CHAPTER FOUR

RESEARCH DESIGN AND METHODOLOGY: A CONCEPTUAL FRAMEWORK

4.1   INTRODUCTION

The research design and methodology have been developed to enable the researcher to obtain the data from the sample studied. Thus, its purpose is to provide the most valid answers to the research questions. The design describes the procedures for conducting the study and the method of data collection. The research design is a very important part of an investigation, since certain limitations in interpreting the results are related to a design. The research design also determines how the data should be analysed (McMillan & Schumacher 1997:34).

4.2   CHOICE OF RESEARCH DESIGN

One of the most important choices made in the construction of any study is the research design. Research design refers to the plan and structure of the investigation used to obtain evidence to answer the research question (McMillan & Schumacher 1997:33). Qualitative research methodology will be used for the purpose of this study. According to Hammersley (2000:2) there are five advantages of using a qualitative research methodology:

- The appreciative capacity: Matza (in Hammersley 2000:2) explains the notion of appreciation in qualitative research which requires that people's behaviour be understood as making sense within the context in which it occurs. The context includes how the participants perceive the environment and themselves. This capacity to appreciate people's behaviour within a context makes qualitative research methodology a valuable choice for this study.

- The designatory capacity: According to Hargreaves (in Hammersley 2000:3) the designatory capacity in qualitative research refers to the researcher's ability to capture and present data as distinctly as possible. The qualitative research methodology provides the researcher with an opportunity to be close to the participants so that he or she can capture and present data as

distinctly as possible. According to the researcher the designatory capacity in qualitative research methodology is a compelling characteristic in the choice of this method for this study.

- The reflective capacity: The reflective capacity in qualitative research refers to the introspection that follows before, during and after the research to find solutions to the problems in the school situation (Hammersley 2000:3). The researcher is of the view that the ability to reflect on issues is an important activity in research, hence the choice of qualitative research methodology for this study.

- Relevance to policy-making and practice: According to Hammersley (2000:5) qualitative research can provide valuable data to improve educational policies and practice because the research methodology is designed to develop 'bottom up' abstractions and observations. To develop abstractions from bottom upwards is an important reason to choose a qualitative research methodology for this study.

- The corrective capacity: The corrective capacity in qualitative research refers to the ability of the research methodology to inform and shape existing perceptions of practitioners and policymakers at micro- and macro-levels in education (Hammersley 2000:3). It is the view of the researcher, that the corrective capacity in qualitative research makes it a valuable research methodology.

According to Gerdes and Conn (2001:1) another important quality of qualitative research methodology is that it looks at the whole rather than the parts. A holistic perspective is developed by allowing the participants to tell their own story in their own words and from their unique perspective (Gerdes & Conn 2001:2). According to the researcher the advantage of collecting the different views of participants in qualitative research methodology through interviews is to glean from the data a holistic perspective that would otherwise not be available so that the education profession can be advanced.

There is general agreement that good qualitative studies answer a clearly stated, important research question (Frankel et al. 2000:3). The following research questions will guide this study:

- What is the role of the principal in managing work-related stress among secondary school educators?
- What are the causes of stress among secondary school educators?
- How does the leadership style of the principal motivate educators?

According to McMillan and Schumacher (1997:459) a qualitative research design is appropriate for this study because:

- a naturalistic method will be used to collect the required data;
- the anticipated problems will guide the field work;
- the anticipated problems may be reformulated because qualitative research is open to change throughout the process of data collection;
- the qualitative research design examines one phenomenon in depth at a selected site, regardless of the number of participants, social scenes, processes and activities;
- the selection of the site is guided by the criteria implied in the anticipated problems where concerns of suitability and feasibility are recognised;
- the researcher assumes an interactive research role to collect valid data for the research purpose;
- the researcher first forms a temporal, spatial and social map of the field to obtain a sense of the total context and for purposeful sampling, therefore gaining a selection of information rich informants and social scenes;
- data collection strategies are multiple, such as verbatim accounts, low-inference descriptors, mechanically recorded data, participants' review and negative case (McMillan & Schumacher 1997:459).
- qualitative research yields a richness of data, therefore permitting a fuller understanding of the phenomenon studied (Best & Kahn 1993:184).

The usefulness of a qualitative study is enhanced to the degree which the research design is adequately described so that researchers may use the study to extend the findings to other studies (McMillan & Schumacher 1997:411).

