

CHAPTER 5

RESEARCH DESIGN AND METHODOLOGY

5.1 INTRODUCTION

This chapter describes the research design used to develop a conceptual framework for enhancing public school accountability. It also explains the rationale behind the methodology employed, how the research was conducted and what steps were taken to ensure the reliability and validity of the study. McMillan and Schumacher (2006) state that research methodology refers to a design according to which the researcher selects data collection and analysis procedures to investigate a specific research problem.

5.2 RESEARCH DESIGN AND METHODOLOGY

According to De Vos, Schurink and Strydom (1998) a research design is a blueprint or detailed plan for how a research study is to be conducted. McMillan and Schumacher (2006) elaborate and state that a research design shows which individuals will be studied, as well as when, where and in which context. The design is either qualitative or quantitative or a combination of both. For Hittleman and Simon (2002) research designs are methods of answering questions. They add that some designs are more appropriate or effective in answering certain questions and again, more than one plan may be appropriate or effective for answering a particular question. For McMillan and Schumacher (2006) research design refers to the way information is gathered from subjects/participants.

In this study, both quantitative and qualitative approaches were employed to develop a conceptual framework for enhancing accountability in public schools. According to Hittleman and Simon (2002) the use of both methods in a research project can incorporate the strengths of both these types of research. The use of both qualitative and

quantitative approaches in a single study is referred to as mixed methods. According to him, mixed methods combine methods of data collection and analysis from both qualitative and quantitative traditions (McMillan & Shumacher, 2006).

Fraenkel and Wallen (2008) state that the advantage of using multiple methods is that researchers are able to gather and analyse more and different kinds of data than they would be if they used only one method. In addition to the questionnaire that was administered on a sample of principals, focus group and individual interviews were conducted to obtain the views and perspectives of district officials and teacher organisations on the notion of school level accountability (Ref. Table 5.2: p.114).

According to Leedy (1993), research methodology refers to an operational framework within which the facts are placed so that their meaning may be seen more clearly. Hussey and Hussey (1997) refer to methodology as the overall approach of the research process encompassing its theoretical underpinning to the collection and analysis of data. The two authors further make the point that, like theories, methodologies cannot be true or false; they can only be more or less successful.

5.2.1 The Quantitative Research Approach

Quantitative research, according to Hittleman and Simon (2002), is characterized by the use of statistical analysis to describe, compare and attribute causality. Generally, quantitative research is considered to be objective. Patton (1990) states that quantitative research is formal, objective and systematic. It utilizes numerical data to obtain information about the world. McMillan and Schumacher (2006) add that this research approach maximizes objectivity by using numbers, statistics, structure and control. Quantitative researchers believe that the best way of measuring the properties of a phenomenon (e.g the attitudes of individuals towards certain topics) is through quantitative measurements because quantification makes the observation more explicit (Babbie & Mouton, 2001). In this study, questionnaires were used to quantify the views and perspectives of principals towards school level accountability.

5.2.2 The Qualitative Research Approach

According to Lofland and Lofland (1995) qualitative research involves methods of data collection that are non-quantitative. In the qualitative research approach, observations are collected and reported in everyday language. Shank and Brown (2007) list the following as the basic tools and procedures used to gather qualitative data: observation, interviews, focus groups, material analysis, archive and historical records analysis, interpretive analysis and participant analysis.

Hittleman and Simon (2002) report that some researchers prefer to refer to qualitative research as *interpretative research* to avoid the connotation of defining this research approach as *non-quantitative* since some sort of quantification can be used. This view is supported by Hittleman and Simon (2002:39) who make the point that because most qualitative research is descriptive, many of its data collection procedures are similar to those found in quantitative description research.

According to Neuman (1991) interpretive methodology is the systemic analysis of socially meaningful action through the direct detailed analysis of people in natural settings in order to arrive at understandings and interpretations of how they create and maintain their social worlds. Interpretative researchers hold the view that social reality is based on peoples' definition thereof. They see social reality as consisting of people who construct and create interpretations through their daily social interaction.

