CHAPTER 5

RATIONALE FOR THE RESEARCH APPROACH

5.1 INTRODUCTION

According to Emory and Cooper (1991:139), a *research design* can be defined as the following:

- a plan for selecting the sources and types of information relevant to the research question;
- a framework for specifying the relationships between the study's variables; and
- a blueprint for outlining all the procedures, from the formulation of the hypotheses to the analysis of the data.

The type of research undertaken in this project is qualitative in nature and was developed from critical theory. Critical theory asks: "How can this situation be understood in order to change it?" Action research goes beyond this and goes into action by asking, "How can it be changed?" (McNiff & Whitehead, 2006:41). This chapter justifies action research as the selected research approach. According to Gabel (in De Jager, 2002:10), action research is "a model of inquiry and provides a practical framework for qualitative investigations".

The following aspects are discussed in this chapter, with specific reference to their use in this study:

- a qualitative research design;
- action research; and
- ethical issues relevant to the study.

5.2 QUALITATIVE RESEARCH DESIGN

There are two broad categories of research design, namely quantitative designs and qualitative designs.

Quantitative designs "use numbers and statistical methods" and tend "to be based on numerical measurements of specific aspects of phenomena; [they] abstract[ ] from particular instances to seek general descriptions or to test causal hypotheses; [they] seek[ ] measurements and analyses that are easily replicable by other researchers" (King, Keohane & Verba in Thomas, 2003:2).

Qualitative designs "seek explanations and predictions that will generalize to other persons and places" (Glesne & Peshkin in Thomas, 2003:2). According to Strauss and Corbin (1998), qualitative researchers clarify data by giving them meaning, translating them, or making them understandable. Qualitative research emphasizes the significance of social context for understanding the social world. It is ideal for complex phenomena about which there is little certain knowledge, such as this study. Qualitative methods are extremely useful for the examination of phenomena and to find out how to understand a phenomenon (Social Assessment, LLC, n.d.).

5.2.1 The nature of qualitative data

Qualitative research builds on a person's verbal skills and requires skilful interpretation of data in the form of words. The words are based on observation, interviews or documents and the data collection activities are typically carried out in close proximity to a local setting for a sustained period.

Qualitative data are usually not immediately accessible for analysis, but require some processing. The apparent simplicity of the data can mask a good deal of complexity and therefore requires a lot of care and self-awareness on the part of the researcher (Miles & Huberman, 1994:11-12). "Qualitative researchers are judged by how insightfully they

interpret the data and present their findings, and by how well the interpretation feeds their material" (Social Assessment, LLC, n.d.). This means that a researcher doing qualitative research adopts a special style and role of observation and measurement, and that also applies to me, as a researcher, in this study.

According to Miles and Huberman (1994:10), qualitative data share a number of features and strengths – they

- focus on naturally occurring, ordinary events in natural settings;
- are rich and have a strong potential for revealing complexity;
- are collected over a sustained period and are therefore powerful tools for studying any process and assessing causality;
- emphasize people's "lived experience" and are well suited to locating the meanings people attach to the events, processes and structures of their lives;
- are often the best strategy for discovering and exploring a new area and developing hypotheses;
- have strong potential for testing hypotheses; and
- are very useful to supplement, validate, explain, illuminate, or reinterpret quantitative data gathered from the same setting.

5.2.2 Qualitative data analysis

Miles and Huberman (1994:10-11) describe qualitative analysis as a continuous, iterative process that consists of the following concurrent flows of activity (see also Figure 5.1 on the next page):

- *data reduction*, which refers to the process of selecting, focusing, simplifying, abstracting and transforming the data;
- *data display*, which is an organised, compressed assembly of information that permits conclusions to be drawn and action; and
- *conclusion-drawing and verification*, which refers to the decision about what things mean and how the meanings that emerge from the data have to be tested for their validity.

