MODEL FOR TRAINING OF REFLECTIVE NEONATAL NURSES IN A SOUTH-AFRICAN CONTEXT

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Dedicated to my husband Danie, my children Neal and Chris, and all my students.

Key terms

Model, reflective learning, reflective neonatal nurses, reflective neonatal practitioners, reflective practice, neonatal nursing practice, higher education, nursing education, education programme, South Africa.

Declaration

I, C.M. Maree, declare that the thesis 'Model for education of reflective neonatal nurses in a South African context' is my own work, and that all the sources used or quoted in this research study have been indicated and reflected by means of complete referencing.

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Researcher's Signature

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Witness's Signature

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Date Signed

Abstract:

Model for education of reflective neonatal nurses in a South African context

In post-basic education of neonatal nurses the challenge is in how to prepare reflective practitioners for their role in neonatal nursing practice. Generic outcomes from SANC and higher education are available that promote the education of reflective neonatal nurses, but do not give much clarity on exactly how this is to be achieved. This prompted the research question: 'How can professional nurses in a South African context be educated to become reflective neonatal nurses?' This study aims to develop a model for the education of reflective neonatal nurses in a South African context.

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 the process for developing nursing theory: a topic of interest was selected, which was a framework of several concepts; relationships between the concepts supported by evidence was identified and clarified; and relational statements were organised to describe the components of the conceptual model.

The structural components of the model were identified as a purpose (specific learning-, critical- and end-product outcomes of education of reflective neonatal nurses); a framework (higher education, nursing education and neonatal nursing practice in a South African context); dynamics (reflective learning); a recipient (neonatal nurses as students); an agent (neonatal educator); and a procedure (education programme).

The study had three phases that had different goals, but occurred simultaneously, overlapping and interrelating in the process of developing the model. The first phase was identifying and clarifying the concepts related to educational aspects of importance in education of reflective neonatal nurses. It was based on theoretical inquiry, concept analysis and inductive and deductive reasoning to describe the framework of education (higher- and nursing education), reflective learning, neonatal nursing students, role of the educator and educational approaches.

The second phase was identification and clarification of concepts in neonatal nursing practice related to education of reflective neonatal nurses. This was done by means of inductive and deductive reasoning, based on the extensive experience and knowledge of the researcher in the field, followed by literature control and confirmed by peer review of neonatal nursing

experts and/or educators. As a result the competences and professional characteristics expected of reflective neonatal nurses were synthesised and the content outline of an educational programme was deduced.

The third phase was constructing and describing a model for educating reflective neonatal nurses in a South African context, which involved developing relational statements linking the concepts clarified in the previous two phases. Experts in model development, higher education, nursing education and / or neonatal nursing practice evaluated the model in this phase.

Ethical considerations of relevance in this study were especially informed consent by the participants (peer- and expert review), and to give credit to all sources used.

Strategies to enhance trustworthiness included triangulation of sources, prolonged engagement of the researcher, clarification of the underlying assumptions of the study, thick description of the process, and validation by means of peer- and expert review.

Recommendations were made regarding dissemination of the model, practice, education and further research.

Abstrak:

Model vir onderrig van reflektiewe neonatale verpleegkundiges in 'n Suid-Afrikaanse konteks

Na-basiese onderrig van neonatale verpleegkundiges is 'n uitdaging om hulle voor te berei as reflektiewe praktisyns vir hul rol in neonatal praktyk. Generiese uitkomste is beskikbaar van die SARV en hoër onderwys wat die onderrig van reflektiewe neonatale verpleegkundiges aanmoedig, maar dit is nie duidelik oor presies hoe om dit te bereik nie. Dit het aanleiding gegee tot die navorsingsvraag: 'Hoe kan professionele verpleegkundiges in 'n Suid-Afrikaanse konteks onderrig word om reflektiewe neonatale verpleegkundiges te word?' Die studie se doel was om 'n model te ontwikkel vir onderrig van reflektiewe neonatale verpleegkundiges in 'n Suid-Afrikaanse konteks.

Om die studie se doel te bereik is 'n ondersoekende en beskrywende ontwerp gebruik wat in wese 'n kwalitatiewe en kontekstuele aard het, om die model te ontwikkel. Die model is ontwikkel volgens die proses van verpleegteorie-ontwikkeling: 'n onderwerp van belang is gekies, wat 'n raamwerk was van verskeie konsepte; verwantskappe tussen die konsepte is geidentifiseer en uitgeklaar ondersteun deur bewyse; en verbandhoudende stellings is georganiseer om die komponente van die konseptuele model te beskryf.

Die strukturele komponente van die konseptuele model is geidentifiseer as 'n doel (spesifieke leer-, kritiese- en eindproduk-uitkomste van onderrig van reflektiewe neonatale verpleegkundiges); 'n raamwerk (hoër onderwys, verpleegonderwys en neonatale praktyk in 'n Suid-Afrikaanse konteks); dinamika (reflektiewe leer); 'n ontvanger (neonatale verpleegstudente); 'n agent (neonatale dosent); en 'n prosedure (onderrigprogram).

Die studie het drie fases gehad met verskillende doelwitte, maar dit het gelyktydig plaasgevind, oorvleuel en gemeenskaplikhede in die proses van ontwikkeling van 'n model gedeel. Die eerste fase was die identifisering en uitklaring van konsepte wat verband hou met onderrigaspekte van belang in die onderrig van reflektiewe neonatale verpleegkundiges. Dit is gebaseer op teoretiese ondersoek, konsepanalise en induktiewe en deduktiewe redenering om die raamwerk van onderrig (hoër- en verpleegonderwys), reflektiewe leer, neonatale verpleegstudente, rol van die dosent en onderrigbenaderings te beskryf.

Die tweede fase was die identifisering en uitklaring van konsepte in neonatale praktyk wat verband hou met die onderrig van reflektiewe neonatale verpleegkundiges. Dit is gedoen deur

middel van induktiewe en deduktiewe redenering, gebaseer op die ekstensiewe ervaring en kennis van die navorser, wat deur literatuurkontrole en gelykes gevalideer is. Die groep het bestaan uit neonatale verpleegeksperts en/of dosente. Na aanleiding daarvan is die bevoedghede en professionele eienskappe wat van reflektiewe neonatale verpleegkundiges verwag word gesintetiseer, en die oorsig van die inhoud van so ‘n program is afgelei.

Die derde fase was konstruksie en beskrywing van ‘n model vir onderrig van reflektiewe neonatale verpleegkundiges in ‘n Suid-Afrikaanse konteks. Hierdie fase het die onwikkeling van verwante stellings behels wat die uitgeklaarde konsepte uit die vorige twee fases verbind. Eksperts in modelontwikkeling, hoër onderwys, verpleegonderwys en/of neonatale verpleegpraktyk het die model in hierdie fase gevalideer.

Etiese oorwegings van belang in hierdie studie was veral ingeligte toestemming deur die deelnemers (gelyke- en ekspertevaluerings), en om erkenning te gee aan alle bronne wat gebruik is.

Strategieë om vertrouenswaardigheid te verhoog het triangulasie van bronne, verlengde betrokkenheid van die navorser, uitklaring van die onderliggende aannames van die studie, digte beskrywing van die proses, en validering deur gelyke- en ekspertgroepe ingesluit.

Aanbevelings is gemaak met betrekking tot disseminasie van die model, sowel as aanbevelings vir praktyk, onderrig en verdere navorsing.

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List of Abbreviations

CHE	Council on Higher Education
CINN	Council of International Neonatal Nurses
CPD	Continuing Professional Development
ETQA	Education and Training Quality Assurance Body
HEMIS	Higher Education Management Information System
HEQC	Higher Education Quality Committee
HET SGB	Higher Education and Training Standards Generating Body
HRH Plan	National Human Resource for Health Plan
ICN NP/APN Network	International Council of Nurses International Council of Nurses: Nurse Practitioner / Advanced Practice Nurse Network
NEPAD	New Partnership for Africa's Development
NICUs	Neonatal Intensive Care Units
NQF	National Qualifications Framework
NSB	National Standards Body
OBE	Outcomes-Based Education
QC	Qualifications and Quality Assurance Council
SANC	South African Nursing Council
SAQA	South African Qualifications Authority
SETA	Sectoral Education and Training Authority
SGB	Standards Generating Body
WHO	World Health Organization

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.

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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 occured 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.

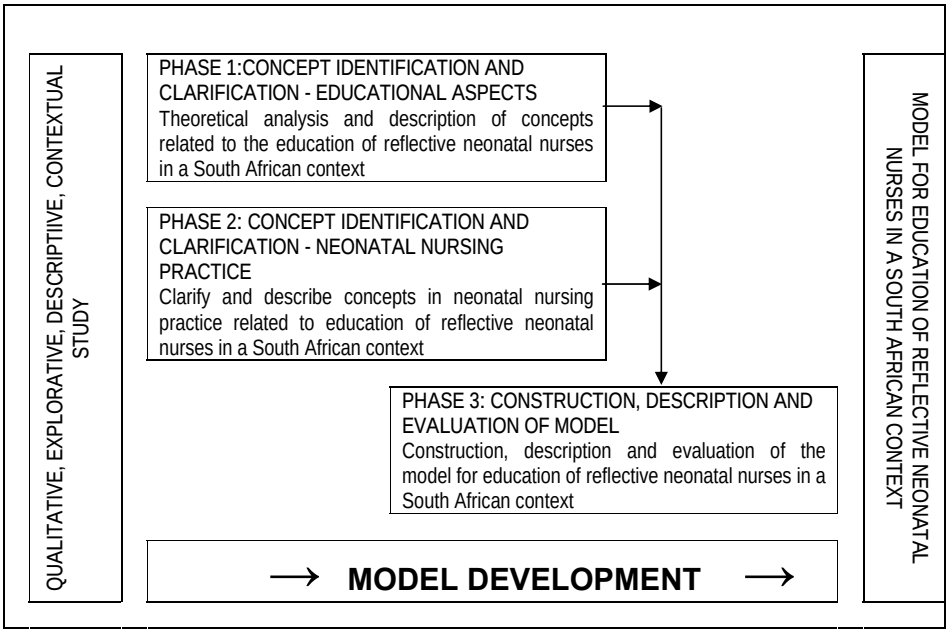

Figure 1.1: Schematic overview of study

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
		8. To describe outcomes of reflective learning
	Identification and clarification of concepts related to the role of the educator and educational approaches in education of reflective neonatal nurses	9. To describe the role of the educator in the education of reflective neonatal nurses
		10. To describe educational approaches for 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	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 & Delport 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 & Delport 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; Krefting 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.

CHAPTER 3:
FRAMEWORK OF NEONATAL NURSING EDUCATION IN THE SOUTH AFRICAN CONTEXT

3.1 INTRODUCTION

The education of neonatal nurses does not take place in isolation, but occurs in a well-organised framework. The main aspects of this framework are the statutory regulations for nursing education set by the SANC in terms of the Nursing Act, no. 50 of 1978 (South Africa 1978), which will be replaced by Act no. 33 of 2005 (South Africa 2005a) on a date determined by the President (SANC 2006), and legislation regulating higher education in terms of the Higher Education Act, no. 101 of 1997 (South Africa 1997).

As mentioned before, this study departed from the central assumption that reflective neonatal nurses are needed in neonatal nursing practice. The challenge identified was on how to educate them to prepare them accordingly. Any model being developed for the education of reflective neonatal nurses must take into account the existing framework of nursing education otherwise it would not be possible to implement it.

The aim of this chapter was to explore the framework of neonatal nursing education in the South African context, including the framework of higher education, the history of nursing education, current practice, and other influencing factors on the education of neonatal nurses in a South African context. By doing so, the components of the model that are addressed include the framework (higher education and nursing education) and the purpose (outcomes of educational programme).

3.2 HIGHER EDUCATION IN SOUTH AFRICA APPLICABLE TO NEONATAL NURSING EDUCATION

Nursing education, being part of the main stream of higher education in the South African context, has to comply with higher education requirements. Changes in higher education systems, especially in the last decade, have contributed significantly to the development of

nursing education. Particularly important developments in higher education were the promulgation of the Higher Education Act, no. 101 of 1997 (South Africa 1997) and the South African Qualifications Authority Act, no. 58 of 1995 (South Africa 1995); the adoption of outcome-based education as the basic philosophy of education in South Africa at all levels (South Africa 1995); and the publication of the National Qualifications Framework (Ministry of Education 2006). Each of these will be briefly discussed.

3.2.1 Higher Education Act, no. 101 of 1997

The Higher Education Act, no. 101 of 1997 (South Africa 1997), legislates for a transformed and unified national higher education system that:

- promotes equal accessibility and opportunity of success for all students,
- develops programmes that produce highly skilled graduates with qualifications that meet the country's employment needs,
- promotes critical and creative thinking, tolerance and a commitment to the common good through its teaching, and
- produces research of an international standard which is at the same time cognisant of its African context.

The Ministry of Education sets the norms and standards for higher education, including funding, planning and qualifications structure (Boughey 2004:6-7; Ministry of Education 2006; Ministry of Education 2004:7; South Africa 1997).

The envisioned programme for educating reflective neonatal nurses accords with this act, especially in the programme's focus on critical and creative thinking, and its aim to meet the country's employment needs by producing skilled lifelong learners in a highly specialised field.

3.2.2 South African Qualifications Authority (SAQA)

The aim of the South African Qualifications Authority Act, no. 58 of 1995 (South Africa 1995), is "to provide for the development and implementation of a National Qualifications Framework (NQF) and for these purposes to establish the South African Qualifications Authority (SAQA) and to provide for matters connected therewith." SAQA was mandated to ensure that

provisions for accreditation are complied with and, where appropriate, that registered standards and qualifications are internationally comparable.

SAQA is a body of 29 members appointed by the Minister of Education and Labour according to the South African Qualifications Authority Act. In the course of its duties, SAQA has so far published legislation regarding the following (Beekman 2004:23-30; Boughey 2004:6-20; Council on Higher Education 2002:18-23; Geyer 1997:10-16; Olivier 2002:8-27; SAQA 2006; SAQA 2007; South Africa 1995):

- The National Qualifications Framework (NQF) is a set of principles and guidelines for recording a learner's achievement, which enables national recognition of acquired skills and knowledge and helps ensure an integrated system that encourages life-long learning.
- The National Standards Bodies (NSBs), Expert Consultative Panels with Qualifications and/or Quality Assurance Councils (QCs) are responsible for developing learning or career pathways by generating and recommending qualifications and standards for registration on the NQF in their particular area of learning or organising field, respectively for higher education and nursing education. They are also responsible for identifying sub-fields of learning for which the Standard Generating Bodies are responsible. The sub-fields relevant to this study are nursing science and higher education.
- The Standards Generating Bodies (SGBs) are recognised by or established by the NSB / QC. The SGBs are responsible for developing the standards and qualifications of a particular sub-field of learning, in this case the SANC for nursing science, and the Higher Education and Training SGB for higher education and tertiary institutions.
- The Education and Training Quality Assurance bodies (ETQAs) are responsible for accrediting providers of education, training standards and qualifications registered at the NQF, monitoring supervision, evaluating assessment, facilitating moderation and registering assessors. A Sectoral Education and Training Authority (SETA) can be established within a specific economic sector to execute the functions of an ETQA if accredited by SAQA for that purpose. The Higher Education Quality Committee (HEQC) is the SETA for higher education, while the SANC is the SETA for nursing.

3.2.2.1 Aim of education

The aim of education according to SAQA is lifelong learning, and the underlying philosophy of the prescribed NQF is outcomes-based education (OBE). SAQA stipulates that "the learning

outcomes of all South African qualifications should include critical cross-field or generic skills to promote lifelong learning as well as discipline, domain-specific or specialised knowledge, skills and reflexivity" (Ministry of Education 2004:7).

The concept of 'lifelong learning' is used synonymously with 'autonomy of learning' and refers to the extent to which a learner can undertake action for learning independently, takes responsibility for his/her own learning and is self-reflexive about and can evaluate the quality of his/her learning and eventually that of others (Council on Higher Education 2002:49).

The education of reflective neonatal nurses conforms with this aim, since lifelong learning is a characteristic of a reflective practitioner (Hillier 2002:22-25; Rolfe 2000:90-92; Van Aswegen *et al*. 2000:128-134); neonatal nursing is domain-specific and implies specialised knowledge and skills (Carter 1998:xix-xx; SANC 1993d & e; SANC 2000:1-2); and reflexivity is a cornerstone of reflective practice (Atkins & Murphy 1993:1189; Greenwood *et al.* 2000:1106; Pappas & Walker 2004:116; Rolfe 2000:155-163; Van Aswegen *et al*. 2000:126).

3.2.2.2 Outcomes-based education (OBE)

OBE is the underlying philosophy of South Africa's NQF. "Outcomes-based learning is learning that is based on what learners can demonstrate after their learning…. The objective with outcomes-based learning is to empower learners to fit into society at large, to think critically and to meet the needs set within the world of work" (Olivier 2000:1).

Outcomes-based teaching includes facilitation and guidance of the students to achieve outcomes through a series of learning processes, including assessment, in which the learner is an active participant (Olivier 2002:6; Beekman 2004:32). It implies splitting outcomes or results of learning from input of content (Geyer 1997:12).

Outcomes refer to the end-products of a learning process, that part of a unit standard which is a statement of the required learner capabilities that must be demonstrated. Outcomes can include social and personal skills, learning how to learn, concepts, knowledge, understanding, methodologies, values, attitudes and more (Geyer 1997:12).

According to SAQA, three types of outcomes can be distinguished in outcomes-based programmes:

- **Critical outcomes:** 'soft' or intangible outcomes that drive all learning processes and enable learners to achieve competences in more than one sphere of life, for example critical and lateral thinking, problem solving, life skills and the ability to effectively interact with others;
- **Specific learning outcomes:** knowledge, skills and values of relevance to a specific context; and
- **End-product outcomes:** final outcomes formed by critical and specific outcomes as a unity (Olivier 2002:32-33).

Competences are developed when a learner has met the criteria that show he/she has achieved the outcomes for required unit standards. Credits are awarded if competence is proven. Specified combinations of credits have to be accumulated to obtain a particular qualification (Geyer 1997:13).

The OBE-approach was not officially part of South African higher education in the past. The differences between traditional education and OBE are shown in Table 3.1 to demonstrate the paradigm-shift required in higher education and legalised by SAQA and the NQF.

Table 3.1: Differences between traditional education and outcomes-based education (OBE)

ASPECT OF EDUCATION	TRADITIONAL EDUCATION	OBE
Centre or focus of learning	The content of the curriculum and facilitating the transfer of these facts and skills, with the assumption that the learner will be able to apply them when and where needed (content-based), as well as the role of the educator and the use of training objectives	The learner and what it essential for him/her to be able to do (performance) at the end of the learning experience, therefore to enable him/her to manage his/her own learning to obtain, understand and employ it to achieve learning outcomes (outcome-based)
Measures of success	The number of students admitted to and successfully completing the courses; successful completion is based on proof during a summative or final assessment of knowledge and skills obtained, and not necessarily growth or effectiveness	The outcomes achieved by the learner that reflect learning of knowledge (concepts, principles and theories) complex skills, values / moral principles, psychosocial skills (motivation and relationships), all demonstrated as growth and effectiveness
Appeals process	Appeals process not necessarily present	Appeals process in place and accessible to students

Table 3.1: Differences between traditional education and OBE (continue)

ASPECT OF EDUCATION	TRADITIONAL EDUCATION	OBE
Role and methods of assessment	Assessment is an 'add-on' experience, where students learn for assessment	Assessment encourages and supports deep learning, where students learn from assessment
	Assessment is not transparent but rather private and confidential; little or no feedback regarding the assessment	Assessment is a transparent process
	Assessment is the 'final judgement' to see if the desired subject-related knowledge and skills have been obtained, with the focus on accumulation of isolated or discrete facts and skills (text-book knowledge, implicit criteria and academic exercises) (behavioural approach)	Assessment is an expanded opportunity to achieving the desired developmental, critical cross-field and specific outcomes, with the focus on integrating and applying knowledge (use of knowledge in real life, public criteria for assessment and meaningful tasks) (cognitive / reflective approach)
	Assessment is almost entirely summative as an examination, separate from instruction, with a final explanation; the educator is the sole and unconditional judge of the learner' achievement	Various methods of assessment are incorporated with instruction; feedback is seen as an important component of instruction in which students participate; supports 'deep learning' and not reproduction of knowledge
	Assessment is mainly done on an individual basis and results are mostly kept secret	Group assessment of collaborative learning and skills and collaborative products
Recognition of an assessor	Assessment is simply included in a person's job description and requirements, either explicitly or implied	Every assessor must be a registered assessor, according to SAQA guidelines and meet ETQA requirements
Assessor's role / aim	'Gate-keeper': stop 'losers' from continuing	'Supportive guide': provide access to further development for all students
	Planning and developing the contents of a curriculum and methods for assessing the obtained knowledge and skills	Planning and developing clear learning outcomes and methods for enabling and encouraging students to achieve them, implementing these and assessing this implementation and achievement
Criteria for an assessor	Required expertise in the subject matter determined by the regulatory body and/or employer of the assessor	Required expertise in the subject matter must be at least the same qualification or in the same 'family' as that for which the learner is studying, according to NQF levels
	Required occupational and contextual expertise determined by the regulatory body and/or employer of the assessor	ETQA determines required occupational and contextual expertise in field of assessment and evaluates individual assessors
	Required expertise in subject education, training and development determined by the regulatory body and/or employer of the assessor	ETQA determines assessor's expertise within its primary focus (years of experience, expertise in education, training and development etc.)
	Required skills in planning, administration and management determined by the regulatory body and/or employer of the assessor	SAQA sets generic standards for skills in planning, administration and management
	Required values and interpersonal skills determined by the regulatory body and/or employer of the assessor	SAQA sets generic standards for values and interpersonal skills
Assessment system	Assessment system rigid and does not often change	Assessment system evolves and changes as new unit standards and assessment criteria are developed

(Sources: Beekman 2004:16-18, 31-38; Olivier 2000:2-3, 6, 26-28; Gravett & Geyser 2004: 44-45, 90-91,144-146)

In OBE, though the educator plays a significant role in facilitating and guiding the learner to achieve these outcomes, self-learning is crucial. Olivier (2002:5) states that

> Self-learning competence is a critical key for each lifelong learner to have. Self-learn competence enables learners to value the learning by means of processes and practices that will enable them to become critical, lateral and creative thinkers. This implies that the way learning is provided, needs to move closer to what the real world wants, especially because legislation is emphasizing continuous and lifelong learning.

An integrated learning process is used to achieve outcomes. Knowledge and skills are contextualised and used as supportive tools for the learning steps that must be made towards the end-products, the outcomes. These learning steps are preparation (planning / development), performance (implementation), interaction (communicate / use of technology or information), assessment and conclusion (evaluation) (Olivier 2002:49-58).

The role of the educator is primarily that of facilitator. Before this facilitation can begin the educator has to identify learning outcomes and critical outcomes, formulate end-product outcomes, plan how to engage students in learning, establish appropriate assessment criteria, develop learning material and plan and schedule learning experiences. During facilitation the educator has to facilitate group and individual learning, council, guide and monitor the learning progress, create an environment for active participation, identify and respond to learner needs, explain difficult concepts and coach students by instructing, demonstrating and challenging them to improve, assess achievement of outcomes as a continuous process and give meaningful feedback. The educator has to decide which learning styles and methods are most helpful for supporting learning in a particular context (Olivier 2002:101-112).

Outcomes-based training uses a similar approach to prepare a person for a specific job or context. The outcomes of the programme are based on the requirements of the particular context, situation or job in real-life and are often performance indicators related to the job. Outcomes-based training therefore has an implicit practical component (Council on Higher Education 2002:31; Olivier 2002:113-148).

In outcomes-based training, the student has to achieve applied competences. Three types of applied competences are defined by the South African higher education system:

- **Practical competences:** the demonstrated abilities, in an authentic context, to consider a range of possibilities for action, to make considered decisions about which possibility to follow, and to perform the chosen action;

- **Foundational competences:** the demonstrated understandings of the knowledge and thinking that underpins the actions taken;
- **Reflexive competences:** the demonstrated abilities to integrate and connect performances and decision making with understanding and with an ability to adapt to unforeseen circumstances, and to explain the reasons behind such adaptation (Council on Higher Education 2002:48-49; Geyser 2004b:139-156)

The concept of 'autonomy of learning' is associated with 'applied competences' and refers to the learner's capacity for lifelong learning. The learner must progress from dependence on others to full self-regulation, and from close supervision to creative, self-directed learning and the ability to supervise the learning of others (Council on Higher Education 2002:49).

Early South African post-basic neonatal courses were all based on a traditional teaching approach and need to be revised to conform with the outcomes-based format required by SAQA, which involves practical, foundational and reflexive competences and aiming at lifelong learning. Development of reflective neonatal nurses is therefore supported by the OBE approach.

3.2.3 National Qualifications Framework (NQF)

The NQF, legalised by the SAQA Act (Act no. 58 of 1995), is a set of principles and guidelines for recording a learner's achievement, to make national recognition of acquired skills and knowledge possible and ensure an integrated system that encourages life-long learning (Beekman 2004:24). It is a tool with which to manage what is happening in education and training in the country (Geyer 1997:11).

The main goals of the NQF are to standardise the quality of qualifications, not limited to formal education, based on the principles of OBE and lifelong learning (Boughey 2004:7-11).

The aims of the NQF are the following (Beekman 2004:23-30; Boughey 2004:6-20; Geyer 1997:10-16; Olivier 2002:8-27):

- **Integration:** to form part of a system of human resources development which provides for the establishment of a unifying approach to education and training;
- **Articulation:** to allow students, on their successful completion of accredited pre-requisites, to move between components of the delivery system;

- **Flexibility:** to allow for multiple pathways to the same learning ends;
- **Access:** to ensure ease of entry to appropriate levels of education and training for all prospective students in a manner which facilitates progression;
- **Progression:** to ensure that the framework of qualifications permits individuals to move through the levels of national qualifications via different appropriate combinations of the components of the delivery system;
- **Coherence:** to work within a consistent framework of principles and certification;
- **Portability:** to enable students to transfer credits of qualification from one learning institution and/or employer to another;
- **Recognition of prior learning:** to assess learning that has already taken place and to give credit for it;
- **Guidance of students:** to provide counselling for students by specially trained individuals who need nationally recognised standards for educators and trainers;
- **Standards:** to express education requirements in a nationally agreed framework and internationally acceptable outcomes;
- **Relevance:** to be and remain responsive to national development needs;
- **Credibility:** to maintain international and national value and acceptance; and
- **Legitimacy:** to enable the participation of all national stakeholders in the planning and coordination of standards and qualifications.

The NQF levels for the different qualifications are schematically presented in Table 3.2.

Table 3.2: NQF for higher education

NQF LEVEL	TYPES OF QUALIFICATIONS AND CERTIFICATES
NQF levels 5-10: Higher Education and Training	
10	Doctoral Degree
9	Master's Degree
8	Honours Degree Postgraduate Diploma
7	Bachelor's Degree Advanced Diploma
6	Diploma Advanced Certificate
5	Higher Certificate
NQF levels 2-4: Further Education and Training (FET)	
NQF level 1: General Education and Training Certificate	

(Source: adapted from Ministry of Education 2006)

For approval and registration at SAQA, qualifications have to be outcomes-based and comply with the NQF aims listed above. The qualifications must be submitted in SAQA format, specify

their NQF level and include the following (Beekman 2004:23-30; Ministry of Education 2006:9-14; Olivier 2002:8-27; Boughey 2004:6-20):

- title and purpose of the qualification;
- unit standards;
- critical cross-field outcomes to promote lifelong learning, and discipline, domain-specific or specialised knowledge, skills and reflexivity;
- specific outcomes of the fundamental elements, core elements and elective elements;
- exit-level outcomes and associated assessment criteria, including embedded knowledge;
- accreditation process, including moderation of unit standards;
- range statements as a general guide to the scope, context and level used for the unit standards or specific outcomes or assessment criteria;
- credits attached to the unit standards;
- rules of combination for the learning outcomes of a qualification;
- entry requirements;
- arrangements for recognition of prior learning; and
- moderation of assessment.

All persons involved with assessing the qualification have to be registered assessors at SAQA, while persons involved in moderating the qualification or a part thereof have to be registered moderators. Registering at SAQA requires evidence of compliance with prescribed criteria (Beekman 2004:1-20; Geyser 2004a:90-111; Murdoch & Grobbelaar 2004:112-125). The terminology used to describe SAQA format is clarified in Table 3.3.

Table 3.3: SAQA and NQF terminology

Terminology	Description
Programme	A purposeful and structured set of learning experiences or course that leads to a qualification. Programmes may be discipline based, professional, career-focused, trans-, inter- or multi-disciplinary in nature. A programme has recognised entry and exit points. All taught higher education programmes should have core and elective elements, except research-based programmes.
Professional programme	A programme that has to meet the licensure and other professional and work-based requirements of statutory councils
Recognised higher education institution	A higher education institution which has formal approval in terms of the Higher Education Act, no. 101 of 1997, to operate as a public or a private institution of higher education in South Africa
NQF levels	Classification or categorisation of qualifications on the NQF, of which higher education qualifications occupy levels 5 to 10: undergraduate levels 5 to 7 and postgraduate levels 8-10 (refer to Table 3.2)

Table 3.3: SAQA and NQF terminology (continued)

Terminology	Description
Level descriptors	Broad qualitative statements against which more specific learning outcomes can be compared, or the outermost layer of qualification specification that indicates the general level of outcomes
Qualification	Formal recognition and certification of learning achievement of a range of credits embodied in a coherent number of standards, awarded by an accredited institution, and as registered by SAQA
Qualification type	First name given to a qualification, e.g. Master's degree
Qualification designator	Second name given to a qualification to indicate broad area of study, discipline or profession, e.g. Master of Nursing Science, abbreviated as M.Cur
Qualifier	Third name given to a qualification to indicate field of specialisation, e.g. M.Cur (Advanced Neonatal Nursing). To merit a qualifier, at least 50% of the minimum total credits for the qualification and at least 50% of the minimum credits at the qualification's exit level must be in the field of the specialisation
Qualification descriptors	Fixed points of reference which enable comparison with other qualifications and provide a basis for designing, approving and reviewing programmes. Descriptors specify a qualification's level, credit-rating, purpose and characteristics or type
Entry requirements	Minimum requirements expected from a learner for admission to a higher education programme, as prescribed by the Department of Education (2005:2-10), and interpreted in the higher education institution's admissions policy and practice
Credits	A measure of the volume of learning required for a qualification, quantified as the number of notional study hours required for achieving the learning outcomes specified for the qualification. One SAQA credit equals 10 notional hours, and 120 SAQA credits are approximately equivalent to one year full-time study
Notional hours of learning	Learning time the average learner will take to meet defined learning objectives, including contact time, time spent in structured learning in the workplace and time spend in individual learning
Unit standards	Nationally agreed and comparable statements supported by specific outcomes and their associated assessment criteria together with other relevant information. The standards are the basis on which to develop learning programmes, prepare for learning interventions and material and develop assessment documents. "Learning takes place *towards* a unit standard, whilst assessment takes place *against* the unit standard" (Olivier 2002:24).
Critical cross-field outcomes	Generic skills supportive of life-long learning, as well as discipline- or domain-specific or specialised knowledge, skills and reflexivity, which are designed by SAQA and are applicable to all learning areas
Specific outcomes	Contextually demonstrated knowledge, skills and values
Exit-level learning outcomes	Outcomes or end-products to be achieved by a qualifying learner at the point at which he/she leaves the programme, leading to a qualification
Range statements	Statements of the complexity, technological involvement, dimension, scope, depth and other parameters of the unit standard. They are expansions, clarifications, descriptions and explanations of the assessment criteria, and direct choice of learning strategy, material and assessment methods whilst ensuring balance between the acquisition of knowledge, skills, values *(How to?)*
Assessment	Systematic evaluation of a student's ability to demonstrate the achievement of the learning goals intended in a curriculum
Accreditation	Recognition status granted to a programme for a stipulated period of time after an HEQC evaluation indicates that it meets minimum standards of quality

Table 3.3: SAQA and NQF terminology (continued)

Terminology	Description
Moderation of assessment	Process in which a person (not the examiner) appointed by the institution checks the standard of the examination, accompanying marking framework and response exemplars and marks a representative sample of examination responses
Recognition of prior learning	Formal identification, assessment and acknowledgement of the full range of a person's knowledge, skills and capabilities acquired through formal, informal or non-formal training or on-the-job or life experience
Work integrated learning	Qualifications designed to incorporate periods of required work that integrate with classroom study; work must be appropriately structured, properly supervised and formally assessed by the institution responsible for the programme

(Sources: Department of Education 2005:2-10; Higher Education Quality Committee 2004:33-37; Ministry of Education 2006:4-17; Ministry of Education 2004:7-16; Olivier 2002:1-27)

3.2.3.1 Higher education qualification descriptors

Descriptions of learning move from the generic to the specific, with specific standards meeting the requirements of generic standards. The *NQF level descriptor* is the generic layer of a qualification. The *qualification descriptor* specifies the qualification type, its minimum credit rating and its purpose and characteristics. The *qualification types* are used as points of reference for the design of specialised qualifications and the programmes that deliver them. The *designated variant* is a generic field of study, and the *qualification's qualifier* a field of specialisation (Council on Higher Education 2002:33-38; Ministry of Education 2006:10-12).

Table 3.4 is adapted from the 'Diagrammatic representation of a nested approach to qualification specification' released by the Ministry of Education (2006:29). Application in this study is indicated in italics.

Table 3.4: Higher education qualification descriptors in neonatal nursing education

NQF Level (level descriptor): *Levels 7, 8 & 9*

Qualification type (qualification descriptor):
NQF Level 7: *Advanced Diploma / Bachelor's Degree*
NQF Level 8: *Postgraduate Diploma*
NQF Level 9: *Master's Degree*

Designated variant (designator):
Advanced Diploma *(Dipl. Nursing Science)*
Bachelor of Nursing Science *(B.Cur I et A)*
Master's Degree in Nursing Science *(M.Cur)*

Qualification specialisation (qualifier):
Dipl. *Neonatal Nursing Science*
B.Cur I et A *(Neonatal Nursing Science)*
M.Cur *(Adv. Neonatal Nursing Science)*

(Source: adapted from Ministry of Education 2006)

3.2.3.2 Higher Education Information Management System (HEMIS)

The details of approved and accredited qualifications are recorded on the national higher education database, in accordance with the rules of the Higher Education Information Management System (HEMIS) of the Department of Education (Ministry of Education 2006:17).

The minimum notional annual study hours for a qualification are reflected in the HEMIS record. Notional annual study hours are based on the volume of learning required for a qualification and its specified exit level. Notional annual study hours are used to determine the total number of units of government subsidy per qualification. These units are then used by the Department of Education to calculate the annual government grant for each public higher education institution (Ministry of Education 2006:17). With 1 credit = 10 notional hours, the minimum credits required for the registration of a qualification are: 120 credits for a National Certificate, 240 credits for a National Diploma and 360 credits for a National First Degree (Council on Higher Education 2002:22).

The Department of Education will only fund whole qualifications and not individual unit standards, short courses or parts of qualifications (Council on Higher Education 2002:32). The HEMIS national database and its rules therefore have significant financial implications for the higher education institutions presenting such courses.

3.2.4 National Standards Bodies (NSBs), Expert Consultative Panels, and Qualifications and Quality Assurance Councils (QCs)

NSBs were initially established and some were later replaced by Expert Consultative Panels to recommend the boundaries of the field in which a qualification specialises, as well as a framework for the sub-fields. They oversee the activities of the SGBs, recommend qualifications to SAQA, recommend registration of standards to the NQF, and liaise with the ETQAs on the procedures for recommending new standards and qualifications (Olivier 2002:15-18).

Acknowledgement of the need for further adjustments led to SAQA proactively engaging partners in mapping out a standards generating approach to better meet the needs of all constituencies. Recommendations are made by the Task Team, but are not yet implemented, to dismantle and replace the NSB structure or the Expert Consultative Panels with Qualifications and Quality Assurance Councils (QCs). The purpose of the QCs would be to represent the proposed pathways, namely TOP QC for the Trade, Occupation and Professional Pathway, GENFET QC for the General and Vocational/Career Pathways in Further Education, and HI-ED for the General and Vocational/Career Pathways in Higher Education (Young 2003:1-20).

Of relevance to this study are Education, Training and Development (NSB 05) or General/Career Pathways in Higher Education (HI-ED); and Health Sciences and Social Services (NSB 09) or Trade, Occupation and Professional Pathway (TOP QC). These serve as particular areas of learning or organising fields (Gravett & Geyser 2004:11-12; Young 2003:1-20). The relevant sub-fields of learning are 'Higher Education' and 'Nursing'.

3.2.5 Standards Generating Bodies (SGBs)

SGBs develop the standards and qualifications of the particular sub-field of learning. The SGB for higher education is the Higher Education and Training SGB, and for nursing is the appointed SGB for Nursing.

3.2.5.1 Higher Education and Training Standards Generating Body (HET SGB)

The HET SGB is the SGB for higher education, responsible for generating standards and qualifications in accordance with SAQA requirements, updating and reviewing these standards, recommending standards and qualifications to the Education, Training and Development National Standards Body (ETD NSB) and recommending criteria for the registration of assessors and moderators or moderating bodies (Olivier 2002:18). The HET SGB developed the Postgraduate Certificate in Higher Education and Training (Gravett & Geyser 2004:11-12).

3.2.5.2 SGB for Nursing

The SGB for Nursing is appointed with the purpose of generating standards and qualifications in accordance with SAQA requirements, updating and reviewing these standards, recommending standards and qualifications to the NSB 09: Health Sciences and Social Services, and recommending criteria for the registration of assessors and moderators or moderating bodies, which they have submitted in 2005 for nursing qualifications. The appointed SGB for Nursing includes members from the SANC to ensure that nurses who complete these qualifications are able to fulfil the requirements for registration with the SANC (SAQA 2007a:1-2).

The SANC determines entrance requirements to the register for nurses and midwives and therefore participates in the process of standard setting and builds on the work of the SGB to ensure that requirements for its competency framework are met in accordance with the scopes of practice of the profession and the nurses. The registration of the nursing qualifications has been overtaken by the publication of the Nursing Act, Act no. 33 of 2005 (South Africa 2005a), and the subsequent proclamation of certain sections of this Act. One of these sections is the scope of practice in section 30 which required the SANC to develop new qualifications to prepare nurses for the proposed new scope of practice. The SANC task team working on

theses new qualifications have used the SGB materials submitted to SAQA to assist the process.

The difference between the role of the SANC and the role of the SGB is that SANC sets the minimum criteria for registration as nurses while the SGB develops the qualification (South Africa 2005a; SAQA 2007a:1-2). The implication thereof is that the processes are running concurrently to obtain a qualification and qualify for licensing to practise as a nurse, in comparison with other countries where it often implies two independent processes.

The NSBs, Expert Consultative Panels or QCs and SGBs together provide a framework for education. The Education and Training Quality Assurance bodies (ETQAs) and Sectoral Education and Training Authorities (SETAs) oversee the quality of service delivery according to this educational framework.

3.2.6 Education and Training Quality Assurance bodies (ETQAs) and Sectoral Education and Training Authorities (SETAs)

ETQAs accredit providers of education and training standards and qualifications registered at the NQF, monitor supervision, evaluate assessment, facilitate moderation and register assessors. A SETA can be established within a specific economic sector to execute the functions of an ETQA if it is accredited by SAQA for that purpose. In practice, ETQAs and SETAs have become synonymous (Gravett & Geyser 2004:12; Olivier 2002:19-21).

The Council on Higher Education is the ETQA/SETA for higher education. The SANC is a ETQA/SETA for nursing (stipulated in section 4(o) of the Nursing Act, Act no. 33 of 2005), although the Health and Welfare SETA (HWSETA) is also involved in aspects of education and training programmes offered at nursing schools (Gravett & Geyser 2004:12; SAQA 2007b:11-14).

3.2.6.1 Council on Higher Education (CHE) and Higher Education Quality Committee (HEQC)

The CHE established a permanent sub-committee, the HEQC, following as stipulated in the Higher Education Act, no. 101 of 1997 (South Africa 1997). The mandate of the HEQC is to promote quality assurance in higher education, audit the quality assurance mechanisms of

higher education institutions and accredit programmes of higher education. The central objective of the HEQC is "to ensure that providers deliver education, training, research and community service which are of high quality and which produce socially useful and enriching knowledge as well as a relevant range of graduate skills and competences necessary for social and economic progress" (Higher Education Quality Committee 2004c:1).