Neuman (1991) argues that the interpretive methodology is the basis for social research techniques that are sensitive to contexts. According to Gultig, Lubisi, Parker and Wedekind (1999), interpretivism has a local rather than global orientation that is concerned more with the frameworks of particular institutions and the ways individuals understand and act in particular social contexts.

For Swann and Pratt (2003), interpretivism is often contrasted with positivism which involves the study of physical entities. Interpretivism on the other hand involves the study

of social phenomena by social scientists who study a world that is interpreted by the actors within it. Shank and Brown (2007) point out that interpretive analysis seeks to provide an explicit framework so that researchers and readers are both clear on the perspectives and frameworks being employed. Natural scientists on the other hand apply their own theoretical constructs to the world they investigate.

This study uses the interpretivist paradigm to enable the researcher to explore the following:

- Perspectives and views on devolved authority and increased accountability at school level.
- Perspectives and views on the roles and relationships of key role-players in a decentralised schooling system.

5.3 QUANTITATIVE AND QUALITATIVE RESEARCH METHODS COMPARED

Since this study employed both qualitative and quantitative approaches, Table 5.1 below presents the main differences between these two approaches. It must however be borne in mind that authors such as Wellington (2006) and Swann and Pratt (2003) warn against the polarization of the two approaches. The table below is intended to highlight the importance of adopting both approaches in research. As Swann and Pratt (2003:212) warn: *“There are no exclusively quantitative or qualitative methodologies.”*

Table 5.1 Features of Qualitative and Quantitative Approaches Compared

Quantitative Approaches	Qualitative Approaches
• The design is structured and predetermined • Relies heavily on statistical data • Sample is randomized and size is very • Important for replication purposes • Uses experiments, standardized instruments and structured interviews • Data analysis is deductive and statistical • Extraneous variables are controlled and greater validity can be achieved • Procedures are standard and replication is assumed	• It evolves over time and is flexible • It is descriptive, uses field notes, documents and interviews • Can be small and not necessarily replicable • Uses observations, open-ended interviews, document reviews, participant observation and researcher as instrument • Data analysis is ongoing and inductive • Data validity questionable, not generalisable • Procedures are particular and replication is very rare

Neuman (1991)

5.4 PHILOSOPHICAL ASSUMPTIONS AND PARADIGMS OF QUALITATIVE RESEARCH

Babbie and Mouton (2001) describe a paradigm as a model or framework for observation and understanding. This framework shapes both what we see and how we understand it. Swann and Pratt (2003) define a paradigm as a set of assumptions which a group of scientists or other theorists share, and which forms the basis for their investigations. Creswell (2007) regards a paradigm as a set of beliefs that guide action. According to him, paradigms address fundamental assumptions taken on faith, such as beliefs about the nature of reality (ontology), the relationship between knower and known (epistemology) and assumptions about methodologies shaped by the researcher's experience.

From an ontological perspective, qualitative research, according to Swann and Pratt (2003) is underpinned and guided by the principle of interpretivistic philosophy. It rejects positivist thinking and refuses to reduce human behaviour to a mere number. This tradition of interpretivism holds that people may or may not experience social and physical reality in the same way (Neuman, 1991), Interpretivism sees social reality as consisting of people who construct meaning and create interpretations through their daily social interaction.

From an epistemological assumption, the longer the researcher gets to know participants, the more they know what they know (Cresswell, 2007). He maintains that researchers bring values to a study, but qualitative researchers need to make those values explicit. The sociological paradigm encompasses the entire constellation of beliefs, values, and techniques shared by members of a given community.

Lincoln and Guba (1985) point out that paradigms represent what we think about the world (but cannot prove), and therefore our actions in the world, including the actions we take as enquirers, cannot occur without reference to those paradigms: as we think, so we act. According to Lincoln and Guba (1985) a paradigm guides the investigator not only in choice of methods, but in ontologically and epistemologically fundamental ways.