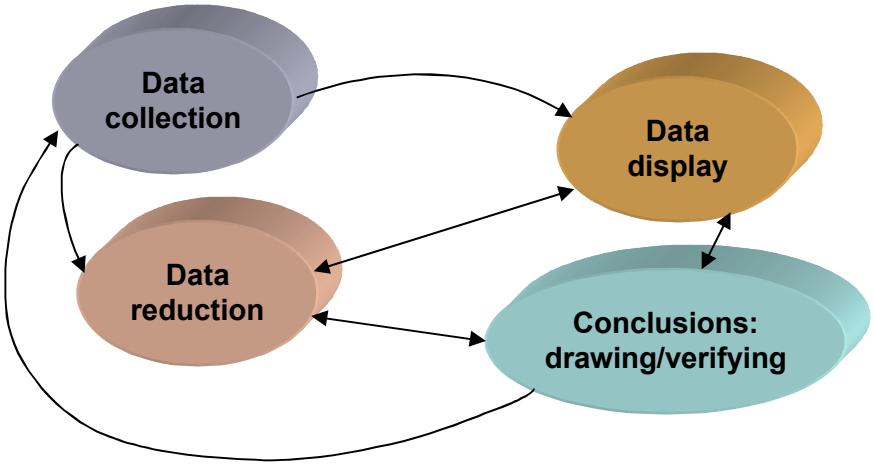

Figure 5.1 Components of qualitative analysis
Source: Miles and Huberman (1994:12)

The following analytical practices are generally used across different qualitative research methods (Miles & Huberman, 1994:9, *verbatim*):

- affixing codes to a set of field notes drawn from observations or interviews;
- noting reflections or other remarks in the margins;
- sorting and sifting through these materials to identify similar phrases, relationships between variables, patterns, themes, distinct differences between subgroups, and common sequences;
- isolating these patterns and processes, commonalities and differences, and taking them out to the field in the next wave of data collection;
- gradually elaborating a small set of generalizations that cover the consistencies discerned in the database; and
- confronting those generalizations with a formalized body of knowledge in the form of constructs or theories.

According to Miles and Huberman (1994:8-9), the following three approaches to qualitative data analysis are followed:

- *Interpretivism* sees human activity as "text" – as a collection of symbols expressing layers of meaning. This text is interpreted through deep understanding and empathy or "indwelling" with the

subject of one's inquiries. This approach leads to a practical understanding of meanings and actions. Qualitative researchers in semiotics, in deconstructivism, in aesthetic criticism, in ethnomethodology and in hermeneutics often pursue this line of inquiry (Miles and Huberman, 1994:8).

- *Social anthropology* focuses on the behavioural regularities in everyday situations, such as language use, artefacts, rituals and relationships. These regularities are expressed as patterns, language or rules and are meant to provide the inferential keys to the culture or society under study. Many social anthropologists are also concerned with the genesis or refinement of theory. They may begin with a conceptual framework and take the framework out to the field for testing, refinement, or qualification. Researchers in life history, grounded theory, ecological psychology, narrative studies, and in a wide range of applied studies often take this line of inquiry (Miles and Huberman, 1994:8).
- *Collaborative social research* undertakes collective action in a social setting and is also known as action research. The researchers design the outlines of a field experiment and once the data has been collated, it is given to the "activists", both as feedback and to craft the next stage of operations. In the case of collaborative action research, the researchers join closely with the participants from the outset, so that the social environment can be transformed through a process of critical inquiry. This approach is found in fields such as critical ethnography and action science (Miles and Huberman, 1994:8-9).

The purpose of this study is to develop a root cause analysis process for uncontrolled variations in human performance. This will contribute a new process to both root cause analysis and human performance management. For this reason, the study followed an action research approach.

5.3 ACTION RESEARCH

5.3.1 What is action research?

Action research has its academic roots in sociology, social psychology, psychology, organisational studies, and education (Web Center for Social Research Methods, n.d.). McKernan (1996:5) defines *action research* as a

> reflective process whereby in a given problem area, where one wishes to improve practice or personal understanding, inquiry is carried out by the practitioner – first, to clearly define the problem; secondly, to specify a plan of action – including the testing of hypotheses by application of action to the problem. Evaluation is then undertaken to monitor and establish the effectiveness of the action taken. Finally, participants reflect upon, explain developments, and communicate these results to the community of action researchers. Action research is systematic self-reflective scientific inquiry by practitioners to improve practice.

McKernan's definition is supported by Dicks (in De Jager, 2002:7), who states that action research tends to be

- *cyclical* (similar steps tend to occur in a similar sequence);
- *participative* (clients and informants are involved in the process as active partners);
- *qualitative* (it deals more with language than with numbers); and
- *reflective* (critical reflection on the process and outcomes are important parts of each cycle).

