

CHAPTER 1: ORIENTATION OF THE STUDY

1.1 INTRODUCTION

Post-basic education of reflective neonatal nurses is a challenge. A critical outcome of education of neonatal nurses is the preparation for their role in reflective neonatal nursing practice, while at the same time comply with the ethico-legal framework of the profession according to the South African Nursing Council (SANC), and the framework of the higher education scenario of South Africa.

The challenge led to the aim of the particular study, namely the development of a model for the education of reflective neonatal nurses in a South African context.

1.2 BACKGROUND OF THE STUDY

The importance of all health practitioners, including nursing practitioners, being reflective has been increasingly emphasised in the literature over the last couple of years (Alsop 2005:174-184; Chiu 2006:183-203; Driscoll & Teh 2001:95-103; Foster & Greenwood 1998:165-172). The researcher's experience as a nurse educator was that educating nurses, specifically neonatal nurses, to be reflective is a challenge in the South African context.

Neonatal nursing has become a specialised sub-field in nursing science, which focuses on nursing high risk and critically ill neonates. The field of neonatal nursing has also changed significantly over the last three decades. Knowledge has advanced and technology becomes more sophisticated; surviving neonates are younger, smaller and more acutely ill; mortality has decreased and morbidity increased (Foster & Greenwood 1998:170; Verklan & Walden 2004:xiii). Other factors from outside the field are also becoming increasingly important, such as staff shortages, increased workloads, higher demand for quality care and greater frequency of legal cases against hospitals and individuals (Kirby & Kennedy 1999:3-24; Venter 2005:5).

Neonatal nurses in a South African context are generally employed in neonatal intensive care units (NICUs) in the public or private health sectors. The patients admitted to these NICUs are



usually high-risk or critically ill neonates. These neonates are kept in the unit until discharged to the care of their parents or alternative primary caregivers.

Due to the recent changes in neonatal nursing, mentioned above, the traditional apprenticeship-style of training has become inadequate for delivering competent neonatal nurses who are reflective about their practice. Foster and Greenwood (1998:170) describe 'routinised' versus 'reflective' neonatal nurses in a study of nurses in Australia. Routinised nurses lack reflective skills and rely on routine care and 'recipes' to cope with the demands of day-to-day neonatal nursing even if these are unsuitable for a specific patient. Reflective nurses, in contrast, provide patient-specific care according to the unique needs of the neonate, using a process of reflection that involves analysing and interpreting cues, weighing the evidence and only then making appropriate clinical decisions.

Von Klitzing (1999:1213 – 1221) states that if nurses work in a critical care unit, they need the ability to reflect about patients, and about themselves and their experiences. Hillier (2002:23, 25) describes reflective practitioners as "people who would be competent professionals, seeking to improve their practice", who "can adopt the different social contexts in which they find themselves" and who can take control of their professional practice, acknowledging both what they are able to transform and what they are powerless to change, through a truly emancipatory process.

Reflective nurses tend to show certain characteristics or skills, including self-awareness, description, critical analysis, synthesis and evaluation of situations (Atkins & Murphy 1993:1190). They use reflection before action, in action and on action in their nursing practice and personal lives (Foster & Greenwood 1998:169-171). They are able to link the concrete to the abstract (Hatcher & Bringle 1997:153). They focus on the 'why' and not the 'how' of their actions (Van Aswegen, Brink & Steyn 2000:124). Van Wyk (2000:1) defines the reflective nurse as one who acts as a professional person, integrating theory and practice, knowledge and skills. In this process, the reflective nurse addresses firstly the technological and rational aspects of nursing practice and secondly those non-technological, non-rational aspects that deal with the unique circumstances of the patient as a person.

Deleted: in their

Reflective nurses use theoretical knowledge, previous experience and personal perspectives in their neonatal nursing (Greenwood, Sullivan, Spence & McDonald 2000:1106). In their practice reflective persons draw on empirical-analytical, historical-hermeneutic and critical/self-reflective knowledge, on technical and cognitive skills, on their values and perceptions of the



world, on their self-perception and emotional status, and on their varied interactions with the world (Smith & Lovat 2003:28-29; 88-90; 100-102).

The South African Nursing Council (SANC) (1992a:3) stipulates that nursing education should aim for:

the development of the nursing student as an adult on a personal and professional level and should lead to cognitive, affective and psychomotor development of the student, as well as the achievement of prescribed programme objectives. The development of the ability for analytical, critically-evaluative and creative thinking and the continuing stimulation of the capacity to interpret scientific data for nursing actions to draw conclusions and to exercise independent judgement, are of the utmost importance.

A neonatal education programme has to meet the requirements of both the SANC and the relevant higher education authorities. The aim of the education of neonatal nurses is to prepare them to meet the demands of professional practice reflectively in the midst of changes and increasing specialisation in the field of neonatal nursing. Nurses have to obtain through education the competences they need to prepare them not only for today, but also for the future, with an efficient knowledge base, appropriate cognitive skills, the necessary psychomotor and technical skills and optimal professional characteristics within a particular framework.

Neonatal nursing education in South Africa began as part of other post-basic education programmes in critical care, advanced midwifery and child nursing, and developed into a specialised programme on its own. Over the years the researcher has seen how the neonatal nursing education programme inherited significant parts of its curriculum from these other programmes. Some of this inherited matter is important and relevant, and some less relevant to neonatal nurses preparing for practice. Some important aspects are not addressed at all.

Although there seems to be a general consensus on the characteristics of the reflective learner and the need for reflective neonatal nurses, educators are unsure how this particular group of students need to be educated to become reflective practitioners. The education of reflective neonatal nurses in a South African context is thus an identified challenge facing nursing educators today, a challenge which prompted this study.



1.3 PROBLEM STATEMENT AND RESEARCH QUESTION

Generic outcomes expected of nursing educational programmes are stipulated by the SANC (SANC 2004:1-21; SANC 1993c:14-16; SANC 1992a:3), the Department of Higher Education (Ministry of Education 2004:1-38), the South African Qualifications Authority (South Africa 1995), the Council on Higher Education (Higher Education Quality Committee 2004a:1-24; 2004b:1-37) and the approved educational institution, which is in this study the University of Pretoria (2000: Unpublished documents).

These outcomes are not very detailed. For example, one reads:

The curriculum for the course shall be compiled in such a manner that it leads to the consolidation of the knowledge of, personal growth and the continued skill of a student in respect of the following: ... (g) defining and accepting responsibility for independent nursing practice. (SANC 1992:3)

Thus, these generic outcomes do promote the education of reflective neonatal nurses, but do not give much clarity on exactly how this is to be achieved. The research question was therefore: 'How can professional nurses be educated in a South African context to become reflective neonatal nurses?' This question encouraged the study, which aimed to develop a model for the education of reflective neonatal nurses in a South African context.

1.4 RESEARCH METHODS

1.4.1 Nature of the study design

To achieve the aim of the study, an exploratory and descriptive design was used which was in essence qualitative and contextual in nature to develop the model.

The model was developed following of the process described by Walker and Avant (1983:145-161) for developing nursing theory. The process began with selection of a topic of interest (one concept/variable or a framework of several concepts), then moved to identifying and recording relationships between the concepts supported by evidence and ended with organising these relational statements to describe the components of the conceptual model (McEwen & Wills 2002:85; Walker & Avant 1983:145-161).