Creswell (2007) asserts that social constructivism as a world view is often combined with positivism. Individuals develop subjective meanings directed towards certain objects or things. However, the meanings are varied and multiple. Meanings are formed through interaction with others (hence social constructivism) and through historical and cultural norms that operate in the lives of individuals. Creswell goes on to point out that the researcher's intention in social constructivism is to make sense from (interpret) the meanings others have about the world (interpretative research). For the purposes of this study, focus group and individual interviews will be used to obtain group and individual perspectives on public school accountability.

5.5 GROUNDED THEORY AS A QUALITATIVE APPROACH TO INQUIRY

Shank and Brown (2007) state that grounded theory as a type of qualitative method was born within sociology. According to the two authors, this theory now plays an important role in many qualitative studies in educational research. According to Creswell (2007), grounded theory is a qualitative research design in which the enquirer generates or grounds a general explanation of a process that is shaped by the views of a large number of participants. The intention of grounded theory study is to discover a theory. This theory is grounded in data from participants who have experienced the process.

In this study, focus group interviews with district officials and teacher unions were conducted to develop a conceptual framework for enhancing public school accountability.

5.6 SAMPLING

According to Gay and Airasian (2000), population refers to the group of interest to the researcher, the group to which he or she would like the results of the study to be generalisable. Generalisability refers to the extent to which the results of a study can be applied to other populations or situations. Sampling entails the selection of a smaller group from the population to obtain information from. The knowledge gained from the sample may be representative of the total population under study (Fraenkel and Wallen, 2008). According to Gay and Airasian (2000) a sample comprises individuals, items or events selected from a larger group referred to as a population. The purpose of sampling is to gain information about the population by using the sample. According to Shank and Brown (2007), sampling as a strategy for participant selection, should be based on what the research is trying to accomplish. Sampling methods are broadly divided into two categories, namely probability and non-probability sampling methods.

5.6.1 Non Probability Sampling

Despite the disadvantages that arise from their non-representativeness, non-probability samples are far less complicated to set up, they are considerably less expensive and can

prove perfectly adequate where the researcher does not intend to generalize his findings beyond the sample in question (Cohen & Manion, 2007). According to McNeil and Mumvuma (2006) and Cohen and Manion (2007) the sample selected is based on the judgement of the researcher , i.e. on his/her experience and its potential to meet the research needs. The importance of purposive sampling, according to Shank and Brown (2007), is that researchers target unique participants who can give the researchers the answers or insights they are seeking. In other words, they select information rich cases from which they could learn much about issues that are important to the study, and as a consequence, purposive sampling size is very small.

Given the various interest groups in this area of study, a purposive sampling (Fraenkel & Wallen, 2008) was used. This sampling approach helped the researcher to accommodate the varied interest groups in this area of study. Information was obtained from principals, teacher unions and departmental officials.

The above individuals were selected on the basis of their expertise and involvement in education management and governance. Questionnaires were administered to principals drawn randomly from the four education districts in the North-West Province. A common interview grid/questionnaire was developed and used during focus group interviews with teacher unions and district officials as shown in Table 5.2 below.

Table 5.2: Sample Distributions

Participants	Numbers	Approach	Purpose
Union Reps	9	Focus Group	Views on education accountability with a particular focus on public schools
Departmental Officials	7	Focus Group	
Principals	222	Questionnaires	Perspectives and views on school level accountability
TOTAL	247		

5.6.2 Distribution and Response Rates of Principals' Questionnaires

The principals' questionnaires were distributed and completed during the seminars that were held in different districts. Since the questionnaires were collected immediately after completion, a hundred percent return rate was almost guaranteed. In total, questionnaires were administered to 222 principals drawn from all types of ordinary public schools in the province.

5.6.3 Description of Respondents and Dates of Interviews

Focus group interviews with teacher unions and departmental officials were held on 16 and 18 November respectively. Teacher union representatives were drawn from their provincial leadership. All three major unions (Sadtu, Naptosa and SAOU) participated in the group interviews. Departmental representatives were drawn from the four education districts in the province.