The responsibilities of the HEQC involves collaboration with professional councils and SETAs on the accreditation and evaluation of professional and work based programmes leading to NQF-registered qualifications; the periodic audit of the effectiveness of quality assurance policies and systems of all public and private providers of higher education, with particular emphasis on quality assurance arrangements for teaching and learning, research and knowledge-based community service; and the project on *Guides to Good Practice* (Higher Education Quality Committee 2004c:7).

The focus of the *Guides to Good Practice* includes setting criteria and guidelines for (Higher Education Quality Committee 2004c:7): institutional policies and strategies for improving teaching and learning; programme design and review; evaluation of teaching; equity; access; academic development and curriculum innovation; the alignment of curriculum with the assessment of students; postgraduate supervision; the role of external examiners; and academic staff development. These documents support the aim of assuring quality delivery of service.

3.2.6.2 SANC as ETQA/SETA for nursing

SANC is accredited as an ETQA for nursing (stipulated in section 4(o) of the Nursing Act, Act no. 33 of 2005) with the following functions: accredit providers of nursing programmes; promote quality amongst constituent providers; monitor nursing programmes; evaluate assessment and facilitate moderation amongst constituent providers; register constituent assessors for unit standards and qualification falling within its primary focus; certificate students; co-operate with relevant moderating bodies; recommend new standards or qualifications to the SGB for Nursing or modifications to existing standards and qualifications; maintain a database of students, providers, etc.; and submit reports to SAQA (SAQA 1999; SAQA 2007a; SAQA 2007b). The focus remains on assuring quality delivery of service in nursing and education.

3.2.7 Skills Development Act and Skills Development Levies Act, no. 9 of 1998

Two other influences on higher education in South Africa are the Skills Development Act, no. 97 of 1998 (South Africa 1998) and Skills Development Levies Act, no. 9 of 1999 (South Africa 1999). They emphasise the obligation of employers to support the continuous development of their employees to meet the country's need for highly skilled employees, improve the skills and productivity of the South African workforce and to utilise the workplace more effectively for skills training. Employers have to pay a specified levy on the wage bills of all employees. These funds are channelled into skills development by the SETAs. Employers can reclaim a part of the levy paid annually if they can prove that they support skills development; this proof must be a Workplace Skills Plan and a Workplace Skills Report submitted to the relevant SETA.

All the SETAs are accredited as ETQAs with SAQA and are expected to measure quality against set standards. Because many sub-fields do not have such standards, some SETAs fund selected standard setting processes in their sectors, for example the HWSETA that funds the activities of the Nursing, Ancillary Care Workers and Phlebotomy SGBs in the form of learnerships and bursaries. Learnerships facilitate the combination of a structured learning component and practical work experience that lead to a qualification. A learnership requires that a contract be established and signed between the learner, the employer and the accredited training provider. While the training provider provides the training facilities, the employer must ensure that the learner receives payment, support, and supervision to implement learning content, workplace policies and procedures and fulfil the learning objectives of the programme. That learner has the obligation to attend the training and to work for the employer adhering to the required workplace policies. These learnerships and bursaries have opened doors for agreements between tertiary institutions and employers for training of more nurses in certain specialities identified as priorities. Some employers have also initiated in-service-training opportunities or developed short in-house courses (Boughey 2004:17-18).

Due to the lack of qualified neonatal nurses in South Africa, various health care institutions have identified the training of neonatal nurses as a priority. Certain provincial governments, such as those of Mpumalanga and Limpopo, are paying a 'scarce skill allowance' to neonatal trained nurses. Private hospital groups have developed short courses in neonatal nursing, or made agreements with tertiary institutions for post-basic training of selected nurses in neonatal nursing. As a result of these measures the demand for training of neonatal nurses

has increased, and courses became more accessible for registered nurses with the support of the employers.

3.2.8 Additional influences in higher education

Other influences in higher education that also influence neonatal nursing education include globalisation, massification and internationalisation; sizing and shaping of the higher education landscape; and the focus of the Department of Education.

3.2.8.1 Globalisation, massification and internationalisation

Globalisation, massification and internationalisation are changes that influence the future of higher education. Globalisation causes education systems to emphasise the contemporary technological, social and cultural needs and problems of bigger communities. Massification, which is linked to globalisation, is the phenomenon of increasing student numbers in higher education because of increasing accessibility and support, especially of disadvantaged students. Internationalisation forces higher education systems to consider international trends and the needs of international societies (Botes 1997:3-9; Council on Higher Education 2002:7-8, 26; Geyser 2004b:140-142; SAQA 2007c:17).

These three trends go hand-in-hand with contemporary changes, including:

- the explosion of knowledge and its accessibility,
- technological advancements in communication and connectedness,
- increased mobility and changing immigration patterns of skilled professionals,
- changes in the employment arena, and
- support from national and international organisations for globalisation and internationalisation.

(Council on Higher Education 2002:7-15; De Villiers 2005:63; Goodyear 2006).

Therefore, a recurrent theme in South African higher education programmes is the need to be internationally accepted and accord with international trends in terms of quality and standards while addressing the needs of the South African society (Department of Health 2006:8, 11; Geyser 2004b:141; Pandor 2005; SAQA 2006:1-11) and supporting African rejuvenation (Council on Higher Education 2001:5-6).

One of the HEQC's responsibilities is international liaison, namely

> membership of and the development of linkages with international quality assurance organisations and networks in order to share information as well as participate effectively in international debates and initiatives on quality provision and articulation in higher education across national boundaries. (Higher Education Quality Committee 2004c:1)

This international involvement demands of higher education, including neonatal nursing education, the training of practitioners with greater operational knowledge and internationally recognised qualifications. This cannot be achieved by traditional education or 'routinised' neonatal nurses, but is possible with the education of reflective neonatal nurses.

The need for reflective practitioners is clearly supported in the following statement of the Council on Higher Education (2001:6):

> Higher education can also contribute meaningfully to improving the quality of schooling, health care, welfare and other public services at national, provincial and local levels. This requires the active promotion of continuing education, the upgrading of professional knowledge and skills and [the] creating [of] flexible opportunities for life-long learning for practical education, health, social services and other public sector personnel. It also requires the appropriate applied and strategic research around key social policy issues and the problems of social reconstruction and development. Such research and the continuous upgrading of the knowledge, skills and competences of public sector personnel will ensure effective delivery of services as well as innovation and new trajectories for development.

3.2.8.2 Changes in the South African higher education landscape due to resizing and shaping

The higher education landscape has been resized and shaped to meet national goals, in the global context, through collaboration at regional level in programme development, delivery and rationalisation. This restructuring process involved reduction of the number of tertiary institutions and creating a new type of 'comprehensive' institution that offer both technikon-type and university-type programmes (Ministry of Education 2004).

The rationale of this restructuring process was explained in the January 2004 document, 'Creating comprehensive universities in South Africa: a concept document' (Department of Education 2004). The main goals of the restructuring include

> access to higher education, enhanced articulation between career-focused and general academic programmes, thus promoting student mobility; strengthening of applied research;

> and enhanced responsiveness to regional and national human resource, skills and knowledge needs. (Asmal 2004:Foreword)

The restructuring of the higher education system began in 1994 and is still a high priority; an estimated R1,9 billion is budgeted for this purpose from 2001/2 to 2006/7 (Pandor 2005).

Thus the curriculum for neonatal nursing education must be revised if it is to remain relevant and appropriate for the changing needs of the society, and comply with new legislation and current trends.

3.2.8.3 Focus of the Department of Education on enrolment of students

During her speech to the National Assembly on the 17 May 2005, Pandor, Minister of Education, emphasised that the main focus of the Department of Education remains the quality of education. She identified six core issues to be addressed to ensure quality of education, which she called the "six doors of learning and culture that are difficult to open or that offer restricted access to what lies within. Each of these features of learning and culture requires decisive, effective, and coherent responses from us as policy makers and implementers in the field of education." The first three 'doors' relate to pre-school and school matters, and the last three to higher education, namely 'higher education enrolment planning', 'further education and skills for a modern economy' and 'opening the hidden access to adult education' (Pandor 2005). These latter three will now be briefly discussed.

Higher education enrolment planning is needed because the growth in student numbers must not outstrip the availability of resources if quality education is to be provided. A result of massification is increased numbers of students enrolling, but decreased numbers of successful graduates, which means a high rate of student dropout and a waste of resources. Pandor (2005) stated in her speech that

> Our success in the sector will be assured through planned enrolment, planned growth and improved sectoral co-operation. An efficient, adequate, well-resourced and responsive system of higher education is an attribute for any society… We must determine our path of growth in access and ensure that the revolving door becomes a door of increased opportunities and skills.

Providing *further education and skills for a modern economy* will require the development of more skills, elimination of unnecessary duplication in programme offerings, provision of

education relative to the skill shortages in the country and design of education that contributes to the national human resource development strategy and promotes economic growth.

Opening the hidden access to adult education will require increased provision of adult basic education and training (ABET) to increase adult literacy, which will contribute to increased numbers of student enrolment in higher education in the long term (Pandor 2005).

Though these may be valuable aims, their practical implementation can cause problems. One difficult implication for neonatal nursing education is the probability that the enrolment of students from different educational backgrounds will increase; these students often suffer the effects of unequal education, and an uneven knowledge base. Innovative teaching strategies might be needed to help all students cope and become reflective neonatal nurses.

3.2.8.4 Focus of the Department of Education on health science education

The Minister of Education in a speech at the National Conference on the Financing of the Health Sciences Education on 16 May 2005, in Cape Town, highlighted the following problems in the country's health system (Pandor 2005):

- The skew distribution of health professionals between the public and private sectors, with the public sector on the losing end;
- The escalating trend of health professionals leaving the country;
- The fundamentally flawed division of funding between pre-clinical training at national level and clinical training at provincial level;
- The failure of the demographic composition of student populations to change to meet the equity goals for higher education's transformation agenda;
- The drop in number of graduates despite increasing student enrolment numbers, suggesting that appropriate support programmes have to be put in place to ensure that access is coupled with success; and
- Tension between the teaching and research mandates of higher education institutions and the service delivery needs of the provincial health departments, causing problems for health professionals in joint appointments. (Joint appointments refer to posts shared between a university and a provincial government in South Africa).

Speaking about the curricula followed in South African faculties of health sciences, the Minister said

> if we are to be successful in addressing the health problems that face the country, health professionals must not only be trained to deal with the clinical or health aspects of these problems but also the social, economic and cultural context within which they occur. We need to develop curricula that not only create a balance between preventive and curative health care, between primary, secondary and tertiary services, but also develop the social, communication and managerial skills necessary for health care workers to function effectively in the South African context …The changes in the curricula must also be accompanied by the development of multiple training sites – in urban and rural areas, suburbia and the townships, thus exposing health professionals to the full range of conditions, experiences and needs of different communities. (Pandor 2005)

Neonatal nursing education fits these goals in the sense that it is career-focused and contributes to satisfying a national need for highly skilled human resources, but is also exposed to the challenges mentioned. A fine balance, though, has to be maintained between addressing the national context and remaining internationally relevant, while overcoming the obstacles in higher education. This balance will be achieved by the education of reflective neonatal nurses who are knowledgeable, skilful and reflexive.

3.2.9 Tertiary institutions

in the past, before 1994, traditionally tertiary institutions had academic freedom and autonomy, and their protection against arbitrary interference was underwritten by formal legislative enactments. These institutions were free to formulate their own definitions of excellence, innovation and the advancement of knowledge (Council on Higher Education 2001:7).

Recently (after 1994), however, globalisation, massification, privatisation, decentralisation, the needs of quality assurance and social changes have required broader concepts of accountability and obligations (Council on Higher Education 2001:7). Transformation is the order of the day in South African society, including tertiary institutions. Their role has been redefined, but remains of extreme importance for society in terms of intellectual development, institutional development and professional development (Botes 1997:3-9).

A compromise must be found between academic freedom and university autonomy on the one hand and notions of accountability and responsiveness to external interests on the other

(Council on Higher Education 2001:7). Changes brought about in efforts to find this compromise are briefly discussed below, with the application to education of reflective neonatal nurses in italics.

- The statutes of the tertiary institutions are drafted in accordance with section 32 of the Higher Education Act, no. 101 of 1997, and must be approved by the Minister of Education and published before becoming operational. *The statute of the University of Pretoria has been approved and was published as Government Notice of the Department of Education, no. 1830, Higher Education Act (101/1997): Statute of the University of Pretoria in the Government Gazette no. 25852* (South Africa 2003). *This statute specifies the structures and broad functions of the management of the university, the council, faculties, faculty boards, institutional forums, convocation, qualifications awarded, employees, students and donors. Any programmes presented at the University have to fit into the institutional framework set out in this statute.*
- The focus of research has shifted to collaboration between tertiary institutions and business, government and other socio-economic actors, with the aim of providing knowledge useful in the market place according to the needs of the community (Council on Higher Education 2001:8-9). *The market place in this case is hospitals with neonatal intensive care units and the community is the neonatal patients, their families and the relevant health care providers. The partnerships of relevance are between the university and health care facilities and interest groups.*
- Tertiary institutions are forced to come up with innovative strategic plans to be competitive players in the corporate world (Privateer 1999:60-79). *The University of Pretoria has developed a strategic plan for the period 2001-2005 entitled 'Inspiring the Innovation Generation', followed by a follow-up strategic plan for the period 2006-2010, which focuses on 'excellence in the University's academic endeavours, quality in everything we do, local impact, transformation, people, innovation, interfaces, and sustainability'* (University of Pretoria 2006:4-7).
- An institution has to submit qualifications for approval to the relevant SETA / ETQA in the prescribed format and register them on the NQF (Beekman 2004:23-30; Ministry of Education 2004:7; Olivier 2002:8-27; Boughey 2004:6-20). *The qualifications in neonatal nursing science presented at present were submitted for approval to SAQA and the SANC in 1999-2000.*
- The institution does not have autonomy to decide on the quality and scope of a qualification, but as provider can design its own plan for ensuring that the educational offering complies with official requirements and meets the needs of the community they serve (Ministry of Education 2004:6). *The qualifications have been submitted to and*

approved by SAQA and the SANC. The curriculum however needs to be revised to meet the needs of the community, since at present it is based only on inherited sections of the traditional critical care, child nursing and advanced midwifery courses. One of the objectives of this study is to describe the actual needs of the community served by reflective neonatal nurses to revise the current plan, to be submitted again for approval by SAQA and the SANC.

- Tertiary institutions have to implement measures for quality assurance, in addition to using external examiners. These measures can include a meta-level coordination body, internal self-evaluation mechanisms, external peer review, publication of reports or indirect links to funding (Beekman 2004:23-30; Boughey 2004:6-20; Council on Higher Education 2001:10-12; Council on Higher Education 2002:18-23; Geyer 1997:10-16; Olivier 2002:8-27; SAQA 2007b:3-17; South Africa 1995). *Quality assurance mechanisms and activities at the University of Pretoria relevant in neonatal nursing education include external examiners, the Unit for Quality Assurance, intra-departmental activities of the Department of Nursing Science and the School of Healthcare Sciences (e.g. Examination Moderation Committee, Departmental and School's Research and Postgraduate Committees, and the School's Academic Advisory Committee), intra-faculty activities of the Faculty of Health Sciences (e.g. Ethics Committee, Academic Advisory Committee and Faculty Board), and the roles of the Senate, the ETQA of Higher Education and the SANC in approving and monitoring courses and clinical facilities.*
- Graduates must be able to use metacritical thinking, reason through abstract and symbolic codes, use inferential and synthetic thought and effectively manage group work, and have participated in inventive or constructivist design experience. Education programmes have to be adjusted to obtain these results (Council on Higher Education 2001:10). *These requirements are the foundation for the education of reflective neonatal nurses, and the main aim of this study is to develop a model for the education of reflective neonatal nurses and as a result, to revise the current neonatal nursing courses presented by the University of Pretoria.*

3.3 HEALTH IN SOUTH AFRICA

Influences other than those operating in the higher education system impact on neonatal nursing education. Factors from the health system contributes significantly, including the National Health Act, no. 61 of 2003, strategic priorities for the national health system, *Batho Pele* principles, National Human Resource Plan for Health (HRH Plan), New Partnership for

Africa's Development (NEPAD) and the World Health Organization (WHO). These will be briefly discussed.

3.3.1 National Health Act, no. 61 of 2003

The National Health Act, no. 61 of 2003 (South Africa 2004:2-3) provides a framework for a structured, comprehensive and integrated approach to health care delivery so as to

> unite the various elements of the national health system in a common goal to actively promote and improve the national health system in South Africa,…establish a health system based on decentralised management, principles of equity, efficiency, sound governance, internationally recognised standards of research and a spirit of enquiry and advocacy which encourages participation…and…promote a spirit of co-operation and shared responsibility among public and private health professionals and providers and other relevant sectors within the context of national, provincial and district health plans.

The tertiary institution responsible for neonatal nursing education plays a part in this integrated approach as it contributes to the production of skilled practitioners. The neonatal nursing students are employees of either the public or private health care sector while they are busy with specialisation in neonatal nursing science, so various aspects of the National Health Act are relevant for tertiary institutions. Such aspects include especially stipulations concerning placement of students, clinical experience and programme content.

3.3.2 Strategic priorities for the National Health System 2004-2009

The Department of Health identified strategic priorities for the National Health System for the period 2004-2009. These priorities flesh out the Department's vision of "an accessible, caring and high quality health system", and their mission, which is "to improve health status through prevention and promotion of healthy lifestyles and to consistently improve the health care delivery system by focusing on access, equity, efficiency, quality and sustainability" (Department of Health 2004:5).

Initiatives significant for neonatal nursing education include (Department of Health 2004:5-15):

- The ICD-10 system adopted as the standard for disease coding in the public and private health sectors that has an impact on patient management with an emphasis on cost-effective care.

- The National Policy on Quality, adopted in 2001, which includes the public sector in its accreditation of health care facilities (the private sector has been involved with accreditation for several years already). This requires a focus on quality of care delivered based on the best current evidence.
- Revitalisation of public hospitals, which emphasise improved quality of care and professional growth.
- Decreasing of morbidity and mortality rates through strategic interventions, such as the Prevention of Mother-To-Child Transmission (PMTCT) programme, promotion of exclusive breastfeeding and attempts to decrease childhood infectious diseases.
- Awareness campaigns for HIV and AIDS and the implementation of the Comprehensive Plan for the treatment, management and care of HIV and AIDS. These expect of neonatal nurses to remain updated and informed.
- Implementation of community service for health care personnel, which implies that all health care personnel who has completed their basic training has to do a year community service before they can pursue a career.
- Internationalisation, of which the impact has been discussed earlier in this chapter.

The Directorate: Child and Youth Health of the Department of Health was established in 1999. One of its sub-directorates is Child Health, which as one of its strategic goals aims to improve the health status and decrease morbidity and mortality rates in neonates (Department of Health 2007:2-3).

Neonatal nursing education can contribute to these strategic priorities (Department of Health 2004:5-15; Department of Health 2007:2-3) by training knowledgeable and skilled reflective neonatal nurses who can be agents of change in:

- improving the quality of care offered to patients;
- promoting the rights of neonatal patients;
- decreasing morbidity and mortality rates through strategic interventions, specifically in matters of child health;
- strengthening hospital delivery systems; and
- contributing to the preparation and implementation of neonatal guidelines applicable to the South African context.

Neonatal nursing education can also contribute to strengthening international relations by including relevant information in its programmes and exploring opportunities for collaborative research projects.

3.3.3 *Batho Pele* principles

The *Batho Pele* principles are a government initiative to improve the delivery of all governmental services to the public, including health service delivery. These principles are consulting users of services, setting service standards, increasing access, ensuring courtesy, providing more and better information, increasing openness and transparency regarding the management of services, remedying mistakes and failures and getting the best possible value for money (Department of Public Service and Administration 2000).

The *Batho Pele* principles are developed for the public sector. A large number of neonatal nursing students are employed in public health care services, and as reflective neonatal nurses would be able to contribute knowledge, skills and innovative strategies to improve the quality and cost-effectiveness of neonatal healthcare.

3.3.4 National Human Resource Plan for Health (HRH Plan)

The South African health system faces complex human resource demands created by the burden of global disease challenges, maldistribution of human resources between metropolitan and rural areas, and loss of skilled staff ('brain drain') to immigration. These problems have a significant negative impact on quality of health care. The HRH Plan was developed to address these matters and promote equity, efficiency and effectiveness in the health system (Department of Health 2006:6).

The core principles of the HRH Plan are as follows (Department of Health 2006:7-9):

- Stewardship for health care lies with the National Department of Health.
- South Africans must enjoy a reliable supply of skilled and competent health professionals for self-sufficiency.
- The planning and developing human resources linked to the needs and demands of the health system must be strengthened.
- The equitable distribution and use of skilled health professionals to promote equal access to health services must be optimised.
- Health workers must have the capacity and appropriate skills to render accessible, appropriate and high quality care at all levels.
- Work environments must be conducive to good management practice in order to maximise the health workforce's potential to deliver good quality health services.

- South Africa's role in international health issues contributing to leadership, scientific advances and global health professions is critical.
- South Africa's contribution, in the short to medium term, to the global health market must be managed in such a way that it contributes to the skills development of health professionals.
- Funding must be mobilised to ensure successful implementation of the HRH Plan.
- The Department of Health must ensure that it has the technical expertise necessary to lead health workforce planning.

Some strategies implemented in nursing to address these challenges aim to (Department of Health 2006:10-13):

- increase the numbers of basic and specialised professional nurses;
- increase training sites, especially in rural areas;
- involve private sector in training nurses;
- support sustained production of specialisation on all levels of care (primary, secondary and tertiary);
- encourage research;
- address mentoring programmes and accompaniment of nursing students;
- address funding opportunities for education;
- expand the healthcare team;
- include alternative healing practices;
- promote lifelong learning and research-based practice among all health workers;
- support internationalisation;
- collaborate with other countries in workforce planning; and
- implement strategies to retain skilled staff.

These strategies support the education of neonatal nurses as a post-basic field of specialisation identified as a 'scarce skill' speciality. The desire to promote lifelong learning, research-based practice and training of change agents to work for quality health care further supports the education of reflective practitioners. It also suggests that sustained production (education) of reflective neonatal nurses to meet the demands of the community and country must be actively planned for.

3.3.5 New Partnership for Africa's Development (NEPAD)

NEPAD is a strategic framework, which was adopted by African leaders at the 37th Summit of the Organization for African Unity. It is designed to address current challenges facing the African continent with the vision of Africa's renewal, These challenges include escalating poverty levels, underdevelopment and the continued marginalisation of Africa. The NEPAD Programme of Action is a holistic, comprehensive and integrated sustainable development initiative for the revival of Africa, guided by formulated objectives, principles and focuses. One of the key priority action areas of the Programme of Action is monitoring and intervening as appropriate to ensure that the Millennium Development Goal areas of health and education are met (NEPAD 2005:1-2) (refer to section 3.3.8).

The particular health issues facing Africa were addressed when Africa's Health Ministers considered the NEPAD Health Strategy at the meeting of the WHO Regional Committee for Africa in 2002. The Health Strategy

> is based on harnessing a health and multi-sectoral effort, strengthening health systems and services, scaling up programmes against disease and conditions related to pregnancy and childbirth, empowering individuals and communities to act to improve their health, mobilising and effectively using sufficient sustainable resources and sharing available health services equitably within countries. (Buch 2003:1)

The Health Strategy is necessary because the huge burden of preventable disease, disability and death that Africa carries not only causes unnecessary death and suffering, but also undermines economic development and damages the continent's social fabric. Particularly harmful are the deaths from conditions related to pregnancy and childbirth (NEPAD Health Strategy 2005:2). The burden of disease persists in Africa "in spite of the availability of suitable tools and technology for prevention and treatment and is largely rooted in poverty and in weak health systems. Yet, where the necessary conditions have been created, there have been important successes" (NEPAD Health Strategy 2005:2).

Directives of the Health Strategy that are relevant to neonatal nursing practice and education are "strengthening and scaling up programmes to reduce disease burden due to conditions related to pregnancy and childbirth", and "empowering individuals, families and communities to act to improve their health, achieve health literacy and integrate effective health interventions into existing community structures", amongst others (NEPAD Health Strategy 2005:4).

Reflective neonatal nurses can contribute significantly towards these goals through their specialised knowledge and skills, and also their open-mindedness, innovation and creativity as change agents in the health sector.

3.3.6 World Health Organization (WHO)

The core functions of the WHO include (World Health Organization 2007a):

- providing leadership on matters critical to health and engaging in partnerships where joint action is needed;
- shaping the research agenda and stimulating the generation, translation and dissemination of valuable knowledge;
- setting norms and standards and promoting and monitoring their implementation;
- articulating ethical and evidence-based policy options;
- providing technical support, catalysing change and building sustainable institutional capacity; and
- monitoring the health situation and assessing health trends.

One mechanism for implementing these functions is the Millennium Development Goals, set for the period 2006 to 2015, to address global health issues, one of which is maternal and newborn health.

South Africa's Millennium Development Goals are linked to those of the WHO. Relevant goals and targets for this study include the reduction by 2015 of child mortality for children under five by two-thirds, which includes the infant mortality rate (South Africa 2005b:1,5).

Reflective neonatal nurses will be able to contribute to reducing the infant mortality rate through competent quality care, and contribute to leadership, innovation and creativity in the field of neonatal nursing.

3.4 NURSING EDUCATION

Nursing has changed significantly with changes in the community, knowledge and technology, and nursing education has adapted accordingly. The impact and implications of historical elements and tradition on contemporary education practice must be recognised when addressing the existing framework of nursing education (Botes 1997:3-9).

This historical overview is included in this study because historical factors still have significant implications for current education practice. Neonatal nursing education has developed from a simple, practical tradition of caring for one's own and the neighbours' newborn and sick babies to a specialised professional career-based programme, which emphasises the education of reflective neonatal nurses.

3.4.1 International historical overview

The focus of nursing over the centuries changed from 'caring' to 'curing'. Initially there was no formal education of nurses, and the available knowledge was non-scientific. Knowledge and skills in caring for the sick and helpless, including newborn babies, were transferred from generation to generation by word-of-mouth and apprenticeship systems. The early Christian churches and philanthropists played a significant role in caring for the sick and helpless, contributing to the caring approach found in nursing (Mellish 1984: 4, 18-10, 24-25, 28-30, 40-44).

Nursing education first began formally in the late eighteenth century, based on a combination of theory and practical instruction. The theory slowly integrated scientific knowledge as it became available, but the contents of these education programmes were mainly unscientific knowledge passed on as tradition (Mellish & Brink 1990:18-19).

Nursing became a profession in the Nightingale era of the nineteenth century, and interest was sparked in the training of nurses. Nursing education was based on a holistic approach that included knowledge, skills and moral development of nurses. Nursing education still followed an apprenticeship approach with limited theory and the main focus on practice. The humanitarian aspect of nursing was encouraged (Mellish 1984:62-77; Mellish & Brink 1990:19-20; Potgieter 1992:3-14; Searle 1972:136).

Neonatal nursing education was not distinguished from other types of nursing education or given any special attention during this era. Rather, the holistic, apprenticeship approach, which combined theory and practice, became fundamental in nursing education. This approach was transferred to the Cape Colony and became part of nursing education in South Africa (Mellish & Brink 1990:19-20; Searle 1972:136). The concept of reflective education was unknown.

Nursing in the early twentieth century was influenced by wars, staff shortages, poor remuneration, long working hours and lack of uniformity in the organisation of health services and the training of nurses, but also by significant breakthroughs in scientific knowledge regarding hygiene, nutrition, infection control and the use of anaesthetics (Potgieter 1992:35-49; Searle 1972:136-137). Newborn and sick babies were not regarded as a high priority and no particular progress in neonatal nursing education took place during this era, but these breakthroughs were of major significance in later developments.

The mid and late twentieth century world-wide was characterised by the growth of nursing as a profession. Nursing education became part of tertiary education and the development of formal curricula for basic nursing courses and post-basic specialisations exploded. Increased accessibility of scientific knowledge, advances in medical technology and pharmacology, and various political, social, health and other factors promoted this trend (Kirby & Kennedy 1999:3-24; Mellish 1984:62-77; Mellish & Brink 1990:19-20; Potgieter 1992:3-14).

During the same period neonatal nursing also changed significantly. Important changes included ethical and legal trends, changes in the number and composition of patient populations, general socio-economic and political changes, the institution of managed care, the advancement of medical technology, enhanced communication technology and the development of new methods of treatment and patient management (Biel, Eastwood, Muenzen & Greenberg 1999:285-290). These changes resulted in the transition of post-basic neonatal nursing education from hospital-based certified courses to graduate degree programmes offered by universities and colleges of nursing (Strodtbeck, Trotter & Lott 1998:272-278). This was also the case in South Africa.

3.4.2 South African historical overview

The Dutch East India Company decided in 1651 to establish a refreshment station at the Cape. In 1652 the first European settlers under the command of Jan van Riebeeck arrived at the proposed settlement. The regulation of midwifery of 1642 of the Dutch East India Company was immediately applicable in the new colony as it was applied in Holland, but no other regulations regarding nursing or nursing education operated in the Cape. A few sworn midwives were appointed to attend to deliveries, while the sick and old were mainly nursed by the older women in the community, and by attendants and slaves in the hospitals. No formal

nursing or nursing education was recorded until 1806 (Mellish 1984:78-86; Searle & Pera 1993:8).

During the British occupation from 1806 until 1909 many improvements took place. The British justice system came with British occupation, including its health legislation. Most hospitals were military hospitals. Statutory registration for doctors, pharmacists and midwives (not nurses in general) was legislated in 1807. Ethical codes were promulgated, but were not applicable to nurses in general. The 1810 code specifically for midwives focused on management of mothers in labour. The only reference to the newborn at that time was a stipulation that all stillborn and newborn deaths and their probable causes had to be reported (Mellish 1984:80-87; Searle & Pera 1993:11).

A new era was introduced by Sister Henrietta Stockdale, who was a pioneer in South African nursing and nursing education. She founded the first nursing school in Kimberley in 1877. She was trained in Great Britain and founded her nursing education and understanding of the nursing profession on the Nightingale system. The further development of nursing as a profession and nursing education was influenced by medical practitioners trained in European universities and nurses from Great Britain, New Zealand, Canada and Australia (Mellish 1984:86-92; Potgieter 1992:129-141; Searle & Pera 1993:13). Central concepts in nursing education in this era included an emphasis on caring, a holistic approach, an apprenticeship style of training and the combination of theory and practice. Most programmes however still lacked formal curricula. Nursing of newborn and sick babies or education of neonatal nurses received no special attention.

South African nursing and nursing education faced numerous problems in the first part of the twentieth century: poverty; epidemics; political division; lack of uniformity and agreement between those responsible for health care services, nursing and nursing education; staff-shortages; lack of tutors; difficult working conditions and long hours; and various attempts to improve the standards, recognition and education of nurses (Mellish 1984:93-95; Potgieter 1992:135-146; Searle & Pera 1993:11-14).

The main focus of nursing at this time was ‘caring’ or ‘nurturing’ rather than ‘curing’, and practice was based on tradition not on scientific knowledge. This also applied to the nursing of newborns. The indigenous people of South Africa had their own history of caring for newborns; some traditional practices were primitive and dangerous, and others effective, built on an empirical base of generations’ worth of gathered knowledge. Maternal and child mortality was

very high in both the so-called 'civilised Western population' and the indigenous tribes (Mellish 1984:97-98).

State registration for all nurses and midwives with the South African Medical Council was legislated under the Medical and Pharmacy Act, no. 34 of 1891, and regulations were drawn up for the examination, certification and registration of nurses and midwives. The South African Trained Nurses' Association was established in 1914, which led to significant changes in nursing as a profession, such as compulsory registration, improvement in nursing education and practice, membership of the International Council of Nurses and development of post-basic courses (Mellish 1984:93-103; Potgieter 1992:139-145; Searle & Pera 1993:18).

The education of nurses and midwives were seen as separate issues, with different sets of regulations. The Colonial Medical Council published detailed regulations for the training of midwives in 1916 that enforced improved education of midwives, which was soon followed by the other Medical Councils (Natal, Transvaal and Free-State). Most deliveries took place at home and the hospitals and maternity wards did not have separate facilities for high-risk newborns. The content of midwives' training focused on deliveries and puerperium care of the mothers (Searle 1972:327). Limited attention was paid to nursing of the newborn.

The first post-basic courses in nursing were presented in South Africa in 1917. The first of these courses relevant to newborn care was the 'Mothercraft' course presented in 1924, which was developed as an attempt by the Child Welfare Movement to reduce the high infant mortality rate in the Cape. The aim of the course was to train nurses in 'mothercraft' so that they could educate mothers in the nutrition and care of their children to protect their lives, while in the maternity hospitals and children's wards and during health visits at their homes or communities (Potgieter 1992:144-145; Searle 1972:345).

The standard of nursing education improved under the control of the South African Medical Council from 1928 to 1944, but the relationship between theory and practice was very poor and totally inadequate to provide for the needs of the community and modern health care at that time. The emphasis of the curricula was on curative healthcare based on natural sciences, and totally excluded the social sciences (Potgieter 1992:146-148; Searle 1972:290-300). Still no particular attention was given to the nursing of the sick newborn or education of neonatal nurses.

Nursing education was not part of general education under control of the Department of Education, but was controlled by authorities who gave preference to service needs (Department of Health, provincial administrations and private institutions). Nurses were exploited in practice as functional workers and lectures were only given near examination time. Nurses were taught *how* to do something, but seldom *why.* This approach was against the Nightingale and Stockdale principles (Mellish & Brink 1990:28; Potgieter 1992:166-167).

The nursing profession obtained professional autonomy in South Africa with the promulgation of the Act on Nursing, no. 45 of 1944, and the establishment of the SANC and the South African Nursing Association (SANA). This led to compulsory registration of nurses, development of standards for nursing practice and education, ethical codes for the profession and scopes of practice for the different categories of nurses and midwives. Nursing education was reorganised in various ways, through the establishment of nursing colleges, approval and inspection of training hospitals, guidelines for and approval of curricula, movement to comprehensive education in the four disciplines (midwifery, general, psychiatric and district nursing), prescription of an ideal ratio of theory to practice (1:4), reduced working hours and improved conditions of practice and education, introduction of post-basic courses and later on degrees and post-graduate degrees in nursing science (Mellish 1984:93,100-103; Potgieter 1992:146-159,158-163; Searle & Pera 1993:14). These changes were the foundation of the development of education programmes for specialised areas such as neonatal nursing, but not yet for education of reflective practitioners.

A one-year post-basic course in paediatric nursing was available from 1952 in the Transvaal. The course focused on nursing sick children, one aspect of which was nursing sick newborns. The course was only available for white nurses (Searle 1972:346). Post-basic courses in intensive care nursing were available from 1970. The content prescribed by the SANC did not include any specific references to the intensive care nursing of sick newborns (Regulation no. 85 of 1970, as amended by Regulation no. 9 of 1993, and the associated 'Directive for the diploma in intensive nursing science') (SANC 1993c). The institution responsible for presenting the course could include content about sick newborns as an additional part of the course.

Nursing education was integrated into the mainstream of higher education in the late 1970s when autonomous nursing colleges were established in association with universities. The SANC maintained external control of nursing education by setting minimum requirements for training, conducting inspections of training centres, and demanding the registration of trained

nurses. Only basic and post-basic professional nurse training was offered at the nursing colleges in collaboration with the universities, while the training of staff nurses and nursing assistants was offered in a separate system that was not part of mainstream education. The universities continued to offer basic and post-basic nursing degree courses, as well as post-basic diploma courses (Potgieter 1992:166-172).

Knowledge about sick neonates increased, medical practice improved, technology advanced and the needs of the community changed. The mortality of neonates decreased, but morbidity increased. More infants survived, but they were often very ill, especially if very preterm (Boeghey 2004:3-4; Foster & Greenwood 1998:170; Kirby & Kennedy 1999:3-24; Verklan & Walden 2004:xiii). These infants could not be nursed in ordinary nurseries any more, so 'high care' or 'special care' areas were established to take care of them.

Neonatal nursing education was not available as a separate post-basic course for nurses who wanted to specialise in neonatal nursing science, but was presented in fragments through the post-basic courses, namely midwifery and neonatal nursing science; child nursing science; and medical and surgical nursing science (critical care).

The relevant sections of the post-basic course in midwifery and neonatal nursing science focused mainly on the immediate management of high-risk newborns. Examples of such outcomes are "Identify and evaluate the factors which promote or threaten the health and life of the mother and child, during labour and the puerperium" and "Evaluate the appropriateness of interventions and of diagnostic and treatment methods" (SANC 1993d:18). In the relevant sections of the post-basic course in child nursing science were the objectives "Identify and evaluate the factors which promote or threaten the health and normal development of the child" and "Evaluate the appropriateness of interventions and of diagnostic and treatment methods" (SANC 1993d:5), as well as common neonatal conditions and their management. Objectives of the medical and surgical nursing science course were "Identify and evaluate the factors which promote or threaten the health of man" and "Evaluate the appropriateness of interventions and of diagnostic and treatment methods" (SANC 1993d:14), while the "area of study may be determined by the nursing school depending upon local needs and the facilities available in the curative service/s involved (SANC 1993d:14). As a result, the courses in medical and surgical nursing science commonly included a module or study themes on post-operative management of the newborn. All in all, neonatal care is in all of these courses only a fragment.

The need for neonatal nursing to be recognised as a specialised discipline of nursing science was becoming urgent as neonatal nurses struggled to cope with all the changes happening in their practice. This prompted the development of short courses listed at the SANC. These courses used a traditional teaching approach and hardly encouraged reflective learning at all. (Refer to Table 3.1 for a comparison between the OBE approach and the traditional approach.)

At the dawn of the twenty-first century significant changes took place in South Africa's higher education and health care systems, and these also influenced nursing education. These changes involved new legislation such as the South African Qualifications Authority Act, no. 58 of 1995 (South Africa 1995); the Higher Education Act, no. 101 of 1997 (South Africa 1997); the Skills Development Act of 1998 (South Africa 1998) and Skills Development Levies Act of 1999 (South Africa 1999); the National Health Act, no. 61 of 2003 (South Africa 2004); the Nursing Act, no. 50 of 1978 (South Africa 1978) that is to be replaced by the Nursing Act, no. 33 of 2005 (South Africa 2005a); as well as regulations related to these acts. This legislation is discussed earlier in this chapter.

Neonatal nursing continued to develop and became more technical. Post-basic courses have been developed to train specialised neonatal nurses and are recognised by the SANC as an additional qualification in 'Medical and surgical nursing science: neonatal nursing' (SANC 2000: Unpublished). The first students qualified in 2001 at the University of Pretoria, after completing a two-year diploma course.

This course was written in SAQA format as discussed earlier in this chapter. The contents were a combination of the neonatal parts of the advanced midwifery and neonatal nursing-, child nursing- and critical care nursing (medical and surgical nursing) courses. The course was written in outcomes-based format, but presented using the traditional teaching approach with limited emphasis on reflective learning or reflective practice. The researcher's experience as an educator on the course was that the contents were fragmented and did not meet the demands of neonatal nursing practice, which could be addressed by this study.

The current state of neonatal nursing education is significantly shaped by the history of nursing education in South Africa, of which a brief overview is given to serve as a background.

3.4.3 SANC

Because of the various changes in South Africa and its legislation, as mentioned above, the SANC revised its nursing legislation. The new Nursing Act, no. 33 of 2005, was promulgated in May 2006 (South Africa 2005a). The Act revises the existing code of conduct, ethical code and values, standards for practice, competency framework and scope of practice, and stipulates that these changes are to be implemented in phases. Part of this implementation is the revision of the education and training of nurses, including neonatal nursing education. Currently the Nursing Act, no. 50 of 1978 (South Africa 1978) is still in force, until the new nursing act will come into operation on a date determined by the President by proclamation in the Gazette (SANC 2006:Circular 03/2006).

In addition to be the SETA/ETQA for nursing, the SANC also influences education of neonatal nursing by providing criteria for accreditation of nursing schools, as well as health care facilities involved in education of nurses resulting in qualifications, and approve the institutions (SANC 1985; SANC 1993a; SAQA 2007a:1-2; SAQA 2007b:11-14).

3.4.4 Continuing professional development (CPD)

Once the Nursing Act, Act no. 33 of 2005, is proclaimed by the President to come into operation, the section related to continuing professional development (section 39) will be ....

> The Council may determine –
> (a) conditions relating to continuing professional development to be undergone by practitioners in order to retain such registration;
> (b) the nature and extent of continuing professional development to be undergone by practitioners; and
> (c) the criteria for recognition by the Council of continuing professional development activities and accredited institutions offering such activities. (South Africa 2005a).