4.3   RESEARCHER'S ROLE

The qualitative researcher chooses a role that is appropriate for the purpose of the study. There are five possible roles: observer, participant, participant observer, inside observer and interviewer. McMillan and Schumacher (1997:436) indicate that the roles of inside observer or participant observer as appropriate research roles. As the research was conducted at the researcher's own organisation, the role of an inside observer was assumed. According to Hurworth (1999:1) the advantages of an inside researcher are that the researcher who researches his/her own organisation:

- can offer a unique perspective on the organisation and its external audience because of his or her knowledge of the culture, history and people involved;
- helps to solve practical problems and improve practice in the workplace;
- forces the researcher to experience everyday issues;
- is particularly suited to assist practitioners engaged in learning, decision making, planning and initiation of change as part of their day to day activity; and
- enable the researcher to learn, reflect and act.

The researcher assumed the role of an inside observer and experienced the following:

- received the cooperation of management and staff while conducting the research;
- developed a greater understanding and empathy towards colleagues and their suffering as a result of work-related stress; and
- felt the research to be relevant and informative and could contribute meaningfully to improve policy and practice at the institution where the study was conducted.

4.4 DATA COLLECTING AND ANALYSIS PROCEDURES

According to Devers et al.(2000:3) identifying and negotiating access to the site and individuals is an important procedure of the qualitative research design. The choice of site was based on the following criteria:

- the site would yield a wealth of data based on the anticipated problems;
- the research site will be the researcher's own (public secondary) school, which is to the researcher's logistical advantage and enables him to make use of his specifically adapted skill.

The following criteria were used to choose the participants:

- They would be secondary school educators who have knowledge and experience of stress in the workplace; and
- They would be secondary school educators of grade nine to grade twelve learners.

Once the site and the subjects were identified the researcher negotiated access by securing permission from the Department of Education and Culture in Kwa-Zulu Natal, the principal of the secondary school and the participants to conduct the focus-group interviews. The researcher may have to write a brief proposal that includes an honest reflection of the primary research purpose (Devers et al.2000:3) in order to gain admission to an organisation.

Refer to Annexure 1, 3 and 4 for the brief proposals to the participants and the Department of Education and Culture of Kwa-Zulu Natal. The proposal to the principal of the school where the research was conducted is not included in this dissertation for ethical reasons.

Once approval to proceed with the research had been secured from the authorities, the researcher began the process of negotiating and maintaining relationships with individuals or groups of primary interest (Devers et al. 2000:3). Refer to annexure 4 for a letter of approval from the Department of Education and Culture, Kwa-Zulu Natal. Negotiating contact with participants may require the researcher to distance him- or herself from the authority. The first days in the field the

researcher established rapport, trust and reciprocal relations with the participants. The researcher needs to be sensitive to the participants and the groups on issues of confidentiality. According to Devers et al.(2000:2) developing and maintaining good relationships are important for effective sampling and for the credibility of the research.

McMillan and Schumacher (1997:402) describe the importance of mapping the field before the basic data collection. The researcher maps the field by acquiring data about the social, spatial and temporal relationships of the site to gain a sense of the total context. The researcher's role as an inside-observer was an advantage to understand the social, spatial and temporal relationships in this study.

According to Devers et al. (2000:4) data must be captured and put in a format that is amenable to analysis. In qualitative research, the raw data consists primarily of words and images in the form of field notes, transcripts, as well as audio- and videotapes. Documents and artifacts also provide useful qualitative data (Devers et al.2000:4).

The qualitative researcher develops a way to organise, code and retrieve data for formal data analyses. In this study, primary data derived from qualitative interviews are verbatim accounts of what transpired in the interview sessions, which were audio-recorded. Audio-recording the interview ensures completeness of the verbal interaction and provides material for reliability checks (McMillan & Schumacher 1997:453).

Then the researcher organised four focus-group interview sessions lasting approximately two hours each. According to the initial planning, participants would be grouped together for a focus-group interview and each group would be presented with a schedule, reflecting the time and day of the interview. Prior arrangement was made with the school management to release the participants from their normal duties so that they could participate in the interview. The interview room was adequately prepared for the interviews by making available furniture, an audio-recorder, audio-cassettes, and copies of the research interview questions.

The researcher documented the procedures and data for each focus group through self-reflection as an inside observer; establishing rapport with the interviewees; documenting the interviewees' reactions; additional information and extensions of interview meanings. This activity is crucial for reflection and elaboration to establish quality control for valid data (McMillan & Schumacher 1997: 454).

During the first session of the interview only three participants of the four arrived. The fourth participant could not participate in the interview because she had to attend to an urgent personal matter and thereafter a cluster meeting of schools. The researcher welcomed the three participants, outlined the purpose of the interview and assured the participants of the confidentiality of the research. The participants were made to feel comfortable before the interview questions were asked. Each of the participants was given an opportunity to respond to the questions. In conducting the interviews the researcher used the topic as a guide with eight broad questions and probes.