1.4.2 Structural components of proposed model

The first step, identifying a topic of interest, involved identifying the structural components of the selected framework of concepts, in this case, the activity of educating reflective neonatal nurses. Dickoff, James and Wiedenbach (1968:545-554) list the components of any activity: there is a purpose (goal or endpoint of the activity); an agent (who is responsible for the activity); a recipient (who receives the activity); a framework (context where the activity takes place); dynamics (the energy source of the activity); and a procedure (procedure, technique or protocol of the activity). Applying this structure to the topic of interest yields the following (in no specific order):

- Purpose: Applied competences, critical- and end-product outcomes of education of reflective neonatal nurses
- Framework: Higher education, nursing education and neonatal nursing practice in a South African context
- Dynamics: Reflective learning
- Recipient: Neonatal nurses as students
- Procedure: Educational approaches
- Agent: Educator

1.4.3 Phases of the study

The study had three phases. The different phases had different goals. The first two phases occurred simultaneously, overlapping and interrelating in the process to culminate in the development of a model for the education of reflective neonatal nurses in the third phase.

The first phase was identifying and clarifying the concepts related to educational aspects of importance in education of reflective neonatal nurses. This phase addressed the framework (higher education and nursing education), purpose (meaning of applied competences, critical outcomes and end-product outcomes), recipient (neonatal nursing students), dynamics (reflective learning), procedure (educational approaches) and agent (educator) listed above.

The second phase continued this identification and clarification of concepts in neonatal nursing practice related to education of reflective neonatal nurses. This phase focused mainly on the purpose (competences expected of reflective neonatal nurses), the framework



(neonatal nursing practice in a South African context) and procedure (content outline of the education programme) of the selected topic.

The third phase was constructing and describing a model for educating reflective neonatal nurses in a South African context. This phase involved developing relational statements linking the concepts clarified in the previous two phases, as well as the evaluation of the model by experts. Figure 1.1 is a schematic overview of this study.

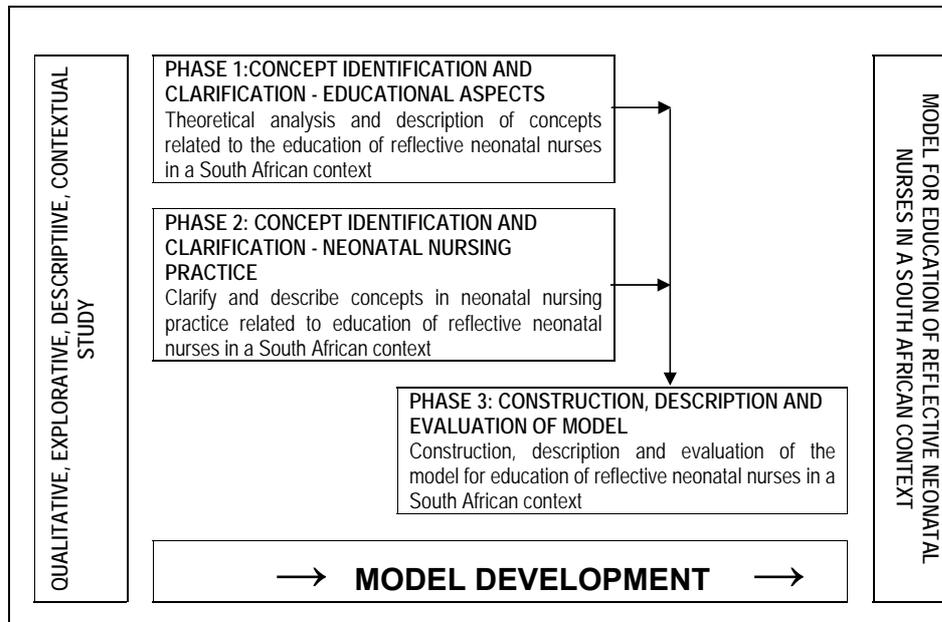


Figure 1.1: Schematic overview of study

1.4.4 Objectives of the study

The objectives of the study were formulated as follows in order to achieve the various goals of the phases:

Phase 1: Concept identification and clarification – educational aspects:

- To explore and describe neonatal nursing education in the South African context
- To analyse higher education in South Africa as applicable to neonatal nursing education
- To explore and describe additional influences on neonatal nursing education

- To describe neonatal nursing students
- To analyse the process of reflective learning
- To explore and describe competences associated with reflective learning
- To explore and describe professional characteristics associated with reflective learning
- To explore and describe outcomes of reflective learning
- To analyse the role of the educator in the education of reflective neonatal nurses
- To analyse educational approaches for the education of reflective neonatal nurses

Phase 2: Concept identification and clarification – neonatal nursing practice:

- To explore and describe the attributes of neonatal nursing practice, what it demands from reflective neonatal nurses and the competences expected of them
- To synthesise the expected outcomes of the education of reflective neonatal nurses
- To deduce the content outline of an education programme for reflective neonatal nurses

Phase 3: Construction, description and evaluation of model:

- To construct and describe a model for the education of reflective neonatal nurses in a South African context
- To evaluate the model for the education of reflective neonatal nurses in a South African context

The research techniques used to meet the various objectives are discussed in detail in the following chapter.

1.4.5 Significance of the study

The model is set out in concepts, statements and the relationships between them to give an overall grasp of a vital task, which is educating reflective neonatal nurses (Burns & Grove 1993:179; Chinn & Kramer 1991:216; McEwen & Wills 2002:79). Herein lies the significance of the study: through developing a model for educating reflective neonatal nurses this study contributes to reflective practice, neonatal nursing, nursing education and nursing science as a whole. The model is a unique contribution to higher education, nursing education and neonatal nursing practice, as it brings neonatal nursing education in line with the real-world demands and expectations of neonatal nursing practice within the current South African context of higher education and health care.



1.5 FRAME OF REFERENCE

The frame of reference of the study developed from the researcher's professional knowledge and experience of neonatal nursing practice and neonatal nursing education. The frame of reference can be described in terms of relevant paradigms, assumptions and conceptual definitions.

1.5.1 Paradigm

The frame of reference for this study was the naturalistic, postmodern paradigm. It was based on the naturalistic paradigm with the underlying philosophy that reality is not a fixed entity but rather a construction by the individuals participating in the research, a construct that is multiple and subjective, and which exists within a particular context (Polit & Hungler 1997:11-13). It was also based on the belief that there is not a single truth, but multiple truths with acknowledgement of both physical and non-physical realities and phenomena, relativity in time and space, search for meaning and wholeness, and multiple interpretations. It further accommodated openness of ideas, critiques and challenges, and non-linearity of thinking and acting (Watson 1999:289).

1.5.2 Assumptions

Assumptions are statements that are not scientifically tested but are considered to be true. They influence the logic behind a study. Therefore, the rigorous development of a study involves recognising its underlying assumptions (Burns & Grove 1993:45-46). The assumptions underlying this study can be divided into epistemological, ontological and methodological assumptions.