5.7 RESEARCH METHODOLOGY

Hussey and Hussey (1997) regard methodology as the overall approach of the research process, including its theoretical thrust to the collection and analysis of data. Leedy (1993) refers to research methodology as an operational framework within which the facts are placed so that their meaning may be seen more clearly. Both authors agree that, like theories, methodologies cannot be true or false; they can only be more or less successful. The following paragraphs expand on the methodology used to collect the data that were utilized to develop a conceptual framework for public school accountability.

5.7.1 Literature Study

The initial phase of the research process consisted of a comprehensive review of related literature. Relevant books, newspaper articles, official reports, manuals and other related documents and online materials and resources were consulted and analysed in order to gain some insight into the notion of accountability in public service in general and education accountability in particular. According to Legotlo and Teu (1998) and Wellington (2006), literature review is important for the following reasons:

- It helps to consider the problem under investigation from various different perspectives.
- It links the study to existing knowledge.
- It helps to understand what has been done in the area of study in different cultural settings. In this instance, countries like Chile, Uganda, Canada, and England were studied to understand their approaches to education accountability.
- It helps to define terms and concepts more clearly.
- Identify areas for further research

The literature review in this study helped the researcher to develop a conceptual framework that underpins the notion of accountability general and education accountability in particular.

5.7.2. Survey Methodology

Surveys are empirical, logical and systematic in the impartial collection of data from a sample of cases (Fraenkel & Wallen, 2008). This impartial collection of data also extends to the statistical analysis thereof. He considers survey methods to be free from personal bias because information obtained is isolated from the values, convictions and pre-suppositions of the researcher. Cohen and Manion (2007) state that the collection of information through surveys involves one or more of these techniques: structured or semi structured interviews, self completion or postal questionnaires, standardized tests of attainment or performance, and attitude scales. The two authors also maintain that surveys proceed through well defined stages starting from the purpose of the enquiry through the design of data-gathering techniques until they are analysed.

Fraenkel and Wallen (2008) furthermore add that survey questions should relate to the objectives of the study and further advise that a hierarchical approach could be used, i.e. beginning with the broadest most general questions and ending with the most specific. The following paragraph will elaborate on the research tools employed in this study.

5.8 RESEARCH TOOLS

According to Borg and Gall (1989), questionnaires and interviews are the most commonly used instruments for data collection in research. Since this study employed both qualitative and quantitative research methodologies, structured questionnaires and interviews were employed to develop a conceptual framework for enhancing public school accountability, the following paragraphs elaborate on the use of questionnaires in this study.

Apart from the focus group interviews conducted, a questionnaire was also administered to school principals. The following paragraphs elaborate on the use of a questionnaire as research tool and how it was employed in the context of this study.

5.8.1 A Questionnaire as a Research Tool

Milne (2006) defines a questionnaire as an instrument with open or closed questions or statements to which a respondent must react. Different kinds of approaches to questionnaires can be distinguished: mailed questionnaires, telephonic questionnaires, group or individual questionnaires. Questionnaires have the following advantages:

- They are quick and relatively easy to administer.
- They are useful for screening large numbers and cover a large geographical area.
- They are easy to analyse and interpret because questions are standardised.
- Respondents have enough time to consider questions.

In this study, 222 questionnaires were administered to school principals randomly selected from school clusters in the four education districts in the North-West Province. A six item interview schedule was used to direct discussions during the focus group interviews with departmental officials and teacher unions. The following paragraphs explain how the items for self completion questionnaires were developed. The format and content of this questionnaire will also be elaborated on.

5.8.1.1 Development of Questionnaire Items

According to Cohen and Manion (2007), an ideal questionnaire must be clear and uniformly workable, and its design must minimize potential errors from respondents. McMillan and Schumacher (2006) suggest the following guidelines for constructing effective questionnaires:

- *Items must be made clear.* Clarity is achieved when all respondents interpret the question in the same way.
- *Avoid double barrelled questions.* A question should be limited to a single idea or concept.

- *Respondents must be competent to answer.* Questions asked must be within the capacity of respondents to answer.
- *Questions should be relevant.* Respondents must never be asked questions that are unimportant to them.
- *Simple items are best.* Long and complicated items should be avoided because they are more difficult to understand.