This section of the Nursing Act is not yet implemented, but the health care institutions are preparing for implementation thereof by supporting their staff and providing learnership and bursaries to them to do courses such as neonatal nursing. It is expected that CPD requirements will increase the demand for education of neonatal nurses, but also to put an emphasis on proof of lifelong learning and therefore on reflective education. It is also expected that the HWSETA might be involved in implementation of CPD-processes (refer to discussion in section 3.3.7).

3.4.5 International Council of Nurses: Nurse Practitioner / Advanced Practice Network (ICN NP/ANP Network)

The International Council of Nurses: Nurse Practitioner / Advanced Practice Network (ICN NP/ANP Network) was launched in 2000 to address the needs of nurses in global trends. These global trends include the changing nature of health systems worldwide, namely technological advances, increased healthcare costs, need for varied services and desire for new models of care delivery (Affara 2006).

The ICN NP/ANP Network aims to be an international resource for nurses in ordinary and/or advanced practice and for other interested parties (e.g. policymakers, educators, regulators and health planners). The Network (ICN NP/ANP Network pamphlet):

- Distributes relevant, up-to-date information about practice, education, role development, research, policy and regulatory developments and appropriate events;
- Provides a forum for exchanging knowledge, expertise and experience;
- Supports individuals and countries in the process of introducing or developing nursing or advanced nursing roles and practice; and
- Making relevant international resources accessible.

The Network has defined the term and role 'nurse practitioner or advanced practice nurse' (APN), formulated an international scope of practice and set educational standards and regulation standards for nurse practitioners or advanced practice nurses that can be used as universal guidelines by participating countries, including South Africa (Goodyear 2006).

Neonatal nurses who have completed specialised training in neonatal nursing science are not formally recognised in South Africa as APNs, but only as registered nurses. However, they can comply with the definition of an APN formulated by the ICN NP/APN Network:

> A nurse practitioner or advanced practice nurse is a registered nurse who has acquired the expert knowledge base, complex decision-making skills and clinical competences for expanded practice, the characteristics of which are shaped by the context and/or country in which s/he is credentialed to practice. A master's degree is recommended for entry level. (ICN 2002)

The profile of a reflective neonatal nurse fits the scope of practice of an APN as formulated by the ICN NP/APN Network:

> The scope of practice of the APN entails the cognitive, integrative and technical abilities of the qualified nurse to put into practice ethical and culturally safe acts, procedures, protocols and practice guidelines. The clinical practice of the APN is scientifically based and applicable to healthcare practice in primary, secondary and tertiary settings in all urban and rural communities. The nurse in advanced clinical practice demonstrates a high level of autonomy in direct patient care and management of health problems. The APN is accountable for providing health promotion, patient and peer education, mentorship, leadership, and management of the practice environment. Maintaining currency and improving nursing practice is the responsibility of the APN that is achieved through the translation, utilization and implementation of meaningful research. The APN engages in partnerships with patients and health team members for determining resources needed for continuous care as well as partnering with stakeholders influencing the policy that directs the health care environment. (Goodyear 2006)

3.4.6 Council of International Neonatal Nurses (CINN)

The CINN was founded in collaboration with the WHO, the Global Network of the WHO Collaborating Centres for Nursing and Midwifery Development, and the International Council for Nurses (ICN). The CINN's goals are consistent with the mission and strategic plan of the WHO to promote health for all people, with special emphasis on vulnerable populations, including mothers and infants. The CINN's contribution to neonatal nursing is to assist worldwide with initiating health policies in neonatal care, developing nursing and professional standards of neonatal care, developing neonatal nursing education materials and sharing information about important issues in nursing care (Global Network… 2002:14-15).

Educating reflective neonatal nurses for the South African context will involve considering the goals, objectives and content suggested by the CINN if the education programme is to remain globally and internationally relevant.

3.5 FRAMEWORK FOR EDUCATING REFLECTIVE NEONATAL NURSES

Based on the discussions in this chapter, a framework for educating reflective neonatal nurses can be formulated, as schematically presented in Figure 3.1. The framework has two main sides, namely South African higher education and neonatal nursing education in South Africa.

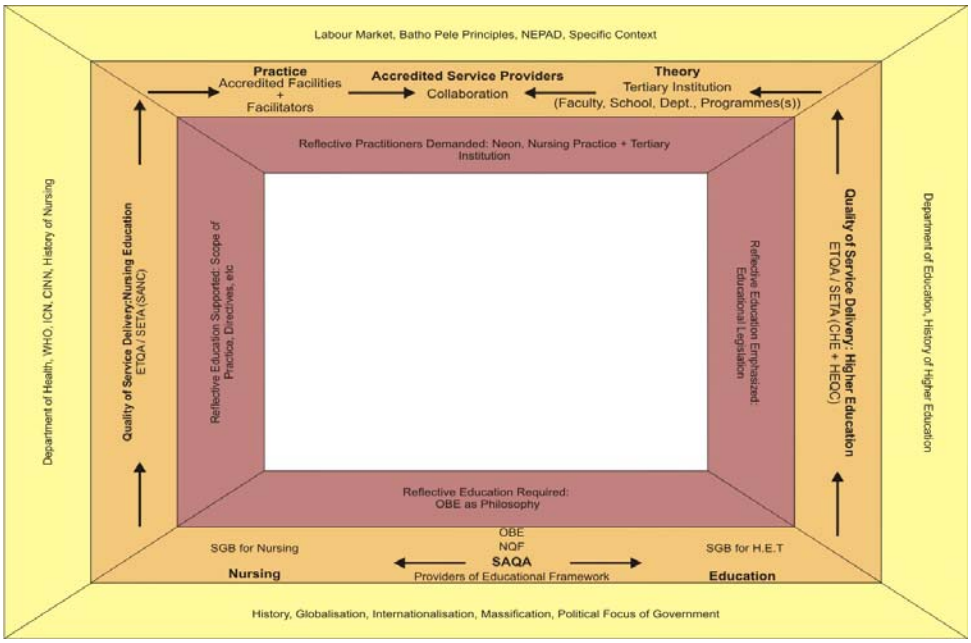

Figure 3.1: Framework for education of reflective neonatal nurses in a South African context

Each side of the framework is driven by the providers of the educational framework, which give rise to the bodies responsible for quality assurance in service delivery. These bodies in turn accredit providers responsible for delivering the service, which in this case is neonatal nursing education. Different forces influence different aspects of the framework directly or indirectly, and so eventually the education of reflective neonatal nurses in a South African context.

The driving force of the providers of the educational framework is rooted in the legislation that establishes SAQA and the NQF, specifies the aims for education in South Africa, and makes OBE its underlying philosophy. These providers of the educational framework are the NSBs, Expert Consultative Panels or Qualifications and Quality Assurance Councils and SGBs for higher education and nursing respectively. These providers are influenced by factors arising from the history of nursing, history of education, globalisation, internationalisation, massification and the focus of the government.

The bodies responsible for quality of service delivery are the ETQA/SETAs. The ETQA/SETA for higher education is the Council on Higher Education and the Higher Education Quality Committee, which are influenced by forces such as the history of higher education, the Department of Education and international trends. The ETQA/SETA for nursing education is the SANC, which is influenced by forces such as the history of nursing, the Department of Health, the WHO and international trends and organisations (for example the ICN and the CINN).

The bodies responsible for service delivery are the accredited providers. These for higher education are the tertiary institutions, and for nursing education those tertiary institutions responsible for nursing education and the accredited health facilities (in this case the accredited hospitals). The accredited providers are influenced by forces such as the labour market, *Batho Pele* principles, NEPAD and the particular context.

The education of reflective neonatal nurses in a South African context takes place within this framework and is implied by the providers of the educational framework as part of OBE and included in criteria for qualifications. The education of reflective neonatal nurses is also emphasised by bodies responsible for quality of service delivery as important criteria of quality education, and the accredited service providers of higher education and nursing education demand it as expected outcomes.

3.6 SUMMARY

This chapter describes the current situation in higher education in South Africa, as applicable to neonatal nursing education, and then provides an overview of the historical development of neonatal nursing education, internationally and nationally, to highlight the most important influences on this education. Additional influences in higher education, health and nursing are explored and described as they affect neonatal nursing education.

This chapter contributed to the development of the model for education of reflective neonatal nurses in a South African context by identification and clarification of the concepts related to the framework (higher education and nursing education) and the purpose (outcomes expected according to higher education and nursing education). The next chapter contains a description of neonatal nursing students and reflective learning.

CHAPTER 4:
NEONATAL NURSING STUDENTS AND REFLECTIVE LEARNING

4.1 INTRODUCTION

The previous chapter described the framework for the education of reflective neonatal nurses in a South African context. This chapter is still part of the first phase and continues to identify and clarify concepts related to the education of reflective neonatal nurses, but now shifting emphasis to neonatal nursing students and reflective learning.

The objectives addressed in this chapter were to describe neonatal nursing students, to analyse the process of reflective learning, to explore and describe the competences and professional characteristics associated with reflective learning, and to explore and describe the outcomes of reflective learning.

The components of the model that were addressed by the abovementioned objectives included the recipient (neonatal nursing students), dynamics (reflective learning) and the purpose (competences and professional characteristics of reflective neonatal nurses).

4.2 NEONATAL NURSING STUDENTS

The education of reflective neonatal nurses takes place within the existing framework for neonatal education discussed in Chapter 3, with the neonatal nursing students being the recipients of this education.

To study neonatal nursing, SANC (SANC 1993a) requires that a person has to be registered as a general nurse and midwife. Neonatal nursing students are therefore qualified professional nurses who have obtained either a diploma or bachelor's degree in nursing science. The tertiary institution (University of Pretoria 2000) requires from neonatal nursing students to be employed in NICUs of accredited private or public hospitals.

Neonatal nursing students are usually women older than 22 years, so they are adults fulfilling various roles in life, such as employee, wife and mother, among other roles in the community.

This means they have many responsibilities other than those of students while they are specialising in neonatal nursing science. Neonatal nurses are therefore adult learners, and so their particular characteristics as adult learners must be considered during facilitation of their education as reflective neonatal nurses.

The Nebraska Institute for the Study of Adult Literacy (2005) describes adult learners as being diverse, bringing a wealth of life experiences to the learning situation with diverse existing meaning structures. They tend to want to relate content to specific contexts in their lives. This means that they tend to be pragmatic in their thinking, study to improve their performance in other social roles, let their studies take a back-seat to other responsibilities, expect class time to be well spent and hope their courses will help them solve problems in their daily lives. They also prefer to have some degree of control over their learning, though they demonstrate different degrees of this control depending upon their maturity level and familiarity with the content. Adult learners tend to be voluntary students who believe the decision to return to studies is important and that education will be helpful. As adults, their sense of self has a significant influence on the meaning of the learning situation, and they show differing degrees of self-efficacy and awareness of their own learning styles. They may feel embarrassed about starting with studies, joining classes with younger students, having negative impressions of their own abilities or of learning institutions and educators.

Adult learners are motivated by various needs and interests since their orientation is life-centred. They prefer experiential learning, need to be independent and self-directed and have a deep need for protecting their self-esteem (Boleman & Kistler 2005; Kaufman 2003:213-216). Adult learners may also engage in learning because they like it and simply enjoy finding out about things (Hillier 2002:30).

When faced with a new situation, adult learners tend to experience awareness and approach it with ‘baggage’, ranging from personal ideas of ‘knowing’ through professional knowledge to emotions (Powell 1989:825; Teekman 2000:1125-1135). Gravett (2004:36-39) stresses the importance of existing, prior or personal knowledge, life experiences and reinforcement and interconnections of thoughts and positive emotions and feelings to support learning.

Cross (2005) describes a model for the Characteristics of Adults as Learners (CAL) in the context of lifelong learning programmes. She identified two classes of variables, namely personal and situational characteristics. Personal characteristics include aging (deteriorating sensory-motor abilities and improved intelligence abilities over time), and life phases and

developmental stages that involve a series of plateaus and transitions (e.g. marriage, job changes, child-bearing, retirement). Situational characteristics are factors like part-time versus full-time learning and voluntary versus compulsory learning, which influence the logistical planning and self-direction of learning.

Kuiper and Pesut (2004:388) used narrative journals kept by both new graduates and experienced nurses to identify the following metacognitive characteristics revealed by all successful students, irrespective of years of work experience: awareness of ignorance / acknowledgement of need for knowledge about using references and resources; ability to judge self-improvement, self-competence, resources and self-reactions; and strategies for self-correction.

These characteristics are shown by adult learners in general, and are vital to neonatal nurses as reflective students. The characteristics of adult learners are important background for the following discussion of reflective learning by adult neonatal nursing students

4.3 PROCESS OF REFLECTIVE LEARNING

The process of reflective learning was identified and clarified as part of the dynamics component of this model. To be able to understand the process of reflective learning, the meanings of 'learning', 'reflection', 'reflective thinking', 'reflective reasoning' and 'reflective learning' were clarified.

4.3.1 Learning

To 'learn' refers to "get knowledge of (subject) or skill in (art, etc.) by study, experience, or being taught" (*The Oxford Combined Dictionary of Current English & Modern English Usage 1987:158*), "to be informed, to get to know; to gain knowledge, skill, or ability in" (*Webster's New Dictionary and Thesaurus* 1990:312).

Various learning theories have been developed as attempts to describe what learning is, what processes are involved in it and what the outcomes are. The most prominent theories are summarised in Table 4.1 overleaf. The groups of theories are not exact classifications, as they at times share concepts or principles. They include behaviourist-, cognitive-constructivist-,

humanistic-, social- and reflective theories. These were explored as part of clarification of the concepts learning and education (also refer to Chapter 6).

Table 4.1: Summary of learning theories

Behaviourist theories	
Underlying philosophy	Behaviourism: one learns from stimulus-response conditioning Logical Empiricism: human behaviour is based on fixed natural laws
Leading movements	Faculty Psychology: St. Augustine, Calvin, Wolff (Rational Psychology) & Edwards Connectionism: Pavlov, Thorndike (Connectionism / S-R Bond Theory), Gates & Stephens, Woodworth, Wesman Classical Conditioning: Watson (Watsonian behaviorism) & Guthrie (Contiguous conditioning) Instrumental Conditioning: Hull (Deductive behaviorism / Reinforcement theory), Skinner (Operant Conditioning Theory), Spence (Quantitative S-R theory), Tolman, Glasser, Hebb, Miller, Mowrer, Stephens Eclectic Behaviourism: Gagne (Conditions of Learning)
Base of knowledge	Scientific / empirical experiments (especially on animals), and eclectical use of ideas from physiology and psychology
Process of learning	Learning takes place from environmental stimuli that provoke a response. Repetition reinforces the response. The association between the response and reinforcement (positive or negative) results in learning. Learning of new capabilities requires prior learning of subordinate capabilities (learning hierarchy)
Focus of teaching	Acquisition of desired stimulus-response connections through positive reinforcement (encouraging) approved responses or negative reinforcement (discouraging) wrong responses
Aim / goal / outcomes of learning	Behaviour modification to obtain observable approved behaviour as a result of 'stimulus situations' / complex configurations of stimulation
Learners	Humans are self-maintaining mechanisms / machines (mechanistic approach), which are not morally loaded, but influenced by environmental stimuli
Educator	Is in control of situation by selecting stimulus and give positive or negative reinforcement to response with repetition
Curriculum / content	Determined by educator
Assessment	Evaluate observable responses to stimuli, followed by incentive if approved responses or punishment if unsuccessful or incomplete
References	Alessi & Trollip 2001:17-19; Bigge 1982:8-11, 24-33, 50-57, 73-74, 88-96, 102-104, 139-152; Burton 2000:1009-1017; Henniger 2004:185-186; McEwen & Wills 2002:323-326; Oxford Brookes University 2005:1-2
Comments	*Criticism:* The mechanistic approach disregards human purposiveness, insight and complexity; and the process is educator-driven with disregard of the students' needs or interests *Value:* Describes relevance of repetition, and of positive and negative stimuli; contributes to behaviour modification and performance- or competency-based education

Table 4.1: Summary of learning theories (continue)

Cognitive-constructivist theories	
Underlying philosophy	Positive Relativism / Pragmatism / Interactionism, with concepts from biology, anthropology, linguistics, philosophy and sociology: Reality is what is perceived through senses and can be affirmed as a body of constructive knowledge / pragmatism Cognitive Psychology: Learning is related to perception and cognition
Leading movements	Structuralism: Locke (Tabula rasa - 'blank tablet' - theory), Herbart (Herbartianism), DeGarmo, Frank McMurry, Charles McMurry, Van Liew, Wundt, Titchener Semantic Networks: Bartlett (Schema Theory) Eclectic Behaviourism / Cognitive Psychology: Bandura (Social Learning Theory, Observational Learning Theory) Gestalt Psychology: Mach, Von Ehrensfels, Wertheimer, Koffka, Köhler (Mentality of Apes) Configurationalism: Bode, Wheeler & Bayels Field Psychology / Positive Relativism: Piaget, Lewin (Topological / vector psychology), Tolman, Dewey, Allport, Ames (Jr.), May, Deci, Bigge, Snygg, Deutsch, Koch, Ausubel, Rogers (Facilitation Theory) Eclectic Cognitive-Constructivist Psychology: Bruner (Instrumental conceptualism, Theory of instruction), Kuhn, Barker, Wright, Bloom Constructivism: Papert (Constructionism), Biggs & Moore (Systems theory), Kolb (Experiential Learning), Revans (Action Learning) Poststructuralism / Postmodernism: Gore, Derrida, Foucault
Base of knowledge	Scientific enquiry (including qualitative research) and philosophical argumentation
Process of learning	Learning is an active process of the mind, where a person constructs his knowledge through relating incoming information to a previously acquired psychological frame of reference (conceptualisation / categorisation by means of strategies). Learning is inherently social, contextualised and reflection is a significant requirement for learning. Learning is a persistent change in knowledge, skills, attitudes, values or commitments
Focus of teaching	To aid students in developing high-quality insights, help them to restructure their life spaces – gain new insights into their contemporaneous situations, place the emphasis on the active process of learning and de-emphasise teaching activities and instructional methods. To teach the 'way of thinking' about a discipline, with the emphasis on personal and social relevance
Aim / goal / outcomes of learning	Construction of knowledge to understand information, solve problems, predict events or create new ideas / inventions, gaining or changing insights, outlooks, expectations, or thought patterns, learn about real-life issues, lifelong learning and to be reflective
Learners	Learners are 'functionalists' (between mystical vitalism and behaviouristic environmental determinism). They process information differently depending on their stage of intellectual development, interpretation of the situation as a whole, their needs, abilities, purposes, insights and experiences to eventually constructing or building their own interpretation or understanding. They make judgements and choices, are motivated and self-determined, and are active participants in the knowledge-getting process, selection and transformation of information.
Educator	Is responsible for facilitation of learning by recognition of the learner's motivation, cognitive abilities and style, metacognitive abilities, learning style, transfer of learning and other individual differences, actively engage learners in their learning, providing guided practice with corrective feedback and support personal autonomy and reflection
Curriculum / content	Combined control by learners and educator with focus on problems in real life, and subjects that can find solutions, e.g. arts, literature, philosophy, science, mathematics, and logic
Assessment	Using various methods of assessment to determine constructed knowledge and insights

Table 4.1: Summary of learning theories (continue)

Cognitive-constructivist theories (continue)	
References	Alessi & Trollip 2001:19-38; Bigge 1982:9-14, 35-45, 57-76, 96-102, 155-248; Burton 2000:1009-1017; Henniger 2004:187-188; Kaufman 2003:4, 213-216; McEwen & Wills 2002:326-330; Oxford Brookes University 2005:2-5; Wikipedia 2005:1
Comments	*Criticism:* Variety of interpretations are possible on the practical meaning of cognitive-constructivist theories *Value*: Recognises humans as purposive, interactive and complex, as well as the importance of mutual interdependence between person and environment, and influences by the past and future Supports best educational choices for the particular situation and students
Humanistic theories	
Underlying philosophy	Psychology: Human beings are central to satisfying humanity's urge toward individual development, autonomy and competence
Leading movements	Classical Humanism: Plato, Aristotle, Socrates, Hutchins, Adler & Van Doren Romantic Naturalism / Psychedelic Humanism: Rousseau, Pestalozzi, Froebel, Goodman, Rogers, Holt & Maslow
Base of knowledge	Non-experimental, philosophical and speculative approaches
Process of learning	Learning is a self-actualising process through development of inherent powers, and cultivating mind or intellect, prompted by learners' own interests and needs
Focus of teaching	Creating a learning situation where learning is a joyous experience, training of intrinsic mental power by skilfully directed questions, and facilitate maturational development of the natural potential of the learner
Aim / goal / outcomes of learning	Inner development that results in imagination, memory, will and thought to meet self-directed learning needs
Learner	Learners are innately good, subjectively free and take responsibility for own life; they are born with a rational substantive mind with the potential of inner development to understand the world as it really is and to respond appropriately; and they are motivated to learn
Educator	Is a facilitator to create a suitable social setting, to help students recognise what already was in their minds by asking skilfully directed questions, to wait for learners to express a need to learn, and for natural unfolding of the learners' potential
Curriculum / content	No fixed curriculum, which is based on the learner's needs, interests and feelings
Assessment	Student-centred, with combined responsibility of student and educator, to determine if students' needs are met
References	Bigge 1982:8-12, 24-35; Burton 2000:1009-1017; Henniger 2004:186-187; McEwen & Wills 2002:333-334
Comments	*Criticism:* Is a narrow perspective as it is completely student-driven, which would not necessarily prepare a student for a professional role *Value:* Recognise choice, self-determination, influence of interests, instincts, needs and environment on choices
Social theories	
Underlying philosophy	Cognitive Psychology: Learning is related to perception and cognition Sociology: Interaction is crucial for learning
Leading movements	Social Model of Instruction: Dewey Symbolic Interactionism: Blumer, Mead Role theory: Turner Critical Social Theory: Marx, Habermas Social Learning Theory: Bandura

Table 4.1: Summary of learning theories (continue)

Social theories (continue)	
Base of knowledge	Scientific enquiry (including qualitative research) and philosophical argumentation
Process of learning	Learning takes place through purposeful interaction: observation, imitation, modelling, conversation, debate and experiences in social settings and through meaningful relationships Learning is a process of integration of behaviour, mental processes and the environment (including the social environment) - people learn from each other
Focus of teaching	To learn about real-life issues through social relationships and interaction
Aim / goal / outcomes of learning	Adaptation and coping with real-life and creation of collaborative relationships, and to communicate effectively
Learners	Learners are central to the learning process, motivated, self-directed and participants in social interaction and relationships
Educator	Is a facilitator responsible to create a climate conducive for interaction and development of learning communities, and to provide students with strategies to communicate effectively
Curriculum / content	Responsibility is shared between students and educator to determine goals / objectives of what has to be achieved. Focus is on real-life issues and coping with them
Assessment	Shared responsibility for assessment of social skills in small and large groups and effective communication
References	Burton 2000:1009-1017; Henniger 2004:186-187; McEwen & Wills 2002:229-247, 332-333
Comments	*Criticism:* The perspective is limited as it focuses mainly on the social aspect of learning and disregards the complexity of learners *Value:* Social, cultural and historical forces are recognised
Reflective theories	
Underlying philosophy	Cognitive-Constructivism: Persons construct their own knowledge through relating incoming information to a previously acquired psychological frame of reference Psychology and Sociology: Humans are motivated, self-directed, social and developing towards self-actualisation
Leading movements	Reflective theory: Mezirow, Schon, Rolfe, Johns, Kuiper & Pesut Critical theory: Habermas (Unity of knowledge), Van Manen, Chiu
Base of knowledge	Scientific enquiry (including qualitative research), and philosophical argumentation to challenge existing knowledge
Process of learning	'Taken-for-granted ideas' are challenged / questioned for the real meaning, which is internalised to result in a changed perspective Learning is influenced by internal and external environment / factors, including experiences
Focus of teaching	Make the best choices for education to be genuinely human, ethical, marked by justice, equality and freedom, with high levels of reflection
Aim / goal / outcomes of learning	High levels of reflection, changed perspectives, reflective practice and lifelong learning in a ever-changing world
Learners	Learners are lifelong learners who are central in the process of learning, motivated, self-determined and actively engage in change (praxis in action)
Educator	Is a facilitator to help students to reach the various levels of reflection and engage in reflective practice
Curriculum / content	Combined control / partnership by educator and learners Content of curriculum based on inclusion of different kinds of knowledge: technical skills, analysing and clarifying human experience, uncovering meanings, prejudices and presuppositions, and the freedom to critically scrutinise institutions and authority

Table 4.1: Summary of learning theories (continue)

Reflective theories (continue)	
Assessment	Most appropriate method ('best choice') for the particular kind of knowledge with emphasis on reflective abilities
References	Burton 2000:1009-1017; Chiu 2006:183-203; Hillier 2002:15-17; Kuiper & Pesut 2004:381-391; Smith & Lovat 2003:88-90
Comments	*Criticism:* The theories are often vague and abstract with a variety of possibilities for interpretation in the practical situation *Value:* It is a holistic approach that recognises the different aspects and complexity of humans and the various forces that influence learning It is a balanced approach between empirical and mysticism

Since this study focuses on educating reflective neonatal nurses, the following discussion attempts to describe learning in this context.

4.3.2 Reflection, reflective thinking, reflective reasoning and reflective learning

Reflection, reflexivity, reflectivity, reflective thinking, reflective reasoning and reflective learning are often used as synonyms by different authors. The exact meaning of this cluster of terms has not been finalised, but overall authors agree they refer to the dynamic internal or mental activity that takes place, with a changed perspective implied or explicitly stated. Take note of the different terms used with significant similarities in the meaning thereof:

- Dewey describes reflection as *validity testing* (Wong, Kember, Chung & Yan 1995:49-50), and reflective thinking as *thought patterns* responsible for *transformation* of a situation in which obscurity, doubt, conflict, disturbance of some sort is experienced followed by a clear, coherent, settled and harmonious condition (Dewey 1933:101-102).
- Schön (1983:15-16) makes a significant contribution to the theory of reflection with his description of reflection as *reflection-in-action* and *reflection-on-action*. Reflection-in-action refers to the reflective thinking one is doing while doing the action and reflection-on-action occurs after the experience has taken place.
- Foster and Greenwood (1998:166), and Van Manen (in Foster and Greenwood 1998) agree with Schön, but also include *anticipatory reflection* or *reflection-before-action*, where reflection takes place even before the action has taken place.
- Atkins and Murphy (1993:1189) describe reflection as the *involvement of the self* and the outcome of reflection as a *changed conceptual perspective*.
- Kim (1999:1207) describes reflection as *consciously examining* what has occurred in terms of thoughts, feelings and actions against underlying beliefs, assumptions, knowledge and

the backdrop or context in which specific practice has occurred; it involves *intentional looking-back* by suspending oneself from the situation and what has occurred.

- Saylor (1990:11) describes reflective thinking as *artistry of combining a professional repertoire with current clinical problems to invent unique responses*.
- Jarvis (1992:174-181) describes reflective thinking as thinking, which seeks to *problematise* many situations of professional performance so that they can *become potential learning situations* and in that way the practitioners can continue *to learn, grow and develop* in and through their practice.
- Reid (1993:305-309) defines reflection as follows: "Reflection is a process of *reviewing* an experience of practice in order to *describe, analyse, evaluate* and so *inform learning* about practice." The starting point is ones own experience.
- Teekman (2000:1125-1135) develops from a study of reflective thinking in actual nursing practice the following definition:

  > Reflective thinking is a *highly adaptive and individualised response* to a gap-producing situation and involves a *range of cognitive activities* in which the individual deliberately and purposely engages in *discourse-with-self* in an attempt to *make sense* of the current situation or phenomenon, in order *to act*. Reflective thinking contributes to better contextual understandings and as such may influence future behaviour.

- Boud, Keogh and Walker (1985) are among the earliest theorists to define reflection in learning: "Reflection in the context of learning is a generic term for those *intellectual and affective activities* in which individuals engage *to explore their experiences* in order to lead to *new understandings and appreciations*."
- Boyd and Fales (1983:99-117) define reflective learning as "the process of *internally examining and exploring and issue of concern*, *triggered by an experience*, which *creates and clarifies meaning* in terms of self, and which results in a *changed conceptual perspective*."
- Getliffe (1996:361-374) describes reflection in general terms as a *reconsideration of ideas or experiences*, and from a professional or education viewpoint as a *conscious and deliberate process of thinking* about and *interpreting* experience in order *to learn* from it. Reflection is not automatic but takes place in response to experience and with a definite purpose. It is a highly personal process, which can result in a *changed perspective* of learning.
- Chiu (2006:186-195) concludes from studies on reflection that

  > reflection can be seen as a necessary component of *knowledge production through experience* with different aspects: *cognitive, emotive and dialogic*. Different kinds of knowledge, in other words, *formal and informal*, are generated by different forms of reflection, in other words, reflection-on-action and reflection-in-action.

Reflection occurs from many perspectives and is located within situational, institutional, cultural and historical contexts.

- Driscoll and Teh (2001:96) describe reflection as a process that allows practitioners to *uncover and expose thoughts, feelings and behaviours* that are present in a period of time.
- Alsop (2005:174-184) describes the essence of reflection as "*revisiting the experience* in our mind, *taking note of key features* of the event, *exploring* for ourselves what happened and what the consequences were, and *establishing how this adds to, or changes*, what we already know". Reflection "should also help practitioners to *identify how they can make modifications* to practice in the light of new experience, knowledge and insights, and so *improve their practice*." It is triggered by situations that are not normal, or are in need of special attention. It can be undertaken alone, or in dialogue and debate with others.
- Johns (1995:226-234) describes reflexivity as the essential nature of *learning through experience*. Learning through reflection is a process of *enlightenment* ('understand who I am'), *empowerment* ('action to change who I am') and *emancipation* ('liberate myself from previous ways of being to become who I need to be').
- Murphy (1998:7) and Scanlan and Chernomas (1997:1138-1143) describe reflective learning as the *process of change through reflection*. It contributes to change in theoretical knowledge and conceptualisation, clinical competences and skills of reflective thinking (including critical thinking). It facilitates understanding of the self within the dimensions of practice, provides students with an avenue for self-evaluation and opens mental activities to inspection. Reflective learning accommodates self-directed learning as it helps students to learn how to learn effectively. In looking back, students can see how far they have come. They set their own agendas as students to decide where they should go next and respond accordingly.

All these definitions and descriptions of reflection, reflexivity, reflectivity, reflective thinking, reflective reasoning and reflective learning suggest implicitly or explicitly the involvement of *mental activities* about or triggered by a situation or *experience* in a *specific context*, with a *changed perspective* as an outcome. This changed perspective often leads to *changed practice*. The changed perspective can be seen as an indication of learning ('development of the mind') in cognitive, affective and psychomotor dimensions.

The term 'reflective learning' is therefore used as a synonym for reflection, reflexivity, reflectivity, reflective reasoning and reflective thinking in this study. In this way we avoid problems with inconsistent use of wording while drawing on the core similarity of all the definitions and descriptions in the literature.

Also illuminating are comments on what reflective learning is *not*. It is not just thoughts and feelings about a topic (Alsop 2005:182), mulling over a topic (Burton 2000:1012) or passive acceptance of existing knowledge or practice (Driscoll & Teh 2001:97). It is not working on 'auto-pilot' or following automatic and routine activities (Driscoll & Teh 2001:96; Jarvis 1992:174-181) or unproblematic everyday practice (Alsop 2005:177) without a purpose (Burton 2000:1012). Reflective learning is not an academic exercise or a new set of rules or detailed instructions on how to carry out practice (Driscoll & Teh 2001:98). It is not accidental problem solving (Foster & Greenwood 1998:165-172). Reflection or reflective learning is not limited to specific categories of staff in clinical practice, but it can also not be forced on any person (Driscoll & Teh 2001:98). It is not an easy solution to improve quality care and requires commitment of time and intellectual effort (Alsop 2005:182). Reflective learning as referred to in this thesis is understood in light of these statements.

This discussion has described reflective learning in terms of *what* it is and what it is *not*, but does not explore the underlying processes of reflective learning i.e. *how* it is done, which will now be discussed in the researcher's own formulation of a definition of reflective learning.

4.3.3 Definition of the process of reflective learning

Reflective learning involves activities that create change, and therefore implies the presence of active processes. Various authors have attempted to describe the processes underlying reflective learning occurring on *different levels* or in *different spheres* and either following a *cyclical sequence*, or a *hierarchy of complexity*:

- Atkins and Murphy (1993:1189) identify three key stages of reflection. The first stage is *awareness of uncomfortable feelings or thoughts* related to the inefficiency of knowledge or judgements in a particular situation. The second stage is a *critical analysis of the situation*, which is constructive and involves examining feelings and knowledge, assessing the need for further learning and realising that routines are not adequate and a change in perspective is needed. The third stage is *developing a new perspective* on the situation i.e. learning, which may lead to behavioural changes.
- Willis (1999:92-112) describes a reflective cycle consisting of three modes of reflection: *contextual reflection* involving review of the contextual forces that influence the experience; *dispositional reflection* on feelings and attitudes; and *experiential reflection* on the lived experience of the learning episode.

- Argyris and Schön (in Burton 2000:1012-1013; Foster & Greenwood 1998:168; Wong *et al*. 1995:49-50) describe single- and double-loop learning: *single-loop learning* involves reflection on the outcomes of the experience or intervention, but without reflection on its strategies, values and goals; and *double-loop learning* involves reflection on the experience accompanied by questioning of the norms, values and social relationships underpinning the experience i.e. reflecting on learning systems and ones own role in them. This second loop learning thus occurs at a higher level; it is also called 'critical reflection'.
- Mezirow (1981:3-24) described seven levels of reflectivity. The first four were referred to as 'consciousness' (*how* questions concern process and content) and included reflectivity, affective reflectivity, discriminating reflectivity and judgemental reflectivity; while the last three were referred to as 'critical consciousness' (*why* questions concern with reasons and consequences) and included conceptual reflectivity, psychic reflectivity and theoretical reflectivity.
- Day (1993:83-93) describes three levels of reflection: reflection concerned with the techniques needed to reach objectives (actions); reflection on the relationship between principles and practice; and reflection that addresses ethical and political concerns.
- Kim (1999:1205-1212) describes levels of reflection as phases of critical inquiry: a *descriptive phase* that involves descriptions of practice events (actions, thoughts and feelings) and examination of descriptions for genuineness and comprehensiveness; a *reflective phase* that entails reflective analysis against espoused theories (scientific, ethical and aesthetic), reflective analysis of the situation and of intentions against actual practice; and a *critical / emancipatory phase* that entails critique of practice in terms of conflicts, distortions and inconsistencies (between values / beliefs and practice, intentions and actions, and clients' needs and nurses' actions), and engagement in emancipatory and change processes.
- James and Clarke (1994:82-90) describe levels similar to Kim's phases and add a fourth phase, namely *personal or deep reflection*, a process of becoming aware of what is known and how it is known.
- Duke and Appleton (2000:1557-1568) confirm experimentally that reflection takes place at different levels of complexity and can be developed over time. They classify reflective activities as: *description, focus, analysis of feelings, analysis of knowledge, analysis of context, synthesis, practice implication, action planning, clarity, referencing of sources and self-evaluation.*
- Boud, Keogh and Walker (1985:18-40) describe the key elements of the reflective process as *attending to feelings*, *association* (relating new data to that which is already known), *integration* (seeking relationships among the data), *validation* (determining the authenticity

of the ideas and feelings that have resulted), *appropriation* (making knowledge ones own), and *outcome of reflection* (a changed perspective and/or commitment to action). Association, integration, validation and appropriation are critical thought processes.

- Teekman (2000:1125-1135) describes reflective thinking as a dynamic process involving *facing the situational gap*, *categorising perceptions* (use of collegial support and the value of experience to make sense of the situation), *recognising patterns*, *framing* (putting things together) and *discourse-with-self* (debating in own mind focusing on eliminating gaps involving the client, the self and the system). Reflective thinking occurs on three consecutive levels, namely *reflective thinking-for-action, reflective thinking-for-evaluation and reflective thinking-for-critical-inquiry*.
- Boyd and Fales (1983:99-117) describe reflective learning as a process involving *a sense of inner discomfort* triggered by a life experience, identification or clarification of the concern that makes the nature of the problem or issue more evident (conceptualisation), *openness to new information* from internal and external sources with the ability to observe and take from a variety of perspectives, *resolution* ('aha'-stage or new perspective) where one experiences that the change or learning that has occurred is personally significant, *internalisation of new perspective* or change in oneself, followed by *operationalisation* that entails decision-making, problem-solving or changed practice as an outcome.
- Getliffe (1996:365) identifies and uses the following categories to evaluate students' level of reflection: *factual* (referring to events that occurred), *prudential* (evaluating the effectualness of actions or suggesting alternative actions), *justificatory* (focusing on reasons why particular actions occurred or why alternatives would be suitable), and *critical* (referring to values, beliefs, assumptions underlying the reasons given to support a course of action or a potential action).
- Chiu (2006:183-203) describes four forms of knowledge or reflection that exist in an interdependent and dynamic cyclical hierarchy: *experiential reflection* or knowledge (experience a felt encounter), *presentational reflection* or knowledge (grasp and present it), *propositional knowledge or critical reflection* (mediate through intellectual processes of concept forming and conceptual organization, analysis, inferences and synthesis, and express it propositionally) and *practical reflection* or knowledge (generate practical knowledge through synthesis and extend it into action). A new experience is created by action and the cycle starts again. Chiu describes these processes as they taking place from first-, second- and third-person perspectives.
- Driscoll and Teh (2001:95-103) describe the process of reflection as 'What?', which entails a *description* of the event; 'So What?', which refers to *analysis* of the event; and 'Now What?' which refers to the *proposed actions* following the event. The process allows

practitioners to uncover and expose *thoughts, feelings and behaviours* that are present at the time.

- Van Aswegen *et al.* (2000:123) construct a definition for reflection as part of the development of a model for facilitating critical reflective practice, as follows:

  > The ideal reflective thinker is more than thoughtful in that his or her reflective skills are internalised and involve a total response to a situation, event or internal feeling. In recapturing the experience the reflective thinker *mulls* over it, *evaluates* it, *rationally examines* it in an open-minded and insightful way, effectively *formulates competing assumptions*, *thinks* about his or her thinking process itself, *admits the feelings* that accompany the situation and *takes control* of the situation. Such reflection results in *deliberate action*.

- Chabeli & Muller (2004:58) define reflective thinking as

  > A rational, progressive cyclic interactive mental process influenced by hierarchical cognitive and affective thinking skills. It is triggered by the uncertainty in a situation bringing about a state of *mental awareness and disequilibrium* which leads to an *interactive constructing process* followed by *consolidation of knowledge*, *new insight* and *changed perspective* as an outcome for clinical decision-making and problem solving.

The common theme of these descriptions is that the underlying processes of reflective learning occurs either as different steps in a cyclical sequence, or as a hierarchical process occurring on different levels of complexity, to change the conceptual framework of the individual, establish an empowered response to the environment and circumstances, and as a result contribute to changed practice.

The researcher's definition of reflective learning, which is based on Kim (1999:1207) and all the literature explored above, is as follows:

Reflective learning can be described as a process of conscious and intentional examination by an individual of what occurs in a learning experience, in terms of thoughts, feelings and/or actions, compared with underlying beliefs, assumptions, knowledge and the particular context. It can occur as reflection-before-action, reflection-in-action and reflection-on-action on a hierarchy of levels of complexity, resulting in a changed perspective and consequent changes in practice. The sequence of levels of complexity includes a descriptive phase, reflective phase and critical / emancipatory phase.

The individual meanings of the definition can be examined in more detail:

'A process' implies a series of actions or progress that takes place.

'Conscious and intentional examination by an individual' refers to deliberate mental activities and efforts made by the person to explore purposively. These activities can take place internally (cognition), or in dialogue with another person/s.

'A learning experience, in terms of thoughts, feelings and/or actions' implies a situation or incident that takes place, or an experience that the person has, that involves ideas or thinking, emotions and/or response/s in that particular situation, that trigger the 'conscious and intentional examination' by the individual. This situation often triggers an awareness of inner discomfort, but can involve any situation of self-examination.

'Compared with underlying beliefs, assumptions, knowledge and the particular context' stresses that this conscious and intentional examination does not take place in isolation, but that the person involved bases this examination on his/her own value-system, pre-conceived ideas and perceptions, existing or new information available to and understood by him / her, and additional factors ('bigger picture') known in and relevant to that particular situation or incident.

'It can occur as reflection-before-action, reflection-in-action and reflection-on-action' describes the timing of the reflective activities in relation to the particular situation or incident. 'Reflection-before-action' is the deliberate anticipation or prediction of a situation, and the planning of actions accordingly; 'reflection-in-action' is the deliberate examination that occurs while the situation is in progress; and 'reflection-on-action' is the retrospective examination of the situation after it has taken place.