1.5.2.1 Epistemological assumptions

The essence of epistemology as applied to a research project is the question of the degree of certainty with which the knowledge base resulting from the research can be considered the truth. It is impossible to prove beyond a shadow of a doubt that any project's assumptions are absolutely correct, due to the complex nature of the human sciences, but this remains the goal



of every researcher. The epistemological aim of good research is therefore to strive to generate knowledge that is as near as possible to absolute certainty (Mouton & Marais 1994:14-15).

The researcher clarified her assumptions about the epistemological nature of neonatal nursing practice to confirm the attributes, demands and competences related to neonatal nursing practice.

The researcher departed epistemologically from the following assumptions:

- The unique and dynamic nature of neonatal nursing practice demands of neonatal nurses to be reflective practitioners.
- Reflective neonatal nurses are able to provide quality, holistic nursing care and meet the demands of high risk and critically ill infants in neonatal nursing practice.
- Neonatal nursing education prepares neonatal nurses for their role as reflective practitioners.
- Neonatal nursing education is a dynamic process of teaching and learning specialised knowledge and skills and creating opportunities for personal and professional growth in the field of neonatal nursing science.
- The educator's role is to facilitate reflective learning through reflective education.
- Reflective education contributes to developing reflective neonatal nurses and closing the theory-practice gap.

1.5.2.2 Ontological assumptions

Ontological assumptions deal with the reality of the meanings that people attach to a specific situation (Polit & Hungler 1997:11-13). In this study the important ontological assumptions were as follows:

- Neonatal nurses gain and experience positive growth through reflective learning.
- The contribution of reflective neonatal nurses to neonatal nursing practice is unique and authentic.
- Neonatal nursing practice is an ever-changing, multi-dimensional and dynamic context.



1.5.2.3 Methodological assumptions

Methodological assumptions involve scientific criteria and how knowledge is obtained and refer to the methods used to scientifically validate a study (Polit & Hungler 1997:11-13). The researcher's methodological assumptions were as follows:

- A phenomenon is described holistically, patterns sought within it and the most appropriate techniques used for the purposes of the study.
- The research design is flexible and the emphasis is on narrative information.
- A qualitative approach facilitates in-depth exploration and description of the phenomenon.
- Qualitative research, as a set of interpretive activities, privileges no single methodological practice over another (Denzin & Lincoln 2000:6),
- A dense or 'thick' description of the research methodology enhances the trustworthiness of the research.
- Triangulation of research methods and sources contributes to the trustworthiness of the study.

1.5.3 Conceptual definitions

Important concepts are clarified fully in later chapters as the argument develops, but basic definitions of these concepts can be given now to clearly demarcate the frame of reference of the study.

1.5.3.1 Reflective neonatal nurses

- Neonatal nurses are professional nurses registered with the SANC under the Nursing Act, Act no. 50 of 1978 (South Africa 1978), until the Nursing Act, Act no. 33 of 2005 (South Africa 2005a) comes into operation (SANC 2006: Circular 03/2006). The definition of a registered nurse according to the Nursing Act, Act no. 50 of 1978 is "a person registered under section 16", which reads as follows:

(3) If the council is satisfied that the qualification and the other documentation submitted in support of the application satisfy the requirements of this Act, it shall ... issue a registration certificate ... authorizing the applicant, subject to the provisions of this Act and to any other legal provisions, to practise within the Republic the profession in respect of which he has applied for registration.



The definition of a professional nurse given in section 31(12) of the Nursing Act, Act no. 33 of 2005 is

... a person who is qualified and competent to independently practise comprehensive nursing in the manner and to the level prescribed and who is capable of assuming responsibility and accountability for such practice ... [and] ... has completed a programme qualifying him or her for registration in another category.

- Thus reflective neonatal nurses are qualified professional nurses who practice reflective neonatal nursing with adequate empirical-analytical, historical-hermeneutic and critical/self-reflective knowledge, with appropriate technical and cognitive skills and with suitable professional characteristics, including values, perceptions of the world, self-perception and emotional status, and interaction with their world (Smith & Lovat 2003:28-29; 88-90; 100-102).
- Reflective neonatal nurses have certain characteristics or skills such as self-awareness, description, critical analysis, synthesis and evaluation of situations (Atkins & Murphy 1993:1190); the ability to apply reflection-before-action, reflection-in-action and reflection-on-action in nursing practice and in their personal lives (Foster & Greenwood 1998:169-171); and the ability to focus on the 'why' and not the 'how' of their actions (Van Aswegen *et al.* 2000:124); and to integrate theory and practice, and knowledge and skills, not only to address the technological and rational aspects of their practice, but also the non-technological and non-rational aspects that deal with the unique circumstances of the patient as a person (Van Wyk 2000:1).

1.5.3.2 Reflective practice

- Reflective practice is an approach to the execution of a discipline that has reflection as its cornerstone. It aims to meet the demands of a specific context. Such practice entails more than just application of rational and evidence-based knowledge and skills; it includes experience and personal growth. Reflective practice is based on reflection in, on and before action and on related cognitive processes, and has positive outcomes for the client and the community. In this study reflective practice is applied to the practice of neonatal nursing.



1.5.3.3 Neonatal nursing education

- Neonatal nursing education takes the form of a programme of study undertaken at a nursing school approved by the SANC (SANC 1969 & 1985). Successful completion of this programme allows a nurse to register an additional qualification at the SANC in 'Medical and Surgical Nursing Science: Neonatal Nursing Science' (SANC 2000). For this research project, the Department of Nursing Science, University of Pretoria, was chosen as an example of an approved nursing school offering an approved programme for the SANC additional qualification. Nurses obtain a diploma, Baccalaureate degree or Master's degree in Neonatal Nursing Science at the University of Pretoria through this programme.
- A post-basic neonatal nursing education programme is by definition a professional programme, as it is "a programme that has to meet the licensure and other professional and work-based requirements of statutory councils" (Higher Education Quality Committee 2004b:36). The programme is career-focused (Ministry of Education 2004:7). A significant part of the programme is "work-based learning", which is described by the Higher Education Quality Committee of the Council on Higher Education (2004b:37) as
a component of a learning programme that focuses on the application of theory in an authentic, work-based context. It addresses specific competences identified for the acquisition of a qualification, which relate to the development of skills that will make the learner employable and will assist in developing his/her personal skills. Employer and professional bodies are involved in the assessment of experiential learning, together with academic staff.
- Neonatal nursing education must reconcile the theoretical and intellectual foundations of neonatal nursing with the realities and demands of nursing practice within a professional-ethical framework.

1.6 OUTLINE OF THE STUDY

This chapter introduces this study, which develops a model for the education of reflective neonatal nurses in a South African context. The layout of the chapters of the research report is as follows:

- Chapter 1: Orientation of the study
- Chapter 2: Research methodology
- Chapter 3: Educational framework of neonatal nursing education in the South African context
- Chapter 4: Neonatal nursing students and reflective learning



- Chapter 5: Competences and professional characteristics expected from neonatal nursing practice
- Chapter 6: Approaches to educating reflective neonatal nurses
- Chapter 7: Construction and description of the model
- Chapter 8: Evaluation of model, limitations, conclusions and recommendations

1.7 SUMMARY

The purpose of neonatal nursing education is ultimately to prepare neonatal nursing students for reflective neonatal practice, based on integration of knowledge, skills, technology and non-rational aspects (for example caring and professionalism) according to the patient's individual needs. Promoting the personal and professional growth of neonatal nurses and their ability to reflect before, during and after action are priorities of a neonatal nursing education programme.

