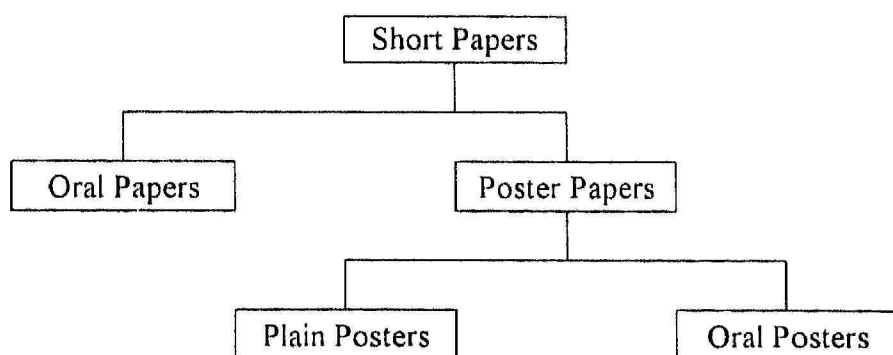


Figure 3.1: Types of Short Papers

Differences were found in the way the writers revised. SR's changes were found when drafts were compared; changes were not written over in the text or in the margins of the drafts. The changes in SL's, CL's and DN's papers were done within the drafts in handwritten notes over the typewritten text or in the margins. Changes were also found between drafts as well.

An initial interview was conducted with the subjects. The questions used in the interviews (refer Appendix 5) were adapted from those used by Lee May Eng (1989) and Shaw (1991) in their studies on composing. The first interview was of a general nature to find out the writers' attitudes and habits in composing. It was also to probe the composing behaviour of these writers in writing the short papers under study. The questions also aimed to discover the problems they encountered in writing the papers and how they overcome the problems. The subjects were individually interviewed by the researcher. The information obtained from the first interview included :

1. personal information about the writer;
2. his or her familiarity with the text written ;
3. type of preparation and sources used in preparing the paper ;
4. the topic of the paper ;
5. the writers' awareness of purpose and audience;
6. composing behaviours in planning, drafting, revising and evaluating the paper ;
7. types of academic and non-academic texts habitually written by the writer;

8. general attitudes and habits with regard to the different types of texts written.

The first interview, therefore, gave useful insights about the writer, his/her composing behaviour and the text. This helped to contextualise the text and served as a useful introduction to the examination of the text for the researcher.

Subsequent to the first interview, the rough drafts and final finished papers of each of the subjects were scanned to locate and note down the changes made. The operations used in making the changes and the linguistic level at which the changes were made were noted as a method of describing the changes. The possible reasons for making the changes that suggested themselves to the researcher were also noted.

A second interview was then conducted with each of the subjects to probe the actual reasons behind the changes made by them. This method of probing reasons, after an initial examination of the text, was modelled after the method used by Myers (1985). At the second interview, students were asked to recall as much as they could of the decisions that led to the changes. A third interview was sometimes necessary if the writer had not articulated the reasons clearly enough.

After the researcher had examined the drafts a second time with the reasons for changes given by the writers, the writers' supervisors were interviewed. This interview was useful in finding out whether there was convergence in reasons given by the writer and those given by his or her supervisor. It was also useful in eliciting reasons for changes instituted by the supervisor whose reasons were not always clear to the writer. In the case of this study, therefore, the supervisor was regarded as the expert informant. The interview was useful also because the researcher gained a broader picture of the various situational variables involved in the composing of such a paper. The triangulation of the data sources was ensured in this way.

The four writers' motivations for the revisions in their drafts were listed and from these thirteen categories were formed (refer 3.4.3 for details of the categories). Quantifying the revisions in these categories were found to be useful for ease of comparison of changes among the four writers as well as to compare the types of changes carried out in each case.

3.4 Analyses

In carrying out studies on revisions in composing, researchers (Chandrasegaran 1986; Lai 1986; Lu Rongze 1990) have used the model for classifying revisions designed by Faigley and Witte (1981). This model was not considered suitable for the purposes of the present study. Firstly, the

model distinguishes between microstructure and macrostructure changes. Short papers, which are the focus of the present study, have a fairly fixed macrostructure. A writer's lack of macrostructure revisions in this case does not necessarily reflect on his ability as a writer.

Faigley and Witte's (ibid.) model was used to mainly to compare writers' revisions in terms of the linguistic realization of intended meanings. The focus of the model was, therefore, on textual realization. In the present study, however, the writers' motivations in revising were given central focus. This was to find out some of the ways in which writers behave in a particular academic community and their reasons for doing so.