'**A hierarchy of levels of complexity**' including '**a descriptive phase, reflective phase and critical / emancipatory phase**' implies that different phases are involved in reflective learning with various degrees of difficulty. The different phases follow each other in a sequence, with underlying competences or abilities involved in every phase. The 'descriptive phase' includes description of the situation or incident (actions, thoughts and feelings), and examination of these descriptions for genuineness and comprehensiveness. The 'reflective phase' entails reflective analysis against espoused theories (scientific, ethical and aesthetic), reflective analysis of the situation and of intentions against actual practice. The 'critical / emancipatory phase' entails critique of practice in terms of conflicts, distortions and inconsistencies (between values / beliefs and practice, intentions and actions, and clients' needs and nurses' actions), and engagement in emancipatory and change processes.

'Resulting in a changed perspective' is the 'change in mind', the development or learning that takes place in the individual relative to his/her original perception of the situation of incident, the point of departure prior to the process of reflective learning, and the emancipation of the individual as a result.

'Consequent changes in practice' refers to the actual or potential differences in the nurse's practice arising from his/her changed perspective. These differences can include a different approach to a situation, or different behaviour and execution of actions. Nurses and other participants in the practical operation of the NICU are emancipated.

The process of reflective learning occurs in phases or levels. The first is the *descriptive phase*, which involves description of a situation or incident and examination of this description for genuineness and comprehensiveness. The second level is the *reflective phase*, which entails reflective analysis of the situation against espoused theories and of intentions compared to actual practice. The third level the *critical or emancipatory phase*, which involves critique of practice in terms of conflict, distortion and inconsistency, and engagement in emancipatory and change processes.

The process of reflective learning is schematically presented in Figure 4.1 (turn page over) in the triangle on the right hand-side. It starts at the base of the triangle and builds up to the tip of the triangle. The light coloured triangle on the left hand-side is a presentation of the specific learning outcomes, and is secondary to the triangle on the right hand side, as it is not a part of the process of reflective learning. It is, however, included in the presentation to indicate its relationship to the various levels of the process of reflective learning (discussed in section 4.4). The process of reflective learning in this model occurs within the framework for education of reflective neonatal nurses as discussed in Chapter 3.

The meaning and implications of the researcher's definition of reflective learning are discussed in more detail later in this chapter:

- The different phases or levels of reflective learning in section 4.4: 'Applied competences and reflective learning';
- Value-system and individual perspective in reflective learning in section 4.5: 'Professional characteristics and reflective learning'
- Changed perspective and practice in section 4.6: 'Outcomes of reflective learning'

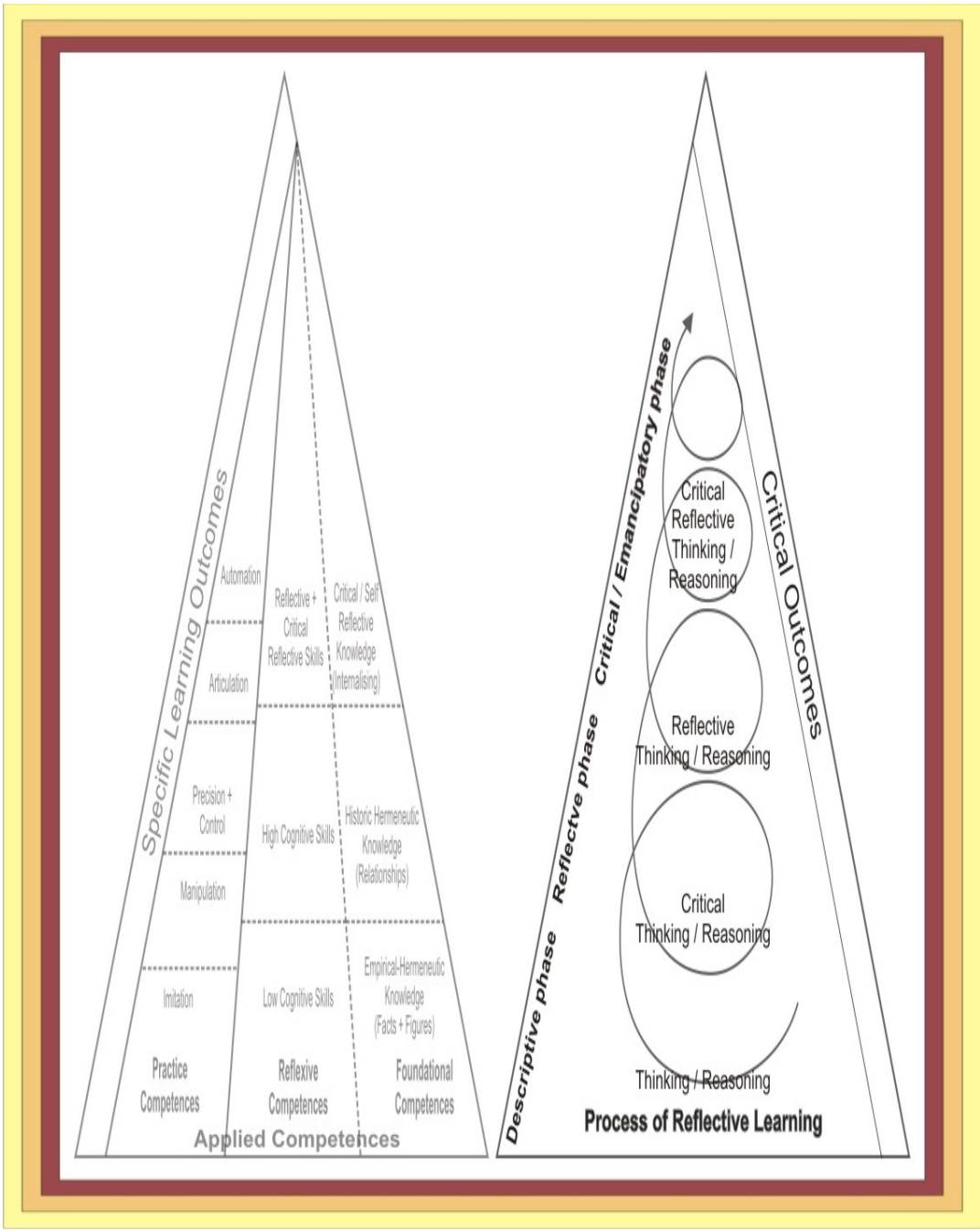

Figure 4.1: Process of reflective learning

4.4 APPLIED COMPETENCES AND REFLECTIVE LEARNING

According to its definition, reflective learning occurs 'on a hierarchy of levels of complexity…[which] includes a descriptive phase, reflective phase and critical / emancipatory phase'. This implies that different spheres are involved in reflective learning, of various degrees of difficulty, following each other in a sequence. Each of these levels is built on underlying competences. These abilities can be located in the psychomotor, cognitive or affective domain.

The phrase 'applied competences' as used in South African higher education is an 'overarching term for three interconnected kinds of competences' (Council on Higher Education 2002:49), which are described as follows:

Practical competences are the demonstrated abilities, in an authentic context, to consider a range of possibilities for action, to make considered decisions about which possibility to follow, and to perform the chosen action.

Foundational competences are the demonstrated understandings of knowledge and thinking that underpins the action/s taken.

Reflexive competences are the demonstrated abilities to integrate and connect performance and decision-making with understanding and with abilities to adapt to change and unforeseen circumstances, and to explain the reasons behind such adaptation (Council on Higher Education 2002:48-49; Geyser 2004b:145).

Practical competences refer specifically to the physical abilities required to execute technical tasks or actions, which are also known as psychomotor or technical skills ('what to do and how to do it'). Foundational competences mainly involve the knowledge required for actions and decisions ('why to do it'). Reflexive competences are the cognitive processes that underpin the application, manipulation or utilisation of knowledge to make decisions or undertake action ('how to decide what to do') (Olivier 2002:37-38; Van der Horst & McDonald 2001:34-36). Practical competences are founded in foundational competences, and integrated through reflexive competences (Council on Higher Education 2002:48-49; Geyser 2004b:145).

Reflective learning as used in this study is related to all three kinds of competences. The competences will now be further described to show how they occur at different levels of complexity during the different phases of reflective learning.

4.4.1 Practical competences

Practical competences can be described as ”the demonstrated ability, in an authentic context, to consider a range of possibilities for action, to make considered decisions about which possibility to follow, and to perform the chosen action” (Council on Higher Education 2002:49). Practical competences are founded in foundational competences (knowledge) and are supported by cognitive abilities and emotions (Council on Higher Education 2002:48-49; Geyser 2004b:145). Hillier (2002:11) points out there is no practice without theory, even if the theory is unstated.

Practical competences are of major significance to nursing, as nursing is a practical profession. Nursing is defined by the SANC (Nursing Act no. 33 of 2005) as follows:

> Nursing means a caring profession, practiced by a person registered under section 32, which supports, cares for and treats a health care user to achieve or maintain health and where this is not possible, cares for a health care user so that he or she lives in comfort and with dignity until death.

‘To care for and treat a health care user’ in nursing practice, including neonatal nursing practice, implies practical actions or clinical interventions and the need for practical competences.

‘Practical competences’, ‘technical skills’, ‘psychomotor skills’, ‘physical abilities’ and ‘clinical skills’ are synonyms in this context. Such skills are based on coordination (for example eye-hand coordination), gross motor functions and/or fine psychomotor skills used in techniques applied to execute technical tasks (Olivier, 2002:37-38; Van der Horst & McDonald, 2001:36). According to Gagne’s taxonomy (Duan 2006:10), motor skills are the ability to perform precise, smooth, and accurately timed muscle movements in the performance of various hands-on actions, in this case nursing skills.

Usually what students are expected to be able to do is directly connected with the activities in which they must engage to be able to achieve these outcomes – they learn through practice (Smith & Lovat 2003:121).

Different levels of practical competences are described in Bloom’s taxonomy namely *imitation* or the ability to re-demonstrate, *manipulation* of the task or the ability to perform acts on

instruction, *precision and control* or the ability to produce a high level of proficiency, *articulation* according to the situation or the coordination of a series of activities, and *automation* or naturalisation or the ability to act with maximum proficiency and the minimum expenditure of energy (Mellish & Brink 1990:34). To be competent practically an individual nurse needs to know 'how to' i.e. know subject-specific skills and algorithms (nursing skills), subject-specific techniques and methods (nursing process), and the criteria for determining when to use appropriate procedures such as diagnostic and laboratory tests (Duan 2006:4).

These levels correlate with the physiological development of motor activities as a combined effort of the cerebrum and cerebellum, from planned or imitated actions to smooth 'automated' and seemingly effortless actions (Thibodeau & Patton 2007:486-487).

Practical competences of relevance in neonatal nursing include basic procedures such as bathing, general care, feeding and basic resuscitation of an infant, and advanced procedures such as advanced resuscitation, endotracheal intubation and ventilation, and insertion of peripheral and umbilical lines, among others. These practical competences expected of reflective neonatal nurses are discussed in more detail in Chapter 5.

4.4.2 Reflexive competences

Reflexive competences are the learner's demonstrated ability to integrate and connect performance and decision-making with understanding and with an ability to adapt to change and unforeseen circumstances, and to explain the reasons behind such adaptation (Council on Higher Education 2002:48-49; Geyser 2004b:145). Reflexive competences involve the cognitive and meta-cognitive skills that underpin the process of reflective learning. The associated skills will now be described as they are related to the different phases of reflective learning.

The cognitive and meta-cognitive processes involved in understanding knowledge include identifying concrete concepts, identifying abstract concepts, discriminating or distinguishing between concepts, constructing rules or formulas, recalling / remembering, comprehending, applying / generalising, analysing, synthesizing and evaluating content (Van der Horst & McDonald, 2001:31-39).

Reflexive competences will now be discussed as it is related to the phases of reflective learning.

4.4.2.1 Reflexive competences in the descriptive phase

The descriptive phase is the first and least complex phase of reflective learning and has two aspects, namely description of the situation or incident, and examination of this description for genuineness and comprehensiveness (Kim 1999:1207-1208).

In terms of human biology and physiology, learning occurs as the dendrites of the neurons develop and form pathways in the brain to create and stabilise a neuronal network. Stimuli or electrical impulses are required for this process, and these arise because of interaction of the person's senses with the environment. The stimuli strengthen synapses as they follow existing neuronal pathways, or create new synapses and pathways, thickening the neuronal network. The thicker and more dense the network, the more complex the cognitive and meta-cognitive activities are that can be executed by the individual. Existing pathways (established learning) cannot be undone or be wiped out, but new pathways can be created. Prior learning and experiences therefore play a significant role in learning, as the individual uses existing pathways to refine new information (Gravett 2004:34-37) and prior learning therefore guides the learner's perception and description of a situation during the descriptive phase of reflective learning.

The descriptive phase begins with descriptions of a particular situation or incident that is predicted to occur, is occurring or that the individual already has experienced. This description of the situation or incident includes the person's actions, thoughts and feelings as experienced. Once the situation has been described, the description is examined for comprehensiveness and completeness of fact and detail of context, without interpretation. The genuineness of the description is very important, but can only be verified by the person him-/herself as a true description of the situation. The person needs to be able to describe his/her own emotions or feelings in the particular context with a certain degree of detachment and suspension (Kim 1999:1207-1208).

For a person to be able to describe a situation, whether it is in writing or in a verbal discussion, the person has to possess the ability to observe (hear, see, feel, etc.), the ability to give meaning and create his/her own perception of what is observed, and appropriate language and cognitive and linguistic abilities to communicate it (Gravett 2004:34-35; Van Rensburg &

Lamberti 2004:67-68). The person must be able to rely on memory for the facts of what occurred or is about to happen, with interpretation thereof within the context. If the context is unknown the person will probably not be able to understand the meaning of the occurrences in that particular context or give a comprehensive, meaningful and complete description of them.

The mental skills required in this phase are relatively low cognitive skills. According to the levels of the cognitive domain as described in Bloom's taxonomy of educational objectives, the person has to have knowledge about the facts related to the topic. To have knowledge implies the ability to *memorise or remember* facts and figures, and to reproduce them. The person also needs *comprehension or insight* into the content to understand, interpret, explain, summarise, emphasise essentials and anticipate implications or results of actions (Duan 2006:1-12; Smith & Lovat 2003:49; Olivier 2002:91-92). The person has to be able to find and use resources; observe, analyse and make judgements; and define and ask questions (Alsop 2005:182). The individual has to identify a topic or problem, then examine, inspect, explore and analyse it to define and clarify the meanings (Hillier 2002:17).

The information generated during this phase about a topic, situation or incident reflect the scientific, ethical or aesthetic aspects of practice. The *scientific* aspect involves the use and application of empirical knowledge (general, discipline-specific or personal). The *ethical* aspect covers the meanings and attitudes (religion, culture, politics, etc.) underpinning specific actions in practice. The *aesthetic* aspect involves forms of self-presentation and creativity adopted by nurses in practice (Kim 1999:1208; Hillier 2002:18-20), or ways of perceiving and grasping of the situation (Johns 1995:228).

Although true reflection does not occur in the descriptive phase, the reflective phase that follows could not take place without the descriptive phase that preceded it. The first phase does however involve a certain degree of analytical thinking, as persons put in effort to view themselves and their actions with a certain degree of detachment and suspension (Kim 1999:1208).

Neonatal nurses have to memorise facts and figures, and have insight into content such as the anatomy, physiology and pathophysiology of the high risk and critically ill neonate, applied pharmacology and the principles of social sciences, which are addressed in Chapter 5.

4.4.2.2 Reflexive competences in the reflective phase

The descriptive phase flows into the reflective phase, which entails reflective analysis against a backdrop of espoused theories (scientific, ethical and aesthetic) of the situation and of intentions as compared to actual practice (Kim 1999:1205-1212).

The main focus during this phase is on the 'why' and not the 'how' of a particular topic, situation or incident (Van Aswegen *et al*. 2000:124). This of course follows on from the previous phase, since it is not possible to search for the 'why' if the underlying facts, assumptions and beliefs are not known.

During reflective analysis the individual uses existing knowledge about the various aspects (scientific, ethical and aesthetic) of practice to 'dismantle' the topic, situation or incident into components and to explore their relation to espoused theories (professional and personal) in terms of meaning, coherence, consistency, disparities, commonalities, uniqueness, intentions, application, usefulness and need for change or learning, so as to develop 'models of good practice' or 'theories of application and knowledge' (Kim 1999:1208-1209; Alsop 2005:182).

These underlying processes can be grouped as *association* (relating new data to that which is already known), *integration* (seeking relationships among the data), *validation* (determining the authenticity of the ideas and feelings that have resulted), and *appropriation* (making knowledge one's own) (Boud, Keogh & Walker 1985:18-40; Wong *et al.* 1995:50), of which the last two (validation and appropriation) are also significant in the critical or emancipatory phase. According to Bloom's taxonomy, the processes can alternately be divided into *application* (the ability to explain a relationship between facts or concepts, to generalise the knowledge and the use of knowledge or skills in new or other situations) and *analysis* (the ability to analyse a situation into its different components and indicate the relationship between them) (Duan 2006:1-12; Smith & Lovat 2003:49; Olivier 2002:91-92). Synthesis starts in this phase and continues into the critical or emancipatory phase of reflective learning.

Various concepts can be used to describe the cognitive skills necessary for these processes underlying reflective analysis. Cognitive skills are the processes of *applying, manipulating* or *using* knowledge at different levels of complexity and within various contexts. The processes include critical thinking and reasoning, reflecting, problem-solving, decision-making, communicating, determining and sequencing priorities, identifying new possibilities and opportunities or innovating, managing processes and situations, applying knowledge and

insight appropriately, predicting and understanding the mindset of others, and adding to decision-making skills as this enables tacit knowledge to be made explicit in practice. Another vital skill is meta-cognition that is thinking about thinking and learning (Olivier 2002:38; Van der Horst & McDonald 2001:34-35; Smith & Lovat 2003:55; Elcock 1997:138-145). Concepts commonly used to describe cognitive skills are clinical reasoning, critical thinking, critical reasoning, reflective thinking, reflective learning and reflective clinical reasoning. These must be distinguished from critical reflection, critical reflective thinking and critical reflective reasoning, which are more relevant to the critical or emancipatory phase of reflective learning.

Clinical reasoning is especially relevant to the thinking and reasoning of the professional nurse identifying and solving problems, making decisions and taking action in practice. Elcock (1997:138) emphasises that ”nursing, as a practice-based profession, needs continually to review what occurs in practice and so learn from that practice if it is to develop.” A reflective approach to clinical practice provides an opportunity to do this. Scanlan and Chernomas (1997:1138-1143) agree that reflection in clinical reasoning is vital in using relevant practical experience in developing professional knowledge, especially considering the clinical nature of the discipline and the close relation between nursing theory and practice.

Alsop (2005:178) confirms Fonteyn’s definition of clinical reasoning as

> the cognitive processes and strategies that nurses use to understand the significance of patient data, to identify and diagnose actual or potential patient problems, and to make clinical decisions to assist in problem resolution and to enhance the achievement of positive patient outcomes.

Critical thinking and critical reasoning, often used as synonyms, are cornerstones of reflective learning. The main difference between ‘thinking’ and ‘reasoning’ is that thinking occurs within the individual’s mind, while reasoning can happen either in the individual’s mind or in dialogue between two or more persons. Both concepts (critical thinking and critical reasoning) are often used in the same context as clinical reasoning, with clinical reasoning focusing more on the context (practice) in which the thinking / reasoning takes place.

Critical thinking is ”purposeful, self-regulatory judgement that results in interpretation, analysis, evaluation, and inference and the explanation of evidential, conceptual, methodological, criteriological or contextual considerations upon which that judgement is based” (Kuiper & Pesut 2004:383).

Descriptions of critical thinking by various authors correlate with this definition. Boychuck Duchscher (1999:578-581) describes critical thinking as a process of inquiry, a method of assessing, planning, implementing, evaluating and reconstructing nursing care to challenge established theory and practice, which is essential to rational and accountable practice, education and research. According to Baker (1996:19-22), critical thinking involves cognitive skills and affective dispositions which, grounded in reflection, can be assessed using the Watson-Glaser Critical Thinking Appraisal Tool that measures skill in inference, recognition of assumptions, deduction, interpretation and evaluation of arguments, all of which are used during the process of reflection. Van Aswegen *et al.* (2000:124) state that critical thinking focuses on understanding and resolving contradictions and recognising the assumptions underlying our beliefs and behaviours. The thinker is not concerned with the 'how' or 'how-to' but with the 'why'.

Kuiper and Pesut (2004:381-391) stipulate that critical thinking is associated with the cognitive dimension of interpretation, analysis, inference, explanation and evaluation, and note that while it is often stated as an outcome of nursing education and a criterion for accreditation of educational programmes, critical thinking alone cannot be clearly proven to lead to positive outcomes in practice, since situational factors, feelings, emotions and experience also contribute significantly to clinical reasoning. The authors emphasise the importance of reflective thinking, which entails metacognitive skills.

Reflective thinking / reasoning is a highly adaptive and individualised response to a new, doubtful or insecure situation, which involves a range of cognitive activities in which the individual deliberately and purposely attempts to make sense of the current situation, in order to act appropriately. It is a process of reviewing an experience of practice using existing knowledge and past experiences to describe, analyse, evaluate and respond to the situation. It contributes to better contextual understanding and as such may influence future behaviour.

Reflective thinking / reasoning is described by Argyris and Schön as single-loop learning, where a person evaluates a situation or incident against a set goal or plan by thinking reflectively (Foster & Greenwood 1998:168; Hillier 2002:18, 23). During reflective thinking, the person recaptures the experience, mulls over it, evaluates it, rationally examines it in an open-minded and insightful way, effectively formulates competing assumptions, thinks about the thinking process itself and admits accompanying feelings. This results in the person's taking control of the situation and responding with deliberate action (Van Aswegen *et.al*. 2000:123-124).

Kuiper and Pesut (2004:388) recognise the reflective approach as part of clinical reasoning and refer to it as **reflective clinical reasoning**. Development of reflective clinical reasoning skills requires concurrent attention to both the cognitive (critical thinking) and metacognitive (reflective thinking) dimensions of reasoning in nursing care contexts. Critical thinking is cognition or the intellectual work of the mind that involves reasoning and self-discipline using particular skills, while reflective thinking is metacognition or a level of consciousness that exists through exerting cognitive control and self-communication about experiences (Kuiper & Pesut 2004:382).

The reflexive competences expected of neonatal nurses in the reflective phase are related to the application of their knowledge of anatomy, physiology and pathophysiology of the high risk and critically ill neonates, of applied pharmacology and of the principles of social sciences to predict problems, provide quality individual and holistic nursing care and learn from mistakes. These competences are further discussed in Chapter 5.

4.4.2.3 Reflexive competences in the critical or emancipatory phase

The last and most complex phase of reflective learning is the critical / emancipatory phase. Kim (1999:1205-1212) describes the *critical / emancipatory phase* as the third phase of reflective learning, which entails critiquing practice in terms of conflicts, distortions and inconsistencies (between values / beliefs and practice; intentions and actions; and clients' needs and nurses' actions), and engaging in emancipator and change processes.

This phase involves the individual's changed perspective and consequent changes in practice. It is concerned with theory-practice connections (Hillier 2003:15-20) and involves mainly metacognitive processes of 'thinking about thinking and learning' (Kuiper & Pesut 2004:386-391). This phase correlates in Bloom's taxonomy with *evaluation*, which is the ability to criticise or judge certain content or situations in the light of a specific aim, and *synthesis*, which is the ability to put elements together to form a coherent or functional whole, or to reorganise elements into a new pattern or structure (Duan 2006:1-12; Smith & Lovat 2003:49; Olivier 2002:91-92).

The metacognitive processes in the critical phase are described in terms of critical reflective thinking, creative thinking, critical reflection and reflective learning. These processes include well-informed and multi-logical reasoning, proactive thought, fair-minded evaluation, focused

inquiry, deliberate and principled thinking about the thinking processes, creative synthesis and insight (Van Aswegen *et al*. 2000:130).

Kim (1999:1206-1209) describes the aim of critical reflective thinking as to understand the nature and meaning of practice to practitioners, correct and improve substandard or ineffective practice through self-reflection and criticism, and generate models of 'good' practice and theories of application through reflection and critique of actual occurrences. The desired outcome is self-emancipation and an emancipatory culture in clinical settings.

Critical reflective thinking / reasoning is described by Argyris and Schön as double-loop learning, where a person not only evaluates a situation or incident against a set goal or plan by thinking reflectively, but also questions and evaluates the validity of the set goal or plan (Foster & Greenwood 1998:168; Hillier 2002:18, 23).

Metacognition is the executive cognitive control used to monitor and manipulate cognitive processes and progress. Metacognitive knowledge leads individuals to select, evaluate, revise or abandon cognitive tasks, goals and strategies in light of the relationships between them and according to each individual's own abilities and interest with respect to an enterprise. Metacognitive skills include self-communication or internal dialogue, self-monitoring and self-regulated strategy to influence diagnostic reasoning when solving clinical problems. Self-regulation of judgements leads to self-efficacy. To develop effective reflective clinical reasoning, students need to develop self-management skills and be guided in complex meaningful tasks to gain cognitive (critical thinking) and metacognitive (critical reflective thinking) knowledge (Kuiper & Pesut 2004:386-391).

Kuiper and Pesut (2004:386-389) describe the processes underlying critical reflective thinking and the links between critical thinking and clinical reasoning. The process of self-monitoring, they say, involves several sub-processes, namely self-observation, self-reaction and self-judgment, which require deliberate attention being paid to the behaviours used to attain goal progress. Such self-monitoring motivates improvement in learning. Metacognitive self-regulation also includes sub-processes, namely goal setting, self-efficacy, knowledge use and thinking strategies. Such self-regulation is reflective thinking about experiences and situations to determine if knowledge is adequate, what goals are to be set, and whether I have the self-efficacy to reach them. Self-evaluation is a key component of reflection, which in turn influences critical thinking and the development of clinical reasoning skills. Kuiper and Pesut (2004:384) suggest that

> critical thinking is to cognitive skill acquisition as reflective thinking is to metacognitive skill acquisition, and that both are necessary for effective clinical reasoning. It is easy to get caught in a never-ending circle of discourse if engaging in dualistic either/or thinking related to critical thinking or reflective thinking. The question is how to embrace both.

Hillier (2002:23) describes reflection as the activity that allows a novice to become a competent professional, and critical reflection as the activity that allows a competent professional to become an expert.

In conclusion, then, critical reflective neonatal nurses are the experts and change agents in neonatal nursing practice. If individuals have the cognitive skills required in the reflective phase, they can become reflective neonatal nurses who can provide competent, safe and quality nursing care.

4.4.3 Foundational competences

Foundational competences are the demonstrated understandings of knowledge and thinking that underpins the action/s taken (Council on Higher Education 2002:48-49; Geyser 2004b:145). The *process* underlying the understanding and thinking is an integral part of reflexive competences (refer to 4.4.2), and foundational competences can be seen as the *content* or the *components* i.e. the knowledge that serves as foundation for practical and reflexive competences.

In nursing practice, which is a clinical field, foundational competences can also be interpreted as clinical knowledge that results from different ways of knowing while providing client care (McEwen & Wills 2002:14-15). For the purpose of this study the terms 'foundational competences' and 'knowledge' are used as synonyms.

Knowledge is not only information, data or facts (Olivier 2002:37) and is not the same as 'memoing, recalling or remembering of previously learned information' as described in Bloom's taxonomy (Van der Horst & McDonald 2001:36-39). Knowledge is never fixed or static, but is dynamic and changing as new evidence becomes apparent. Knowledge is always biased, never neutral and is influenced by viewpoints, ideologies, philosophies and experiences (Smith & Lovat 2003:32-34, 78-79). It is never complete, predetermined and entirely discipline-related, but rather continuous and constructed in specific social and historical settings (Waghid

2001:80). Knowledge is not just a list of content about a subject that a neonatal nurse has to learn.

Knowledge refers to information, data, facts, theories and concepts used as thinking constructs to build rules, concepts, principles, codes and formulas, according to their interrelationship with reality, challenges and problems within a specific context. Knowledge is used to clarify and to understand logic, sequences and relations (Olivier 2002:37).

4.4.3.1 Types of knowledge: hidden, scientific and personal knowledge

Knowledge can be divided in categories, based on the origin of the knowledge, namely hidden, scientific and personal knowledge.

Hidden knowledge is the unintended and non-explicit 'common-sense knowledge and understanding' gathered from information, skills, beliefs, norms, perceptions, meanings and feelings that reflect the views and values of the dominant culture. Such hidden knowledge is picked up through messages of acceptance, rejection and/or legitimisation in relationships and socialisation. Hidden knowledge can be positive or negative (Smith & Lovat 2003:34-37). In this study, hidden knowledge is not addressed in detail because of its unplanned and unintentional nature, but its existence must be noted.

Scientific, espoused, explicated, formal, empirical or theoretical knowledge is generated through science and is supposed to guide practice (Powell 1989:825). Waghid (2001:80) describes this as declarative knowledge, the factual knowledge of a discipline and the way it is structured for retrieval (e.g. theories).

Personal, theory-in-use, tacit, intuitive or informal knowledge belongs to the individual and is based on assumptions and experience (Powell 1989:825). It is produced in practice and tailored to specific situations, with the practitioner intimately involved in generating and validating the knowledge (Kim 1999:1206). Waghid (2001:80) describes this as procedural knowledge, which allows the purposeful manipulation of declarative knowledge (scientific knowledge) to undertake a task, solve problems, make decisions, understand, know 'how' and 'why', and so on.

Johns describes four patterns of knowledge (1995:226-234; 1996:1135-1143). The first is empirical, which includes technical, factual or scientific knowledge, and the others are

aesthetic (subjective knowledge gained through unique and particular situations), personal (knowledge that an individual brings to the situation often based on prior personal experience) and ethical (knowledge based on one's own values and understandings about what is right or wrong or what ought to be done in particular situations). Empirical knowledge is objective, abstract, generally quantifiable, exemplary, discursively formulated and verifiable. Aesthetic knowledge is expressive, subjective, unique and experiential. Personal knowledge incorporates experiencing, knowing, encountering and actualising the self in practice, and ethical knowledge refers to the moral and values of the person (McEwen & Wills 2002:13-15). In the researcher's opinion, John's aesthetic, personal and ethical knowledge cannot be separated and are all part of personal knowledge. Empirical knowledge is separate from the individual and fits in with other authors' descriptions of empirical, scientific or formal knowledge.

The tension between scientific and personal knowledge contributes to the much debated theory-practice gap, where clinical situations do not match what textbooks say. A common perception is that though textbooks and research journals are accurate and truthful, real-life situations are actually based on experience (personal knowledge). Researchers have been confronted with comments such as 'we have tried it and it doesn't work', 'we have found that the way we do it at the moment seems to work best', or 'we have done it this way for the last couple of years and it works just as well' (Rolfe 2000:1). Kim (1999:1206) however points out that personal knowledge generated from practice can vary from poor to expert, from redundant to innovative.

Schön (1983), in contrast, reminds that though a good practitioner requires a sound theoretical and scientific base on which to operate in practice, this does not necessarily produce effective practice, while tacit or intuitive knowledge can contribute greatly to effective practice. Various authors support an approach, which embraces both scientific and personal knowledge to enhance practice by means of reflection (Foster & Greenwood 1998:171; Hillier 2002:13-17; Jarvis 1992:178; Johns 1995:226-234; Johns 1996:1135-1143; Kim 1999:1206; Rolfe 2000:9-47; Wilkinson 1999:36). Scanlan and Chernomas (1997:1138-1143) agree that reflection is vital in making experiences in practice relevant in the development of professional knowledge.

4.4.3.2 Hierarchy of levels of knowledge

Knowledge can also be described according to level of complexity or difficulty. These levels form a hierarchy.

The levels of foundational competences or knowledge, grouped according to complexity or difficulty, are empirical-analytical knowledge, historical-hermeneutic knowledge and critical or self-reflective knowledge (Smith & Lovat 2003:88-90). The line between levels is not always exact, as they are integrated to a certain extent and build on each other to create the whole meaning. The different levels of foundational knowledge correspond with the process of reflective learning. Each of the levels in the hierarchy can be briefly discussed.

Empirical-analytical or factual knowledge

Empirical-analytical knowledge is concerned with facts and figures and the technical control of them. The information is data outside and apart from persons, which is controlled by those who provide it; the provider (e.g. lecturer or author) can decide what to make available and what not, and in what format (Smith & Lovat 2003:88-90).

This kind of knowledge is factual, and consists of the basic elements students must know about a discipline to solve problems in it. Factual knowledge usually includes terminology with its definitions and meanings, and facts such as descriptions (Duan 2006:4; Van der Horst & McDonald 2001:36-39). It is supposedly objective, abstract, generally quantifiable, exemplary, discursively formulated and verifiable, and draws on traditional ideas that can be verified through observation, experimental, historical or phenomenological research (McEwen & Wills 2002:13).

Empirical-analytical knowledge is very important in reflective learning, as it provides the base for historical-hermeneutic and critical or self-reflective knowledge: if a person does not understand the basic facts involved in the situation, incident or topic, he/she cannot form a personal opinion about it and take appropriate action. This level of knowledge corresponds with the descriptive phase of the process of reflective learning.

Empirical-analytical knowledge in neonatal nursing includes facts about the basic natural sciences (e.g. anatomy, physiology, embryology, pathophysiology and pharmacology), aspects of the social sciences (e.g. psychology and sociology) and specialised nursing subjects. These are discussed in Chapter 5.

Historical-hermeneutic knowledge

Historical-hermeneutic knowledge includes meanings and relationships, the inner dimensions of the subject (Smith & Lovat 2003:88-90).

The term 'conceptual knowledge' is similar in meaning, since it also refers to the abstracted and generalised knowledge gained from empirical and personal knowledge to reveal patterns and relationships (McEwen & Wills 2002:15). According to Bloom's taxonomy, conceptual knowledge includes the interrelationships among the basic elements within a larger structure that enable them to function better, and comes in the form of classifications and categories, principles and generalisations, theories, models and structures (Duan 2006:4; Van der Horst & McDonald 2001:36-39).

This kind of knowledge is important in evidence-based care, which holds that the content related to a topic or subject has to be soundly based on evidence so that the highest quality care is provided in the most efficient way in a particular context (McCain 2003:5).

Mastering historical-hermeneutic knowledge requires applying, manipulating and using knowledge (critical thinking and reasoning), but also giving it meaning within the context and against the background of ones own experience and personal knowledge (reflective thinking and reasoning). This level of knowledge can be linked to the reflective phase of the process of reflective learning.

Historical-hermeneutic knowledge in neonatal nursing includes application and integration in action of aspects of the basic natural sciences (e.g. anatomy, physiology, embryology, pathophysiology and pharmacology), aspects of the social sciences (e.g. psychology and sociology) and specialised nursing subjects. These are discussed in Chapter 5.

Critical or self-reflective knowledge

Critical or self-reflective knowledge arises in a person's freedom to critically reflect on the subject matter and decide autonomously on what to do with that knowledge (Smith & Lovat 2003:88-90). Critical or self-reflective knowledge is true knowledge, since it is not longer situated outside of and apart from the person; rather the person scrutinizes and appraises the adequacy of the information and evaluates its meaning for him- / herself (Smith & Lovat 2003:88-90).

Rolfe (2000:175-178) refers to this knowledge as internalised knowledge, in which the person combines experiential knowledge and research-based knowledge, through the processes of reflection, to find his/her own meaning that will in turn influence his/her nursing practice. Reflective knowledge is the process of learning new knowledge from an experience, adding to the body of existing theory (Jarvis 1992:178).

According to Bloom's taxonomy, this kind of knowledge is metacognitive, since it involves knowledge of cognition and awareness and knowledge of ones own cognition, and includes strategies, knowledge about cognitive tasks and self-knowledge (Duan 2006:5; Van der Horst & McDonald 2001:36-39).

Mastering critical-reflective knowledge requires the previous levels of knowledge and the ability to form a personal opinion, internalise what has been learned and become a transformative agent in practice (critical reflective thinking and reasoning). This level of knowledge corresponds with the critical-reflective phase of the process of reflective learning.

In conclusion, then, foundational competences require empirical-analytical knowledge, historical-hermeneutic knowledge and critical or self-reflective knowledge. This includes knowledge of the facts and figures required to understand and make sense of the demands of neonatal nursing practice, and of the meanings of and relationships between all these facts and figures, and the implications of these; and internalisation of this knowledge so that its meaning can be used to change practice.

Foundational competences therefore refer to the knowledge (the *what*) that the individuals possesses and relies on decision-making and action, while reflexive competences refer to mastery of the underlying processes (the *how*) required to use this knowledge practically. Combined with practical competences, these form applied competences. They are also linked to the different phases of the process of reflective learning, from least difficult (at the base of the triangles) to most complex (at the tip of the triangles). Applied competences as related to the process of reflective learning, are schematically presented in Figure 4.2.

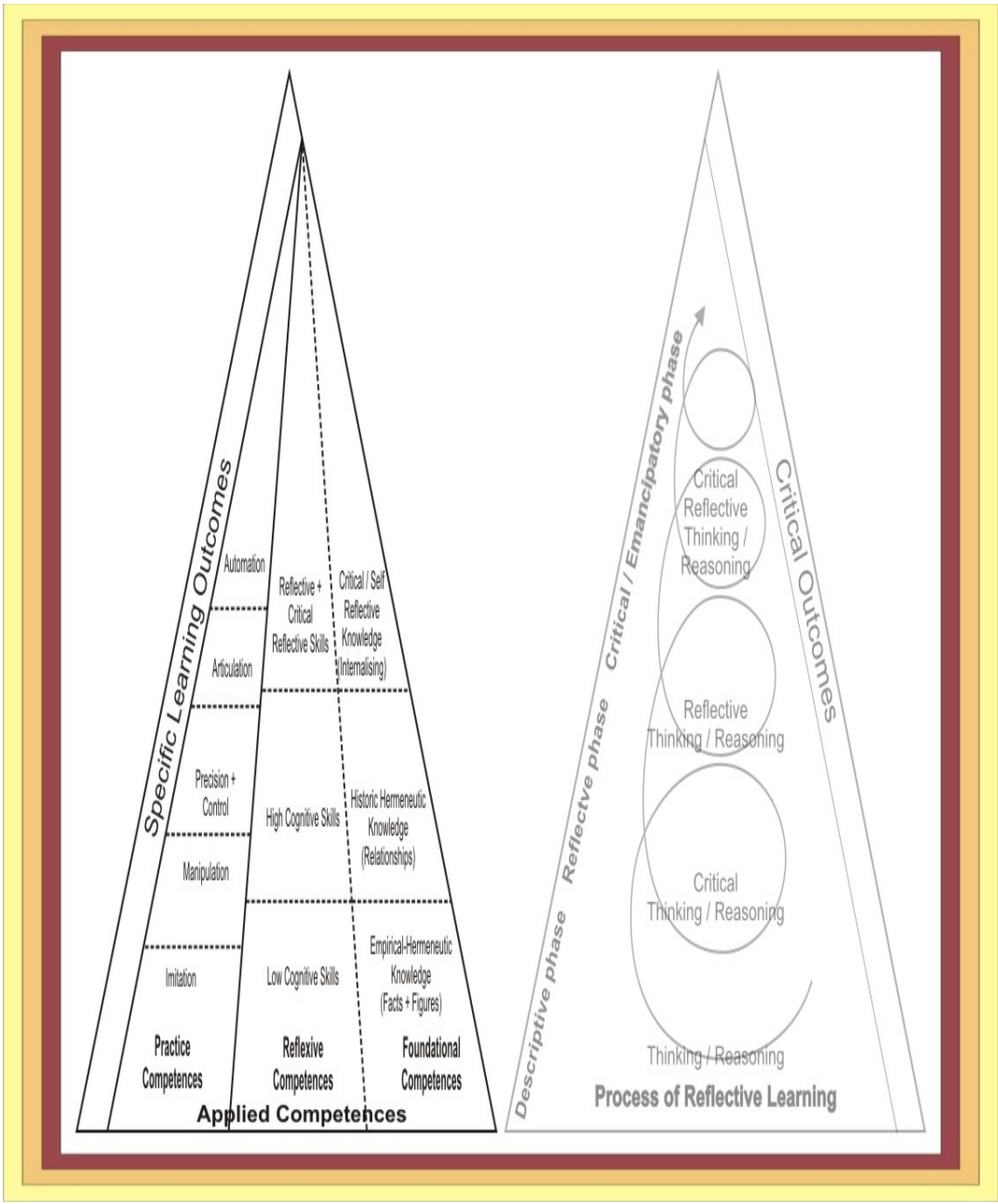

Figure 4.2: Applied competences

4.5 PROFESSIONAL CHARACTERISTICS AND REFLECTIVE LEARNING

As reflective learning is a conscious process of examination by an *individual* of what occurs in a learning experience, in terms of thoughts, feelings and/or actions, compared with underlying beliefs, assumptions, knowledge and the particular context resulting in a changed perspective and consequent changes in practice, the *person* involved is central to the whole process. This implies that the competences required for reflective learning cannot be addressed without considering the characteristics of this person. Professional characteristics are those characteristics that determine how a person perceives knowledge, uses it and applies skills in a particular context.