Generic outcomes are set for educational programmes, but lack detail about the competences expected from neonatal nurses for reflective practice, and about how to educate reflective neonatal nurses. This lack prompted this study, which developed a model for the education of reflective neonatal nurses in a South African context.

The study had three phases: 1) identifying and clarifying concepts relevant to educational aspects, 2) identifying and clarifying concepts from neonatal nursing practice relevant to education of reflective neonatal nurses and 3) constructing, describing and evaluating the model. The frame of reference of the study has been described in this chapter, so the following chapter is a discussion of the methodology.



CHAPTER 2: RESEARCH METHODOLOGY

2.1 INTRODUCTION

This study was based on the central assumption that reflective neonatal nurses are needed in neonatal nursing practice. Generic outcomes for neonatal nursing education are available in official documentation, but detailed outcomes adequately describing the demands of real practice of neonatal nursing are absent.

Some relevant information is available, such as theory on nursing in general and on the nursing of healthy, high-risk and critically ill neonates, in sources like Avery, Fletcher and McDonald (2005), Deacon and O'Neill (1999), De Kock and Van Der Walt (2004), Harrison, Keet and Shore (1996), Kenner and McGrath (2004), McEwen and Wills (2002:32-39), Merenstein and Gardner (2002) and Verklan and Walden (2004). Literature is also available on reflective practice, reflective practitioners and reflective education (teaching and learning) in sources such as Atkins and Murphy (1993:1189), Gravett and Geyser (2004), Hatcher and Bringle (1997:13-159), Hillier (2002), Pee, Woodman, Fry and Davenport (2000:754-761), Piterman and McCall (2000:30-37), Rolfe (2000), Scanlan and Chernomas (1997:1138-1143), Smith and Lovat (2003) and Van Aswegen *et al.* (2000:126). In the researcher's experience, however, exactly how neonatal nurses are to be educated to become reflective practitioners was not clear.

This led to the research question: 'How can professional nurses in a South African context be educated to become reflective neonatal nurses?' and the decision to develop a model for the education of reflective neonatal nurses in a South African context as the aim of this study. The objective of this chapter is to discuss the research methodology followed in this study.



2.2 RESEARCH METHODOLOGY

2.2.1 Research problem

The main research problem developed from the researcher's observation that while generic outcomes that indicate a need for reflective neonatal nurses in a South African context were widely available in educational literature and legislation, specific outcomes for reflective neonatal nurses and clarity as to how to educate them at a tertiary institution were distinctly lacking.

2.2.2 Research aim

This study therefore aimed to develop a model for educating reflective neonatal nurses in a South African context.

2.2.3 Research design

The researcher developed a model for educating reflective neonatal nurses in a South African context using a qualitative research approach. The design of the study was explorative and descriptive, within a particular context.

A model was chosen as the outcome of the study because in a model the relationships between the concepts relevant to the research question are illustrated with more insight than in a description of guidelines, policy or strategic plans. Once a model has been developed, guidelines, policies or strategic plans can be derived from it (McEwen & Wills 2002:373).

A qualitative research approach was chosen because the aim of the study entailed social processes and human interactions (Streubert Speziale & Carpenter 2003:107), such as reflective learning and teaching. The primary focus of a qualitative approach is understanding and describing phenomena rather than explaining them, and includes the perspectives of the 'social actors' involved (Babbie & Mouton 2001:270), who in this study were the neonatal nurses and neonatal educator. A qualitative study focuses rather on natural observation than controlled measurement, and the subjective exploration of reality from the perspective of an



insider rather than objective investigation from the perspective of an outsider (Fouche & Delport 2002a:79). A qualitative approach allows the researcher

“to gain a first-hand, holistic understanding of phenomena of interest by means of a flexible strategy of problem formulation and data collection.... [the] purpose is to construct detailed descriptions of social reality ... [and] ... there are no fixed steps that should be followed and the design cannot be exactly replicated. (Fouche & Delport 2002a:80-81).

Babbie and Mouton (2001:270) describe the main aim of a qualitative study as “in-depth (“thick”) descriptions and understanding of actions and events”.

This study was explorative as various dimensions of a phenomenon in a particular context or situation were investigated and alternative interpretations of information were searched for to refine relationships, or contribute to the development of new concepts or theory (Delport & Fouche 2002:357; Polit & Hungler 1997:457). In this study, the aspects under investigation included higher education, nursing education and neonatal nursing practice as a mean to develop the model for educating reflective neonatal nurses.

The study was descriptive in nature as it involved description of a phenomenon (education of reflective neonatal nurses) in its natural setting, with the aim of presenting an integrated illustration thereof in terms of concepts and statements and relationships between them (McEwen & Wills 2002:373). The study described a picture of the specific details of a situation, social setting or relationship, focused on the ‘how’ and ‘why’ questions, and described deeper meanings (Fouche 2002a:109).

It was a contextual study as it took place in a particular natural setting (higher education, nursing education and neonatal nursing practice in South Africa) and took into account relevant influences, characteristics and processes in the context (Babbie & Mouton 2001:272; McEwen & Wills 2002:349-355; Streubert Speziale & Carpenter 2003:110).

To be scientific a study must show a certain coherence, be concerned with definite fields of knowledge, preferably be expressed in universal statements that are true or probably true and logically ordered, and explain its various investigations and arguments (McEwen & Wills 2002:6). Fouche and Delport (2002a:78) state that such a study has to originate with a problem and follow a logical and orderly process to arrive at a conclusion that resolves the problem and answers the research question, which was a driving force to steer this study.



According to Denzin and Lincoln (2000:6), “qualitative research, as a set of interpretive activities, privileges no single methodological practice over another”. The methodological choices of this study were based on the suitability and practicality of each method or strategy to meet the objectives of the study. .

2.2.4 Process of model development

The process chosen for developing the model followed a description of theory development in Walker and Avant (1983:145-161). The process involved selection of a topic of interest (one concept/variable or a framework of several concepts), identifying and recording relationships between the concepts supported by evidence and organising the relational statements to describe the components of the conceptual model (McEwen & Wills 2002:85; Walker & Avant 1983:145-161).

The study had three phases. The different phases had different goals, of which the first two phases occurred simultaneously to culminate in the development of a model for the education of reflective neonatal nurses in the third phase. The first two phases were the identification and clarification of concepts relevant to the educational aspects, and the competences expected of them by neonatal nursing practice respectively. These two phases were differentiated by their different focuses. The third phase was the construction, description and evaluation of the model for educating reflective neonatal nurses in a South African context.

2.2.5 Structural components of the model

The structural components of the initial conceptual framework were identified based on the agents described by Dickoff, James and Wiedenbach (1968:545-554), as summarised in Table 2.1. These components were used to formulate the objectives of the study within the three phases.