Dudley-Evans' (1991) categories for analysing supervisor's comments on thesis were also found to be unsuitable for this study even though the composing was done in a related discipline of plant biology. This was because some of the revisions in the short papers of the present study such as the removal of standard information from the text were those that would not normally occur in the composing of theses. Space constraint appears to be a more urgent consideration for the writers of short papers than for those writing theses.

In analysing the revisions for the present study, therefore, a description of the change in terms of the operation used and the linguistic level at which it

occurs was noted. The rationale for the change was given next followed by the effect, if any, of the change on the text. Finally these changes were categorised and quantified. The sections that follow describes the various stages of the analyses in detail.

3.4.1 Description of the Changes

The revisions are described in terms of operations and linguistic levels adapted from the studies of Sommers (1980) and Bridwell (1980). The six operations used by Sommers (1980) in her study of revision strategies of students include additions, deletions, substitutions, distributions, consolidations and permutations. They describe the precise action being carried out by the writer in the revision.

Researchers find additions, deletions and substitutions to be the less demanding operations for writers. Additions involve an expansion of the content of the text ; these could be information that may be inferred from the text but which may have to be stated explicitly. Additions could also be done to include information that is unique to the study being reported such as the conditions of growth of a microorganism. Deletions involve the opposite action of reducing the text by the removal of information from the content perhaps because an explicit statement is not considered necessary. Substitutions consist of information replaced in the text.

Distributions, consolidations and permutations are considered the more demanding operations. Distributions involve the transfer of information from one segment to more segments thus creating shorter segments. Consolidations, on the other hand, consists of the combining of more than one segments into one. Permutations refer to the rearrangement of information within the text. This may happen within a sentence where a clause is moved to the initial position in the structure for greater effect; it may also occur between paragraphs when a sentence is moved to serve as the topic sentence in that paragraph.

The part of speech affected in the revision is also noted in describing the change to keep track of the linguistic level at which the change occurs. This method was adapted from Bridwell's (1980) scheme of analysing revisions. Changes occurring at the word, phrase, clause, sentence and paragraph levels as well as those involving different sections of the paper were described.

3.4.2 Rationale and Effect on Text

The rationale for the changes made was solicited from the interviews with the writer as well as the supervisor. This stage helped to clarify the basic thinking underlying the revision done. Information from the interview was useful also because it clarified some of the constraints and frames of reference of the academic community that the writer had to conform to in order to ensure that

his/her paper was accepted. Thus the added dimension of social aspects operating on the individual's writing was brought into the picture.

The cumulative results of the description of change and the rationale for it are used by the researcher in finding the most obvious effect of the change on the text. The effect may be in terms of the rhetorical aims achieved or in patterns of discourse followed.

3.4.3 Categories of Changes

The different perceptions of the changes in terms of descriptions, the motivations and their effects of the revisions on the text as a whole were considered in the final step of categorisation. An examination of the changes yielded thirteen categories in which revisions occurred. These categories include the following:

- a. Formal/Readability (F/R) changes which include grammatical revisions, improved sentence constructions and typographical errors;
- b. Clarifying/Specifying (C/S) revisions that clarify information through of information to text or through the use of specific words or terms to make meaning clearer;
- c. Conciseness (Con) changes that shorten the text thus creating a more effective text;

- d. Text Convention (TC) revisions that are done to conform to accepted textual conventions such as basic layout, organisation of information and the use of language;
- e. Known/Standard Information (K/SI) changes that include the removal of information known to the discourse community and which are not, therefore, necessary for a short paper;
- f. Claim revisions that affect the tone of the text by upgrading or downtoning the status of certain types of information in the text;
- g. Highlighting Information (HI) changes in which certain types of information are foregrounded either through transformations or through explicit statement of fact;
- h. Cohesion changes that establish relationships between and within sentences as well as ideas;
- i. Discoursal Organisation (DO) which include the movement of sentences for appropriate paragraphing and flow of information;
- j. Details Specific to Study (SS) which are the additions of information of a specialised nature or which was unique to the study;
- k. Simple Vocabulary (SV) changes which were the substitutions of simpler words;
- l. Lexical Variety (LV) changes which refer to varying the use of a word in the text;
- m. Idiosyncratic (Idio) changes which were those that reflected the preferences of the writers or their supervisors.