Professional characteristics are related to a person's value system, emotional status and core perception of the world and the self and that person's resulting interaction with the outside world. The following discussion is related to values and worldview, self-perception and emotional status and interaction with the outside world to identify and clarify the concepts regarding professional characteristics associated with reflective learning. The professional characteristics expected of reflective neonatal nurses are addressed in Chapter 5.

4.5.1 Values and worldview

Every person has a system of beliefs and values and a way of seeing the world. Values are assertions of what an individual thinks are important, the things for which that person is prepared to suffer, and which guide the choices he/she makes. Such choices are usually not based on what a person wants to do but what that person believes he/she ought to do. Value systems can be unique to individuals or common to a group of individuals who share similar beliefs. Such shared values give particular meaning to particular cultures, civilisations or groups for example a profession such as nursing. Values give individuals and groups their core characters and form the foundation of human rights (Curtin & Flaherty 1982:8-9). Values guide a person's judgement of what is right, wrong and negotiable, which in turn is the basis of the ethics and ethical decision-making of the professional nurse (Mellish 1988:104-105; Searle 1988:123).

Values and world-perceptions identified in literature relevant to reflective learning and reflective practice, include a positive attitude, value for life, morality and moral integrity, confidence in interpretation of what is right and wrong, dignity, respect for others and their

property, respect and recognition of other values and views, empathy and concern for others, appreciation for nature, respect for religious convictions, respect for authority, recognition of human rights and a passion for life (Olivier 2002:39-40; Smith & Lovat 2003:55; Van Aswegen *et al*. 2000:130; Van der Horst & McDonald 2001:35-41).

In adult students values and world-perceptions are usually formed. The values and world-perceptions are also abstract and implicit, which makes it very difficult to assess. However, the researcher believes that values and world views must be recognised in facilitating reflective learning, as they are among the main driving force for choices and behaviour in individuals and therefore in their execution of nursing practice.

4.5.2 Self-perception and emotional status

The values and world views of individuals are assumed to guide their choices, but their perceptions of themselves and their emotional status also have a significant influence on how they make and implement their choices in the real world, including learning and practising nursing. Self-perception and emotions often go hand-in-hand, but emotions can be easily influenced by the individual's circumstances to various extents and for various periods, while self-perception is usually stable or only changes slowly over an extended period of time.

An individual's self-perception or self-esteem has three dimensions, namely competence, worth and control. Competence in this regard is the belief an individual has that he/she can accomplish tasks and achieve goals; worth is the extent to which an individual likes and values him- / herself; and control is the degree to which an individual feels he/she can influence the events around him/her. Persons with high self-esteem are more confident in their learning abilities and tend to display greater interest and motivation in class, while persons with low self-esteem are characterised by feelings of inadequacy, fear of rejection, dependence on others and loss of control over events. An individual's self-perception and emotions create his/her individual needs at any given time (Henniger 2004:132-133).

Emotion is central to the process of rational thought: what a person learns is organised by his/her emotions. Positive emotions, a sense of well-being and a state of relaxed alertness promote the process of learning, while negative emotions such as depression, anxiety and feeling threatened inhibit learning (Gravett 2004:38-39).

The self-perception and emotional states that support reflective learning are (Olivier 2002:39-40; Smith & Lovat 2003:55; Van Aswegen *et al*. 2000:130; Van der Horst & McDonald 2001:35-41):

- self-confidence,
- self-respect,
- internal motivation,
- self-discipline,
- honest self-evaluation,
- devotion to truth against self-interest,
- emotional stability and stability of character,
- a need for continuous personal and professional growth,
- courage and perseverance,
- being willing to take risks,
- remaining clear about issues,
- acknowledging ones own competences,
- taking responsibility for ones own life,
- accepting accountability for ones decisions and activities, and
- being able to cope with challenge, stress, change, frustrations, emotional turmoil and death.

An individual's self-perception and emotional status play a very important role in his/her interaction with the outside world. For example, a person with good self-image and confidence tends to be open to suggestions, cope well with criticism and make decisions easily. In contrast, a person with poor self-image tends to take criticism personally and be more concerned about what others say about a decision than about whether the decision is the best for the situation. An example of an emotional state that powerfully influences a person's interaction with the outside world is depression, which inhibits the ability to improve practice (Henniger 2004:132-133; Van der Horst & McDonald 2001:35-41).

4.5.3 Interaction with the outside world

An individual's interaction with the outside world can be seen in how he/she presents him- / herself and how others perceive him/her, in other words his/her observable attitudes and behaviour. This interaction with the world is a result of the individual's values and world view,

self-perception and emotional state, foundational knowledge, practical competences and reflexive competences, as discussed earlier in this chapter.

An individual's observable attitudes and behaviour manifest in his/her verbal and non-verbal communication with others, in written texts and in observable actions in his/her practice. These manifestations can be observed and, in the context of reflective learning, used to classify individuals as non-reflective practitioners, reflective practitioners or critically reflective practitioners. These three types of practitioners will now be briefly discussed, as they are related to the different levels of applied competence and the phases of reflective learning.

4.5.3.1 Non-reflective practitioners

Wong *et al*. (1995:48-57) studied diary entries of nursing practitioners and describe the features of non-reflective practitioners. Such practitioners tend to:

- be very descriptive without analysing their experiences,
- make assumptions without trying to test them for validity,
- view situations in a relatively straightforward way without considering contextual factors,
- use mostly concrete thinking rather than abstract thinking, and
- describe their experiences impersonally as if in an academic paper.

Duke and Appleton (2000:1557-1568) stress that non-reflective practitioners operate at the level of action, and their thinking is characterised by descriptive accounts, invalid assumptions and unsupported opinions.

Foster and Greenwood (1998:170) describe non-reflective practitioners as 'routinised nurses' rather than 'reflective nurses'. Routinised nurses rely on routine care and 'recipes' to cope with the day-to-day demands of neonatal nursing even if these are unsuitable for a specific patient. Reflective nurses, in comparison, can render care according to the unique needs of the individual neonate by analysing and interpreting cues, weighing evidence and making appropriate clinical decisions through a process of reflection.

Thus, non-reflective practitioners tend to stay in the descriptive phase of the reflective learning process, the main activities of which are thinking and reasoning (refer to Figure 4.1). Their reflexive competences are limited to memory and communication (refer to Figure 4.3) and they depend mainly on empirical-analytical knowledge (refer to Figure 4.4).

4.5.3.2 Reflective practitioners

Reflective practitioners function on the reflective phase of the reflective learning process, the main activities of which are critical thinking / reasoning and reflective thinking / reasoning (refer to Figure 4.1). Their reflexive competences are high-level cognitive and reflective skills (refer to Figure 4.3), using empirical-analytical and historic-hermeneutic knowledge (refer to Figure 4.4).

Waghid (2001:81) mentions that social involvement and discussion, co-operation, mutual attentiveness and responsiveness, respect and appreciation of individual divergence, reasonableness and debate are at the heart of reflexive praxis.

As far as thinking skills are concerned, reflective practitioners have advanced abilities in self-awareness, description, critical analysis, synthesis and evaluation of situations (Atkins & Murphy 1993:1190). They can attend to feelings, make associations, integrate relevant facts and experience, turn experiences into learning opportunities, identify relationships between prior and new knowledge and feelings, modify existing knowledge to new situations, and arrive at insights and possibly ideas of some originality. (Duke & Appleton 2000:1557-1568, Wong *et al*. 1995:48-57).

Such practitioners can apply reflection-before-action, reflection-in-action and reflection-on-action in nursing practice, and in personal life (Foster & Greenwood 1998:169-171). They focus on the 'why' and not the 'how' of their actions (Van Aswegen *et al*. 2000:124). However, they tend not to make the effort to validate assumptions, make knowledge their own or transform their perspectives.

As far as professional characteristics are concerned (American Philosophical Association 1990:315-423; Carroll, Curtis, Higgins, Nicholl, Redmond & Timmins 2002:36-41; Kuiper & Pesut 2004:385; Olivier 2002:39-40; Smith & Lovat 2003:55; Van Aswegen *et al*. 2000:130; Van der Horst & McDonald 2001:35-41) reflective practitioners tend to:

- maintain good personal relationships;
- be receptive and sensitive to others and their needs;
- be caring and compassionate;
- stay responsive;
- share freely;
- be approachable and reasonable;

- acknowledge the achievements of others;
- encourage and support others in handling information and data;
- maintain confidentiality;
- respect rules, authority and principles or structure;
- be assertive and demonstrate leadership, while remaining able to work in a team if necessary;
- stay inquisitive and interested in their field of specialisation and the world;
- be open-minded and flexible and adapt to change;
- be proactive;
- be willing to reconsider;
- be honest, fair, reliable and trustworthy;
- persistent;
- manage time, situations and incidents efficiently
- prepared to sacrifice if necessary;
- creative, imaginative, innovative and insightful;
- orderly in complex matters;
- dynamic; and
- professional at all times.

As far as learning is concerned, reflective neonatal nurses tend to (Alsop 2005:182-183; Driscoll & Teh 2001:98, Rolfe 2000:155-163; Van Aswegen *et al*. 2000:126):

- have specialised theoretical knowledge and clinical skills in their field of specialisation or interest, in addition to general skills of critical thinking, decision-making and self-directed learning;
- practice nursing as an art;
- be adaptable, flexible and open-minded;
- acknowledge a need for personal growth;
- be willing to learn from practice;
- 'replay' aspects of practice;
- be aware of conditions necessary for reflection to occur;
- believe that change is possible;
- be honest and describe clinical practice in detail before analysing problems;
- articulate what happens in practice;
- not be defensive about their own practice;
- accept that knowledge can emerge from within or outside clinical practice;

- recognise consequences of reflection;
- be courageous in acting on reflection;
- be lifelong learners;
- see change as a challenge;
- take responsibility to ensure others benefit from their expertise;
- draw others into debate about practice;
- support peer and team learning; and
- encourage reflective processes.

Reflective practitioners can integrate theory with practice and knowledge with skills to address practice both in its technological and rational aspects and its non-technological, non-rational aspects, meeting the unique needs of the patient as a person (Teekman 2000:1125-1135).

Rolfe (2000:228) describes a reflective nurse as follows:

> She knows her patients intimately as people rather than statistics… This knowing goes far beyond the social. It is founded on a deep therapeutic relationship and a scientific process of coming to understand patients as dynamic, biopsychosocial systems on the one hand, and as unique individual persons on the other.

Reflective practitioners engage in reflective practice, which is more than just applying rational and evidence-based knowledge and skills; it also includes experience and personal growth, based on reflection-before-action, reflection-in-action and reflection-on-action, to the benefit of the community (Foster & Greenwood 1998:166, Jarvis 1992:177-178). They use theoretical knowledge, previous experiences and personal perspectives when making decisions and caring for patients (Greenwood *et al*. 2000:1106). They can respond to changing situations and do not rely on the use of technical rational knowledge alone (Reid 1993:305).

According to Alsop (2005:182), though some people are more naturally reflective than others, reflection is a skill that can be developed, practised and refined.

4.5.3.3 Critically reflective practitioners

In addition to the skills and characteristics of reflective practitioners, critically reflective practitioners have other characteristics: they function in the critically reflective or emancipatory phase of the reflective learning process, the main activities of which are critical reflective thinking / reasoning (refer to Figure 4.1). Their reflexive competences include critical reflective

skills (refer to Figure 4.3), based on empirical-analytical, historic-hermeneutic and critical / self-reflective knowledge (refer to Figure 4.4).

Critically reflective practitioners reflect at the levels of validation, appropriation and/or outcome, as well as at all lower levels (Wong *et al.* 1995:48-57). As far as learning is concerned, critically reflective practitioners can:

- critically evaluate experiences and themselves;
- frame a problem in its context;
- adopt a wide and multi-dimensional perspective in dealing with issues;
- pursue alternative views or possibilities by drawing on a number of resources, including prior knowledge, existing information and literature;
- be courageous in trying out different methods;
- be amenable to change and decline 'habitualisation' of practice; and
- not take things for granted.

As far as practical skills are concerned, critically reflective practitioners can integrate experience with discussion, frame the problem in context, look at alternative possibilities, draw on a wide number of resources, and practice at the level of validation, appropriation and/or outcome of reflection (Duke & Appleton 2000:1557-1568).

Hillier (2002:23,25) argues that critically reflective practitioners are competent professionals who seek to improve their practice and can adapt to the different social contexts in which they find themselves. They are able to take control of their professional practice, and acknowledge what they are able to transform and what not through a truly emancipatory process.

Conway (in Kuiper & Pesut 2004:386) describes critical reflective practitioners as humanistic existentialists with a holistic, non-traditional view and a humanistic philosophy of practice. They exemplify self-awareness and risk-taking, and exert power and influence in their practice areas. Critical reflective practitioners are able to work out schemes for putting into action what they have learned personally (Driscoll & Teh 2001:98).

Van Aswegen *et al*. (2000:130-131) states that the 'transformative intellectual' or 'critical reflective practitioner' relies less on personal fictions and conventional wisdom for personal and professional conduct and more on critical structures of knowledge considered in the context of ideological possibilities and probabilities. They are role models for specific behaviour of critical reflective practice and strive to be self-regulated, independent,

empowered and caring in practice. They show strong commitment to improving practice and learning, and engage in continuous observation, critical thinking and reflection to challenge pre-conceived ideas. They are change agents who are self-empowered through critical-reflective processes and are willing to empower others to discover and use their unique skills, knowledge, experience and creativity. They are continuously trying to ensure that the outcome of any action is close to what is anticipated by the theory and previous experience combined.

4.5.3.4 Most suited practitioners for reflective nursing practice

The researcher argues that non-reflective practitioners are not suited to becoming specialised neonatal nurses, as they will not be able to make the practical decisions, which can be the difference between life and death, or can have long-term sequelae for infants and their families. This does not mean that such a person should not be allowed to nurse in a NICU. These nurses can have other sought-after qualities, such as warmth, caring and reliability, but will need supervision to function efficiently.

Reflective practitioners are suitable for neonatal nursing, as they will be able to integrate the relevant information and take appropriate action to the advantage of the infants and their families. These nurses will probably provide quality holistic neonatal care and could take charge of the unit if necessary.

Critically reflective practitioners, however, have the potential to become leaders and change agents in neonatal nursing practice. They will be able not only to provide quality holistic neonatal care but also to lead others to improve their practice.

All three of these groups have a place in neonatal nursing practice, but reflective and critically reflective practitioners have most potential to specialise as neonatal nurses.

Reflective and critically reflective nurses do *not* (Baker 1996:21, Getliffe 1996:363, Greenwood *et al*. 2000:1107, Powell 1989:826):

- hold technical-rational knowledge to be the most important type of knowledge;
- have a thin knowledge-base;
- fail to at least attempt to learn from experience;
- remain ignorant of gaps in or opportunities of learning;
- demonstrate rigidity in their practice or unwillingness to change;

- feel anxious about having feelings or fail to recognise the role of their feelings in their decisions;
- see all patients as the same and nursing as a group of tasks to be done; and
- resort to routine nursing practices to protect themselves from the risks associated with 'individualised' clinical decisions.

4.5.4 Lifelong learning

Reflective practice as a significant outcome of reflective learning is advantageous for the patient, the community and the student (Buckingham & Palmer 2005:203-214). One such significant outcome for neonatal nursing students can be lifelong learning.

Lifelong learning and a transformation of training and education have become necessary because "we are embarking on a new age…marked by advanced technologies, driven by computers at the speed of thought, and where knowledge is power" (Maehl 2000:xi). As Maehl (2000:xv) points out, "what we learn no longer lasts a life-time but must be replaced in a few years." This is true globally, including neonatal nursing practice and education.

Buckingham and Palmer (2005:202) comment that the speed of change in science and technology, and improvements in communication systems require all professionals to embrace change, which can be achieved through lifelong learning.

One of the aims of higher education in the South African context is *autonomy of learning* (used synonymously with lifelong learning), defined by the Council on Higher Education (2002:49) as

> a learner's capacity for lifelong learning, i.e. the extent to which a learner can undertake action for learning independently, the extent to which a learner takes responsibility for his/her own learning and the extent to which a learner is self-reflexive about, and can evaluate the quality of his/her learning, and eventually that of others. Progression in this category of learning is from dependence on other-regulation, to full self-regulation, and from close supervision to creative, self-directed learning and the ability to supervise the learning of others.

Buckingham and Palmer (2005:202, 213) describe lifelong learning as constant and dynamic growth and maturation that maximizes potential in the domains of knowledge, attitudes and skills. In professional nursing practice this kind of learning is associated with formal continuing professional development, which aims to improve health and social care services for the benefit of the users of those services. For nurses this is also associated with career

development and is a way of maintaining employability. According to Henniger (2004:369) reflection can lead to significant growth of an individual in a career, keeping that person excited and challenged throughout years in a particular occupation.

Reflective learning is a core skill that informs all aspects of lifelong learning and professional practice (Buckingham & Palmer 2005:203-214; Kuiper & Pesut 2004:382). Reflection is also an important desired characteristic of practice, helps optimise curriculum development and effective programme planning and evaluation, supports clinical decision-making and judgement in client care, and is a key ingredient in a commitment to lifelong learning (Kuiper & Pesut 2004:382).

Buckingham and Palmer (2005:213) say lifelong learning is based on skills such as a belief in self rather than in the power of a position, the ability to collaborate and become connected with new teams in various ways, commitment to the intrinsic excitement of achievement in a particular project that can show results, and the willingness to keep learning.

Without lifelong learning it would be senseless for nurses to specialise in a dynamic and ever-changing field such as neonatal nursing science, for which formal education only provides a foundation. Thereafter the onus is on the individual to remain updated and continue to grow professionally. An important characteristic of adult learners is their need for lifelong learning.

4.6 OUTCOMES OF REFLECTIVE LEARNING

The researcher's definition of reflective learning culminates with the phrase, 'resulting in a changed perspective and consequent changes in practice', which is the actual learning of knowledge and obtaining of competences by the individual that takes place during the different phases of reflective learning.

The outcomes of reflective learning are discussed below under the headings of reflective and critically reflective practice, and lifelong learning. The discussion is based on relevant literature, and assumes that reflective practice is not a guaranteed or automatic outcome of reflective learning, but rather a potent potential gained through such learning, which yet can be influenced by the particular context or the person/s involved.

4.6.1 Reflective and critical reflective practice

As Chiu (2006:184) points out, the exact link between critical reflection and reflective practice is not yet clear, nor is the exact difference between reflective and critically reflective practice. For that reason these two concepts are often used as synonyms, and are discussed together in this section.

Nursing practice is characterised by complexity, uncertainty, instability, uniqueness and value conflicts. Theories to resolve these problems are often not readily available and practitioners are forced to reframe problems to find solutions (Getliffe 1996:362). Change is endemic in nursing practice (Reid 1993:309), and the existence of a theory-practice gap is a given (Getliffe 1996:362; Powell 1989:824-832; Reid 1993:306). Even where a relevant theory exists, professional practice involves not a simple linear application of this theory but rather a much more complex process involving professionals' juggling of situational demands, intuition, experiences and knowledge (Kim 1999:1206).

Reflective practice or praxis is one way of addressing the challenges of complex, dynamic and constantly changing nursing practice (Chiu 2006:184). Such practice is an approach rather than a state. It enables practitioners to deal effectively with the immediacy of care of individuals, gain real understanding of practice, improve their own practice and change nursing practice for the future. Engaging consciously and conscientiously in reflection should therefore assist advanced practitioners not only to develop their own professional practice but also to contribute to the development of the nursing profession as a whole (Alsop 2005:174-177).

Johns (1995:226-234) says the essential purpose of reflective practice is "to enable the practitioner to access, understand and learn through his or her lived experiences and, as a consequence, to take congruent action towards developing increasing effectiveness within the context of what is understood as desirable practice."

Powell (1989:830) describes professional practice as a continuum between purely technical-rationality-based practice on the one side and reflective practice on the other side. The former is mainly concerned with empirical laws, while the latter is based on research in practice as a guiding force. Students usually begin with technical-rationality-based practice and develop to reflective practice.

Smith and Lovat (2003:90) describe praxis as the sort of practice used by an individual who has reflected on and gained from all three kinds of knowledge (empirical-analytical, historical-hermeneutic and critical- or self-reflective knowledge), who then sets out to be a participant in and agent of change.

Reid (1993:306) defines reflective practice as ”the process of using reflection to influence how practitioners approach and respond to varying situations.” Reflection questions why outcomes occur and widens what is perceived as legitimate knowledge, by including ‘softer knowledge’ as well as traditionally ‘hard science’. The potential outcomes of such practice include the closing of the theory-practice gap, ability of practitioners to respond to changing situations, continuous development of practitioners and prevention of habitualisation (Reid 1993:305-309).

Reflective practice is thus an important educational tool in the training of nurses (Reid 1993:305-309). Such practice is ”the process of turning thoughtful practice into a potential learning situation …the utilisation of good theory in practice in what must always be a situation of probability” (Jarvis 1992:178). In such learning and practice, practitioners can adopt the different social contexts in which they find themselves (Hillier 2002:23).

Reflective practice is also very valuable in practice, particularly in situations about which not much knowledge is available, or when different practitioners have diverging approaches, or when controversy, misunderstanding and/or disharmony arise between practitioners or between practitioners and clients (Kim, 1999:1207).

Such problems can be turned into opportunities for improvement, since, as Jarvis (1992:178) describes, reflective practice begins when practitioners identify or experience a problem in their practice and have to learn afresh about the knowledge, skills and attitudes that their practice demands. A problem can be identified by the person him- / herself or by another person. Reflective practice implies meaningful conscious action in a specific field, a practitioner’s seeking to learn from practice and so improves it constantly. In this way a person becomes an expert. Habituation is a constant risk, but can be minimised through interaction between people, since each person is unique and interpersonal relationships help keep the focus on human beings as persons. A reflective nurse should carefully plan and monitor his/her actions, even if these are routine, and always consider each patient as a unique client and not a ‘case’ (Jarvis, 1992:177).

Van Aswegen *et al*. (2000:117-134) summarise critical reflective practice as follows:

> Critical reflective practice is thus more than thoughtful practice. It is practice that seeks to analyse the situation of professional performance so that they can become potential learning situations. Critical reflective practice is the utilization of good theory in practice in what must always be a situation of probability. The critical reflective practitioner is continuously trying to ensure that the outcome of any action is close to what is anticipated by the theory and the previous experience combined. Critical reflective thinking as praxis, requires action, involvement and risk taking.

The advantages and positive outcomes of reflective practice include the following:

- Development of knowledge through reflection, which contributes to practice-generated theory; this 'inside-out' growth of theory complements the usual application of theory form 'outside-in', and helps narrow the theory-practice gap (Driscoll & Teh 2001:97).
- As a powerful educational tool, reflection can facilitate the integration of theory and practice, increase self-awareness, enhance critical thinking, challenge habitual practice and identify tacit knowledge (Burton 2000:1009-1017; Foster & Greenwood 1998:165-172; Hallet 1997:103-110; Kuiper & Pesut 2004:386).
- Reflective practice helps create a transformative environment where students are accountable for thinking for themselves and trying to interpret before being told; they have to become aware of their own understandings, each other's understanding and their educator's understandings – all learning from each other and creating ongoing change to enhance quality (Waghid 2001:82).
- Reflection-in-action helps make professional practice more effective, both for present clients / patients and future ones, because it teaches practitioners to learn from practice (Powell 1989:826).
- Reflective activities encourage critical thinking abilities and therefore clinical decision-making (Burton 2000:1013; Scanlan & Chernomas 1997:1138-1143).
- Reflective practice can lead the professional to understand of how historical, social, cultural, cognitive and personal experiences contribute to professional knowledge acquisition and practice (Wilkinson, 1999:36).
- Reflective practice draws from situated, individual instances of nursing practice to develop and augment the knowledge necessary to improve practice, because it recognises that practice involves not only using knowledge but also gaining new knowledge as well. Nursing as a profession is entering a new era of the fusion and synthesis of knowledge for its application to practice (Kim 1999:1205).
- Reflecting on the outcome of practice can lead to trying out new skills and new, creative ways of doing things (Jarvis, 1992:178).

- Reflective practice is characterised by autonomous, responsible and informed action (Van Aswegen *et al*. 2000:130).
- Reflective practice entails critique of practice and so helps detect conflicts, distortions and inconsistencies and foster emancipatory and change processes (Kim 1999:1205-1212).

Driscoll and Teh (2001:98) summarise all these advantages, saying that reflective practice enhances rather than competes with traditional forms of knowledge, can generate practice-based knowledge, values what practitioners do and why they do it, helps practitioners to make more sense of difficult and complex practice, supports practitioners by offering a formal opportunity to talk to peers about practice, improves patient care delivery at the centre of reflective conversation, focuses practitioners on ways of becoming more effective, is a reminder that there is no end point to learning about everyday practice, offers practice-based learning activities that can contribute to continuing professional development of qualified practitioners, and offers an inquiring and evidence-based approach to clinical practice.

Practice without reflection is characterised by resistance to change, unwillingness to acknowledge or implement research, lack of theoretical development in clinical practice (Getliffe 1996:370), and habitual or 'routinised' practice (Foster & Greenwood 1998:165-172). Reflective practice however meets the demands of a specific context through more than just application of rational and evidence-based knowledge and skills; it includes experience and personal growth; is based on the underlying processes of reflective learning and the hierarchy of competences as discussed earlier in this chapter; and has positive outcomes for the clients or community.

Reflective practice is not without problems, as is discussed in section 4.6.3 on the barriers to reflective learning.

4.6.2 Outcomes in terms of South Africa's higher education framework

The South African higher education framework is discussed in Chapter 3 of this study. As discussed there, SAQA specifies that "the learning outcomes of all South African qualifications should include critical cross-field or generic skills to promote lifelong learning and discipline, domain-specific or specialised knowledge, skills and reflexivity" (Ministry of Education 2004:7). According to SAQA, three types of outcome are distinguished in outcomes-based

programmes, namely critical outcomes, specific / learning outcomes and end-product outcomes. The outcomes integrated parts of a whole, and will be briefly discussed.

4.6.2.1 Critical outcomes

The term 'critical outcomes' is used in this study for both 'critical outcomes' and 'critical cross-field outcomes', which are used interchangeably in the literature.

Critical outcomes are the 'soft' and intangible outcomes that drive all learning processes and empower students. They are competences that are useful in more than one sphere of life, for example critical and lateral thinking, problem-solving, life skills and the ability to effectively interact with others. They are generic, cross-curricular, broad and linked to all learning areas (Olivier 2002:32-34), and focus on the capacity to apply knowledge, skills and attitudes in an integrated way (Van der Horst and McDonald 2001:257).

The generic outcomes determined by SAQA for all teaching and learning include (Higher Education Quality Committee 2002b:34; Olivier 2002:33-34; South Africa 1995):

a) Identifying and solving problems in which responses show that responsible decisions using critical and creative thinking have been made;
b) Working effectively with others as a member of a team, group, organisation or community;
c) Organising and managing oneself and ones activities responsibly and effectively;
d) Collecting, analysing, organising and critically evaluating information;
e) Communicating effectively using visual, mathematical and/or language skills in the modes of oral and/or written persuasion;
f) Using science and technology effectively and critically, showing responsibility towards the environment and the health of others;
g) Demonstrating an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation; and
h) Contributing to the full personal development of each learner and the social and economic development of society as a whole, by making the underlying intention of any programme of learning known and to make an individual aware of the importance of:
   (i) Reflecting on and exploring a variety of strategies to learn more effectively,
   (ii) Participating as responsible citizens in the life of local, national and global communities,
   (iii) Being culturally and aesthetically sensitive across a range of social contexts,
   (iv) Exploring education and career opportunities, and

(v) Developing entrepreneurial opportunities.

The hierarchical process of reflective learning (as discussed in section 3.3) is also generic, cross-curricular and linked to all learning areas, and includes the various activities that underpin critical outcomes. The actual outcomes of the reflective learning process correlate with the critical outcomes as described above.

4.6.2.2 Specific learning outcomes

Specific learning outcomes, also referred to as applied competences, are the knowledge, skills and values relevant within a specific context. They are embedded in a particular learning area, are contextually demonstrated and contribute to the achievement of critical outcomes (Olivier 2002:32-33; Van der Horst & McDonald 2001:259).

Thus students should be able to demonstrate these competences in a specific context in particular areas of learning at a specific level after completing their training. Specific or learning outcomes are a comprehensive package of achievement that constitute a successful learning programme, and so provide (Olivier 2002:36):

- a mode to assess the progress of students,
- the basis for selecting subject matter needed to achieve outcomes,
- the basis for selecting cognitive learning objectives and technical skills that will enable students to achieve end-product outcomes; and
- together with assessment criteria, content for formal unit standards, credits and qualifications.

The knowledge, skills and attitudes that make up specific or learning outcomes can be divided into foundational, practical and reflexive competences (therefore the applied competences) (Council on Higher Education 2002:48-49; Geyser 2004b:139-156), which in this study are explored as associated with reflective learning (refer to section 4.4). Chapter 5 of this study discusses those applied competences expected of reflective neonatal nurses that form the basis of the education programme.

4.6.2.3 End-product outcomes

End-product outcomes are the final results of training in the form of products, services or decisions. These end-product outcomes combine all critical and specific outcomes in a unity.

End-product outcomes only become observable after students have followed a range of learning activities (Olivier 2002:32-33, 41).

The end-product outcomes relevant in this study are the changed perspectives of the individuals involved, which become observable as professional characteristics (discussed in section 4.5) and reflective practice (discussed in section 4.6.1).

4.6.3 Barriers to reflective learning

Various aspects of reflective learning have been discussed in this chapter: neonatal nursing students, the underlying processes and levels of reflective learning, the competences and professional characteristics associated with reflective learning, and the outcomes of reflective learning. The alternative or down-side of reflective learning though is that it is not without problems. These problems are barriers to reflective learning, and can be grouped into those associated with the individuals involved, with the particular circumstances and with the programme.

4.6.3.1 Barriers related to individuals involved

Some of the biggest barriers to reflective learning depend on the people involved, particularly their skills and individual characteristics:

- Different skills are required in the different phases of reflective learning, varying from fairly low-level cognitive skills in the descriptive phase to complex metacognitive skills in the critical or emancipatory phase. Not all individuals have these skills. If students are unable to be reflective, they resist change and are unwilling to develop theory in practice or acknowledge research (Getliffe 1996:370). Wong *et al.* (1995:48-57) describe such people as non-reflective practitioners, who tend to focus on concrete descriptions and have difficulty to reflect on their experiences in practice.
- Previous learned knowledge and competences may help during reflective learning in some cases and hinder in others (Mann 2005:318). While it may be liberating to learn from and challenge the way we practice, it might also be very difficult to 'unlearn' what has been done routinely (Driscoll & Teh 2001:98).
- Sometimes people deny their ignorance, or are simply satisfied with their current level of performance whatever it is. This kind of certainty about a situation premature closes off

learning without accommodation or attempts at reflection, prevents valuing experiences as learning opportunities (Kuiper & Pesut 2004:386).

- Conversely, reflection on negative situations can promote helplessness, hopelessness, loss of self-confidence and damage self-esteem (Kuiper & Pesut 2004: 386).
- The processes of reflection can be emotionally problematic. A person's memory can be uncertain and biased. Reflection can trigger anxiety and other painful emotions. This can cause students to feel threatened or exposed and vulnerable, and to react extremely to giving or receiving feedback. Competent support and trusting relationships are needed for this kind of education. Psychological morbidity is always a risk (Burton 2000:1014-1015).
- Individuals often fear standing out from the crowd, challenging conformity in practice, being a lone voice, being less satisfied with the way practice is carried out, wanting to find out more about why things are done a particular way, being labelled a troublemaker by suggesting alternative ways of working, being faced with making difficult choices, not having knowledge of how to proceed with an idea, having more questions than answers, finding that others may not have answers to practice concerns, and rocking the boat in relation to future promotion or ambitions. All these fears can inhibit reflective learning and practice (Driscoll & Teh 2001:98).
- Learning from reflective thinking does not happen automatically, but requires active involvement, unveiling of personal feelings and self-examination. This can create anxiety and conflict in the individual (Foster & Greenwood 1998:166; Getliffe 1996:366; Teekman 2000:1125-1135). Students may view the inclusion of the affective domain in reflective education as an invasion of privacy (Baker 1996:21).
- Interpersonal factors can also hinder reflective learning, if the honesty and openness of discussions is limited by poor student-educator relationships, group dynamics or motivational factors (Getliffe 1996:370-371).

These barriers decrease engagement in reflective learning due to inability, unwillingness or active resistance. The educator must be sensitive to these barriers when facilitating reflective learning and manage them according to the particular situation's needs.

4.6.3.2 Barriers related to circumstances

Reflection is an intentional event that takes effort, time, commitment and adequate resources, and finding these to engage in the process can be a burden, depending on a student's circumstances (Alsop 2005:182; Burton 2000:1014; Driscoll & Teh 2001:98; Getliffe 1996:370-371). Other such barriers are a context that does not support standards of professional and

personal values, short staffing (Kuiper & Pesut 2004:386) and peer pressure to keep things as they are (Driscoll & Teh 2001:98). Ethical issues such as maintenance of patient and student confidentiality and privacy can become problematic during reflective discussions and sharing (Burton 2000:1014-1015; Carroll *et al*. 2002:36-41).

Teekman (2000:1125-1135) emphasises the importance of a clinical environment that is supportive towards the students' needs. Educators as reflective practitioners have to find the most appropriate way of dealing with each situation to overcome these barriers.

4.6.3.3 Barriers related to the educational programme

Course-related barriers include lack of consensus as to what skills to teach or emphasise because of diversity of definitions of reflective learning; failure to identify the necessary cognitive operations; inappropriate methods of instruction; attempting to teach too much in too little time, and poor quality of assessment to evaluate achievement (Ulsenheimer, Bailey, McCullough, Thornton & Warden 1997:151).

Other barriers include lack of managerial support and educational expertise (Foster & Greenwood 1998:166), lack of theoretical knowledge of reflection and skills development, necessity for thorough preparation by students, reflective thinking in journals that is not necessarily put into practice, difficulty in assessing reflective abilities, and subjectivity in assessment (Burton 2000:1014-1015).

4.7 SUMMARY

Reflective learning was discussed in this chapter in terms of neonatal nursing students, relevant concepts and the different levels or spheres of the process of reflective learning. The discussion also covered the competences and professional characteristics associated with reflective learning, outcomes of reflective learning and some barriers to reflective learning. Through the discussions, concepts were identified and clarified to add to the development of parts of the model for educating reflective neonatal nurses, especially those relevant to the recipients (neonatal nurses), the purpose (meaning of specific or learning outcomes, critical outcomes and end-product outcomes) and the dynamics (reflective learning). The next chapter identifies and clarifies concepts from neonatal nursing practice of relevance for educating reflective neonatal nurses.

CHAPTER 5:
COMPETENCES AND PROFESSIONAL CHARACTERISTICS EXPECTED OF REFLECTIVE NEONATAL NURSES

5.1 INTRODUCTION

The first phase of this study focused on identifying and clarifying concepts related to the education of reflective neonatal nurses in a South African context. This phase was addressed in the two previous chapters, in which a thorough literature study allowed the South African higher education system to be explored, especially as relevant to post-basic nursing education, neonatal nursing students and reflective learning to be broadly described.

This chapter discusses the second phase of the study, namely clarifying and describing concepts in neonatal nursing practice that are important for educating reflective neonatal nurses. The following concepts related to neonatal nursing practice were identified: neonatal patients, neonatal nursing practice environment, family-centred care, multi-professional teamwork and professional nursing practice. Based on these concepts, competences and professional characteristics expected of reflective neonatal nurses were formulated.

The objectives of this phase 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 programme (applied competences and professional characteristics), and to deduce the outline the contents of an educational programme for reflective neonatal nurses. These objectives contributed to the development of a model for education of reflective neonatal nurses, particularly the purpose (content outline and competences expected of reflective neonatal nurses), framework (neonatal nursing practice in the South African context) and recipient (professional characteristics expected of reflective neonatal nurses).

The research design and methodology were described in Chapter 2. The attributes and demands were verified with literature control. The competences and professional characteristics expected of reflective neonatal nurses were deduced from these described attributes and demands, and were evaluated by means of peer review.

5.2 ATTRIBUTES AND DEMANDS OF NEONATAL NURSING PRACTICE AND COMPETENCES EXPECTED FROM REFLECTIVE NEONATAL NURSES

An *attribute* is 'a quality or property inseparable from anything; that which can be predicated of anything' (*Webster's New Dictionary and Thesaurus* 1990:48), or 'a quality ascribed to person or thing; characteristic quality; object regularly associated with person, etc.' (*The Oxford Combined Dictionary of Current English & Modern English Usage* 1987:15). The term 'attribute' is used in this study to mean a characteristic or quality that can be predicated or associated with neonatal nursing practice.

A *demand* is defined as 'the asking for what is due; an asking for with authority; an urgent claim; desire shown by consumers' (*Webster's New Dictionary and Thesaurus* 1990:156); 'request made as of right or peremptorily; urgent claim; desire of would-be purchasers or users for commodity' (*The Oxford Combined Dictionary of Current English & Modern English Usage* 1987:71). As a verb, 'demand' is defined as 'require; call for (tasks that demand special knowledge); requiring skill or effort' (*The Oxford Combined Dictionary of Current English & Modern English Usage* 1987:71). The term 'demand' is used in this study to mean what is required of, called for or requested from reflective neonatal nurses as a result of the attributes of neonatal nursing practice.

The concepts *competence/s, professional characteristics* and *process of reflective learning* were clarified in Chapter 4. Competences include reflexive, foundational and practical competences. Reflexive competences are not discussed separately in this chapter, as they comprise the abilities (low cognitive, high cognitive, reflective and critical reflective skills) inherent to foundational competences. Thus foundational and practical competences, with professional characteristics, are the focuses of this chapter. It is important to note that reflective learning drives the process of developing these competences; this kind of learning involves critical, clinical, reflective and critical-reflective thinking/reasoning.

Foundational competences includes the different levels of knowledge, namely:

- empirical-analytical knowledge, which is concerned with facts and figures and their descriptions (Duan 2006:4; Smith & Lovat 2003:88-90; Van der Horst & McDonald 2001:36-39),
- historical-hermeneutic knowledge, which involves applying, manipulating and using knowledge (critical thinking and reasoning), as well as giving it meaning within the context and against the background of ones own experience and personal knowledge (Duan

2006:4; McEwen & Wills 2002:15; Smith & Lovat 2003:88-90; Van der Horst & McDonald 2001:36-39) and

- critical or self-reflective knowledge, also known as internalised knowledge, which arises from the combining of experiential knowledge and research-based knowledge (Endres 2005:1-9; Jarvis 1992:178; Rolfe 2000:175-178).

Practical competences are the abilities to successfully execute technical tasks; it requires coordination (for example eye-hand coordination) and the relevant gross and/or fine psychomotor skills (Duan 2006:10; Olivier, 2002:37-38; Van der Horst & McDonald, 2001:36). To be competent practically an individual nurse needs to know subject-specific skills and algorithms (nursing skills), subject-specific techniques and methods (nursing process), and also the criteria for determining when to use appropriate procedures such as diagnostic and laboratory tests (Duan 2006:4).

The categories into which the data is grouped, which were identified from neonatal nursing practice, are: neonatal patients, neonatal nursing practice environment, family-centred care, multi-professional teamwork and professional nursing practice. The data will now be presented.

5.2.1 Neonatal patients

Neonatal patients are the core concern of neonatal nursing practice. They are an exceptionally vulnerable and high-risk group of patients due to their total dependence, poor communication skills and unique mental health needs, as well as their unique anatomical features and physiological needs, their immaturity and the wide range of neonatal health problems and congenital conditions to which they are prone.

Factors that contribute to the vulnerability of neonatal patients are their total dependence on others for care, their poor ability to communicate and their unique mental health needs. For these reasons they are protected legally by the Bill of Rights in the Constitution of South Africa, Act 108 of 1996 (South Africa 1996:13-14), the Child Care Act no. 74 of 1983 (South Africa 1983), and the Children's Bill (South Africa 2003). Infants in their capacity as 'patients with special needs', who are dependant on nurses for their care, are also protected by nursing legislation (SANC 2004:13-14; SANC 1992b:1-5).