Table 2.1: Summary of components or 'agents' of model

Component / agent	Description of component / agent	Application to this study
Purpose	Goal or endpoint of the activity	Applied competences, critical- and end-product outcomes of education of reflective neonatal nurses
Framework	Context where the activity takes place	Higher education, nursing education and neonatal nursing practice in a South African context
Dynamics	Energy source of the activity	Reflective learning
Recipient	Who receives the activity	Neonatal nursing students
Procedure	Procedure, technique or protocol of the activity	Education programme, including outline of content and educational approaches
Agent	Who is responsible for the activity	Educator

2.2.6 Objectives of the study

Each phase had its own purpose and objectives as part of the development of the model. These purposes and objectives of the phases of the development of the model for educating reflective neonatal nurses in a South African context are shown in Table 2.2.

Table 2.2: Objectives of the different phases

Phase	Purpose of the phase	Objectives of the phase
Phase 1 (Educational aspects)	Identification and clarification of concepts related to the framework of neonatal nursing education in the South African context	1. To describe neonatal nursing education in the South African context
		2. To describe higher education in South Africa as applicable to neonatal nursing education
		3. To describe additional influences on neonatal nursing education
	Identification and clarification of concepts related to neonatal nursing students and to reflective learning	4. To describe neonatal nursing students
		5. To describe the process of reflective learning
		6. To describe competences associated with reflective learning
		7. To describe professional characteristics associated with reflective learning
	Identification and clarification of concepts related to the role of the educator and educational approaches in education of reflective neonatal nurses	8. To describe outcomes of reflective learning
		9. To describe the role of the educator in the education of reflective neonatal nurses
Phase 2 (Practice-related aspects)	Identification and clarification of concepts in neonatal nursing practice in the South African context related to education of reflective neonatal nurses	10. To describe educational approaches for the education of reflective neonatal nurses
		1. To describe the attributes of neonatal nursing practice and what it demands of reflective neonatal nurses
		2. To describe the expected outcomes of the education of reflective neonatal nurses (applied competences and professional characteristics)
		3. To describe the content outline of an educational programme for reflective neonatal nurses



Table 2.2: Objectives of the different phases (continue)

Phase	Purpose of the phase	Objectives of the phase
Phase 3 (Model construction)	Construction and description of a model for educating reflective neonatal nurses in a South African context	1. To construct and describe a model for the education of reflective neonatal nurses in a South African context
		2. To evaluate the model for the education of reflective neonatal nurses in a South African context

The research methodology applied in each phase to meet these objectives is discussed in the following section.

2.2.7 Phase 1: Identification and clarification of concepts related to the educational aspects of educating reflective neonatal nurses

2.2.7.1 Purpose and objectives of phase 1

The purpose of the first phase was concept identification and clarification of meaning and definition, and identification of the relationships between different concepts. This was thus a theoretical phase, whose main activities were theoretical inquiry into the education of reflective neonatal nurses in a South African context.

The objectives of this theoretical phase were as follows:

- To explore and describe the framework of neonatal nursing education in the South African context in terms of:
 - Neonatal nursing education in the South African context,
 - Higher education in South Africa as applicable to neonatal nursing education, and
 - Additional influences on neonatal nursing education;
- To explore and describe neonatal nurses and reflective learning in terms of:
 - Neonatal nursing students,
 - Process of reflective learning,
 - Competences associated with reflective learning,
 - Professional characteristics associated with reflective learning, and
 - Outcomes of reflective learning; and
- To analyse the role of the educator and educational approaches in education of reflective neonatal nurses.



2.2.7.2 Approach in phase 1

The theoretical data of this phase of the study was obtained through a review of the relevant literature. Such a review finds 'authority arguments', which are "the voices of the researchers that have gone before you", which "[anchor] your research in the literature", allow "contextualisation of your study to argue a case" and identification of "a niche to be occupied by your own research" (Henning, Van Rensburg & Smit 2004:26-27).

Henning *et al.* (2004:3-9) describe the role of the researcher in interpreting the data's meaning as significant, and emphasise the researcher's responsibility for preventing contamination or bias by means of thick description and a strong theoretical base. The presented data must of course be understood, but it also must be explained with either empirical or theoretical evidence. This phase of the study thus searched for the necessary theoretical evidence.

Also, reviewing extant knowledge helps prevent 're-invention of the wheel', and assists the process of abstracting the emerging conceptual framework (Fouche & Delpont 2002b:128-129; McEwen & Wills 2002:50, 84; Streubert Speziale & Carpenter 2003:119-120).

2.2.7.3 Population and sampling

The theoretical data was selected purposively for the clarification of concepts, conceptual definitions, operational definitions, relational statements and existing ethico-legal frameworks, conceptual frameworks, models and theories to meet the particular objectives of this phase of the study (Crookes & Davies 1998:181-191; De Vos, Strydom, Fouche & Delpont 2002:131-133, 198-199, 207; McEwen & Wills 2002:75-78; Rossouw 2003:103-106; Streubert Speziale & Carpenter 2003:119-120). Although the focus of the study was the South African context, the researcher did not use only South African literature, but included a number of international (primary and secondary) sources to explore the phenomena.

2.2.7.4 Data collection

The method of data collection was guided by theoretical sampling, which is "the process of data collection for generating theory whereby the analyst jointly collects, codes and analyses his data and decides what data to collect next and where to find them, in order to develop his theory as it emerges" (Babbie & Mouton 2001:287). Denzin and Lincoln (2000:519) describe theoretical sampling as a "pivotal part of the development of formal theory" with the aim of



conceptual refinement, to define the properties of the categories, to identify the contexts and conditions that are relevant and applicable, to identify the gaps between the categories, and to describe the linkages between the concepts and categories.” Although the aim of this study was the development of a model and not a formal theory, the same principles were applied as for formal theory, as described by Walker and Avant (1983:145-161).

The theoretical sampling in this phase of the study focused on neonatal nursing education in the South African context, and on reflective learning. The literature sources included national and international primary sources, secondary sources, articles, theses, dissertations, legislation and other publications or relevant information. Relevant literature was identified and obtained with the assistance of an information specialist at the Academic Information Service of the University of Pretoria by searching the databases (especially using the CINAHL and MEDLINE databases); following up significant authors and articles or books quoted repeatedly; and keeping alert for other relevant literature encountered during the course of the study. Recent sources, that is, those that appeared within the last ten years, were preferred, but older literature was included in cases of authoritative primary sources.

2.2.7.5 Data analysis

Conceptual analysis was used to identify relevant concepts in the data and to clarify, define, give meaning and make sense of these concepts and the relationships between them within a specific context (Botes 2003:94-95; Denzin & Lincoln 2000:23-25; De Vos 2002:339-355; Du Toit 2003:23). Theoretical analysis was used to obtain related data from existing conceptual frameworks, ethico-legal frameworks, models and theories. The main instrument used during this data analysis was the human mind (Henning *et al.* 2004:10).

During this analysis the researcher recorded all the ideas that could give a clear description of the concepts or the relationships between the concepts. These notes or memos were sorted and integrated with the description of the emerging conceptual framework (Babbie & Mouton 2001:491-493; McEwen & Wills 2002:53; Rossouw 2003:23, 94; Streubert Speziale & Carpenter 2003:119-120).