The guidelines provided above were taken into account when developing the questionnaire items for this study. In addition, some of the following tips provided by Fraenkel and Wallen (2008:113) were taken into account:

- Ensuring that the vocabulary is appropriate for the intended audience.
- Having colleagues review the items for logical validity.
- Trying the instrument with a group of respondents who are as similar as possible to the study respondents.
- Revising items as necessary until the required number is achieved.

The main aim of the principals' questionnaires was to obtain their views and perspectives on notions of public school accountability.

Since an accountability assessment tool for principals was not readily available, some items from the following accountability assessment tools were adapted and modified to suit the objectives of this study:

- Accountability Self-Assessment Tool developed by the Arizona Grantmakers' Forum for Private Foundations (Arizona Grantmakers Forum, 2006)
- Financial Management Accountability: A Questionnaire for Managers (Treasury Board of Canada Secretariat, 2002)
- Texas Public School Accountability - A questionnaire (Texas Institute for Education Reform (Texas Institute for Education Reform, 2007).

Apart from using some items from the tools mentioned above, other questionnaire items were developed from the objectives of this study, the literature review, and with the assistance of the supervisors.

5.8.1.2 Format and Content of the Principals' Questionnaire

The questionnaire for principals was divided into several parts. The introductory part of the questionnaire introduced the purpose and relevance of the survey to participants. Principals were implored to respond to questions and assured of confidentiality

PART A: (Questions 1-4) This part was aimed at obtaining the profile of schools in terms of their classification, location and ranking. Respondents were expected to simply tick the appropriate box from the list of options given.

PART B: (Questions 5-8) Focused on the qualifications and managerial experience of the respondents. Respondents were expected to tick the appropriate box from the list of options given.

PART C: (Questions 9-47) Focused on the characterization of an accountable public school. Variables describing an accountable public school were listed and the respondents were asked to rank them on a four point scale.

PART D: (Questions 48-77) Focused on the accountability of the principals against a list of criteria. The respondents were expected to score each criterion under A and do the same under B to determine the extent to which they measure up to the criteria.

PART E: (Questions 78-80) Solicited the views of respondents on issues of accountability as they relate to the provincial department. They were expected to plot their views on three items using a nine point scale.

5.8.1.3 Pre-testing the Principals' Questionnaire

According to Leedy (1993), questionnaires should be pre-tested on a small scale population. The main aim of pretesting the questionnaire, according to Legotlo and Teu (1998), is to detect any flaws in the instrument. These authors are of the opinion that only after the necessary changes have been made following the pilot test, the questionnaire can be administered to the full sample. In the case of this study, the principals' questionnaire was piloted during the principals' meeting held in the Lichtenburg area office and minor adjustments were made to the questionnaire thereafter.

5.8.1.4 Quality Assurance of Questionnaires and Interview Schedule

The need to ensure that the questionnaires and interview schedule were validated was always uppermost in the mind of the researcher. To that extent, the questionnaires and interview schedules were developed through stringent quality assurance processes. Apart from consistent inputs and discussions with the promoters, some highly skilled and knowledgeable colleagues in the department were approached to ascertain the validity of the instruments.

5.8.1.5 The Final Questionnaire

After obtaining the necessary permission from the head of department in the North-West Education Department, the principals' questionnaires were administered to 222 principals drawn from the four education districts in the province. These questionnaires were administered during principals' seminars held at selected clusters on predetermined dates. The principals' questionnaires contained information on the purpose of the survey and also guided the respondents on how to go about responding to the different items on the questionnaire. The researcher distributed the principals questionnaires during principals seminars held in the four districts. These questionnaires were collected immediately after completion by the respondents. The researcher administered the questionnaires himself, assisted by two staff members from his office. Because the questionnaires were collected immediately after completion, a hundred percent return rate was possible. The following

paragraphs will discuss the other data gathering techniques that were also used in this study.