The importance of physiological and behavioural cues as neonatal infants' attempts to communicate has been widely discussed in recent years, and guidelines for interpreting infants' language or stress cues have been developed as part of the developmental care approach (Als & Lawhon 2004:47-64; Gardner & Goldson 2002:219-282; Harrison, Roane & Weaver 2004:236-245; Hennessy 2004:29.31-29.34; Modrcin-McCarthy, McCue & Walker 1997:62-71; Raines 1993:43-48; Symington & Pinelli 2003:1-34; White-Traut 2004:235). These cues must be carefully interpreted, with delicate discrimination between fine nuances, before clinical decisions are based on them. The patient cannot be asked to confirm the nurse's interpretation, but decisions made on this information can have far-reaching implications. Neonatal nurses must therefore show great sensitivity for infants' needs and careful discernment in making clinical judgement.

Neonatal patients' unique mental health needs have also received significant attention in the past decade, especially optimal parent-infant bonding for the infant's long-term well being, safety and security. The literature emphasises improving infants' social and emotional well-being by strengthening relationships with caregivers and promoting age-appropriate social and emotional skills (Gale, Flushman, Heffron & Sweet 2004:65-74; NANN 2004a:22; Siegel, Gardner & Merenstein 2002:725-753). Kenner (2004:403) stresses the fact that

> the relationship between parent-infant attachment and later parenting behaviours has been well established. In addition, the parent-infant attachment is the basis for all the infant's subsequent attachments and is the relationship through which a sense of self is developed. Therefore an important component of nursing care of the high-risk infant is facilitation of parent-infant interaction and attachment.

To address the unique mental health needs of neonatal patients demands a caring and compassionate approach and good interpersonal skills from neonatal nurses.

Neonatal patients' anatomy is very small and vulnerable, and differs significantly from that of adults. The size, appearance and anatomy of neonates also change significantly during different gestational ages as they grow and develop (Joffe & Wright 2002:1-8; Lotas, King & King 2004:89-104; McGrath 2004:105-117). These differences have specific implications for various invasive procedures, including endotracheal intubation, insertion of venous or arterial catheters and ventilation. The more preterm the neonate, the more difficult it is to execute invasive procedures on him/her and the higher the risk of complications (Fletcher & MacDonald 1993; Furdon & Benjamin 2004:135-172; Gardner & Goldson 2002:219-282; Heiss-Harris 2004:342-374; NANN 2004a:13; Poirier Maguire 2004:472-484; Pressler,

Turnage-Carrier & Kenner 2004:1-34). This demands difficult and high-precision practical competences from neonatal nurses.

Neonatal patients have basic physiological needs that must be met, including comfort, nutrition, thermoregulation, ventilation, hygiene and cord care, rest and sleep, a safe environment and care of minor and common newborn problems, which also differ very much from those of other groups of patients. The developmental care approach, which is based on the underlying principle of individualised care for each infant according to individual needs and abilities, is important (Als & Gilkerson 1995:44ccc-44kkk; Gardner & Goldson 2002:219-282; Greenwood *et al*. 2000:1106; Hennessy 2004:29.3-29.40; NANN 2004a:7; Turnage Carrier 2004:236-264; Verklan 2004c:86-91; Zabloudil 1999:46-51). Neonatal nurses must have a sound foundational knowledge of these things, and be competent practically to execute appropriate nursing care interventions.

Neonatal health problems are unique and are often related to the patients' immaturity, which adds to their vulnerability and sensitivity, and results in unpredictable responses to extra-uterine stimuli and treatment. This inability to cope with extra-uterine stimuli and treatment often results in severe adverse outcomes or mortality (Child PPIP Group… 2004; Poirier Maguire 2004:472-484; Pressler, Turnage-Carrier & Kenner 2004:14-19; Symington & Pinelli 2004:1-34; Verklan 2004:80-101). Any or all of a neonate's systems can be immature, including the neurological, respiratory, endocrine and metabolic, gastrointestinal, renal and genito-urinary, cardiovascular, haematological, immune and musculoskeletal systems, and the skin and special senses as discussed by Avery *et al.* (2005), Merenstein and Gardner (2002) and Verklan and Walden (2004).

Neonatal health problems can also be acquired conditions, which are often preventable, such as asphyxia neonatorum (most often associated with difficult or prolonged delivery), intracranial haemorrhage, meconium aspiration syndrome, infections, pathological jaundice, cold injury due to severe hypothermia and trauma due to various causes. These problems are often associated with secondary disturbances of internal homeostasis such as hypoxia, acidosis, hypotension, hypothermia, fluid- and electrolyte disturbances and hypoglycaemia (Avery *et al.* 2005; Maree 2004:31.1-31.88; Merenstein & Gardner 2002; NANN 2004a:13-22; Zukowsky, Goodwin, Askin, Diehl-Jones, Lund, Sadowski, Watson, Stokowski, Horns, Botwinski, Lynam, Verklan, Sterk & Witt 2004:485-932). Asphyxia and trauma at birth are identified in *Saving Babies 2004* (Child PPIP Group … 2004) as the second most common

cause of neonatal deaths (preceded by immaturity) in South Africa, followed by infections as the third most common cause.

A common cause of neonatal morbidity and mortality is congenital conditions. These abnormalities may be apparent or invisible at birth, and may present acutely or progress slowly to deterioration, death or impaired progress. Multiple physiological systems are commonly affected. Examples of congenital conditions include neural tube defects, congenital cardiac defects, Down syndrome, VATER syndrome, tracheo-oesophageal atresia, gastroschisis, cleft lip and palate, metabolic disorders, congenital infections and foetal alcohol syndrome (Avery *et al.* 2005; Matthews & Robin 2002:679-701; Sterk 2004:858-892). Congenital conditions are amongst the top ten causes of neonatal death in South Africa (Child PPIP Group 2004).

The care of these vulnerable and high risk neonatal patients often includes resuscitation, invasive procedures, use of medical technology (for example respiratory support, invasive monitoring, blood gas interpretation and management) and administration of pharmacological substances. The outcomes for these neonates may be good recovery, recovery with morbidity, or mortality. The neonatal patients may be discharged into the care of primary caregivers or may be transferred for specialised treatment to other institutions. Those who are discharged often have special needs that must be taken care of by the primary caregivers (Taquino & Lockridge 1999:64-79).

These attributes of neonatal patients place specific demands on reflective neonatal nurses. Nurses must be able to admit patients with any of the abovementioned conditions, to assess their condition, identify actual and potential problems and make appropriate decisions to the benefit of the patients in terms of planning and implementation of care. Nurses also have to evaluate the effectiveness of any care or treatment and make appropriate adjustments. Providing competent, safe and evidence-based care to this group of patients requires domain-specific foundational and practical competences. Empirical knowledge is not enough, and neonatal nurses will have to have at least historical-hermeneutic knowledge in addition, so that they can make safe decisions about practical interventions.

Reflective neonatal nurses are therefore required to possess at least the specific foundational and practical competences indicated in Table 5.1.

Table 5.1: Foundational and practical competences related to neonatal patients

Foundational competences	Practical competences
Neonatal nurses have to understand and demonstrate insight into the following: • Development and maturation of the fetus and neonate* • Transition from intra-uterine to extra-uterine life* • Anatomy and physiology of neonates according to their gestational age* • Basic needs of neonatal patients • Neonatal communication (i.e. physiological and behavioural cues) • Mental health needs of neonates • Developmental care approach • Aetiology, pathophysiology, clinical presentation and management of neonatal conditions, including conditions related to immaturity, acquired and congenital conditions* • Principles of basic and advanced nursing care of preterm, critically ill, recovering and dying neonates • Basics of medical technology and use thereof in neonatal care • Basic and applied pharmacology • Transport of newborns • Post-discharge care of high risk neonates *(*These are related to all the neonatal systems, including neurological, respiratory, endocrine and metabolic, gastrointestinal, renal and genito-urinary, cardiovascular, haematological, immune and musculoskeletal systems, skin and special senses)*	Neonatal nurses have to be able to demonstrate competence in the following: • Basic newborn care • Accurate assessment of all the biophysical systems and interpretation of findings, including physical assessment and special investigations • Appropriate planning and execution of interventions, including resuscitation, prevention, curative interventions and rehabilitation • Advanced care of premature, critically ill, recovering and dying neonates • Provision of safety and security, including emotional safety and security • Implementation of all developmental care principles • Appropriate use of medical technology • Administration of medication and assessment of the effects thereof • Safe transport of newborns • Facilitation of parent-infant bonding and attachment

5.2.2 Neonatal nursing practice environment

The neonatal nursing practice environment can be defined as a place equipped with necessary physical resources where neonatal patients are cared for during a time when they are especially vulnerable. The environment includes facilities, equipment, consumables, linen and techniques of environmental manipulation.

The facilities and equipment of private hospitals in South Africa are stipulated in Regulation 158 of 1980 as amended by Regulation 434 of 1993 (South Africa 1980). Further guidelines are available for planning and commissioning healthcare facilities in South Africa (Du Toit 1993:53-114), as are specific guidelines for designing and equipping NICUs or aspects thereof such as infection control (Bozette & Kenner 2004:75-88; Department of Health 2004; Niermeyer & Clarke 2002: 46-69; Pappas & Walker 2004:106; Pierce & Turner 2002:117-131;

Simmons 2004:410-421; Task Force on Guidelines: Critical Care Unit Design 1988:796-806; White 1999:S2-S12).

Some aspects of NICU facilities are vital for the unit's functioning and so are common to all units; these include physical building structures, a continuous supply of electricity, lighting and cold and warm running water, medical air supply, oxygen supply, vacuum supply for suctioning, sewerage system and telephone lines. Units must also be kept clean. Other aspects show differences between individual units, especially spaciousness, appearance and technical equipment. These differences influence the nursing care provided by the neonatal nurses at the different units.

Various types of medical equipment are available in different NICUs. However, the amount of equipment in a specific NICU is not always in proportion with the number and acuity of patients for which the unit caters. In addition, the availability of medical technical support, maintenance for equipment and in-service training in the use of equipment and the criteria for its use vary tremendously between units. Equipment includes:

- monitoring equipment such as multi-purpose monitors, cardiac monitors, saturation monitors and apnoea monitors;
- equipment for ventilatory support such as oscillators, mechanical ventilators, CPAP drivers, nitric oxide, oxygen blenders, humidifiers;
- patient beds such as radiant warmers, incubators and cribs; and
- equipment for specific interventions such as infusion pumps, syringe pumps, intercostal drain insertion trays, emergency trolleys, suction units and blood gas machines.

Medical technology and its use are dynamic and change rapidly, and so must be managed. Lynch (1991:81) however cautions that

> the abundance, variety, and complexity of this technology…attach an additional dimension to caregiving responsibilities. In giving safe and comprehensive care, the nurse must understand the function and malfunction of all the pieces of equipment utilized and must address the challenge of balancing the needs of the neonate with those of the machines.

The consumables and linen used in a NICU are an integral part of caring for neonatal patients (Bozette & Kenner 2004:75-88; Department of Health 2004; Niermeyer & Clarke 2002: 46-69; Pappas & Walker 2004:106; Pierce & Turner 2002:117-131; Simmons 2004:410-421; Task Force on Guidelines: Critical Care Unit Design 1988:796-806; White 1999:S2-S12). Some problems and frustrations experienced by neonatal intensive care nurses are directly related to

a lack of these resources. A common problem and source of frustration and conflict in NICUs is the clothing and diapers, which parents are responsible for providing.

These factors demand that neonatal nurses have a good understanding of the neonatal nursing practice environment, and of how to use it optimally to facilitate the provision of quality nursing care to neonatal patients. Again, empirical knowledge is not enough, since nurses need to apply their knowledge in the practical execution of nursing care in varying circumstances. The practical competences expected of them vary in difficulty and complexity depending on what equipment they are using at a particular time.

A further complicating factor is the fact that the NICU environment can be manipulated. This refers both to making the environment safe and to a developmental care principle. Environmental manipulation in the sense of making the environment safe include aspects such as infection control, emergency preparedness (resuscitation trolley and other emergency equipment) and compliance with health and safety requirements (Du Toit 1993:53-114; Gardner & Goldson 2002:219-281; Niermeyer & Clarke 2002: 46-69; Pappas & Walker 2004:106; SANC 2004a; South Africa 1980).

Environmental manipulation is also one of the cornerstones of the developmental care approach, based on actual research findings. Environmental manipulation in this regard includes reduction of direct and bright lightning, reduction of noise and reduction of negative smells and introduction of positive smells (for example a drop of breast milk on cottonwool placed near the infant's face). Other principles of developmental care are the maintenance of sleep-wake cycles and cluster-care. This approach is reported to have positive short- and long-term outcomes for infants and to increase job satisfaction for neonatal nurses (Bozette & Kenner 2004:75-88; Dodd 1994:23-26; Jorgensen 2000:1-4 & 2001:1-5; Symington & Pinelli 2003:1-34; Westrup, Kleberg, Von Eichwald, Stjernqvist & Lagercrantz 2000:66-72). However, the literature rarely records the frustrations involved in implementing environmental manipulation in a busy NICU if not all staff cooperates.

To apply environmental manipulation as part of the nursing care given to the vulnerable patient population of a NICU demands insight (at least empirical and historical-hermeneutic knowledge) from neonatal nurses regarding health and safety principles, the developmental care approach and the use of medical technology, as well as corresponding practical competences. Nurses may also have to compromise or to use entrepreneurial skills to provide the best possible care with limited available resources. The minimum foundational and

practical competences expected of reflective neonatal nurses regarding the neonatal nursing practice environment are shown in Table 5.2.

Table 5.2: Foundational and practical competences related to neonatal nursing practice environment

Foundational competences	Practical competences
Neonatal nurses have to understand and demonstrate insight into the following: • Legal (including health and safety) requirements for NICUs • Physical necessities (including equipment, consumables and linen) to provide neonatal care • Health and safety principles • Use and basic management of medical technology • Environmental principles of the developmental care approach	Neonatal nurses have to be able to demonstrate competence in the following: • Provision of a safe and conducive environment to preterm, critically ill, recovering and dying neonates • Appropriate use of equipment, consumables and linen in providing nursing care • Appropriate maintenance of medical technology • Implementation of environmental manipulation as a developmental care principle

5.2.3 Family-centred care

The family of the neonate is of exceptional importance in neonatal nursing practice. Carter (2002:xix-xx) remarks that

> the goals of neonatal intensive care should be patient- and family-centred. It is the patient we treat, but it is the family, of whatever construct, with whom the baby will go home. Indeed, it is the family who must live with the long-term consequences of our daily decisions in caring for their baby.

A lack of parent-infant attachment and interaction and reduced parental confidence is associated with lower levels of childcare competence and child development in the long term (Loo, Espinosa, Tyler & Howard 2003:31-37).

The family-centred approach emerges from awareness and enhanced understanding of individual and family functioning and people's adaptation to stress, and of the importance of bonding and attachment and their implications for both infant and family (Davis, Sweeney, Turnage-Carrier, Graves & Rector 2004:373-410; Gale, Flushman, Heffron & Sweet 2004:65-74; NANN 2004a:22; Siegel, Gardner & Merenstein 2002:725-753). Neonatal nurses have to demonstrate this awareness. They are further expected to be able to facilitate these processes in the midst of the uncertainties and emotional turmoil of a NICU.

Parents of neonatal patients experience intense emotional upheaval, which is only worsened by the hospitalisation of their baby. Their emotional grief and suffering are extremely intense

when their baby dies or if aggravating circumstances worsen the baby's condition. Parents go through the various phases of adaptation and coping with stress, every parent in his/her individual way, and this can present in a variety of behaviours. Common emotions experienced by parents correlate with the phases of adaptation and include (Kenner 2004:392-393; Siegel *et al.* 2002:725-753):

- excitement and ecstasy at being parents;
- shock and denial that everything is not going as planned or expected;
- guilt, anger and disappointment about the circumstances;
- frustration and helplessness about lack of control and inability to do more for their baby or about the situation;
- mistrust of the medical team;
- anxiety and fear of what might happen; and
- intense feelings of sympathy with their baby.

These stressful circumstances can last for up to four months of hospitalisation, and in some cases continue after discharge. If a mother's stress levels increase, as when her baby is admitted to the NICU or has a relapse, her risk of developing postpartum depression or psychosis increases (Beck 2003:37-46; Dippenaar 2004:23.9-23.9; Mew, Holditch-Davis, Belyea, Miles & Fishel 2003:51-58). The more support the parents are given, the better they tend to cope with the stress they experience during the hospitalisation of their baby, and the better the outcomes are in terms of parent-infant bonding and attachment (Charchuck & Simpson 2003:39-53; Kenner 2004:392-393; Siegel *et al*. 2002:725-753).

Several authors suggest ways for neonatal nurses to support the parents of babies admitted to the NICU or whose baby has died (Charchuk & Simpson 2003:39-44; De Kock 2004:28.1-28.14; Jansen 2003:17-22; Morse, Durkin, Buist & Milgrom 2004:465-474; Raines 1996:7-12). The support demanded by parents can vary in intensity and may require that neonatal nurses act as counsellors, support bereaved parents, debrief a group after a traumatic incident until a professional person can be consulted or identify a pathological condition that needs to be referred for professional management.

Neonatal nurses and other healthcare providers in the NICU also have a significant role and responsibility in empowering parents during hospitalisation, and preparing them for adaptation to the post-discharge period to be the primary caretakers (Harrold & Schmidt 2002:165-169; Herbst 2004; McMurray 2004:43-47; NANN 2004a:22; Newborn Screening Task Force Report 2000:386-427; Sagun 2003:61).

The manner in which neonatal nurses are expected to support or empower the parents and family members of infants is significantly influenced by the diversity of these families. Parents and family members vary greatly in age, marital status, sexual preference, socio-economic status, race, culture, history, political views, religion, value system, language, personality and education. This diversity of parents often creates interpersonal or internal conflict, but can also lead to the formation of supportive groups.

Another factor that influences the implementation of family-centred care is that the care-taking roles of parents and neonatal nurses are not very clearly defined, especially in cases of prolonged hospitalisation. Such lengthy hospitalisation creates opportunities for meaningful relationships between parents and neonatal nurses, but can also result in conflict about care-taking issues and role differentiation. Parental roles are also influenced by cultural expectations and other attributes relevant to the diversity of parents.

Eventually all care, including involvement and empowerment of parents, must be beneficial for the baby (Herbst 2004; Jansen 2003:17-22; Kenner 2004:392-393; Loo *et al*. 2003:31-37; Siegel *et al*. 2002:725-753). According to the Constitution of the Republic of South Africa (South Africa 1996:16), "a child's best interests are of paramount importance in every matter concerning the child". The mandate of the profession of nursing is 'to take responsibility for nursing care that is provided by a cadre of committed nurses that do not discriminate on the grounds of race, colour, creed, gender, religion, culture, politics, social status, personal attributes or the nature of the health problem' (SANC 2004b:9).

Neonatal nurses must therefore be able to

- facilitate parent-infant bonding and attachment and deal with emotional parents, irrespective of how the parents manage their stress;
- fulfil a variety of roles, including a crutch for support, a scapegoat for feelings of guilt or a punch-bag for negative feelings; and
- manage cases where the baby deteriorates or dies, and often be the bearers of bad news.

Neonatal nurses are obliged to give a dying infant a dignified death and fully involve the parents and/or family. If an infant is recovering and nearing discharge, nurses have to support and empower the parents for their post-discharge role. Nurses are expected to manage potential interpersonal conflict arising from care-taking issues in a way that prevents the infants' being affected. Neonatal nurses will only be able to meet these expectations if they

possess at least the relevant empirical-analytical and historical-hermeneutic knowledge, the associated practical competences and appropriate professional characteristics.

The foundational and practical competences expected of nurses are indicated in Table 5.3.

Table 5.3: Foundational and practical competences related to family-centred care

Foundational competences	Practical competences
Neonatal nurses have to understand and demonstrate insight into the following: • The rights, needs and responsibilities of parents/family members • Bonding and attachment • Adaptation and mechanisms of coping with stress • Cultural diversity • Principles of family-centred care • Principles of empowerment (including basic teaching) • Principles of emotional support, counselling, bereavement and debriefing • Identification of pathological relationships, adaptation or coping of parents/family members	Neonatal nurses have to be able to demonstrate competence in the following: • Effective communication skills • Provision of a safe and conducive environment for parents/family members • Implementation of a family-centred approach • Facilitation of bonding and attachment • Empowerment, emotional support, counselling, caring for the bereaved and debriefing • Effective trans-cultural nursing skills • Early referral for identified pathological conditions

5.2.4 Multi-professional teamwork

Neonatal healthcare professionals work as a team, sharing a common interest in neonatal practice but each having his/her own specialised knowledge and skills. “An effective neonatal intensive care team consists of trained professionals of many disciplines – no one of us can do it alone. … Shared decision making should be the commonly employed process, requiring shared information among health care professionals …” (Carter 2002:xix-xx).

Common features of multi-professional teamwork in South African NICUs are related to role differentiation, and the diversity of team members.

The most dominant members of the multi-professional health team in South African NICUs are the nursing and medical staff, but other members can include occupational therapists, speech-language therapists, audiologists, physiotherapists, dieticians, radiographers, radiologists, pharmacists, counsellors, ophthalmologists, paediatric surgeons and other specialised health professionals. The various roles and involvement of these team members differ greatly from hospital to hospital. In the public sector most of these practitioners are often routinely included in the team. In the private sector most become team members and gain access to patients by

being officially consulted by the attending doctor or neonatal nurses. The neonatal nurses play an important role in both cases by coordinating the teamwork in the unit. As coordinators, they are expected to have insight into the various roles, functions and responsibilities of the different professional persons, as well as their relevance to the particular patients in the NICU.

One way to define a particular profession, especially in healthcare, is to describe the dependent, independent and interdependent functions of a member of that profession and how these relate to responsibility and accountability. The *dependent* role of the professional is his/her function and accountability as a professional registered with the applicable body (in this case the SANC or the Health Professions Council of South Africa) and includes his/her obligations to comply with the relevant legislation, such as the prescribed scope of practice and standards for practice. The professional's *independent* role is his/her function in making decisions about patient care and related issues, and includes his/her being accountable and responsible for these decisions and his/her own acts and omissions, independent of any other health professional. The professional's *interdependent* role is his/her function as part of the healthcare team and includes his/her shared responsibility towards patients and community. All three roles are applicable at all times and have to contribute to quality patient care (SANC 2004:1-61; Searle & Pera 1993:193-201).

The different members of the multi-professional team have distinct functions and responsibilities, but these also overlap to a certain degree (Kirby & Kennedy 1999:20-23; NICU Task Force 2000:641-648; Pressler & Rasmussen 2004:473-496; South Africa 2003; South Africa 1985; South Africa 1984; South Africa 1978). The differentiation of the shared responsibilities of neonatal nurses and other team members is not always clear and/or consistent, resulting in inter-professional, interpersonal and internal conflict. An example of this can be seen in private hospitals, where a doctor is not always on the premises: during office hours, the doctor is responsible for resuscitation when he/she is on the premises, but after hours, when the doctor has left, the neonatal nurse is responsible for resuscitation.

A further feature is the diversity of team members. They are individuals, with various backgrounds, educational levels, personalities, races, genders, cultures, religions, value systems and circumstances. This diversity results in dynamic and ever-changing contexts, with inter-professional and interpersonal relationships that can be either positive or negative, contributing to teamwork and the morale of practice or breaking it down (Sully & Dallas 2005:173-188).

Neonatal nurses are required to be part of the professional neonatal healthcare team. They have to fulfil their roles and responsibilities towards patients and their families though these roles and responsibilities are not always clear or consistent because of the diversity of the members of the healthcare team. Nurses are often gatekeepers and coordinators in the healthcare team. They cannot be part of the team if they do not possess at least domain-specific empirical and historic-hermeneutic knowledge, as well as insight into teamwork. The foundational and practical competences expected of nurses are indicated in Table 5.4.

Table 5.4: Foundational and practical competences related to multi-professional teamwork

Foundational competences	Practical competences
Neonatal nurses have to understand and demonstrate insight into the following: • Functions, roles and responsibilities of various multi-professional team members (including their own) • Effective communication • Principles of teamwork and group dynamics • Dealing with diversity	Neonatal nurses have to be able to demonstrate competence in the following: • Effective communication skills • Effective teamwork skills • Effective management of diversity and conflict

5.2.5 Professional nursing practice

A crucial characteristic of neonatal nursing practice is its professional setting; neonatal nurses are professionals. Several features of this characteristic determine some of the attributes of neonatal nursing practice. These features include managerial aspects, ethico-legal aspects and professional- and personal outcomes.

5.2.5.1 Managerial aspects

Managerial aspects of professional practice include both a responsibility to manage the unit effectively, and a responsibility towards the wishes and directives of the management of the institution.

At all times a specialised neonatal nurse is responsible for managing the NICU. There is usually an appointed unit manager on duty, but in his/her absence the responsibility can be delegated to any of the specialised neonatal nurses on duty. A neonatal unit has many facets that need managing, including care of patients and their families, personnel, safety, facilities and equipment, stock and linen and administration. The management of these facets is complicated by various factors, such as resource availability, interpersonal relationships, staff

members' personalities and institutional policies, as well as the diversity of parents and other multi-professional team members. The work of the nurse responsible for managing the unit is heavy and stressful, and often loaded with conflict and emotions.

The literature extensively discusses the principles, relevance and impact of management and management styles on workplace climate, staff morale, job satisfaction, conflict management, decision making and problem solving (Booyens 1993 & 2000; Muller 1996:120-133; Naude, Meyer & Van Niekerk 2000). The neonatal nurse in charge of the NICU must manage all the facets of the neonatal unit effectively in all their diversity, which he/she will only be able to do if he/she at least has the relevant empirical and historical-hermeneutic knowledge of the various facets of the unit's functioning and relevant management skills.

Another relevant managerial aspect of professional practice is the responsibilities and rights of neonatal nurses as employees. The management of the institution can have either a positive or negative impact on the climate and staff morale in the NICU, through their handling of communication and feedback, management style, institutional policies and availability of resources and support (Muller 1996:198-212; Naude *et al*. 2000). Neonatal nurses must execute their responsibilities skilfully and rely on their rights appropriately. If they do not agree with the hospital's management they should follow the correct procedures, always acting responsibly and with integrity (SANC 2004a).

The managerial aspects of professional neonatal nursing practice require certain foundational and practical competences from reflective neonatal nurses, as indicated in Table 5.5.

Table 5.5: Foundational and practical competences related to managerial aspects of neonatal nursing practice

Foundational competences	Practical competences
Neonatal nurses have to understand and demonstrate insight into the following: • The rights and responsibilities of employees and employers • Principles of management • Effective communication	Neonatal nurses have to be able to demonstrate competence in the following: • Effective communication skills • Effective management of multi-facets of neonatal nursing practice (including personnel, facilities, equipment and technology) • Effective management of conflict • Compliance with rights, responsibilities and institutional policies

5.2.5.2 Ethico-legal aspects

Nursing's professional character adds a unique but very important dimension to the attributes of neonatal nursing practice. Neonatal nursing practice is an ethico-legal minefield. Quality of care is paramount. The nursing process is a universal tool that can be used to meet the demand for safe quality nursing care, but its application is worthless without the necessary education in basic and advanced neonatal nursing care.

Ethical decision-making remains a universal problem without a perfect solution/s and clear right or wrong answers (Jevon 1999:45-46; NANN 2004a: 9-10; Pector 2004:4-10; Penticuff 1998:339-352; Pierce 1998: 287-297; Stutts & Schloeman 2002:27-33). Many ethical issues are involved in neonatal nursing practice, since many decisions taken by nurses have long-term consequences. Common ethical issues included deciding:

- to resuscitate or not;
- to stop treatment or not;
- which patient to benefit (probably at the cost of another) if there is not enough equipment;
- to admit and treat a patient whose weight is less than the required weight for treatment;
- on issues of confidentiality, such as to reveal HIV status or not;
- on issues of consent, such as to administer blood or continue with an intervention that requires consent though the parents are not available to give consent;
- whether to initiate treatment, such as chemotherapy and antiretroviral treatment, that has a chance of helping but could have severe side-effects;
- whether to report incompetent or negligent acts or omissions by members of the multi-professional team, including colleagues;
- how to tell important information about an infant to the parents, for example a diagnosis or prognosis;
- whether to grant parents' requests such as to hand over the medical treatment of the baby to a traditional healer;
- what to do with an orphaned baby;
- whether to go on strike about difficult working conditions or to respond to a call for solidarity with others; and
- whether to work with neonatal patients while having an infectious condition and knowing the risks for the patients, if a replacement cannot be found.

Ethical principles are described to assist decision-making, and ethical guidelines formed to uphold human rights (Botes 1994; Center for Ethics and Human Rights 2001:1; Ketefian

1989:509-518; Sudia-Robinson 2004:946-951; Swaney, English & Carter 2002:801-811). The SANC (1992, 2004) provides ethical guidelines to assist professional nurses in ethical decision-making. Of course, nurses are still vulnerable to legal prosecution for any of their decisions.

Various other factors also have the potential to result in legal prosecution, as many causes can worsen the condition of an already compromised and vulnerable neonate, for example, the many investigations and interventions to which infants are subjected; the varied sensory stimuli of the environment and repeated handling of the infant can all influence the infant negatively; and the many decisions that are made regarding treatment and the infants' unpredictable responses to it. Any such factors can therefore have potentially legal implications, irrespective of negligence, purposive malpractice or accidental misconduct (Carter 1998:xix-xx; Lynch 1991:78-86; Miller 2003:67-68; NANN 2004a:8; Orleans, Tappero, Glicken & Merenstein 2002:1-8; Verklan 2004a:92 & 2004d:952-971; Verschoor, Fick, Jansen & Viljoen 1997:71-77).

The neonatal nurse's legal protection lies in his/her registration at the SANC as a professional nurse (South Africa 1978), the scope of practice (SANC 1984 & 2004a) and other relevant legislation and guidelines for nursing practice and for the professional nurses' accountability and liability (Muller 1996; South Africa 1984 & 1985; SANC 2004b; Searle & Pera 1992). A nurse also has a certain amount of protection from his/her employer in the form of contracts, policies of the organization, the liability of the organisation, and labour organisations if the nurse is a registered member with indemnity insurance (Verklan 2004d:952-971; Verschoor *et al.* 1997:26-38, 71-77). The most important protection that a nurse can have is a sound base of knowledge and practical competence (Schober & Affara 2006:30-34). Neonatal nurses are required to understand their scope of practice, rights and responsibilities, the risks and protection in taking decisions and the principles of legal action, but more importantly must have the required foundational and practical competences on which to base any decisions.

Once ethico-legal risks have been considered, quality care in the NICU is the next priority. Optimum care requires evidence-based practice, upholding the standards of nursing practice, safe and competent practice and professional care. The SANC embraces these principles. It has evidenced-based practice at its foundations, and works to ensure that 'the South African public receives knowledgeable, competent, safe, and compassionate and ethically based nursing care' (SANC 2004a:8; South Africa 1978 & 2005) through its efforts to 'set, promote

and control the standards of nursing and midwifery education and practice' (SANC 1992 & 2004a:9).

Evidence-based practice can be interpreted as practice based on principles derived from the aggregated results of randomised controlled trials, typically investigated using meta-analysis. In nursing, evidence-based practice can also be interpreted as practice following guidelines based on trustworthy research results and best available knowledge of practice. This implies that evidence-based practice is not rigid and can always be changed if 'better' knowledge becomes available or if new evidence supports a different view (Thomas 2004:940-941; Van der Walt 2004:3.4-3.5; Orleans *et al.* 2002:1-8).

McCain (2003:5) defines evidence-based nursing practice as "the use of research evidence (or the best evidence in the absence of research) combined with clinical expertise and consideration for the patients' values and culture". This approach is necessary, because, McCain continues, "very busy nurses [need] up-to-date knowledge in order to provide the highest quality of care in the most efficient way." Verklan and Walden (2004:xiii) agree, saying that, at a minimum, neonatal nurses are expected to enhance their application of clinical knowledge by utilizing an evidence-based approach to improve patient outcomes.

The nursing process is the recommended approach for using competences in a systematic manner in practice. However, application of the process varies and is strongly influenced by the competences and characteristics of the individuals involved.

The nursing process is well described in the literature. As Verklan (2004a:952-953) says,

> the nursing process forms the foundation for nursing education, practice and documentation, regardless of whether the nurse graduated from a diploma, associate degree, or baccalaureate program….Failure to follow the…five steps of the nursing process is the number one cause of all patient injuries.

The five steps are assessment, diagnosis, planning, implementation and evaluation, with documentation being an integral part of each step (Geyer 2005; SANC 2004). Neonatal nurses have an obligation to implement the nursing process.

Ethico-legal risks and quality of care therefore demand from neonatal nurses at least domain-specific empirical and historic-hermeneutic competences, but also call for critical or self-reflective knowledge in the forming of judgements and the making of decisions. Nurses are also expected to have appropriate practical competences. The minimum foundational and

practical competences expected of neonatal nurses in terms of ethico-legal professional practice are indicated in Table 5.6.

Table 5.6: Foundational and practical competences related to ethico-legal professional practice

Foundational competences	Practical competences
Neonatal nurses have to understand and demonstrate insight into the following: • Ethico-legal framework of neonatal nursing practice • Ethical decision making • Principles of legal action • Principles of evidence-based practice • Nursing process • Principles of quality improvement and risk management	Neonatal nurses have to be able to demonstrate competence in the following: • Effective ethical decision making • Provision of safe, ethico-legally responsible, evidence-based and quality neonatal nursing care • Effective application of the nursing process • Quality improvement and risk management

5.2.5.3 Professional and personal outcomes

Neonatal nursing practice can produce a wide range of professional and personal outcomes for neonatal nurses. These outcomes, which can be negative or positive, seem to be among the main determinants of whether or not neonatal nurses remain in the profession. Neonatal nursing is highly stressful, characterised by high demands and high risks, with limited opportunities for promotion or other monetary incentives. It is often characterised by low staffing, high workload and responsibility load, limited support and restricted resources. However, in the midst of these difficulties the profession still offers great opportunity for personal growth.

Some of the negative outcomes include traumatic experiences such as neonatal deaths; poor interpersonal relationships; low morale; stress related to workload and unrealistic expectations from the management; burnout; and frustration due to restrictions on reflective practice. These negative outcomes commonly result in high absenteeism and staff turnover, and nurses leaving neonatal nursing, or even the profession, (DENOSA 2006:42-45; Geyer 2006:46-47; Geyer 2001:26-27; Zondagh 2004). Resistance to change or lack of change also appear to be significant factors in causing nurses to leave (Turnage-Carrier, Ward-Larson & Gates 2004:423-462).

Positive outcomes of the profession include job satisfaction; high morale; the joy to nurse such a vulnerable group of patients and the feeling of meaning something to them; experience of

personal growth; the satisfaction of being competent; lifelong learning; and positive interpersonal relationships. These outcomes correlate with the professional and personal outcomes of reflective and critical-reflective practice as discussed in Chapter 4. This type of neonatal nurse tends to remain in the profession in spite of problems with low staffing, high workload and restricted resources.

Neonatal nursing practice places high demands on neonatal nurses to deliver competent, safe, evidence-based, quality neonatal care in a complex and stressful environment to an exceptionally vulnerable group of patients. The foundational and practical competences expected of them are at least to be reflective practitioners as discussed in Chapter 4. Particular competences relevant to professional and personal outcomes are indicated in Table 5.7, with the focus on improving these professional and personal outcomes.

Table 5.7: Foundational and practical competences related to professional and personal outcomes

Foundational competences	Practical competences
Neonatal nurses have to understand and demonstrate insight into the following: • Process of reflective learning • Principles of reflective practice • Principles of leadership • Group dynamics and interpersonal relationships • Stress management • Change management	Neonatal nurses have to be able to demonstrate competence in the following: • Reflective neonatal nursing practice • Lifelong learning • Effective leadership skills • Effective management of stress • Effective change management

As Verklan and Walden (2004:xiii) state,

> the art and science of neonatal nursing is never stochastic. We learn from scientists, researchers, multidisciplinary colleagues, and of course, our infants and their families. At a minimum, we are expected to enhance our application of clinical knowledge by utilizing an evidence-based approach to improve patient outcomes. The role of the nurse is frequently to bring together all of the pieces of the puzzle to ensure comprehensive, clinically excellent, and compassionate care to sick newborns and their families.

Thus, not only are foundational and practical competences demanded by neonatal nursing practice, but professional characteristics as well. We have highlighted various characteristics in the discussion of the attributes and demands of neonatal nursing practice and the competences it expects of neonatal nurses. The professional characteristics demanded by neonatal nursing practice will now be briefly described.

5.3 PROFESSIONAL CHARACTERISTICS DEMANDED BY NEONATAL NURSING PRACTICE

It was concluded that the professional characteristics associated with the attributes and demands discussed in the previous section are related to the individual nurse's value system and perception of the world, perception of self and emotional status, and interaction with the outer world. The discussion that follows here explores these characteristics in neonatal nursing practice, building on the theoretical discussion in Chapter 4.

5.3.1 Value-system and perception of the world

Neonatal nurses are expected to value life and to have respect for others, for their rights, views and preferences. Nurses are also expected to have respect and give recognition to other professions, to value professional interdependency and to respect authority. These nurses must have integrity and high moral values, and have a passion for neonatal nursing.

5.3.2 Perception of self and emotional status

Neonatal nurses are expected to have good self-knowledge, self-respect and self-awareness. They must be confident in themselves and their abilities. They have to take responsibility for their own lives, decisions and actions. They must have self-discipline, internal motivation and a need for professional and personal growth.

These nurses must have stable characters and be emotionally stable, even when coping with frustrations, emotional turmoil, death and a dynamic, changing and stressful environment.

5.3.3 Interaction with the outer world

The manner in which neonatal nurses conduct themselves with their outer world has to be caring and compassionate, sensitive and receptive, supportive, gentle, patient and precise, particularly in the handling of infants.

These nurses must be reflexive, open-minded, flexible and adaptable, assertive, innovative and professional. They have to maintain confidentiality and handle information and data respectfully. They also must be inquisitive and interested in their patients and all that affects them. They must be approachable, acknowledge and support others, be team players when necessary and the team leader when needed. They must adhere to rules, authority and principles, and manage time, situations and incidents effectively.

Neonatal nurses are expected to be honest, fair, consistent, reliable, trustworthy and prepared to sacrifice if need be.

It might not be possible to achieve all these professional characteristics as part of the outcomes of an educational programme, as many have to do with core individual characteristics. It might be possible to keep these in mind for selection criteria and recruitment of students. Aspects thereof would be possible to address, for example communication skills. Suggested educational approaches to achieve expected outcomes are discussed in more detail in Chapter 6.

5.4 CONTENT OUTLINE AND EXPECTED OUTCOMES OF PROGRAMME FOR EDUCATION OF REFLECTIVE NEONATAL NURSES

The expected outcomes of the programme must be interpreted in light of the discussion in Chapter 4 of the various processes and levels of competence underlying reflective learning and the characteristics of a reflective practitioner. The various categories do not carry the same weight in the educational programme, for example, the neonatal patient category will obviously weigh the heaviest. This report includes an outline of the content that should be included in such a programme and not their proportions or detailed descriptions thereof. The content outline, as deduced in this study, is presented in Table 5.8.