Most forms of action research use a cyclical or spiral process that alternates between action and critical reflection (see Figure 5.2 on the next page).

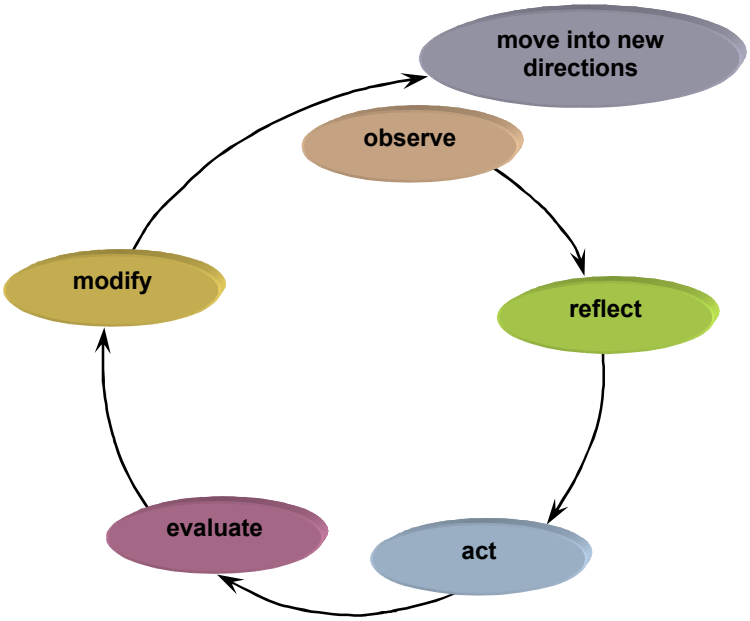

Figure 5.2 An action research cycle
Source: McNiff and Whitehead (2006:9)

In later cycles, the process alternates between data collection and interpretation in the light of the understanding developed in the earlier cycles. Such a study is therefore both an emergent and iterative process – it takes shape as understanding increases and converges towards a better understanding of what happens (Web Center for Social Research Methods, n.d.).

In summary, the following conclusions can be drawn about action research (De Jager, 2002:7): first, action research is about real-life action; second, it is about life-long research; and, third, it is a collaborative group activity and involves people with different perspectives.

5.3.2 The purpose of action research

All sound researchers share a number of features. According to McNiff and Whitehead (2006:22, *verbatim*), they

- identify a research issue;
- identify research aims;
- set out a research design (plan);
- gather data;
- estimate criteria and standards of judgement;
- generate evidence from the data;
- make a claim to knowledge;
- submit the claim to critique;
- explain the significance of the work;
- disseminate the findings; and
- link new knowledge to existing knowledge.

While all research generates new knowledge, action research generates a special kind of knowledge and is used to improve one's understanding; develop one's learning and influence others' learning (McNiff & Whitehead, 2006:13-14).

According to McNiff and Whitehead (2006:45), action research has two main purposes, namely, first, to contribute to new practices and, second, to contribute to new theory.

McNiff and Whitehead (2006:32) argue that the main social purposes of action research include that it aims to improve workplace practices by improving learning, to promote the ongoing democratic evaluation of learning and practices, and to create good social orders by influencing the education of social formations.

The purpose of action research is *not* to draw comparisons, show statistical correlations, or demonstrate a cause and effect relationship. These are addressed by social science instead.

5.3.3 Underpinning assumptions of action research

The following are the underpinning assumptions of action research (McNiff & Whitehead, 2006:23-32):

- *Ontological assumptions*
  - Action research is value-laden and ethically committed.
  - Action research aims to understand what I/we are doing.
  - Action research assumes that the researcher is in relation with everything else in the research field and influences, and is influenced by, others.
- *Epistemological assumptions*
  - The object of enquiry in action research is the "I" in relation to other "I's".
  - Knowledge is vague.
  - Knowledge is often subjective and unbiased and individuals have to negotiate these meanings with other knowing individuals.
- *Methodological assumptions*
  - Action research is participatory and collaborative – it takes place in social contexts and engages other people.
  - Action research begins with a concern and follows through a developmental process that shows cycles of action and reflection.
  - Action researchers aim to examine their practice with a view to improving it.

5.3.4 The action research process and plan

The steps in the action research process are the following (McNiff & Whitehead, 2006:91):

- Review the current practice.