5.8.2 Focus Group Interview As a Qualitative Research Method

According to Cohen and Manion (2007), focused interviews differ from other interviews in the sense that the persons interviewed are known to have been in a particular situation. The actual interview is focused on the subjective experience of the persons who have been exposed to the situation.

Group interviews, according to Borg and Gall (1989) involve addressing questions to a group of individuals assembled for this particular purpose. The participants are selected because they are well informed about the topic. Focus group interviews are characterized by the following:

- A carefully planned discussion designed to obtain perceptions on a defined area of interest in a permissive, non-threatening environment.
- It is conducted with approximately seven to ten people by a skilled interviewer.
- The discussion is relaxed, comfortable and often enjoyable for the participants as they share their ideas and perceptions. The healthy relationship that the researcher has with both the unions and officials assisted greatly in creating a very conducive environment for free flowing discussions with some occasional jokes being thrown into the discussions. This triggers thoughts and ideas among participants that do not emerge during an individual interview
- Group members influence each other by responding to ideas and comments in the discussion. Borg and Gall (1989) assert that researchers find that interactions among participants stimulate them to state their feelings, perceptions and beliefs that they would not express if interviewed individually.

In this study, a carefully constructed interview schedule based on the objectives of the study was used to obtain information from selected groups of departmental officials and

teacher unions. In order to create a non threatening environment, the groups were interviewed separately and on different dates.

Lichtman (2006) holds the view that the purpose of using focus groups is to gather information from participants about the topic of interest. According to Fraenkel and Wallen (2008), a focus group is basically a group interview. Hatch (2002) makes the point that focus group interviews are often used to supplement other qualitative data. In the case of this study, the views of district officials' and those of teacher unions were sought in relation to school level accountability. In addition, views were also solicited from them in as far as how they understood their roles and responsibility in enhancing school level accountability.

According to Borg and Gall (1989), focus groups may consist of established groups, and when using established groups, the researcher needs to be sensitive to pre-existing relationships among the group. The two authors further state that the focus group technique works best when all members are on equal basis. Fraenkel and Wallen (2008) also point out that the object of the focus group interview is to get what people really think about an issue in a social context where participants can hear the views of others and consider theirs accordingly. In order to achieve this, interviews for the different groups were separated for the purposes of this study.

5.8.2.1 Format and Content of the Structured Interview Schedule

The interview schedule involved translating the research objectives into the questions that made up the main body of the schedule or questionnaire. A common interview schedule was developed for the two focus groups (teacher unions and departmental officials). The same interview schedule was also used for individual interviews with the representatives of SGBs. Seven questions were derived from the objectives of the study. The same set of questions was used for both focus group interviews and individual interviews administered with representatives from the SGBs.

A single questionnaire was developed for both focus group and individual interviews. Seven broad questions on accountability were posed to the interviewees. These questions were used for both the focus group and individual interviews to obtain consistent information from the different respondents.

5.8.2.2 Pre-testing of the Structured Interview Schedule

Leedy (1993) maintains that questionnaires should be pretested on a small population before being administered. Legotlo and Teu (1998) add that the main aim of pre-testing the questionnaire is to detect flaws in the instrument. The two authors are of the opinion that the questionnaire can be administered on the full sample only after the necessary changes have been made.

In case of this study, the interview schedule was first discussed with the supervisors of this study before it was piloted with three education specialists. No changes were made to the interview schedule after the pilot.

All the focus group interviews were held at a central venue in Mmabatho. Both the representatives of unions and officials from the department were convened in a boardroom in the offices of the Accreditation and Assessment Chief Directorate in Mmabatho.

5.9 TRUSTWORTHINESS OF THE STUDY

Smith *et al* (1996) points out that credibility or internal validity refers to how truthful particular findings are. Whitbeck (1995) also argues that the scientific enterprise is built on a foundation of trust, that the results reported by others are valid and that the sources of novel ideas will be appropriately acknowledged in the literature.

According to Fraenkel and Wallen (2008), validity refers to the degree to which evidence supports any inference a researcher makes based on the data he/she collects using a particular instrument. The authors make the point, however, that it is the inferences that are validated and not the instrument. It is for this reason that inferences should be appropriate, meaningful, correct and useful.