Table 5.8: Content outline and expected outcomes of educational programme for reflective neonatal nurses

Content	Expected outcomes: foundational and reflexive competences (knowledge)	Expected outcomes: practical competences	Expected outcomes: professional characteristics
Neonatal patients	Neonatal nurses have to understand and demonstrate insight into the following: • Development and maturation of the fetus and neonate* • Transition from intra-uterine to extra-uterine life* • Anatomy and physiology of neonates according to their gestational age* • Basic needs of neonatal patients • Neonatal communication (i.e. physiological and behavioural cues) • Mental health needs of neonates • Developmental care approach • Aetiology, pathophysiology, clinical presentation and management of neonatal conditions, including conditions related to immaturity, acquired and congenital conditions* • Principles of basic and advanced nursing care of preterm, critically ill, recovering and dying neonates • Basics of medical technology and use thereof in neonatal care • Basic and applied pharmacology • Transport of newborns • Post-discharge care of high risk neonates *(*These are related to all the neonatal systems, including neurological, respiratory, endocrine and metabolic, gastrointestinal, renal and genito-urinary, cardiovascular, haematological, immune and musculoskeletal systems, skin and special senses)*	Neonatal nurses have to be able to demonstrate competence in the following: • Basic newborn care • Accurate assessment of all the biophysical systems and interpretation of findings, including physical assessment and special investigations • Appropriate planning and execution of interventions, including resuscitation, prevention, curative interventions and rehabilitation • Advanced care of the premature, critically ill, recovering and dying neonates • Provision of safety and security, including emotional safety and security • Implementation of all developmental care principles • Appropriate use of medical technology • Administration of medication and assessment of the effects thereof • Safe transport of newborns • Facilitation of parent-infant bonding and attachment	Value-system and perception of the world: Value life Respect for others, their rights, views and preferences Respect and recognition for other professions Value for professional interdependence Respect for authority Passion for neonatal nursing High moral values and moral integrity Perception of self and emotional status: Self-knowledge, self-awareness and self-respect Confidence in self and own abilities Responsibility for own life, decisions and actions Ability to cope with frustrations, emotional turmoil and death Emotional stability and stability of character Ability to cope in dynamic, changing and stressful environment Need for professional and personal growth Self-discipline Internal motivation
Neonatal nursing environment	Neonatal nurses have to understand and demonstrate insight into the following: • Legal (including health and safety) requirements regarding NICUs • Physical necessities (including equipment, consumables and linen) to provide neonatal care • Health and safety principles • Use and basic management of medical technology • Environmental principles of developmental care approach	Neonatal nurses have to be able to demonstrate competence in the following: • Provision of a safe and conducive environment to preterm, critically ill, recovering and dying neonates • Appropriate use of equipment, consumables and linen in provision of nursing care • Appropriate maintenance of medical technology • Implementation of environmental manipulation as a developmental care principle	

Family-centred care	Neonatal nurses have to understand and demonstrate insight into the following: • Rights, needs and responsibilities of parents/family members • Bonding and attachment • Adaptation and mechanisms of coping with stress • Cultural diversity • Principles of family-centred care • Principles of empowerment (including basic teaching) • Principles of emotional support, counselling, bereavement and debriefing • Identification of pathological relationships, adaptation or coping of parents/family members	Neonatal nurses have to be able to demonstrate competence in the following: • Effective communication skills • Provision of a safe and conducive environment for parents/family members • Implementation of a family-centred approach • Facilitation of bonding and attachment • Empowerment, emotional support, counselling, caring for the bereaved and debriefing • Effective trans-cultural nursing skills • Early referral for identified pathological conditions	Interaction with outer world: Caring and compassionate Sensitive and receptive Supportive Gentle, patient and precise when handling an infant Reflexive Open-minded, flexible and adaptable Assertive and leading Professional Maintain confidentiality Respectful handling of information and data Inquisitive, interested in neonatal care and her world Continuously develop Approachable Acknowledge and support others Management of time, situations and incidents Adherence to rules, authority and principles Team worker when needed Prepared to sacrifice if required Honest, fair and consistent Reliable and trustworthy
Multi-professional teamwork	Neonatal nurses have to understand and demonstrate insight into the following: • Functions, roles and responsibilities of various multi-professional team members (their own inclusive) • Effective communication • Principles of teamwork and group dynamics • Dealing with diversity	Neonatal nurses have to be able to demonstrate competence in the following: • Effective communication skills • Effective teamwork skills • Effective management of diversity and conflict	
Professional nursing practice: managerial aspects	Neonatal nurses have to understand and demonstrate insight into the following: • Rights and responsibilities of employees and employers • Principles of management • Effective communication	Neonatal nurses have to be able to demonstrate competence in the following: • Effective communication skills • Effective management of multi-facets of neonatal nursing practice (including personnel, facilities, equipment and technology) • Effective management of conflict • Compliance with rights, responsibilities and institutional policies	
Professional nursing practice: ethico-legal aspects	Neonatal nurses have to understand and demonstrate insight into the following: • Ethico-legal framework of neonatal nursing practice • Ethical decision making • Principles of legal action • Principles of evidence-based practice • Nursing process • Principles of quality improvement and risk management	Neonatal nurses have to be able to demonstrate competence in the following: • Effective ethical decision making • Provision of safe, ethico-legal, evidence-based and quality neonatal nursing care • Effective application of the nursing process • Quality improvement and risk management	

Professional nursing practice: professional and personal outcomes	Neonatal nurses have to understand and demonstrate insight into the following: • Process of reflective learning • Principles of reflective practice • Principles of leadership • Group dynamics and interpersonal relationships • Stress management • Change management	Neonatal nurses have to be able to demonstrate competence in the following: • Reflective neonatal nursing practice • Lifelong learning • Effective leadership skills • Effective management of stress • Effective change management	

5.5 SUMMARY

In this chapter relevant aspects of neonatal nursing practice in the South African context were identified and clarified as distinct concepts that can be used in the education of reflective neonatal nurses. These findings were presented in this chapter as expected outcomes, which are knowledge (foundational and reflexive competences), practical competences or professional characteristics. These outcomes were used to outline the content of such an educational programme.

The chapter contributes to the development of a model for the education of reflective neonatal nurses by clarifying and describing the purpose (competences expected of reflective neonatal nurses), framework (neonatal nursing practice in the South African context) and procedure (content outline of an educational programme).

The next chapter addresses possible approaches or strategies for educating reflective neonatal nurses.

CHAPTER 6:
ROLE OF THE EDUCATOR AND APPROACHES TO EDUCATING REFLECTIVE NEONATAL NURSES

6.1 INTRODUCTION

In the previous chapter concepts were identified and clarified from neonatal nursing practice that are of importance in educating reflective neonatal nurses. At the end of that chapter, the competences and professional characteristics expected of reflective neonatal nurses were described, and content of an education programme from them was outlined. In this chapter relevant literature was analysed to describe the role of the educator and to find possible approaches for achieving these outcomes. This chapter is a continuation of phase 1, but is discussed here in logical sequence in terms of content. The methodology followed is discussed in Chapter 2.

The role of the educator and the educational approaches are the final components of the model for educating reflective neonatal nurses. They are relevant specifically to the agent (educator) and procedure (educational approach) elements of the model.

6.2 TEACHING REFLECTIVE NEONATAL NURSES

To 'teach' is defined as "to impart knowledge to; to impart knowledge of (e.g. to teach arithmetic); to explain, show (that, how to); … to give instruction, esp. as a profession", while 'teaching' refers to "the act, practice, or profession of giving instruction" (*Webster's New Dictionary and Thesaurus* 1990:563). *The Oxford Combined Dictionary of Current English & Modern English Usage* (1987:302) defines 'teach' as "enable, cause, (person, etc. to do) by instruction and training …; give lessons at school or elsewhere in or on (subject, game, instrument, etc., to person …); be teacher, give lessons esp. at school; give instruction to, educate …; explain, show, state by way of instruction", while 'teaching' refers to the "teachers' profession, doctrine, what is taught". 'Teaching' can also be described as the educational process used to facilitate learning or to enable a person to obtain certain objectives by means of instruction, explanation, demonstration, example or other appropriate means (*Oxford Combined Dictionary* 1987:302).

This study focuses on educating reflective neonatal nurses. These nurses are expected to achieve particular outcomes described as applied competences (including specific foundational, reflexive and practical competences) and professional outcomes, as discussed in Chapters 4 and 5.

Teaching was traditionally seen as the transmission or delivery of education, based on the assumption that knowledge comes in discrete, pre-formed units, which students ingest in smaller or greater amounts until graduation or 'indigestion' takes over. The modern perspective sees teaching rather as stimulating, facilitating or establishing inquiry about underlying processes or principles, based on the assumptions that knowledge is not a static, pre-formed substance but is constantly changing and that deep or lifelong learning has to be an outcome of higher education as preparation for a rapidly changing world (Gravett 2004:27-29).

Gravett (2004:24) states that the quality of the outcomes of learning is functionally related to the approaches adopted by the students, and facilitated by educators. A deep approach is a prerequisite for significant learning that will last, the type of learning ideally associated with higher education.

Educating reflective practitioners requires a programme that facilitates their acquisition of specialised knowledge and clinical skills, and promotes their personal growth and development, so help them meet the demands of reflective practice (Atkins & Murphy 1993:1189; Carter 1998:xix-xx; Pappas & Walker 2004:116).

Powell (1989:830) states that an essential ingredient in reflective practice is in-depth knowledge combined with nursing theory and other contributing disciplines to develop sound theories of practice or theories-in-use.

Another essential ingredient in reflective practice is experience. Cross (2005) suggests that adult learning programs should capitalise on the experience of students, adapt to their limitations due to age, and challenge students to move to increasingly advanced stages of personal development. Students should have as much choice as possible in the availability and organisation of learning programmes.

Knowledge and skills necessary for neonatal specialisation can be learned through formal courses, but in large part are obtained in practice through experience. Unfortunately, the knowledge and skills generated through research and formal theories often differ from the

knowledge and skills produced in practice, a phenomenon commonly described as the theory-practice gap (Greenwood *et al*. 2000:1106-1114; Kaufman 2003:1-11; Rolfe 2000:1-3). The ideal approach to educating reflective practitioners will be one that contributes to overcoming this gap.

Olivier (2002:101-106) describes teaching as a facilitation process that guides students through the learning process, in which the teacher becomes a mentor, coach, facilitator, co-ordinator, demonstrator, advisor, manager and guide in assisting students to learn through various strategies.

Henniger (2004:4-10) describes teaching as challenging work that requires considerable effort and skill, as well as simultaneous independence and interconnectedness. Teaching is an art that leads to inspired learning, a science based on research, and a profession that requires lifelong learning.

Thoughtful teaching is a combination of intent, commitment and the adoption of compatible practices designed to promote learner achievement. Educators must question their classroom practices, their beliefs about teaching, the contextual forces that influence what they teach and how they teach it, and the moral and ethical principles implicit in their teaching (Van der Horst & McDonald 2001:126).

Reflective teaching is “when we think carefully about our teaching, we demonstrate our commitment to improving our professional practice. We want to find out about the consequences of our actions” (Hillier 2003:13).

Smith and Lovat (2003:2, 73) identify the key roles of the teacher as information processor, manager, decision-maker and problem-solver. The teacher is responsible for organising, adapting and presenting the curriculum in such a way that the students learn from it to solve their own problems.

We can summarise all these points of view and say that the process of teaching, for the purpose of educating reflective neonatal nurses, entails facilitating learning by:

- **processing (assessing) information** including beliefs, assumptions, perceptions, needs and expectations, expected outcomes of the programme, context and facts of reality;
- **planning and implementing**: educational approach/es, teaching and learning activities, resource use, socialisation, enculturation, a community of inquiry and interpretation and its logistical management; and

- **evaluating**: students through assessment and feedback, the programme through evaluation and accreditation, and the self as a teacher.

6.3 ROLE OF THE EDUCATOR IN REFLECTIVE EDUCATION

The educator is the person responsible for facilitating the teaching of the programme as part of development of reflective students and reflective practitioners. As the responsible person, the educator has to fulfil certain expectations. These responsibilities and expectations will now be briefly discussed under the headings of information processing, planning and implementation, evaluation, and the qualities expected of a reflective educator. These discussions have to be interpreted at the background of Chapters 3, 4 and 5.

6.3.1 Information processing

The first step of teaching is processing information, whether this is beliefs, assumptions, perceptions, needs and expectations, content and expected outcomes of the programme or facts about context. Information processing allows the educator to get familiar with the programme to be taught, the students to whom it is to be taught, the framework and context within which the teaching will take place, the educator's own beliefs and assumptions, and any other relevant information (Smith & Lovat 2003:2, 73). (The term 'assessment of information' is possibly a synonym here for 'processing of information', but is avoided to prevent confusion with 'student assessment'.)

Particularly important in this study is the fact that during reflective teaching the educator is merely a facilitator of the education process who moves the teaching beyond content to a more process-oriented approach using a variety of teaching strategies. The emphasis is on *learning through reflection and self-assessment* to integrate formal theory with experiential knowledge (Hatcher & Bringle 1997:153; Pee *et al.* 2000:754-761; Piterman & McCall 2000:30-37; Rolfe 2000:84-124).

To achieve this facilitation, the educator has to be clear on his/her own beliefs and assumptions, as these have a direct impact on all aspects of planning and implementation in the teaching process (Smith & Lovat 2003:2).

The educator has to be familiar with the programme to be taught in terms of content, requirements and expected outcomes, assessment criteria and methods, underlying framework and context. Relevant aspects that will affect the programme for educating reflective neonatal nurses have been discussed in Chapters 3, 4 and 5.

Other relevant information includes institutional policies and culture, selection of students, students' needs and expectations, students' prior knowledge and experience, available resources, related subjects or programmes which might influence the students, and the clinical situations in which the students do their practical work (Hillier 2002:142-167; Olivier 2002:101-105).

Once the educator has mastered information processing and is familiar with the relevant information, planning and implementation can follow.

6.3.2 Planning and implementation

In the teaching process, the following have to be planned and implemented: educational approach/es, teaching and learning activities, use of resources, socialisation, enculturation, establishment of a community of inquiry and interpretation, and its logistical management. The main purpose of this phase of teaching is to help students become reflective as students and practitioners.

Before beginning facilitation, the educator has to identify specific learning outcomes and critical outcomes, formulate end-product outcomes, plan how to engage students in learning, establish appropriate assessment criteria, develop learning material and plan and schedule learning experiences (Olivier 2002:101-112).

Waghid (2001:80) describes reflective teaching as a process of transformation.

> Transformation is about empowering those involved in the higher education process to develop the critical ability of students and educators to the extent that they become self-determined (rational) and reflexive. In essence, a discussion of transformation in higher education makes the idea of a reflexive praxis unavoidable.

Educators need to take responsibility for enabling their students to learn reflexively. This involves shaping education into a dynamic activity. Students should engage in experience, reflection, restructuring and planning, and so develop lifelong learning skills (Waghid 2001:80).

The educator must use the learner's prior knowledge and experience as point of departure and build on it (Gravett 2004:37), or provide practical support and encouragement for students who have to 'unlearn' routine practice. At all time educators must provide space for students to intentionally reflect on practice (Driscoll & Teh 2001:98-99), depending on the particular situation.

It is extremely important to create a safe and nurturing social environment for reflective learning and reflective practice (Mann 2005:330). The educator has to have a prior relationship with the student if any meaningful discussion and open dialogue is to take place on a personal level (Getliffe 1996:364; Powell 1989:826). Students need competent support and a trusting relationship before engaging in reflective activities (Burton 2000:1014-1015).

Students have to be encouraged in reflection and helped to think rationally so as to develop their own ideas about nursing practice. The educator needs to spend time with them, asking open-ended questions to facilitate reflection-on-action and developing a nurturing, safe environment in which students can learn. An optimal learning environment has a healthy balance between support, interest, enjoyment and challenge without threat (Gravett 2004:39).

The individual learning styles of students must be considered, and opportunities offered for structured reflection on and open discussion of these styles (Getliffe 1996:363-364, 370). The accommodator, activist or 'diver' who thrives on new experiences, but becomes quickly bored and who learns best by doing and feeling, would need support to work on creative thinking, reflecting and planning. The diverger, reflector or 'dreamer' who is thoughtful, listens well and considers all well before engagement or taking risks, would need to be assisted to set priorities, make decisions and participate in group activities. The converger, theorist or 'logician' who analyses, synthesises, thinks logically and rationalises, and who likes thinking and doing, would need support with creative and lateral thinking, and the ability of personal reflection and team work. The assimilator, pragmatist or 'searchlight' who like experimentation, to try out new ideas and to implement what he has learned, would need support with analytical and critical thinking (Hillier 2002:71-78; Honey & Mumford 1992; Kolb 1984).

Educators have to facilitate one-on-one and group learning according to the needs of the students, identify and utilise individual learning styles, monitor the learning process, choose the most appropriate course of action to achieve an outcome, use a variety of teaching methods and techniques, assess and give proper feedback, and support and propagate creativity. Other roles that educators play during the presentation of the programme include

mentor, coach, facilitator, co-ordinator, demonstrator, advisor, manager, assessor, moderator and guide (Henniger 2004:176-199; Olivier 2002:101-106).

Socialisation and enculturation of students into the domain or discipline is important if they are to become productive in the professional context. Each discipline has its own particular ways of communication, language use, conventions of behaviour and underlying meanings and values. These are commonly learned in a social context, especially where there is a positive atmosphere. Educators have to deliberately plan activities that enhance socialisation and enculturation, manage group interaction, enhance communication, encourage participation and sharing, explain concepts and be explicit about the meanings of terms used, especially those that concern assessment. The educators' own use of vocabulary and behaviour plays a significant role in the students' adoption of unique conventions (Henniger 2004:176-177; Olivier 2002:101-106; Van Rensburg & Lamberti 2004:67-89).

Gravett (2004:29-30) adds that the educator is responsible for gradually establishing a community of inquiry and interpretation through shared purposeful activity involving both teacher and students in the knowledge domain. The educator is responsible for intentionally creating a supportive space for such a community. This can be done by combining intentionality with flexibility (communicating expectations clearly but remaining sensitive to and considerate of individuals' needs and expectations), nurturing respectful relationship with students, intentionally striving to inspire learning, demonstrating passion for the knowledge domain, and resisting students' desire to locate authority unilaterally in the teacher and thus to be passive.

Planning and implementation involve decision-making and problem–solving. The educator is expected to deal with any problems or barriers to reflective learning or practice. Examples of barriers include anxiety and other emotions triggered by reflection; ethical issues e.g. patient and student confidentiality and privacy; painful feelings of vulnerability; resistance to reflective journal keeping; and failure to implement reflective thoughts in actual practice (Burton 2000:1014-1015; Henniger 2004:60-61).

For practical sessions students must be accompanied by skilled staff able to facilitate reflective practice. The educator must ensure that students have this skilled guidance (Powell 1989:830-831).

A significant portion of planning is choosing appropriate educational approaches and techniques and planning for their logistical requirements. Other planning activities include daily, weekly, quarterly and yearly planning (Van der Horst & McDonald 2001:160-174).

6.3.3 Evaluation and assessment

Evaluation is a very important aspect of reflective teaching and includes student assessment and feedback, evaluation and accreditation of the programme, and self-evaluation. Evaluation is not done only at the end of the academic year or the programme, but is integrated throughout the learning process. The term 'evaluation' is used in the context of this study as a more comprehensive concept and inclusive of the term 'assessment'.

Assessment is defined by the Council on Higher Education (Higher Education Quality Committee 2004b:33) as "systematic evaluation of a student's ability to demonstrate the achievement of the learning goals intended in a curriculum." In this study the term 'assessment' refers only to 'student assessment'.

The Council on Higher Education (Higher Education Quality Committee 2004b:12) specifies that, to be accredited, a programme must have for all its modes of delivery appropriate policies and procedures for:

- internal assessment;
- internal and external moderation;
- monitoring student progress;
- ensuring explicit, valid and reliable assessment practices;
- recording assessment results;
- settling disputes;
- ensuring a rigorous and secure assessment system;
- recognizing prior learning; and
- developing staff competence in assessment.

The programme must comply with the student assessment policies of the institution at which it is offered. The educator is also responsible for using assessment constructively as an integral part of learning by focussing on *what* has to be assessed, as well as *how* it can be assessed to create a learning opportunity (Geyser 2004a: 90-91). The educator has to carefully select appropriate assessment methods that bring out different qualities in students, concentrate on

processes and products for the students' individual education, and are learning experiences in themselves (Getliffe 1996:363-364, 370).

Some problematic aspects of student assessment with which the educator has to deal are difficulties in assessing reflective abilities, and subjectivity in assessment (Burton 2000:1014-1015).

Geyser (2004a:92-99) discusses the following principles of assessment:

- Assessment should be an integral part of learning that focuses on deep, active learning and involves high order cognitive skills.
- Assessment should be an integral part of programme and module design, matching the learning outcomes.
- The purpose of assessment should determine the assessment methods and techniques (e.g. diagnostic, formative or summative assessment).
- The relevant assessment criteria should be identified and applied clearly.
- Assessment processes should be reliable and valid.
- Assessment should be transparent and fair.
- Assessment tasks should be practical and realistic in terms of available resources, time, etc.
- Assessment should include a wide range of approaches and methods (e.g. self-, peer, group and workplace-based assessment).
- Assessment should provide feedback to support the learning process.
- Assessment should be integral to quality assurance procedures.

The educator must also make sure that the programme meets the specific requirements of the Department of Education set out in the Higher Education Act (South Africa 1997) and is registered with SAQA on the NQF (see Chapter 3). The programme must also meet the requirements of the Council on Higher Education (Higher Education Quality Committee 2004a & 2004b) for accreditation and of the profession's ETQA and council (SANC in this study) (see Chapter 3). Preparing for external accreditation by the relevant bodies includes obligatory internal or self-accreditation by the institution, which evaluates the programme against prescribed requirements. The educator responsible for a particular programme is expected to participate in this evaluation and make any changes necessary for compliance (Boughey 2004:1-21).

Waghid (2001:77-83) argues that higher education policy frameworks on their own cannot transform teaching and learning. Transformation must be driven from 'inside' by academics serious about changing education for the better. One way to transform is through reflexive praxis. Praxis is by implication action with a worthwhile rational end in mind, "engaging in action attuned to social experience where possibilities may be contemplated, reflected upon, transformed and deepened". Reflexivity involves critically examining one's personal and theoretical disposition, and at the same time, investigating how one's personal and theoretical commitments can transform patterns of critical educational discourse. In a sense reflexivity requires that the educator has criticized and 'deconstruct' his/her own teaching through reflection to 'transform' it to new ways of approaching old problems better.

Evaluation includes self-evaluation by the educator, especially of his/her presentation of the programme. Is there room for improvement, and if so, what must be improved? This is part of the educator's own personal growth and lifelong learning (Henniger 2004:8; Killen 2004:181-182).

6.3.4 Qualities required of reflective educators

Taking up the responsibilities explored in section 6.3.1-3 requires certain qualities in an educator. Most importantly as various authors emphasise, educators have to be credible reflective practitioners themselves (Burton 2000:1014-1015; Foster & Greenwood 1998:169; Getliffe 1996:370; Powell 1989:831; Reid 1993:305-309; Teekman 2000:1125-1135; Waghid 2001:81-82). A reflective educator thinks about her own teaching, models reflective thinking strategies in the classroom and clinical practice and uses specific teaching strategies to encourage students to be reflective (Scanlan and Chernomas, 1997:1138-1142).

Other qualities associated with reflective educators include open-mindedness, active concern with aims and consequences of teaching, ability to employ methods of enquiry, ability to employ self-reflection, collaboration with peers, and the ability to engage in a dialogue with colleagues (Hillier 2003:13; Raines & Shadoiw 1995:271). Educators have to have a sound knowledge-base in nursing theories and related disciplines, emphasise applications of knowledge, monitor it closely and plan experiences appropriately based on reflective principles (Powell 1989:830-831).

Reflective educators are facilitators and 'sharers' (Olivier 2002:101; Reid 1993:305-309)). Educators have to become learners rather than experts by continuously developing and

expanding their own knowledge-base in practice and reflective education, and by combining tradition and reflection (Getliffe 1996:370; Powell 1989:831).

Reflective educators have to establish trusting and meaningful relationships with their students and assure them of competent support before engaging in reflective dialogue or activities (Burton 2000:1014-1015; Getliffe 1996:364; Powell 1989:826). Meaningful reflective relationships are created only when educators give up their powerful position as authorities and collaborate with their student (Foster & Greenwood 1998:169; Getliffe 1996:361-374; Scanlan & Chernomas 1997:1138-1143; Waghid 2001:81-82). She has to be seen as a role model (Smith 1998:24).

Educators must be experienced in the process of supervision and reflection, and must use reflective frameworks effectively to guide students attempting to reflect at an appropriate level. Nurse educators should be aware that each framework promotes a particular level of reflection, though this is not always explicitly stated. The educator has to consider the individual student's ability to acquire and process information and consider the specialised subject content before choosing a reflective framework. This will help to protect students from negative learning experiences with accompanying loss of self-esteem and confidence and resulting disinterest and disillusionment (Foster & Greenwood 1998:168-169).

Educators must be consistently non-judgemental and supportive (Kuiper & Pesut 2004:385). They must assist students to focus, encourage them in deeper analysis and help them to balance of thoughts and feelings, without rushing them to closure (Baker 1996:19-22). Whatever a student uncovers during reflection must be given due attention.

Paterson (1995:211-220) describes four factors that impact upon a student's ability to reflect: the individual's developmental level of reflection, the individual's perception of the educator's trustworthiness, the individual's expectations of journal writing, and the quantity and quality of feedback from the educator. The qualities of the educator directly affect all four of these factors.

Students' positive emotion, and interconnectedness of thought and emotion support learning. The educator can promote these by respectful, authentic and empathetic interaction with students, enthusiasm, positive emotional involvement and the creation of challenges or temporary discomfort without threatening students (Gravett 2004:38-39). Reflective educators can deal with intrapersonal and interpersonal conflict and anxiety, provide a 'safe' and confidential environment for students and deal with ethical dilemmas (Burton 2000:1014-1015;

Getliffe 1996:370; Teekman 2000:1125-1135). Reflective educators do not use reflection as a managerial tool to discipline students (Driscoll & Teh 2001:99).

6.3.5 Conclusive remark

Thus the educator processes information, plans and implements, and evaluates. To do this in the reflective teaching process educators must be credible reflective practitioners themselves, establish positive and supportive relationships with students, and be able to deal with individual problems sensitively. This is just as important in neonatal nursing education.

In the following section various educational approaches and strategies are explored that educators can use for educating reflective neonatal nurses.

6.4 EDUCATIONAL APPROACHES

A programme's educational approach has to be chosen according to the purpose or outcome the programme intends to achieve. Outcomes of a nursing education programme include the specific learning outcomes, critical outcomes and end-product outcomes, discussed in detail in Chapter 4. The expected competences and professional characteristics depend on the content of the programme, as discussed in Chapter 5. Approaches can be broadly classified as behavioural, cognitive-constructivist or information-processing, humanistic, social or reflexive approaches. (See discussion of learning theories in Chapter 4, Table 4.1). The first four approaches are more traditional. The more recent reflexive approach is the focus of this study, as it is best suited for educating reflective neonatal nurses, but the others still have relevance. This will be shown by a brief discussion of all five approaches.

6.4.1 Behavioural approaches

Behavioural approaches are based on the philosophy that students learn as they modify their behaviour in response to environmental feedback. This feedback can be positive (reinforcement) or negative (discouragement). Behavioural approaches require highly organised, carefully planned teaching methodologies that change behaviours (Henniger 2004:185-186).

Examples of such methodologies, which tend to be teacher- or content-centred learning, are direct instruction (Henniger 2004:186), mastering of content through repetitive drills and tasks, demonstrations (real-life, simulation or video), telling and selling (talk-and-chalk), question-and-answer sessions, dictating, discussing and reading (Hillier 2002:142-167; Olivier 2002:90-91, 111). Examples of teaching techniques used especially in practical training are the next-to-Nelly approach, where the trainer is the role model whom students have to follow, and self-paced criterion-referenced instruction, where the learner paces him/her self to meet specific technical criteria (Olivier 2002:119-122).

These techniques can be used effectively as part of learner-centred learning, to introduce new concepts or new clinical skills. Repetition commonly helps to improve memory and perception, which are necessary for learning a new clinical skill or practical competence. Pauses may help students to absorb the material, especially if reflection is integrated in the pause, while feedback and reinforcement are very important in learning clinical skills (Buckingham & Palmer 2005:211-212).

6.4.2 Cognitive-constructivist approaches

The cognitive-constructivist approaches are based on the premise that students make sense of their world as they are assisted to organise the information around them. They process information differently depending on their stage of intellectual development, eventually constructing or building their own interpretation or understanding (Henniger 2004:187-188; Kaufman 2003:4).

These approaches have three subtypes, namely active learning, social learning and creative learning. Active learning occurs when the students actively engage in discussion of research topics, and in tasks that involve them physically and intellectually. Social learning entails learning through social interactions with peers, teachers and other adults. Creative learning occurs when students take in new information and create or recreate knowledge for themselves (Henniger 2004:187-188).

Examples of teaching techniques associated with constructivist education include teamwork on a selected topic, research activities, report writing and creating artefacts to demonstrate learning (Henniger 2004:188; Hillier 2002:142-167).

Problem solving can also be a technique of constructivist education if students apply existing knowledge to a new or unfamiliar situation to gain new knowledge. This can be used with other strategies or on its own. Students gain insight by exploring different views or perspectives either in a group or on their own (Olivier 2002:96-99). The focus of problem solving as a constructivist technique is on creating new knowledge and not on social interaction, which is only part of the process.

This approach is especially valuable for facilitating the learning of foundational knowledge, which in this study includes for example the physiology, pathophysiology and pharmacology related to the neonatal patient.

6.4.3 Humanistic approaches

Humanistic or personal approaches are based on the assumption that each individual must take responsibility for his/her own learning and strive to reach full potential. The educator's role is to help students develop physically, emotionally and socially to become productive members of society by helping them to grow in self-understanding (Henniger 2004:186-187).

The purest example of a humanistic approach is nondirective learning, where the learner has full control of what must be learned and how it is to be learned. More practical forms of this approach involve creating an optimum learning environment, involving students in determining expected outcomes, considering individual needs and encouraging self-understanding in combination with other teaching methods (Henniger 2004:186-187; Olivier 2002:119). This type of approach agrees closely with the principles of adult and reflective learning as discussed in Chapter 4.

6.4.4 Social approaches

The social approaches are based on the premise that students learn best as they interact with peers and teachers in learning communities. The role of the educator is to create learning communities and provide strategies to enable students to communicate effectively with each other, build relationships and achieve educational outcomes (Henniger 2004:188; Hillier 2002:142-167; Olivier 2002:96).

An example of a social approach or strategy is cooperative learning, where students work together in a group small enough to allow everyone to participate on a clearly defined collective task, without direct supervision by the educator. This approach relies on face-to-face interaction and feelings of positive interdependence and individual accountability. Useful techniques are learner-teams-achievement divisions, jigsaw and group investigation (Henniger 2004:188; Van der Horst & McDonald 2001:137-149), think-pair-share methods, round tables, student team learning, introductory focussed discussion, cooperative study groups (Bitzer 2004:54-59), role-playing, presentations, games and quizzes and group projects (Hillier 2002:142-167).

Problem-solving as a team or group is another example of a social approach. Here students work in groups to apply existing knowledge to a new or unfamiliar situation to gain new knowledge. This approach can be used as part of other strategies or on its own. The students gain insight by exploring different views or perspectives through interaction in a group (Olivier 2002:96-99; Van der Horst & McDonald 2001:150-157).

Brainstorming can be used as a group activity together with other strategies such as problem–solving. Here group members work together to list all potentially relevant ideas about a particular topic, discuss these ideas and decide which to select for more detailed exploration by individual group members (Van der Horst & McDonald 2001:154-155).

Social approaches can be applied in various areas of reflective neonatal nursing education, but are especially valuable for teaching nursing care of neonatal patients, for example through case study presentations, peer group evaluation, or group assignments.

6.4.5 Reflective approaches

A reflective approach aims to achieve reflective learning, which in this study is defined as

> a process of conscious and intentional examination by an individual of what occurs in a learning experience, in terms of thoughts, feelings and/or actions, compared with underlying beliefs, assumptions, knowledge and the particular context. It can occur as reflection-before-action, reflection-in-action and reflection-on-action on any of a hierarchy of levels of complexity, resulting in a changed perspective and consequent changes in practice. The sequence of levels of complexity includes a descriptive phase, a reflective phase and a critical / emancipatory phase. (Refer to Chapter 4.)

Various teaching techniques for facilitating reflective learning have been described over the last couple of years. All begin with the point made by Driscoll and Teh (2001:99) that students have to understand the principles of reflection before trying to reflect.

Studies into techniques for facilitating reflective learning include the following:

- Kim (1999:1205-1212) investigates *critical reflective inquiry* in a project that explores methodology, philosophical and theoretical foundation of critical reflective inquiry, actual engagement in such inquiry (through writing narratives about clinical experience and analysing these narratives in small groups), and ways in which critical reflective culture can be incorporated into nursing at a hospital.
- Duke and Appleton (2000:1557-1568) made students *write dialogues about practical incidents* related to module learning outcomes, which were then marked using a grid constructed from theory on the reflective process.
- Wong *et al*. (1995:48-57) describe a project that explores reflection and how it facilitates students' learning from experience. The students had to *design and implement a teaching* plan in an identified area, and *write a reflective paper about it* afterwards. A coding scheme was used based on the work of Boud *et al*. (1985) to assess the journals.
- Foster and Greenwood (1998:165-172) describe using *reflective dialogue* to introduce five newly-registered novice nurse to an NICU.
- Teekman (2000:1125-1135) studies how nurses use sense-making as a means of *self-questioning* in actual nursing practice. Interviews with ten registered nurses at three different hospitals revealed that sense-making is a useful strategy to enhance reflective thinking in practice.
- Powell (1989:824-832) studies eight practising registered nurses using a tool based on Mezirow and Lazzara's use of Colaizzi's reduction. The tool is found to be very usable for assessing reflection-on-action in practice, and is recommended as an educational tool.
- Reid (1993:305-309) explores a way to improve facilitation of reflective practice. *Coaching* is found to be pivotal in guiding a facilitator's approach to reflective practice; this coaching involves balancing challenge and support in a way appropriate for each individual and using recognised knowledge, experience and reflection. If facilitators take a risk and initially offer an experience of reflecting, this helps students realise 'the need to feel' before 'understanding', and embrace the continuing process of affirmation and transformation of practice.
- Baker (1996:19-22) explores the *reflective journals* of students at a baccalaureate nursing school as teaching strategy to enhance critical thinking. Journaling is found to nurture qualities associated with the 'ideal critical thinker', and to promote mindful and thoughtful

nursing practice. The students could use various media to express themselves, and most chose written expression.

- Getliffe (1996:361-374) studies six second-year undergraduate nursing students, using *structured reflection for formative assessment* based on John's Model for Structured Reflection, in three sessions. Students were introduced to concept of reflection-on-practice, and then, in three sessions, incidents identified by the students were discussed using structured reflection. Students completed questionnaires after each session and the educator kept a reflective journal. Use of reflection sessions as a formative part of assessment is found to be valuable.
- Chiu (2006:183-203) uses participatory action research, based on her reflection on literature and her own practice and research, to suggest a new *conceptual framework for critical reflection for reflective practice*. The integration of reflections from first-, second- and third-person perspectives is found to be valuable in enhancing reflective practice.
- Mann (2005:313-332) describes a self-reflective experiential study on three psychotherapists and the author's own reflection on learning using an innovative psycho-therapeutic approach (Pesso-Boyden System Pshychomotor). The study demonstrates the value of *self-directed reflection, peer support during 'co-reflection',* and *interactive inquiry*.
- Waghid (2001:77-83) describes presenting a course to students at honours level in 'Comparative Education' using reflexive praxis, which entails a variety of reflective activities. At the end of the course a focus group were held with the students. The use of *reflexive praxis* is found to be very valuable for transformation and for enhancing the quality of practice.
- Alsop (2005:174-184) describes using a *portfolio* as a place to collect and present evidence of continuing competence and professional development, as a way to encourage reflection and self-direction in identifying learning needs.
- Kuiper and Pesut (2004:381-391) describe a *self-regulated learning model* in nursing that explains how clinical reasoning skills can be acquired through attention to reflective thinking and the acquisition of critical thinking skills. Guiding the reflective process promotes greater reflectivity, with consequent transformation in the learning process. Methods that focus on guiding and supporting the reflective process include: interviews, vignettes, questionnaires, reflective papers, diaries and journals. Other methods mentioned are music, poetry, videotaping, discussion, writing, role-play, modelling, coaching/mentoring and supervision.
- Buckhingham and Palmer (2005:206-209) describe *reflecting as a core learning skill* that informs all aspects of lifelong learning and practice. They suggest opportunities for individual learning (reflective diary, reading, clinical research or a project), learning with

support (coaching, mentoring, critical incident analysis, interest groups, networking, role model, action learning groups), learning away from the usual work environment (job rotation, course design or presenting on specific topic, secondments, educational visits), personal development plans (develop individual, personal and career objectives), changing the culture, time management, stress management, clinical learning and clinical leaders, and writing and publishing.

Overall, then, various teaching techniques are available to facilitate reflective learning. It is important for educators to choose the most appropriate techniques to achieve a programme's specific required outcomes.

Suitable approaches for this study, which focuses on educating reflective neonatal nurses, will now be discussed.

6.5 SUITABLE APPROACHES FOR EDUCATING REFLECTIVE NEONATAL NURSES

The specific learning outcomes expected from reflective neonatal nurses are categorised as practical, foundational and reflexive competences. Practical competences are "the demonstrated ability, in an authentic context, to consider a range of possibilities for action, to make considered decisions about which possibility to follow, and to perform the chosen action" (Council on Higher Education 2002:49). The different levels of practical competences are *imitation* or the ability to re-demonstrate, *manipulation* of the task or the ability to perform acts on instruction, *precision and control* or the ability to produce a high level of proficiency, *articulation* according to the situation or the coordination of a series of activities, and *automation* or naturalisation, or the ability to act with maximum proficiency and the minimum expenditure of energy. To reach practical competence an individual needs to know how to do something, have subject-specific skills and algorithms (nursing skills), be familiar with subject-specific techniques and methods (nursing process), and understand the criteria for determining when to use appropriate procedures such as diagnostic and laboratory tests (Duan 2006:4).

Foundational competences are the demonstrated understandings of the knowledge and thinking that underpins the action/s taken (Council on Higher Education 2002:48-49; Geyser 2004b:145). This foundation complex occurs at various levels of complexity or difficulty, which form a hierarchy; these are empirical-analytical, historical-hermeneutic and critical or self-

reflective knowledge (Smith & Lovat 2003:88-90). The differences between the levels are not always exact, since they are integrated with and build on each other to create the whole meaning.

Reflexive competences are the demonstrated abilities to integrate and connect performances and decision-making with understanding and with an ability to adapt to change and unforeseen circumstances, and to explain the reasons behind such adaptation (Council on Higher Education 2002:48-49; Geyser 2004b:145). Reflexive competences involve the cognitive and meta-cognitive skills that underpin the process of reflective learning, and are therefore described as they relate to the different phases of reflective learning discussed in section 4.3.3.

Certain principles must be remembered when choosing the most appropriate teaching techniques. These have been compiled from the work of Bitzer (2004:41-47), Buckingham and Palmer (2005:211-212), Getliffe (1996:365-369), Geyser (2004a:90-111), Gravett (2004:22-40), Kaufman (2003:1-11), Olivier (2002:1-7), SAQA (1999:6-18) and Van der Horst and McDonald (2001:3-7):

- Deep learning requires that the teacher design teaching and learning activities that involve both teacher and students in a purposeful process of inquiring into different views on phenomena, comparing and contrasting these views and exploring why certain ways of seeing are more powerful.
- Students have to take responsibility for their own learning, and educators act as facilitators to achieve the desired end-results or outcomes.
- To foster deep learning, the focus must be on the main ideas of the knowledge domain and how these interrelate.
- Students have to be stimulated to develop a disposition of inquiry, which is inherent to a scholarly way of thinking and doing.
- Depth of learning rather than breadth of coverage must be emphasised.
- The ideal state of mind for optimal learning is ‘relaxed alertness’, which is characterised by low threat, a sense of well-being and moderate to high challenge.
- Teaching and assessment must be intentionally aligned to support the attainment of envisaged outcomes.
- Students’ existing knowledge must be taken as the base for future learning.
- Students must be involved in formulating learning outcomes.
- The teacher must engage with students rather than expounding information.
- Students’ misconceptions must be confronted and eradicated.

- Formative assessment must provide students with constructive feedback about their progress, and assess for understanding and application rather than for facts.
- Students must be involved in their own assessment to identify their own knowledge gaps and critically appraise new information.
- Students must be guided to develop the habits of outlining, organising, reflecting, explaining, theorising, applying and communicating information.
- Students must be required to read, extract core ideas, summarise, paraphrase and construct their own definitions for terms.
- Discussions must take place in small and manageable groups of students.
- Group dynamics are important, and group members must be more or less at the same level of reflection to prevent frustration.
- Sessions must be structured according to the students' learning styles and preferences; this can vary from structured questions that guide the reflection to open discussion, or some combination of structures, as long as the purpose of the reflection is made very clear.
- Assessment must be integral to the educational approach and not only a final evaluation to see if outcomes have been achieved. In itself assessment must be a learning opportunity, using clear specifications of the purpose of the assessment and proper feedback to help students learn.
- Feedback must include similarities, differences, misconceptions, good interpretations and other relevant issues.
- Learning does not take place at a steady rate, but usually in periods of rapid advance followed by periods of consolidation.