Inductive and deductive reasoning was applied throughout this phase of the study. Deductive reasoning was used in argumentation where conclusions were implicitly or explicitly supported by the statements. Inductive reasoning was used in argumentation where conclusions were based on probable support from the statements (Mouton & Marais 1992:108-119).



2.2.7.6 Trustworthiness

The strategies used to make the study trustworthier are described in section 2.3 below. The findings of this phase of the study are described in Chapters 3 (framework for nursing education and higher education in the South African context), 4 (neonatal nursing students and reflective learning) and 6 (role of the educator and educational approaches for education of reflective neonatal nurses). These findings are components for the construction of the model described in Chapter 7.

2.2.7.7 Ethical considerations

The most important ethical consideration in the first phase of the study was related to recognition of authorship and prevention of plagiarism (Strydom 2002b:72). It was adhered to by referring to the authors as their work has been quoted or used in the research report.

2.2.7.8 Findings of phase 1

The findings of phase 1 yielded some of the components of the model, namely the framework (higher education and nursing education), dynamics (reflective learning), purpose (the outcomes associated with reflective learning), the recipient (neonatal nursing students), the agent (educator) and the procedure (educational approaches). The findings are discussed in Chapters 3, 4 and 6 of this study.

2.2.8 Phase 2: Identification and clarification of concepts in neonatal nursing practice related to educating reflective neonatal nurses

2.2.8.1 Purpose and objectives of phase 2

In phase 1 theoretical inquiry was used to identify and clarify concepts relevant to neonatal nursing education in the South African context and to reflective learning. In phase 2 of the study, concepts in neonatal nursing practice in the South African context related to education of reflective neonatal nurses were identified and clarified.



The objectives of phase 2 of the study were:

- To explore and describe the attributes of neonatal nursing practice and what it demands from reflective neonatal nurses;
- To synthesise the expected outcomes of the education of reflective neonatal nurses (applied competences and professional characteristics); and
- To deduce the content outline of an education programme for reflective neonatal nurses.

2.2.8.2 Approach in phase 2

Phase 2 was based on the researcher's professional expertise in the field of neonatal nursing science. This phase focused on clarifying and describing concepts in neonatal nursing practice that are important for educating reflective neonatal nurses. The concepts related to neonatal nursing practice were identified and described as the attributes and demands of neonatal nursing practice. Literature control and peer review were used to verify those concepts to support the process of specifying and clarifying of concepts of importance to education of reflective neonatal nurses. Based on the verified concepts, competences and professional characteristics expected of reflective neonatal nurses were formulated.

2.2.8.3 Researcher as instrument

The researcher as instrument in this phase referred to a prolonged engagement in the field and the use of her knowledge and vast experience of neonatal nursing practice in a South African context, as well as in nursing education. The researcher had obtained specialised qualifications in paediatric nursing science, nursing education and in neonatal nursing science. Her knowledge and experience as a specialised neonatal/paediatric nurse stretched over medical and surgical neonatal intensive care, in private and public South African hospitals. The researcher also had been the unit manager of a paediatric and neonatal intensive care unit of a private hospital, prior to her career as educator. As educator, she had maintained clinical expertise especially by means of her responsibility of clinical accompaniment of neonatal nursing students in NICUs. She therefore had a significant base of knowledge, clinical experience and prolonged engagement before she had started with this study.

The advantage of prolonged engagement was that the researcher understood the attributes of neonatal nursing practice and the dynamics of the actual situation, its finer nuances and what



it demands from a person (Krefting 1991:217), in this case from neonatal nurses. That enabled her to identify the relevant aspects that need to be included in an educational programme for neonatal nurses. The other side of the coin though was that exactly the same knowledge and experience could cloud her perspective and made her biased and subjective, which could imply that what she included as content in the educational programme might not have been as sound as it should be.

For that reason the researcher deliberately went to neonatal nursing practice to reduce biasness, to support and clarify her professional pre-understanding of neonatal nursing practice and to verify and confirm her own professional competency in decision making regarding what aspects need to be covered in an educational programme for reflective neonatal nurses (refer to Annexure 1).

The researcher identified the concepts of relevance to describe the *attributes and demands* of reflective neonatal nursing practice, as a step towards eventually synthesising the *competences* expected from reflective neonatal nurses which could be addressed as part of an education programme for reflective neonatal nurses, and to deduce the *outline of content* of such a programme. Literature control was done simultaneously and the process was followed by peer review to refine and verify the findings, as discussed in the following sections.

2.2.8.4 Literature control

Literature control was included in this process to explain the data where possible and to confirm or support the researcher's interpretation of the data with existing knowledge as described by Fouche and Delport (2002b:127-129), Henning *et al.* (2004:27-28), Krainovich-Miller (1998:95) and Streubert Speziale and Carpenter (2003:118-119). The literature control was especially valuable to confirm descriptions and understanding of the attributes and demands of neonatal nursing practice, while little information was available regarding the competences expected from reflective neonatal nurses. A unique contribution from this study was to deduce the expected competences from descriptions of the attributes and demands of neonatal nursing practice, and to validate it with peer review.

Relevant literature was selected to help clarify and integrate the concepts identified in the data. The literature control was therefore limited and selective, as its purpose was not to discuss every identified aspect in depth, but rather to focus on information relevant to the education of reflective neonatal nurses in the particular context. Examples of this data



included text books for neonatal intensive care, statistical information, professional regulations or guidelines, governmental policies and research findings related to attributes of neonatal nursing practice and/or demands thereof on reflective neonatal nurses and/or applied competences or professional characteristics expected of reflective neonatal nurses. The sources included as international benchmarks in advanced neonatal nurse education were the *Curriculum guidelines for neonatal nurse practitioner education programs*, and the *Education standards for neonatal nurse practitioner programs* compiled by the National Association of Neonatal Nurses in the USA (NANN 2002a & 2002b).

Data analysis was done mainly through inductive reasoning to reason from specific to more general understandings, and deductive reasoning to develop specific predictions from general principles (Babbie 2001:34-35; Polit & Hungler 1997:455, 459). A deliberate effort was made to keep to the truth, use relevant arguments and to find support for the arguments (Rossouw 2003:37-48).

The main purpose that was kept in mind during the reasoning was to synthesise the applied competences and professional characteristics expected from reflective neonatal nurses, which could be addressed in an education programme, and to deduce an outline of content of such a programme.

The literature control in itself was a contribution to trustworthiness as a method of triangulation of sources. The literature control was followed by peer review to further enhance trustworthiness (refer to section 2.3).

2.2.8.5 Peer review of findings

Finally, the findings were peer reviewed to validate the findings, as described by Babbie and Mouton (2001:276-278), Krefting (1991:214-222), Lincoln and Guba (1985:291-331), and Rossouw (2003:176-184). Once the findings were properly described in written format, neonatal nursing experts were requested to review them, by means either of attending a focus group discussion or written feedback (Babbie & Mouton 2001:84-88; Krueger 1994:6).

Thirteen neonatal nursing experts were purposively selected. The sampling criteria for inclusion as a neonatal nursing expert were a neonatal nurse with a master's degree in neonatal nursing science; who was or had been a unit manager of a NICU; or who was or had



been a neonatal educator or a clinical facilitator for neonatal nursing training. The experts had to give informed consent to participate in the study (refer to Annexure 2).