- Identify an aspect that needs investigation.
- Visualize a way forward.
- Try it out.
- Take stock of what happens.
- Modify what is done in the light of what has been found and continue working in this new way.
- Monitor what is done.
- Review and evaluate the adapted action.
- Assess the validity of the account of learning.
- Improve practices in the light of the evaluation.

The above process can be transformed into the following series of questions, which can act as an action plan for action research (McNiff & Whitehead, 2006:192-195):

- *What is my concern?*

  This is a description of what the research is about and how the concern has led one to decide to research the issue.
- *Why am I concerned?*

  This is an explanation of how the situation could be seen as a realization of, or a denial of, one's values. It articulates the values that inspire one's work.
- *What kinds of experience can I describe to show why I am concerned?*

  This is a description of what the situation is like, what others are thinking and doing, and one's dissatisfaction with the current situation.
- *What can I do about it?*

  This is an explanation of how one thinks about the situation, how one thinks it can be addressed, and the ethical considerations of involving others and working in a social context where the proposed actions may have implications for others.

- *What will I do about it?*

  This is an explanation of the course of action to be taken, some of the practicalities involved, and how good ethical conduct is ensured.
- *What kind of data will I gather to show the situation as it unfolds?*

  This is a description of the situation as it develops, drawing on the data gathered. It describes what happened, why it happened, and what was achieved.
- *How will I explain my educational influences in learning?*

  This is a description of one's original value that inspired the work and how judgements about one's own influences are made.
- *How will I ensure that any conclusions I reach are reasonably fair and accurate?*

  This is an explanation of the procedures to be followed to test and critique the provisional conclusions at all steps of the research.
- *How will I evaluate the validity of the evidence-based account of my learning?*

  This is a description of the criteria and standards of judgement, as well as the significance for evaluating the validity of the account of learning.
- *How will I modify my concerns, ideas and practice in the light of my evaluations?*

  This is a description of how the research will lead to the development of new practices and new thinking (theorizing) and how the new practice will be tested to evaluate what is being done and how to improve it where necessary.

5.3.5 Gathering and interpreting the data

When looking for data during action research, one looks for episodes of practice that will produce evidence of one's own learning, as well as the learning of others (McNiff & Whitehead, 2006:137). The following questions need to be answered early in the process (McNiff & Whitehead, 2006:134):

- How will practice be monitored?
- How often will data be gathered?
- Which data gathering techniques will be used?

The following are some of the most common data-gathering techniques used during action research (McNiff & Whitehead, 2006:139-142):

- observation and data gathering techniques to observe and record one's own as well as other people's actions:
  - field notes;
  - record sheets and observation schedules; and
  - sociometric analysis; and
- observation and data gathering techniques to observe and record one's own as well as other people's learning:
  - written accounts;
  - personal logs and diaries;
  - questionnaires; and
  - surveys and interviews.

The frequency with which data are gathered depends on the overall length and intensity of the project. Data can be collected using documented practices, such as diaries, personal letters, policy statements, and agendas and minutes of meetings. Alternatively, data can also be gathered at the research site where researcher and participants meet. Situations such as role play, performance, artworks, or video-taping can be set up at the research site, so that people can explore their learning and find ways of articulating it (McNiff & Whitehead, 2006:143-144).

The purpose of gathering data is to generate evidence to support the researcher's claim to knowledge. Producing evidence involves analysing data and establishing the validity of a claim. Generating evidence is a rigorous process that involves the following (McNiff & Whitehead, 2006:148):

- making a claim to knowledge, by saying one knows something now that was not known before and adding it to the public body of knowledge;
- establishing criteria and standards of judgement;
- searching the data archive and selecting data; and
- generating evidence.

5.3.6 Testing validity

"Validity refers to establishing the truth value of a claim, its authenticity or trustworthiness" (McNiff & Whitehead, 2006:157).

To get other people to agree that a researcher's claim to validity is credible, he/she must put his/her findings into the public arena with an explicit articulation of the procedures that have been used to demonstrate the methodological rigour of the study, so that its validity can be tested against other people's critical assessment. If others agree, then the claim can be accepted as valid.

5.3.7 Establishing legitimacy

"Legitimacy refers to getting the account accepted in the public domain, by getting people to listen to you and take your work seriously, in the hope that they may be open to learning from it or trying out something similar for themselves" (McNiff & Whitehead, 2006:157).