Refer to Annexure 2 for interview questions. Participants were also involved in a lively discussion because of the nature of focus-group interviews. At the end of the interview session the researcher thanked all the participants for their contribution. According to McMillan and Schumacher (1997: 403), the researcher remained open to new concepts and ideas during the interview process. As initial patterns emerged the researcher identified ideas and facts that needed corroboration in the closing phase.

As planned, the interviews were conducted over two days. Three of the four participants were present at the second interview session. The fourth participant was unable to participate in the interview because he was engaged in completing the matric syllabus. The researcher followed the same procedures with each of the four groups. All four participants were present at the third interview session. In the last interview session only three of the four participants were present because the fourth participant was completing the term-end progress report for the learners. A total of thirteen educators were interviewed of a group of sixteen educators. Three educators could not participate in the interview because of work constraints. A transcript was made of each focus-group interview to ensure comprehensive information, and each transcript was verified for correctness by the participants. The data from the transcripts were categorised into themes.

According to McMillan and Schumacher (1997: 403) the data-collection phase should shade off naturally and logically into formal data analysis and the presentation of data. The challenge of data analysis is to make sense of massive amounts of data, reduce the volume of information, identify significant patterns and construct a framework for communicating the essence of what the data revealed (Best & Kahn 1993:203). According to Gough and Scott (2000:1) analysis of qualitative data begins with the identification of key themes and patterns. Qualitative research data are categorised as emic and etic (Gough & Scott 2000:2). According to McMillan and Schumacher (1997:516) emic categories represent the views and explanations that are distinctive for the site and the participants. Etic categories represent the researcher's views and the scientific explanations of the phenomenon under investigation. Best and Kahn (1993:203) show that organising data is the first step in analysing qualitative research. The data of this research study were organised as follows:

- A table was drawn with five rows and five columns where the data of each participant were categorised according to themes that emerged.
- Each of the thirteen participant's responses to the interview questions was carefully categorised so that the emergent pattern would become apparent.
- The categorised data were used to describe, compare, juxtapose and interpret in an attempt to answer the research questions.

According to Best and Kahn (1993:204) only after the data have been organised and described should the researcher begin with the most critical phase of the process of analysis and interpretation. "Interpretation involves explaining the findings, answering 'why' questions, attaching significance to particular results and putting patterns into an analytic framework. The discipline and rigor of qualitative analysis depends on presenting solid descriptive data in such a way that others reading the results can understand and draw their own interpretations."

4.5   SAMPLING

In qualitative research purposeful sampling is often employed to collect data (Devers et al.2000:2). According to Devers et al.(2000:2) purposeful sampling strategies are designed to enhance under-standing of selected individuals, group experiences or developing theories and concepts. Miles and Huberman (in Devers et al. 2000:2) note that there are three types of purposeful sampling:

• Typical cases (reflect the phenomenon under investigation)
• Extreme cases (cases that represent unusual manifestations of the phenomenon of interest)
• Negative (exceptions to the rule)

In this study typical cases were mainly identified to collect data. The researcher was however, also searching for extreme and negative cases of data. The researcher chose one public secondary school and sixteen (16) educators to investigate the anticipated research problem. The aim of this research was to conduct an in-depth study of the phenomenon of stress at the selected site.

4.5.1   Sample size

Qualitative researchers selectively choose persons, situations and events that are most likely to yield information-rich data about the anticipated problems (McMillan & Schumacher 1997:432). Selection of respondents for an interview begins with a description of the desired attributes or profiles of persons who would have knowledge of the topic. E.g. "An attribute for the purpose of this study is an experience that a respondent has had in common with other respondents and that is specifically relevant and useful for the purpose of the study." In this study, sixteen (16) educators who are currently teaching in the secondary school, from grades nine to twelve, were identified to participate in the interview. The researcher considers the sample to be adequate because they include most of the secondary school educators of the different learning areas. In qualitative research, sample size can range from n =1 to n = 40 (McMillan & Schumacher 1997:435). A preliminary interview with four (4) educators showed that they had experienced work-related stress.

4.6   RESEARCH INSTRUMENTS

4.6.1   Interviews

The focus-group interview was used in this study. According to Frankel et al.(2000:2) focus group is defined as a group interview around a focussed topic. McMillan and Schumacher (1997:453) note that the advantage of focus-group interviews is that they create a social environment in which group members are stimulated by each other's perceptions and ideas of each other, thereby increasing the quality and richness of data beyond what can be achieved with one to one interviewing. The researcher is of the opinion that since all the participants are from one site, focus-group interviews are more appropriate than individual interviews because more participants can be interviewed in less time, thereby enhancing the quality of data and saving costs and time.

4.6.2   Document analysis

According to Frankel et al.(2000:3) qualitative researchers study written documents in a variety of contexts. In the context of this study the following documents were studied:

- class registers for learners;
- office discipline record book for learners
- split and combined classes' records.