The neonatal nursing experts were informed about the study and invited to a focus group discussion, or invited to give written feedback on the competences and professional characteristics expected of neonatal nurses, and the outline of content of a neonatal nursing education programme. The experts received written copies approximately three weeks before the focus group discussion.

Three participants attended the focus group discussion, while six participants gave written feedback. Four experts apologised for being unable to participate at that time. The main aim of the focus group discussion was not to generate new information, but rather to confirm or reject the researcher's interpretation and description of the findings of this phase of the study with specific reference to inclusion thereof as part of an education programme for reflective neonatal nurses. If new information had been obtained though, it would be included in the refined descriptions.

The focus group discussion was audio taped and transcribed *verbatim*. Qualitative analysis was done on the feedback at the focus groups, as well as the written feedback to confirm, disprove or add to the existing descriptions (Babbie & Mouton 2001:84-88; Krueger 1994:6). The combined data yielded results that confirmed the researcher's interpretations as the participants attending the focus group, as well as participant who gave written feedback fully agreed with the content. No new data was generated, but some linguistic recommendations were made that are included in the final report of this study.

2.2.8.6 Trustworthiness of phase 2

The main strategies to enhance trustworthiness in phase 2 included prolonged engagement, and triangulation by means of literature control and peer review (Babbie & Mouton 2001:276-278; Kretting 1991:214-222; Lincoln & Guba 1985:291-331; Rossouw 2003:176-184). These are discussed in more detail in section 2.3.

2.2.8.7 Ethical considerations of phase 2

The most important ethical considerations during phase 2 were to give recognition to the authors and to prevent plagiarism, which was achieved using meticulous referencing, as well



as obtaining of informed consent from participant during peer review, which was done. Ethical considerations are discussed in more detail in section 2.4.

2.2.8.8 Findings of phase 2

The findings of phase 2 yielded some of the components of the model, namely the framework (neonatal nursing practice), the purpose (the expected competences and the outline of content to be included by an education programme for reflective neonatal nurses) and the description of the recipient (professional characteristics expected of reflective neonatal nurses). The findings are discussed in Chapter 5 of this study.

2.2.9 Phase 3: Construction, description and evaluation of the model for educating reflective neonatal nurses in a South African context

2.2.9.1 Purpose and objectives of phase 3

The purpose of the third and last phase of the study was to construct a model for the education of reflective neonatal nurses in a South African context. The objectives of this phase were as follows:

- To construct and describe a model for the education of reflective neonatal nurses in a South African context; and
- To evaluate this model.

Such a model is a schematic representation of an aspect of reality. The media used in this study to represent the reality are language, symbols and directional arrows. The aim of this phase is to illustrate “processes through which outcomes occur by specifying the relationships among the variables in graphic form where they can be examined for inconsistency, incompleteness or errors” (McEwen & Wills 2002:79).

The model was constructed from the concepts and relationships identified, explored, clarified and described in the previous two phases of the study. In the last steps of the study the researcher organised and systematically described these relationships as a theoretical illustration of the reality, and then evaluated this illustration as suggested by McEwen and Wills (2002:79, 84-86), Streubert and Carpenter (1999:99-114), Streubert Speziale and Carpenter (2003:114-120) and Walker and Avant (1983:7, 18, 145-159).



2.2.9.2 Construction and description of the model

The research methods and techniques used in this study for the development of the conceptual model were similar to the process of theory development; the main difference was the limited scope of a model in comparison to that of a theory, which made the focus of this study restricted and limited its generalisability (Walker & Avant 1983:146; McEwen & Wills 2002:79).

McEwen and Wills (2002:84-85) describe the steps of theory development as concept development, statement development and theory construction. Concept development is the process of specifying, clarifying and defining the concepts relevant to the phenomenon. Statement development is developing relational statements and determining empirical referents that can validate them. Theory construction (in this study model construction) is systematic organisation of the links in a formal coherent theoretical structure. The assumptions of the researcher have to be very clear, since these have a significant influence on the outcomes and interpretations of this process.

The strategy used in this study to construct the model followed what Walker and Avant (1983:21, 145-161) call theory synthesis: "to pull together a theory from a body of data, set of observations or set of empirical statements". The first step was selecting a topic of interest, which in this study was a framework of several concepts related to the education of reflective neonatal nurses in a South African context. The second step involved reviewing the literature or making field observations and noting related variables and recording the relationships between them. The last step was organising these relational statements to show the patterns of relationship among the variables; this pattern formed the conceptual model (McEwen & Wills 2002:85; Walker & Avant 1983:145-161).

The structural components of the conceptual model corresponded with the specifications (or 'agents') described by Dickoff, James and Wiedenbach (1968:545-554): the purpose (goal or endpoint of the activity); an agent (who is responsible for the activity); a recipient (who receives the activity); a framework (context in which the activity takes place); dynamics (the energy source of the activity); and a procedure (procedure, technique or protocol of the activity).

The application of these agents in this study is as follows, in no specific order:



- Purpose: applied competences, critical- and end-product outcomes of education of reflective neonatal nurses;
- Recipient: neonatal nursing students;
- Framework: higher education, nursing education and neonatal nursing practice in a South African context;
- Dynamics: reflective learning;
- Procedure: education programme; and
- Agent: educator.

Data used during this last phase of the study included the concepts and statements identified, clarified and described in the first two phases of the study. Data analysis involved inductive and deductive reasoning used to synthesise this data to form a conceptual model. Bias or subjectivity was a valid risk in this phase, so the completed model was exposed to expert review and evaluated to enhance trustworthiness.

2.2.9.3 Evaluation of the model

The final step of the development of the model was to have the model evaluated to identify its trustworthiness, strengths and weaknesses through expert review.

The experts were chosen by purposive sampling as described by Strydom and Venter (2002:207) and Crookes and Davies (1998:181-191). To be included a person was required to have at least a master's degree and to be recognised by others or through scientific publications as knowledgeable in higher education, nursing education, reflective practice, neonatal nursing practice and/or model development. The persons had to give voluntary informed consent to participate.

The participants were provided with a hard copy and/or electronic copy of a description of the model with an evaluation form to be completed (Annexure 3). They received these documents with adequate time (three weeks) to familiarise themselves with the content to clarify uncertainties, to evaluate the model and to give feedback verbally, on hard copy or electronic written format as suggested by Hollis, Openshaw and Goble (2002:2-8).

Thirteen experts were invited, of which three indicated that they would not be able to participate. The number of responding experts is indicated in Table 2.3 according to their field



of expertise. The total number of experts appears to be more than thirteen because most were experts in more than one field.

Table 2.3: Number of responding experts per field of expertise

Field of expertise	Number responding experts per field of expertise
Higher education	4
Nursing education	6
Reflective practice	4
Neonatal nursing practice	3
Model development	2

They were requested to evaluate the model utilising criteria recommended by Chinn and Kramer (1991:127-137), McEwen and Wills (2002:91-108) and Walker and Avant (1983:117-143):

- Clarity, simplicity and consistency,
- Appropriateness and relevance,
- Comprehensiveness,
- Adaptability and generalisability,
- Practicality and usefulness,
- Accessibility,
- Importance for research, practice and education, and
- Validity or trustworthiness.