To establish the legitimacy of a study and have its findings accepted in the public domain, a researcher should to be able to show the relevance and significance of the research project to others. People will listen if they can see how the ideas can enrich their own lives. The research project should produce new things that people can learn, which will feed back into new actions, which in turn will generate new learning. This is an ongoing process and others would want to see how they could do something similar in their own contexts.

Action research is significant if the researcher can generate and test the theory in relation to his/her own learning, the learning of others in workplaces and social situations, and the education of social formations (McNiff & Whitehead, 2006:233). "The education of social formations" refers to changes in the rules that regulate social organisations and move the social formation in the direction of values that carry hope for the future of humanity. This involves the learning process that people engage in when they decide to improve their collective capacity for generating theory to improve learning.

5.4 ETHICAL ISSUES

Sieber and House (in Miles & Huberman, 1994:289-290) suggest that the following core principles guide ethical choice:

- *beneficence* – this involves maximizing good outcomes for science, humanity in general and the individual research participants in particular, while avoiding or minimizing unnecessary harm, risk, or wrong;
- *respect* – this implies protecting the autonomy of (autonomous) persons, with courtesy and respect for individuals as persons, including those who are not autonomous; furthermore, understanding others' aims and interests, not being condescending;
- *justice* – this includes ensuring reasonable, non-exploitative and carefully considered procedures and their fair administration, and distributing costs and benefits fairly among persons and groups;
- *non-coercion and non-manipulation* – this means not using force or threats, or leading others to cooperate when it is against their interests;
- *support for democratic values and institutions* – this includes making a commitment to equality and liberty, working against oppression and subjugation.

Miles and Huberman (1994:290-295) suggest that the following series of issues typically need attention before, during, and after qualitative studies:

- *Worthiness of the project*

  Is the project worth doing? Will it contribute in some significant way to a domain broader than the researcher's funding, publication opportunities, and career? Is it congruent with the values important to the researcher? A researcher is likely to pursue a study that is only opportunistic, without larger significance or real meaning to the researcher, in a shallow way, devoting less care to the design and data collection.

- *Competence boundaries*

  Does the researcher have enough expertise to carry out a good quality study? Is the researcher prepared to be supervised, trained, consulted with? Is such help available? Unacknowledged incompetence is responsible for the following in qualitative studies: blissful ignorance on the part of the researcher, underdesign of the study, the accumulation of large amounts of poorly collected, unanalysed data, and superficial and hasty conclusion-drawing when deadlines loom.

- *Informed consent*

  Do the people who are being studied have full information about what the study will involve and do they give the consent to participate freely? Weak consent and ambiguity about later stages of analysis can lead to poor data and can be damaging to study quality and to the interests of the people in the case.

- *Benefits, costs, and reciprocity*

  What will each party to the study gain from having participated? What do they have to invest in time, energy, or money? Is the balance equitable? Study participants' concern about the inequity of benefits and costs can jeopardize access and lead to thin data.

- *Harm and risk*

  What might this study do to hurt the people involved? How likely is it that such harm will occur? If harm is expected, access and data quality may suffer. The prospect of immediately impending harm can put pressure on the researcher to revise or delete conclusions, or to self-censor them in advance.

- *Honesty and trust*

  What is the researcher's relationship with the people being studied? Do they trust each other? If people feel betrayed by the researcher when they read the report, they will reject it as a reasonable interpretation of what happened.

- *Privacy, confidentiality, and anonymity*

  In what ways will the study intrude, or come closer to people than they want? How will information be guarded? How identifiable are the individuals and organisations studied? Sieber (in Miles & Huberman, 1994:293) distinguishes the three terms in the following way:

  - *privacy* – "control over others' access to oneself and associated information; preservation of boundaries against giving protected information or receiving unwanted information (Miles & Huberman, 1994:293);
  - *confidentiality* – agreements with a person or organisation about what will be done with their data; this may include legal constraints; and
  - *anonymity* – lack of identifiers (information that would indicate which individuals or organisations provided which data).

  When privacy has been threatened, new analytical moves may be needed to protect data quality. Using member checks to verify or extend interpretations and conclusions helps with anonymity problems. Explicit confidentiality agreements about where raw data and analyses will be stored, and who will have access to them, can enhance data quality by increasing trust.