The class registers were studied because the researcher wanted to establish the pattern and frequency of absenteeism among learners. The researcher is of the view that absenteeism among learners could contribute to the lowering of educational standards. The office discipline record book for learners was studied for additional information on serious discipline problems among learners. The researcher is of the view that all serious discipline problems among learners are brought to the attention of school managers, therefore studying the office record book for learners is valuable. The record of the split and combined classes was examined to understand how learners are distributed. The researcher contends that uneven distribution of learners will cause dissatisfaction among educators.

4.6.3   Validity of qualitative designs

Validity refers to the degree to which the explanations of the phenomena match the realities of the world (McMillan & Schumacher 1997:404). In qualitative research, claims of validity rest on the data collection and analysis techniques. According to McMillan and Schumacher (1997:404) qualitative researchers commonly use a combination of any of the nine possible strategies to enhance design validity:

- prolonged field and persistent work;
- participant language and verbatim accounts;
- low-inference descriptors;
- multiple researchers;
- mechanically recorded data;
- participant researcher;
- member checking;
- participant review; and
- negative cases of discrepant data.

To ensure validity of this study, the following combinations were used:

- Participant's verbatim language allowing for literal statements of participants and quotations from documents.
- Low inference descriptors, which allows recording precise, almost literal and detailed descriptions of people and situations.
- Mechanically recorded data where the use of audio-recorder is used to ensure validity.
- Negative cases of discrepant data used to actively search for, record, analyse and report data that are an exception to patterns or that modify pattern (McMillan & Schumacher 1997:409).

4.6.4 Reliability

Reliability of qualitative research design refers to the researcher's ability to be transparent, consistent and dependable in his or her research activities so that research bias is minimised (Chenail 1995:1). According to Best and Kahn (1993:208) reliability is the degree of consistency that the instrument or procedure demonstrates. Whatever it is measuring, it does so accurately. According to McMillan and Schumacher (1997:408) the researcher's interactive style, data-recording strategies, data analyses, interpretation of participant's meaning, presentation of the results and storage of data for audit purposes contribute towards the reliability of the research.

The following strategies were used in this study to ensure reliability:

- The researcher engaged in a discussion with a colleague to formulate the research questions, type of analysis and interpretation of data. This strategy is known as peer briefing.
- Several focus-group interviews were conducted with the participants.
- The data were corroborated with the participants at all the stages of the research process.
- The total interview time was six hours.
- The data were transcribed from the audio-cassettes, coded and categorised into topics and themes.
- An accurate record of the dates, time and persons involved were recorded.
- Audio recording and original transcripts of the focus-group interviews were carefully stored.

4.7   RESEARCH ETHICS IN FIELD WORK

According to Leedy (1993:129) a summary of a professional code of ethics indicate the following ethical considerations that should govern any qualitative research:

- Researcher must maintain scientific objectivity.
- Researchers should recognise the limitations of their competence and not attempt to engage in research beyond such competence.
- Every person is entitled to the right of privacy and dignity of treatment.

- All research should avoid causing personal harm to subjects used in the research.

- Research findings should be presented honestly, without distortion.

- The researcher must not use the prerogative of a researcher to obtain information for other than professional purposes.

- The researcher must acknowledge all assistance, collaboration of others, or sources from which information was borrowed from others.

- The researcher must acknowledge financial support in the research report or any personal relationship of the researcher with the sponsor that could conceivably affect the research findings;

- The researcher must not accept any favours, grants or other means of assistance that would violate any of the ethical principles set above.

Besides the above code of research ethics, the participants in this study were assured of confidentiality at all stages of the interview process for design reliability. This is an important ethical consideration because the researcher is of the view that participants who feel uneasy about the confidentiality of information will not respond honestly to the interview questions. Criteria for research design involve not only the selection of information and efficient research strategies, but also adherence to research ethics (McMillan & Schumacher 1997:409). Emergent designs require that ethical principles be upheld through all the phases of planning and data collection. Qualitative researchers elicit co-operation, trust, openness and acceptance from their participants.

Researchers routinely code names of the participants and places for confidentiality. They (the researchers) also have a responsibility of protecting the participants' confidence from others in the focus group (McMillan & Schumacher 1997:409). Although physical harm to the participants seldom occur in qualitative research, some persons can experience humiliation and loss of interpersonal trust. A sense of caring and fairness has to enter the researcher's thinking and actions (McMillan & Schumacher 1997:409).

4.8   CONCLUSION

This chapter on research design and methodology provides the qualitative research design, the researcher's role, procedures for collecting and interpreting data, sampling technique and size, research instrument, validity, reliability and research ethics of the study. The data are analysed and discussed in chapter five.