Once feedback was obtained from the experts, the model was refined and finalised. The model for education of reflective neonatal nurses in a South African context is described in Chapter 7 and the experts' evaluations are described in Chapter 8 of this study.

2.3 STRATEGIES FOR TRUSTWORTHINESS OF THIS STUDY

According to Denzin and Lincoln (2000:6), "qualitative research, as a set of interpretive activities, privileges no single methodological practice over another". The methodological choices of this study were based on the suitability and practicality of each method or strategy for developing a trustworthy model for educating reflective neonatal nurses.

Trustworthiness refers to the truth value of research findings, or the degree to which the truth of the findings can be trusted (Botes 2003:176).



The strategies to enhance trustworthiness are mainly based on recommendations of Lincoln and Guba (Babbie & Mouton 2001:276-278; Graneheim & Lundman 2004:105-112; Krefting 1991:214-222; Lincoln & Guba 1985:291-331; Rossouw 2003:176-184), and aim to maximise credibility, theoretical validity, transferability, dependability and confirmability.

2.3.1 Credibility

The credibility or truth-value of the study is the degree of confidence we can have in the truth of the findings in terms of research design, informants and the context and conducting of the research process (Babbie & Mouton 2001:277; Krefting 1991:217-218; Lincoln & Guba 1985:301-304; Rossouw 2003:180).

The role of the researcher in a qualitative study is to make choices that determine the research strategy and often to create a strategy for finding the best possible answer for the particular study (Fouche 2002b:272). The researcher is commonly part of the natural setting or context of the study to explore the phenomenon, trying to understand the variables and not to control them while analysing, as analysis often begins simultaneously with data gathering. Making appropriate research decisions, conducting the research and interpreting the meanings of what is being observed require from the researcher sensitivity for the phenomenon under investigation. This sensitivity is derived from experience, knowledge and personal interest (Nolan & Lundh 1998:7-11; Polit & Hungler 1997:72; Wilson 1993:46).

Credibility or truth-value in this study was enhanced by the researcher's prolonged engagement in the context of advanced neonatal nursing care as a professional nurse, as well as an educator in neonatal nursing at a tertiary institution. Prolonged engagement in the field or natural setting of the study and intense participation allows a researcher to understand the dynamics of a situation and to discover hidden facts, which significantly enhances the trustworthiness of a qualitative study. The researcher knew and understood the context, the culture, the values and the processes common in neonatal nursing practice. Her long-term involvement in the research setting was a crucial factor in prompting this study, identification of concepts, the selection and inclusion of literature, analysis and interpretation thereof, and description of the findings (Babbie & Mouton 2001:277; Krefting 1991:217-218; Lincoln & Guba 1985:301-304; Rossouw 2003:180).



Though her knowledge, experience and personal interest contributed significantly to the value of the study, they could also bias the findings. Therefore, other strategies were also implemented, such as triangulation and validation through peer and expert review (Babbie & Mouton 2001:277; Krefting 1991:218-219; Lincoln & Guba 1985:304, 308, 314).

Triangulation of data collection methods contributed to credibility by mutual confirmation or crosschecking of data and interpretations. The techniques used in this study included literature review, researcher as instrument, literature control, peer review and expert evaluation. Triangulation of data sources was also used, namely a variety of scientific literature and expert opinions (Babbie & Mouton 2001:277; Krefting 1991:219; Lincoln & Guba 1985:305-307; Rossouw 2003:181). To increase the credibility of her interpretations and reduce the risk of bias, the researcher used experts twice, to check her description of the concepts relevant to education and neonatal nursing practice, and to check the final model.

A further contribution to the trustworthiness was the supervision of this study by two study promoters in terms of the research methodology as well as content.

2.3.2 Theoretical validity

To enhance the theoretical validity of the study, a deliberate attempt was made to develop good theoretical definitions that truly reflect the concepts from which the model is built, and accurate operational definitions in the first two phases of the study (Chapters 3 to 6). These definitions and statements were confirmed by experts who reviewed them for accuracy and relevance as part of evaluation of the model (Chapters 7 and 8) as suggested by Rossouw (2003:177).

The third and last phase of the study was the construction and description of a model to illustrate the relationships between the variables identified and described in the previous two phases of the study. Once the conceptual model was finalised it was examined for consistency, completeness or error, usefulness and generalisability of its underlying theory (McEwen & Wills 2002:79). In this study, the model was evaluated by means of expert review, but not tested by application (refer to Chapter 8).



2.3.3 Transferability

Transferability or applicability is the degree to which the findings can be applied to another context or setting or can be generalised (Babbie & Mouton 2001:277; Krefting 1991:220-221; Lincoln & Guba 1985:316; Rossouw 2003:182-183). Ensuring transferability was not the main aim of the study, but rather an unlooked-for consequence of the thick description yielded by the research process and the validation of the results. The experts who evaluated the model were given an opportunity to evaluate the model for transferability as part of their evaluation (see Chapter 8).

2.3.4 Dependability

Dependability is the extent to which evidence is provided to the audience that if the study were to be repeated with the same or similar respondents in the same or similar context, the findings would be similar (Babbie & Mouton 2001:278; Krefting 1991:221; Lincoln & Guba 1985:316-318; Rossouw 2003:183). Due to the dynamic nature of the context of this study, a repetition would not necessarily obtain the same results. The detailed description or audit trail of the methodology offered in this report though enhances the ability of the audience to judge the trustworthiness of the findings.

2.3.5 Confirmability

Confirmability or neutrality is the degree to which the findings are without bias or influence (Babbie & Mouton 2001:278; Krefting 1991:216,221; Lincoln & Guba 1985:318-327). It is enhanced in this study by triangulation, peer reviews and the description of a confirmable audit route and process.

2.4 ETHICAL CONSIDERATIONS

Ethical decisions in this study were made, based on guidelines described by Crookes and Davies (1998:207-222), Streubert and Carpenter (1999:107) and Strydom (2002b:64-74).



The aim of the study was to develop a model for the education of reflective neonatal nurses in a South African context. It did not involve any clinical trial or direct patient involvement and the study did not investigate a sensitive topic. No known harm or adverse effects were expected for any participants. The study intended to contribute to nursing science as a profession, nursing education, neonatal nursing science, neonatal nursing practice and higher education.

All principles of privacy, anonymity and confidentiality were adhered to throughout the study. The input obtained from the participants could not be linked back to them, even though the phenomenon under investigation was not a sensitive issue. No names were written down at any stage of the study.

All sources are acknowledged as accurately and completely as possible.

The researcher was competent and adequately skilled to undertake the study, and throughout adhered to the requirements of the University of Pretoria in terms of qualifications, research knowledge, supervision, approval from the Ethics Committee of the University of Pretoria prior to the study, approval from the Postgraduate Committee of the School of Health Care Sciences and approval from the Academic Advisory Committee of the School of Health Care Sciences of the University of Pretoria.

2.5 SUMMARY

This chapter discusses the research methodology used and research decisions made in the different phases of this study. The information regarding research decisions is summarised in table format attached as Annexure 4. The findings of the various steps are discussed in the following chapters.