- *Intervention and advocacy*

  What does the researcher do when he/she sees harmful, illegal, or wrongful behaviour on the part of others during the study? Whose interests are being advocated? If the researcher decides to withhold "guilty knowledge" in favour of continued access, his/her public reports, conceptualization and explanatory theories may become lopsided.

- *Research integrity and quality*

  Is the study conducted carefully, thoughtfully and correctly in terms of some reasonable set of standards? If the researcher does not attend to the issue of goodness criteria in the study, he/she is on shaky intellectual ground.

Scientific rigour and trustworthiness, internal and external validity and social consequences are important quality factors in qualitative research (Social Assessment, LLC, n.d.).

- *Ownership of data and conclusions*

  Who owns the field notes and analyses, and once the reports have been written, who controls their diffusion? Freedom of scholarly inquiry, career advancement and recognition are strong values. Sources of funding should be disclosed. The researcher needs to be clear on the political context of his/her work. The broader use of audits can, for instance, be used to improve the quality of conclusions. However, researchers need to guard against agreeing too easily to others' veto efforts, or to altering important substantive aspects as a way of assuring publication or continued funding.

- *Use and misuse of results*

  Does the researcher have an obligation to help ensure that the findings are used appropriately? What if they are used harmfully or wrongly? From the start, the researcher needs to be as clear as possible about how committed he/she is to supporting the use of the findings. Such clarity encourages strong technical attention to how the material is used (for example, in producing reports), and focuses attention on the ethical issues.

Ethical considerations that are, more specifically, applicable in action research involve the following three aspects (McNiff & Whitehead, 2006:86-87): first, the researcher must negotiate and secure permission in writing to do the research; second, the researcher must protect the participants by not naming or identifying them in any way; and, third, the researcher must assure good faith at all times by always doing what he/she says that he/she is going to do.

Finally, Miles and Huberman (1994:296-297) offer the following advice about the ethical issues:

- *Awareness*

  Researchers should discuss their general ethical positions. Reasoning inductively from past situations in which the researcher felt uncertain about the right thing to do, or situations in which the researcher felt comfortable, can be helpful.

- *Anticipation*

  Most of the issues raised in this chapter can benefit from advance thinking during the early stage of project design. Running through the issues as a sort of checklist can help the researcher to avoid problems later.

- *Preliminary agreements*

  Researchers should contract with case participants early. These must be done explicitly during entry and access, and must be committed to paper.

- *Documentation and reflection*

  It is easy to become preoccupied with the demands of data collection and analysis and to miss latent, potentially painful ethical issues until it is too late. Some routinized structure can help to foreground mild worries that often prove to be a distant early warning of problems.

- *Third parties*

  Because ethical issues often tend to be masked by taken-for-granted assumptions, beliefs and values, involving a trusted third party can be very helpful. Such a person can raise issues that the researcher may have overlooked, suggest alternative viewpoints, help make tacit assumptions explicit, be an advocate for respondents, or serve as a mediator between respondents and researchers when there are unresolved problems.

- *Regular checking and renegotiation*

  The evolution of any qualitative study normally involves some twists and turns that no one expected. As a result, initial agreements and working procedures almost always need to be updated. It is therefore useful to create the expectation that agreements may need renegotiation from the start and to make it clear that “recheck” meetings can be called at any point by either the researcher or the respondents.

The ethical decisions and standards applied during this research are discussed in Chapter 6.

5.5 CONCLUSION

This chapter has argued for the selection of qualitative research, and more specifically action research, as the most suitable research approach for the research problem at hand. The following requirements qualified this study as an action research project:

- the research required a collaborative process that involved all the participants who tested the root cause analysis process;
- a better understanding of the problem and solution needed to be developed from the data that were collected during each round of testing;
- testing of the root cause analysis process needed to take place in participants' natural settings;
- interpreting participants' feedback required sorting and sifting through their comments to identify similar phrases, patterns, and themes;
- participants' feedback needed to be used to revisit the process for a next round of testing;
- the steps in the process were repeated till an adequate solution was identified and developed; and
- developing a process such as a root cause analysis process requires life-long research.

The next chapter explains the research methodology and the iterative, cyclical process that was followed to develop an adequate solution to the research problem, based on the rationale described in this chapter.