In this study, credibility and trustworthiness were secured by triangulation and extended involvement in the field of education. The researcher asked a colleague to review the recorded interviews and to make sure that the data was correctly transcribed, coded and interpreted. The trustworthiness of the data was furthermore secured by collecting and comparing data from three main sources, i.e. (i) questionnaires to Principals; (ii) focus group interviews with representatives from Teacher Unions; and (iii) focus group interviews with Departmental Officials representing all four districts in the North-West Province. In addition, an extensive literature review was done to enhance the credibility of this study. According to Smith *et al* (2006) dependability or reliability of a study refers to how one can be sure that one's findings are consistent and reproducible. In this study, the strategy that was adopted to ensure dependability was encoding data and verifying each step of the process from literature as well as relying on expert advice from established researchers who are also experts in the field of education.

5.10 DATA ANALYSIS

Neuman (1991) makes the point that social researchers systematically collect and analyse empirical evidence to understand and explain social life. Data analysis therefore entails examining, sorting, categorizing, evaluating, comparing, synthesizing and contemplating the coded data as well as the raw data.

5.10.1 Quantitative Data Analysis

Neuman (1991) asserts that researchers use tables, graphs and charts to give the reader a condensed picture of the data. He further states that in the analysis of quantitative data, the researcher needs to organize and manipulate the quantitative data to get them to

reveal things of interest about the social world. This study used tables and diagrams to present data.

The data were coded before computing them. According to Neuman (1991), coding data means organizing data systematically so that the computer can read them. He further explains that coding involves a set of rules stating that certain numbers are assigned to variable attributes. In this study, the principals' questionnaires were coded before they were administered to them. To describe the results of the questionnaire, descriptive statistics: mean, standard deviation, frequencies and percentages were used.

5.10.2 Qualitative Data analysis

According to Hittleman and Simon (2002), one of the procedures used by qualitative researchers to support their interpretations is triangulation. In essence, triangulation means collecting information from several sources about the same event or behaviour. Cohen and Manion (2007) make the point that triangulation is often used in interpretative research to investigate different viewpoints. Used in this manner, triangulation will produce different sets of data, according to these authors. Triangulation is therefore a procedure used for cross- validating information.

According to Neuman (1991), social researchers systematically collect and analyse empirical evidence to understand and explain social life. He goes on to say that when data are in the form of words, sentences and paragraphs rather than numbers, researchers need to use different research strategies and data collection techniques. Data analysis, according to Neuman (1991) will therefore involve examining, sorting, categorizing, evaluating, comparing, synthesizing, and contemplating the coded data as well as the raw data. According to McMillan and Shumacher (2006) qualitative data analysis entails three steps: Organisation of data, summarizing the data and interpreting the data. Data organisation entails separating data into workable units while looking for categories, concepts and themes.

The interview schedule was analysed by identifying the most common trends into themes. Reflective notes about what was learned from the data were made: '*memoing*' according to Johnson (1999). Data were transcribed by typing the text from interviews into word processing documents.

Data were also read by the researcher line by line and coded into meaningful analytical units. This process is called coding and it is defined by Johnson (1999) as attaching segments of data to symbols, descriptive words, or category names. The researcher also asked a colleague to review that the data was correctly transcribed, coded and interpreted, in order to secure the trustworthiness of the data.

According to McMillan and Schumacher (2006) most studies organize data according to their source. Emic data (participant wording) and etic data (researcher representation of emic data) were used to arrive at themes /sub-themes and conclusions that explain trends and findings in this study.

5.11 SUMMARY

In summary, this chapter described the research methodology used to design a conceptual framework for public school accountability. It further provided a description of quantitative and qualitative approaches to research, highlighting the strengths and weaknesses of each. It provided the theoretical basis for the research sampling procedures and the tools used to gather data, and how these tools were to be administered. The final part of the chapter provided an indication of how the collected data were to be analysed in chapter 6.