Successful teaching techniques for boosting academic performance include (Henniger 2004:180-185; Marzano, Pickering & Pollock 2001):

- facilitating identification of similarities and differences;
- teaching effective summarising and note taking;
- positively reinforcing individual performance;
- giving appropriate assignments and opportunities to practice new and developing skills;
- fostering students' ability to create non-linguistic representations or mental pictures;
- setting clear goals and giving quality feedback;
- teaching application of knowledge by stimulating generation and testing of hypotheses; and
- activating prior knowledge (e.g. using cues, effective questioning and advance organisers).

The following must be avoided in order to facilitate reflective learning (Gravett 2004:22-40):

- transferring large quantities of information;
- assessing only recall of independent facts;
- emphasising coverage at the expense of depth;
- designing an over-demanding syllabus with excessive workload for students;
- assessing frequently for credit;
- failing to give adequate feedback;
- creating low expectations for success (with comments like, 'Anyone who can't understand this should not be at university'); and
- not giving detailed notes in the form of information analysed, summarised, related and organised by the educator.

Educators have to consider these principles when deciding on an appropriate educational approach for facilitating the learning of reflective neonatal nurses. The content of the envisioned programme, as outlined in Chapter 5, and its expected outcomes significantly influence the choice of approach. The application of approaches for educating reflective neonatal nurses and achieving expected outcomes is suggested in Table 6.1.

Table 6.1: Educational approaches for educating reflective neonatal nurses

Approach	Examples of techniques	Suitability to achieve competences		
		Practical competences	Foundational competences	Reflexive competences
Behavioural approach	Direct instruction, repetitive drills, demonstrations, formal lectures, presentations, dictation / reading, next-to-Nelly, criterion-referenced instruction, simulations, experiments	Very good	Selected situations	Poor
Cognitive-constructivistic approach	Discussions, research, report writing, problem solving, teamwork, case studies, projects, assignments	Limited	Very good	Good
Humanisticic / Personal approach	Nondirective learning, self-study	Limited	Varies	Limited
Social approach	Cooperative learning (group investigation, jigsaw), teamwork, study groups, discussions, brainstorming, problem solving, role play, mentoring, supervision, coaching, games and quizzes, group presentations, chatrooms, IT conferencing	Limited	Good	Good
Reflexive approach	Reflective inquiry, reflective journals, report writing, reflective dialogue, self-questioning, coaching, mentoring, supervision, structured reflection, reflexive praxis, port-folio, problem solving	Limited	Good	Very good

In conclusion, the best approach is no single selected approach, but rather a combination of relevant approaches or an integrated approach according to each learning opportunity's expected outcomes, available resources and context. It is crucial that the educator understand the underlying assumptions of the various approaches, the advantages and disadvantages of the different teaching techniques, and the principles or 'rules' of the techniques before trying to implement them. Educators must use reflexive praxis themselves, to stay updated on educational approaches and techniques as part of their own lifelong learning and to continue to improve their own practice through reflection.

Waghid teaches post-basic students research methodology at a university. A description (2001:80-82) of his reflexive teaching praxis shows an example of an integrated approach adapted to each situation to achieve the expected outcomes:

> *In the beginning of the course, he first presents (format of formal lecture) and expounds on the conceptual underpinnings of issues about knowledge in the curriculum, in particular the diversity of ways in which knowledge within the field is produced. The presentation is complemented by relevant and critical readings. The students are encouraged to make analytical summaries of the selected readings to ensure basic understanding of the texts, but also to interpret these same texts relevant to their own social and every day life experiences. The focus has to be on thinking patterns that would engender a critical, reflexive understanding and approach to studies and relate abstract theoretical and methodological perspectives with situational examples in everyday life situations. The aim thereof is the reduction of facts with the focus on transferable skills and fundamental concepts (not spending too much time on absorbing knowledge, but creating an understandable link).*
>
> *After the presentation and exposition stages, he introduces activities (classroom presentation/discussions, assignment, seminar and workshop) that would demand their use of critical reflection and rethinking of knowledge and the production of their own and shared meanings. The students as individuals and in collaborative groups engage critically in reading of knowledge and knowledge formation as constructed and applied in the world regarding the particular topic. The aim of this phase is to give them insight into their own learning styles and that of others with appreciation of the value of diversity in a working environment, and to develop collegiality in working in teams, which contribute to easier transition to the workplace environment.*
>
> *He attempts to get students to think or go beyond information given with integrative skill of bringing knowledge, skills, understanding and experience together in problem solving activities and environment, which in turn provides students with an appropriate kind of preparation for lifelong independent learning.*

Similarly, a neonatal educator can achieve the best results using an integrated approach according to the particular topic.

6.6 SUMMARY

This chapter addressed the role of the educator and possible approaches for educating reflective neonatal nurses. This contributed to clarifying the concepts used in the model, particularly the agent (educator) and the procedure (educational approaches). The following chapter is a description of the construction of the model as a whole.

CHAPTER 7:
CONSTRUCTION AND DESCRIPTION OF THE MODEL

7.1 INTRODUCTION

The previous chapters addressed various aspects of the education of reflective neonatal nurses. This chapter focuses on constructing a model for the education of reflective neonatal nurses, building on the discussions of the previous chapters.

7.2 METHODOLOGY OF MODEL DEVELOPMENT

A model for the education of reflective neonatal nurses in a South African context was developed in this study using a qualitative research approach. The study used an explorative, descriptive design within its particular context. The research methodology is discussed in detail in Chapter 2. The methodology then used to construct the model using the research data can be briefly summarised as follows:

- The model for the education of reflective neonatal nurses in a South African context was developed using a qualitative research approach, since it focuses on social processes and human interactions (Babbie & Mouton 2001:270; Fouche & Delport 2002:79; Streubert Speziale & Carpenter 2003:107).
- An explorative, descriptive design was used within the particular context since the project involved investigative observation and description of a phenomenon in its natural setting, with the aim of presenting an integrated illustration of the phenomenon in terms of concepts and statements and relationships between them (Fouche 2002a:109; McEwen & Wills 2002:373).
- This was a contextual study conducted in a particular natural setting and taking into account the influences, characteristics and processes of this context (Babbie & Mouton 2001:272; McEwen & Wills 2002:349-355; Streubert Speziale & Carpenter 2003:110).
- Methods of data collection and analysis were chosen for their suitability and practicality for contributing to the development of a model for the education of reflective neonatal nurses (Denzin & Lincoln 2000:6). (Refer to Annexure 4)
- The model development process was modelled on the process used for theory development by Walker and Avant (1983:145-161).

- The structural components of the model were based on the 'agents' described by Dickoff, James and Wiedenbach (1968:545-554).

7.2.1 Process of model development

The process of theory development as described by Walker and Avant (1983:145-161), was described in Chapter 2, as presented in Figure 7.1.

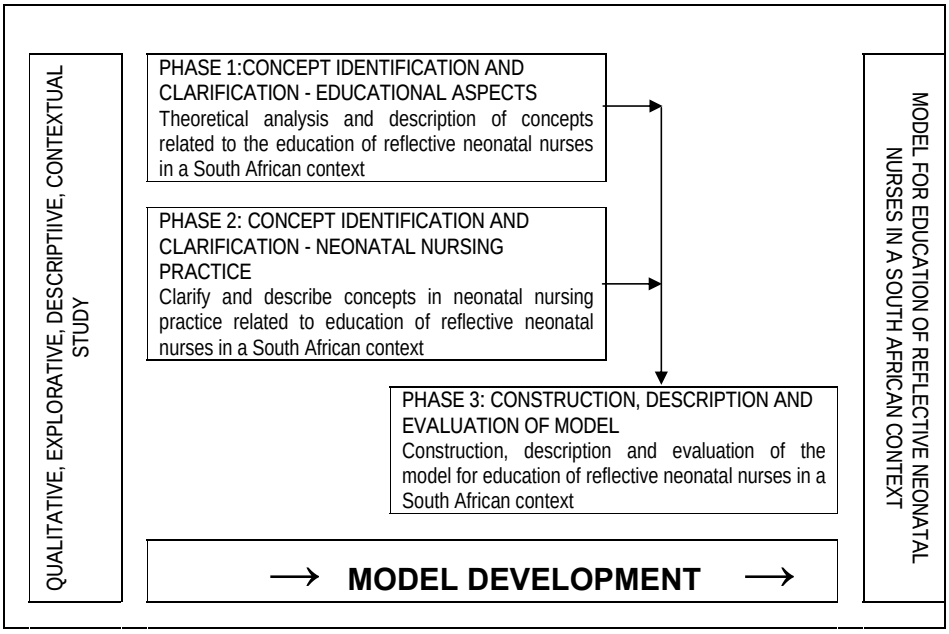

Figure 7.1: Schematic presentation of methodology applied in study

The process began with the selection of a topic of interest (one concept/variable or a framework of several concepts), derived from a problem that the researcher identified in her work as a neonatal nursing educator. The next step was identifying and recording the relationships between the concepts in this framework, drawing on suitable evidence. This was the main aim of the first and second phases of the study. The last step, which this chapter describes, involves organising statements of these relationships to form the components of a conceptual model, which was the third phase of the study (McEwen & Wills 2002:85; Walker & Avant 1983:145-161).

7.2.2 Components of model

The components used to develop the model were the 'agents' described by Dickoff, James and Wiedenbach (1968:545-554). These included the purpose of the model, its framework, recipient, agent, dynamics and procedure. The designation of these agents in the model is shown in Table 7.1.

Table 7.1: Agents of the model as applied in this study

Agents described by Dickoff, James and Wiedenbach (1968:545-554)	Description of agents/components (Dickoff *et al* 1968:545-554)	Agents in this study (components of model)	Detailed discussion of agents in this study
Framework	Context in which the activity takes place	Framework for education of reflective neonatal nurses: • Nursing education arena • Higher education arena Neonatal nursing practice	Chapter 3 Chapter 3 Chapter 5
Recipient	Who receives the activity	Neonatal nurses	Chapter 4
Dynamics	Energy source for the activity	Reflective learning	Chapter 4
Purpose of model	Goal or endpoint of the activity	Outcomes of education of reflective neonatal nurses: • Applied outcomes • Critical outcomes • End-product outcomes	Chapters 3, 4 & 5
Agent	Who is responsible for the activity	Neonatal nursing educator	Chapter 6
Procedure	Procedure, technique or protocol of the activity	Educational programme: • Outline of content • Educational approaches	Chapter 5 Chapter 6

Following this process, and using the descriptions of the agents or components from the previous chapters, the model will now be described.

7.3 DESCRIPTION OF THE MODEL

An overview of the model is schematically presented in Figure 7.2 overleaf, followed by a description of the components of the model.

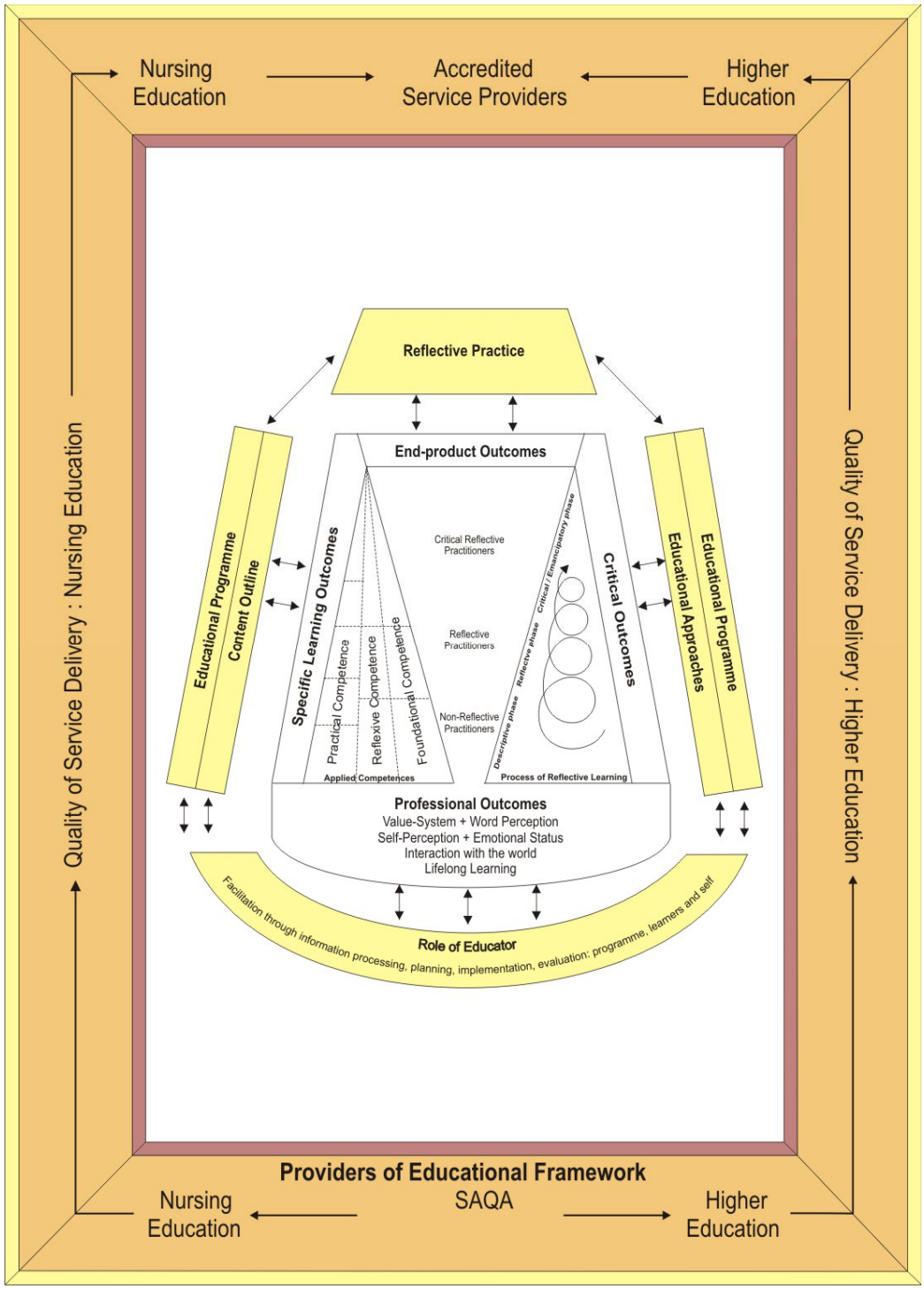

Figure 7.2: Model for education of reflective neonatal nurses

The model for the education of reflective neonatal nurses has six main components, namely the educational framework, neonatal nursing students, reflective learning, the outcomes of the education of reflective neonatal nurses, the role of the educator and the education programme.

The symbolic meanings of the schematic presentation are as follows:

- The frame around the model represents the educational framework.
- The figure in the centre represents all that occur in the neonatal nursing students.
- The boundary surrounding the central figure represents the outcomes of the educational programme in terms of SAQA. It is still part of the central figure, as it is still an integral part of the neonatal nursing students.
- The figure below the centre indicates the role of the educator as facilitating the processes that occur in the neonatal nursing students, utilising the educational programme that is indicated to the left and the right of the central figure. The shape of the particular figure does not have any particular meaning
- The figure above the central figure represents reflective practice, which is an outcome outside the neonatal nursing students (in neonatal nursing practice) as a result of what has occurred in them.
- The processes are driven (take place) from the base to the top: the educational framework is driven from the providers to the accredited service providers; and from the educator to the neonatal nursing student to reflective practice.
- The arrows indicate the direction of flow. The unidirectional arrows indicate a single direction of influence or flow. The bi-directional arrows indicate that there are influences or flow in both directions, which contribute to the dynamics of the processes.
- The triangles are symbolic of processes that start at the bottom and culminate to the top. The processes in the two triangles and the upside-down triangular shape occur more or less simultaneously at the same level, as indicated in the descriptions of the components of the model.
- The dotted lines are an indication that there is a strong relationship or no clear distinction between the areas that are divided by the dotted line.
- The base underneath the triangles (“professional outcomes”) serves as the foundation for the processes to occur within the neonatal nursing students, which is eventually effected to become part of the end-product outcomes. The shape thereof has no specific meaning.
- The model contains less detail than the schematic presentations of the individual components to prevent an ‘overcrowded’ presentation.

7.3.1 Framework for educating reflective neonatal nurses

The framework for educating reflective neonatal nurses is a description of the context of the study. It has two sides, namely South African higher education and nursing education in South Africa. The framework of South African higher education is provided by the South African Qualifications Authority Act, no. 58 of 1995 (South Africa 1995), the Higher Education Act, no. 101 of 1997 (South Africa 1997) and the legislation based on these acts. The framework for nursing education in South Africa is based on the South African Qualifications Authority Act, no. 58 of 1995 (South Africa 1995), and the Nursing Act, no. 50 of 1978 (South Africa 1978) that is to be replaced by the Nursing Act, no. 33 of 2005 (South Africa 2005a), and the legislation based on all these acts. Significant relevant factors will now be discussed briefly.

SAQA was established in terms of the South African Qualifications Authority Act, no. 58 of 1995 (South Africa 1995), to develop and implement the NQF and provide for any related matters. SAQA is responsible for ensuring that provisions for accreditation are complied with and, where appropriate, that registered standards and qualifications are internationally comparable.

According to SAQA, the aim of education is lifelong learning. The underlying philosophy of the NQF is OBE. Therefore, the learning outcomes of all South African qualifications should include critical cross-field or generic skills to promote lifelong learning and discipline-, domain-specific or specialised knowledge, skills and reflexivity (Ministry of Education 2004:7).

To help achieve this, relevant legislation and documents specify the requirements of the NQF, OBE, higher education qualification descriptors, the Higher Education Management Information System (HEMIS), NSBs/QCs, SGBs, ETQAs and SETAs (Beekman 2004:16-18, 31-38; Council on Higher Education 2002; Gravett & Geyser 2004: 44-45, 90-91,144-146; Ministry of Education 2004 & 2006; Olivier 2000:2-3, 6, 26-28; SAQA 2006).

These prescriptions provide the framework for educating neonatal nurses by means of a recognised professional qualification at a tertiary institution in a South African context. The framework is schematically presented in Figure 7.3. One part of the framework prescribes for the requirements of higher education and another for those of nursing education. Both parts consist of providers of the educational framework, bodies responsible for quality control of service delivery, and accredited service providers, which are indicated in the middle frame of

the schematic presentation. The outside frame represents the influences on these bodies, and the inside frame the relevance of these bodies on the education of reflective neonatal nurses.

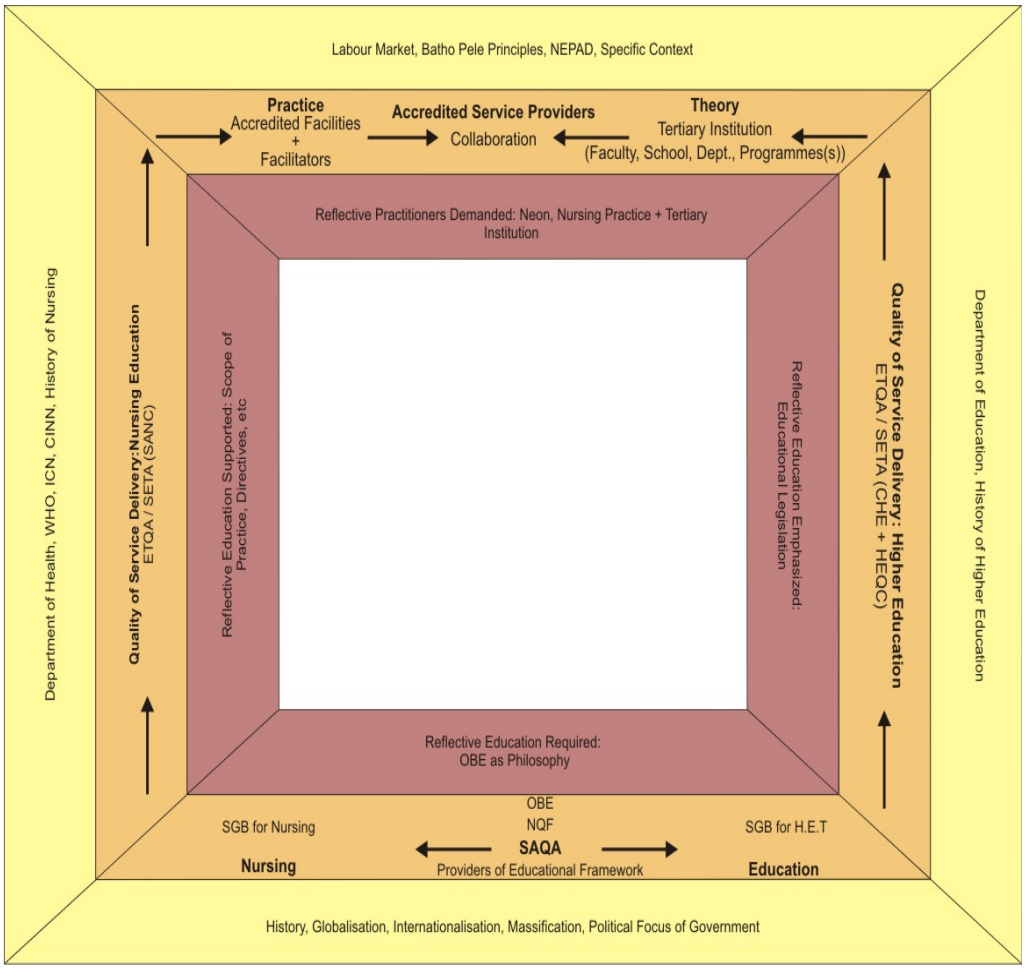

Figure 7.3: Framework for education of reflective neonatal nurses

SAQA encourages the education of *reflective* neonatal nurses, based on the underlying philosophy of OBE, and emphasising lifelong learning and discipline-, domain-specific or specialised knowledge, skills and reflexivity as outcomes of a work-based programme.

7.3.1.1 South African higher education

The *providers of the framework* in higher education are NSBs/Expert Consultative Panels (NSB 05-Education, Training and Development), which are proposed to be replaced by the HI-

ED QC (Qualifications and Quality Assurance Council for the General and Vocational/Career Pathway in Higher Education), and the SGB, which is the HET SGB. The NSB recommends the boundaries of the field (education) and the framework for the sub-fields (in this case higher education at NQF levels 7-9), and oversees the activities of the SGB. The responsibilities of the HET SGB include generating standards and qualifications in accordance with SAQA requirements, updating and reviewing these standards, recommending standards and qualifications to the ETD NSB and recommending criteria for the registration of assessors and moderators or moderating bodies (SAQA 1995; SAQA 2006; Olivier 2002:15-18). Influences on these providers include the history and development of higher education, globalisation, internationalisation, massification and the political focus and undertakings of the government (Botes 1997:3-9; Council on Higher Education 2002:7-15; Geyser 2004b:140-142; Ministry of Education 2006; SAQA 2007b).

The body or ETQA/SETA responsible for the quality of service delivery in higher education is the CHE with its permanent sub-committee, the HEQC. These bodies are responsible for promoting *quality assurance in higher education*, auditing the quality assurance mechanisms of higher education institutions and accrediting programmes of higher education, and they support the education of reflective practitioners (Higher Education Quality Committee 2004a, b & c; SAQA 2007; South Africa 1997). Influences on the quality of service delivery in higher education include especially the history of higher education, and the political focus of the Department of Education (Asmal 2004; Botes 1997:3-9; Council on Higher Education 2002:7-15; Department of Education 2004; Ministry of Education 2001, 2004 & 2006; Pandor 2005).

The *accredited service providers* in higher education for NQF levels 7-9 are tertiary institutions accredited by the HEQC for particular programmes (Higher Education Quality Committee 2004a & b). Their role is of extreme importance for society in terms of intellectual, institutional and professional development (Botes 1997:3-9), and they demand education of reflective practitioners. They are influenced by the labour market and realities of educational practice, and the implementation of various undertakings such as *Batho Pele* principles, skills development, labour legislation and creation of comprehensive universities (Boughey 2004:17-18; Department of Education 2004; Department of Public Service and Administration 2000; Ministry of Education 2001; South Africa 1999).

7.3.1.2 Nursing education in South Africa

The *providers of the educational framework for nursing education* are the NSB 09-Health Sciences and Social Services or Expert Consultative Panels, which are proposed to be

replaced by the TOP QC (Qualifications and Quality Assurance Council for the Trade, Occupation and Professional Pathway) in collaboration with the SGB for Nursing appointed in terms of the SAQA Act (South Africa 1995) and the SANC. The SANC is the professional authority for the nursing profession in South Africa in terms of the Nursing Act, no. 50 of 1978, (South Africa 1978) as well as the Nursing Act, no. 33 of 2005 (South Africa 2005) that is to replace the first mentioned Nursing Act. The SGB for Nursing is responsible for generating standards and qualifications in accordance with SAQA requirements, updating and reviewing these standards, recommending standards and qualifications to the NSB and recommending criteria for the registration of assessors and moderators or moderating bodies. SAQA will not consider the qualifications if it is not supported by the SANC (Olivier 2002:18; SANC 2004; SAQA 2007a & b; South Africa 2005a). They are influenced by the history and development of health and nursing education, globalisation, internationalisation, massification and the political focus and undertakings of the government and the SANC, and support the education of reflective nursing practitioners (Botes 1997:3-9; Department of Health 2004 & 2006; Department of Public Service and Administration 2000; Geyser 2004b:140-142; NEPAD Health Strategy 2005; SAQA 2006).

The SANC is accredited as the ETQA for nursing with the main responsibility of *quality of service delivery* as they:

- accredit providers of nursing programmes;
- promote quality amongst constituent providers;
- monitor nursing programmes;
- evaluate assessment and facilitate moderation amongst constituent providers;
- register constituent assessors for unit standards and qualifications falling within its primary focus;
- certificate students;
- co-operate with relevant moderating bodies;
- recommend new standards or qualifications or modifications to existing standards and qualifications to the NSB/Expert Consultative Panel or Qualifications and Quality Assurance Council;
- maintain a database of students, providers, etc.; and
- submit reports to SAQA (SAQA 2007a; South Africa 2005a).

The SANC collaborates with the HEQC in accrediting and evaluating professional and work-based programmes leading to NQF-registered qualifications, as well as other aspects of quality assurance policies and systems for teaching, learning, research and knowledge-based

community service, and projects such as *Guides to Good Practice,* during which they support the education of reflective nursing practitioners (Higher Education Quality Committee 2004c:7).

Influences on the quality of service delivery in nursing education include especially the history of nursing as a profession and of nursing education, the WHO, international professional bodies (e.g. ICN and CINN), and the political focus of the Department of Health (Department of Health 2004 & 2006; Global Network of the WHO… 2002:14-15; Goodyear 2006; ICN 2002).

The *accredited service providers of nursing education* include nursing departments at tertiary institutions which are accredited as training schools for particular nursing programmes by the SANC, and health facilities accredited by the tertiary institution and approved by the SANC as training facilities (South Africa 2005a; SANC 1992a, 1993d & e, 1997, 2000). Influences on them include the labour market and realities of nursing practice, and the implementation of various undertakings such as NEPAD, *Batho Pele* principles, skills development, labour legislation, collaboration between private and public health sectors, and creation of comprehensive universities (Boughey 2004:17-18; Department of Health 2004 & 2006; Department of Public Service and Administration 2000; South Africa 1999). These accredited service providers demand reflective neonatal nursing practitioners.

This framework contributes to:

- the current demand for reflective neonatal nurses who can manage the changing and complex reality of neonatal nursing practice in South Africa, and
- the need for collaboration between higher and nursing education in the education of reflective neonatal nurses.

7.3.2 Neonatal nursing students

Neonatal nursing students are the recipients of this education programme in whom the process of reflective learning takes place, producing the expected outcomes.

Neonatal nurses are adult learners who are motivated by their own particular needs and interests. Their orientation is life-centred; they prefer experiential learning and being independent and self-directed, and have a deep need to protect their self-esteem (Boleman & Kistler 2005; Kaufman 2003). Adult learners sometimes engage in learning simply because

they like it and enjoy finding out about things (Hillier 2002:30). They have significant personal knowledge and experiences that can be used to guide practice and learning (Gravett 2004:36-39; Powell 1989:825; Teekman 2000:1125-1135). They engage voluntary in the educational programme for neonatal nursing.

As reflective learning, in the researcher's definition, is a process of conscious and intentional examination by an individual of what occurs, in terms of thoughts, feelings and/or actions, and compared with underlying beliefs, assumptions, knowledge and the particular context, resulting in a change in perspective and consequent changes in practice, the *person* is central to the whole process. The implication is that reflective learning occurs in the neonatal nurse as an adult learner and cannot be addressed without consideration of the characteristics of the persons involved.

7.3.3 Reflective learning

According to the researcher's definition, various spheres of differing degrees of complexity are involved in reflective learning. The different spheres follow each other in a sequence, and different competences or abilities underlie each phase. The first is the descriptive phase, which involves description of the situation or incident (actions, thoughts and feelings), and examination of these descriptions for genuineness and comprehensiveness. The reflective phase follows, which entails reflective analysis of the experience against espoused theories (scientific, ethical and aesthetic), reflective analysis of the situation itself and reflective analysis of intentions against actual practice. The last phase is the critical / emancipatory phase, which involves critique of practice in terms of conflicts, distortions and inconsistencies (between values/beliefs and practice, intentions and actions, and clients' needs and nurses' actions), and engagement in emancipatory and change processes.

The hierarchical process of reflective learning is generic, cross-curricular and linked to all learning areas. In the programme for educating reflective neonatal nurses, the reflective learning process includes the various activities that underpin the critical outcomes formulated by SAQA (Higher Education Quality Committee 2002b:34; Oliver 2002:33-34; South Africa 1995) and the actual outcomes of the reflective learning process correlate with critical outcomes of the programme. The hierarchical process is schematically presented in Figure 7.4 in the right-sided triangle indicated by the spiral, starting at the bottom of the triangle. The triangle on the left hand side represents applied competences and is included in the

background to indicate the relationship between the process of reflective learning and applied competences. Both occur within the educational framework.

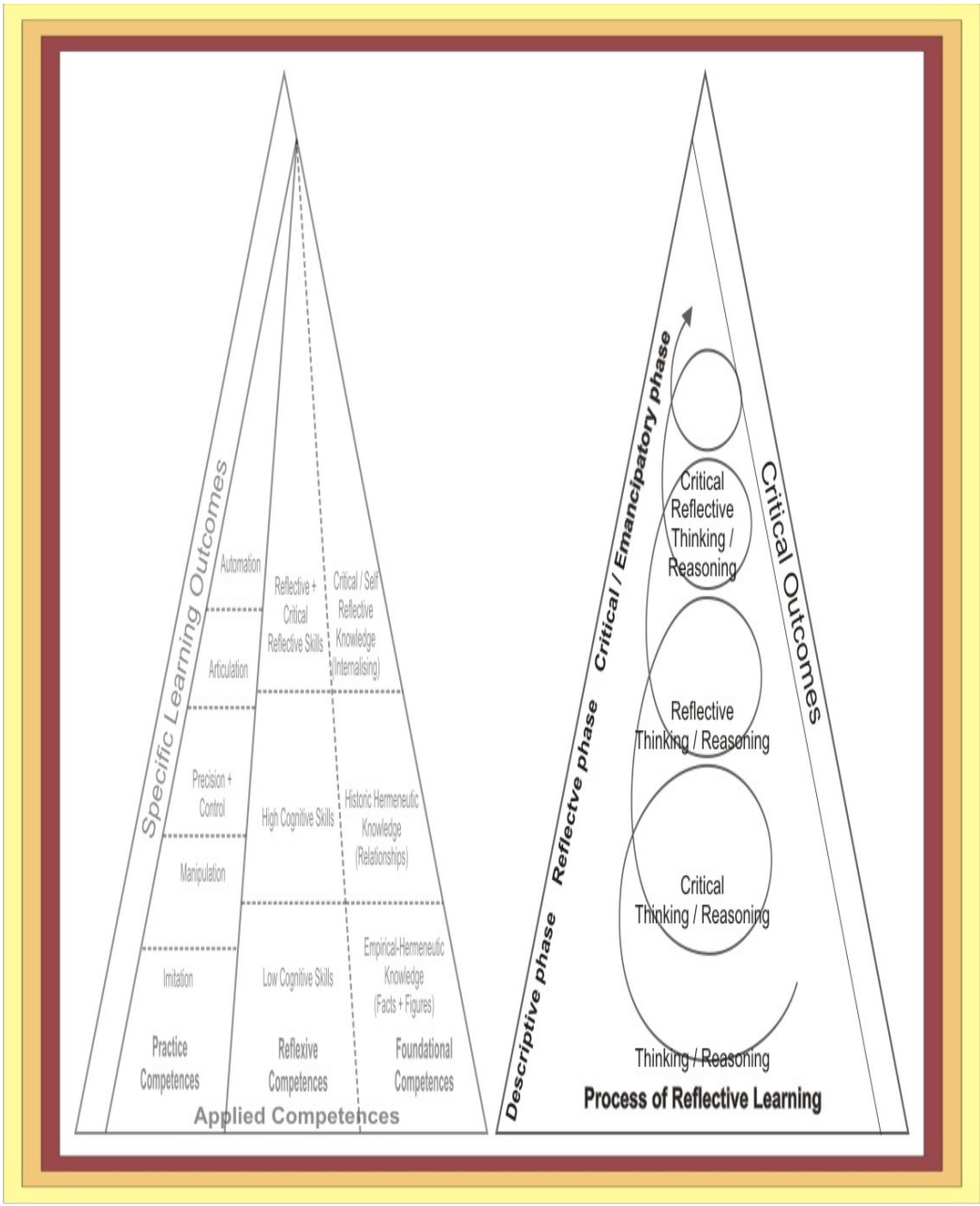

Figure 7.4: Process of reflective learning

7.3.4 Programme outcomes

The outcomes of our programme are the purposes or end-goals of this study. The outcomes are described in terms of critical outcomes, specific learning outcomes and end-product outcomes, as relevant to the neonatal nursing students as recipients of the programme, and reflective/critical-reflective practice as shown in changes in neonatal nursing practice.

7.3.4.1 Critical outcomes

Critical outcomes, determined by SAQA, are generic and cross-curricular outcomes relevant to all learning areas. They are 'soft' or intangible outcomes, such as the capacity to apply knowledge, skills and attitudes in an integrated way, which are common to all subjects or learning areas. These critical outcomes drive the learning process used to achieve competences in more than one sphere of life (Olivier 2002:32-34; Van der Horst & McDonald 2001:257). According to the researcher, they are integral to the outcomes associated with the process of reflective learning, as indicated in Fig. 7.4.

These generic outcomes determined by SAQA inform all teaching and learning, and include (Higher Education Quality Committee 2002b:34; Olivier 2002:33-34; South Africa 1995):

- identifying and solving problems through making responsible decisions using critical and creative thinking;
- working effectively with others as a member of a team, group, organisation or community;
- organising and managing oneself and one's activities responsible and effectively;
- collecting, analysing, organising and critically evaluating information;
- communicating effectively using visual, mathematical and/or language skills in the modes of oral and/or written persuasion;
- using science and technology effectively and critically;
- showing responsibility towards the environment and the health of others;
- demonstrating an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation; and
- contributing to the full personal development of each learner and the social and economic development of society at large, by making it the underlying intention of any programme of learning to make an individual aware of the importance of:
  - reflecting on and exploring a variety of strategies to learn more effectively,
  - participating as responsible citizens in the life of local, national and global communities,

- being culturally and aesthetically sensitive across a range of social contexts,
- exploring education and career opportunities and
- developing entrepreneurial opportunities.

7.3.4.2 Specific learning outcomes

Specific learning outcomes are the particular outcomes of an educational programme, which are formulated as applied competences. Applied competences include the relevant knowledge, skills and values or achievements that students should be able to demonstrate at a particular level of competence, in their particular context and field. These competences are embedded in a particular learning area, are contextually demonstrated and contribute to the achievement of critical outcomes (Olivier 2002:32-33; Van der Horst & McDonald 2001:259).

Applied competences is thus an overarching term for three interconnected kinds of competence, namely practical, reflexive and foundational competences (Council on Higher Education 2002:48-49; Geyser 2004b:139-156). Applied competences are schematically presented in Figure 7.5 in the triangle on the left side on the overleaf. The competences start at the bottom of the triangle and culminate to the top, as they get more complex. The dotted lines between them demonstrate the lack of clear boundaries and integration. The process of reflective learning appears on the right side in the background, again to indicate their relationship.

Foundational competences are the knowledge (the *what*) that the individuals possess and rely on for decision-making and action, while reflexive competences are the abilities to use the underlying cognitive and metacognitive processes (the *how*) to use this knowledge. Practical competences are the technical executions of procedures or skills founded in foundational competences (knowledge) and supported by cognitive abilities and emotions (Council on Higher Education 2002:48-49; Geyser 2004b:145). The levels of foundational and reflexive competences correlate with that of the process of reflective learning. Practical competences follow its own levels, which also starts at the bottom from least complex to most complex.

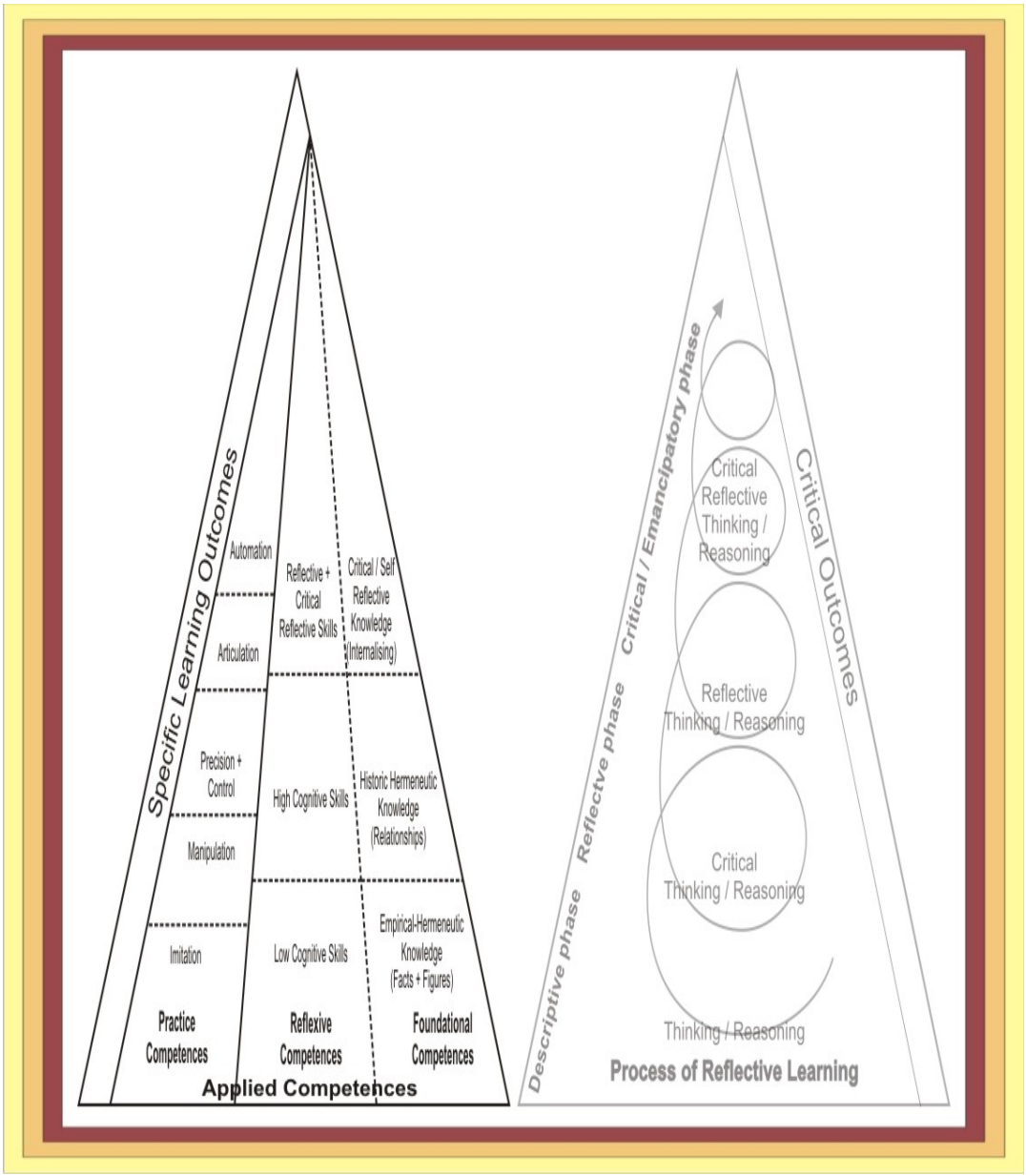

Figure 7.5: Applied competences

Practical competences

Practical competence, which involves technical skills, psychomotor skills, physical abilities or clinical skills, are 'the demonstrated abilities, in an authentic context, to consider a range of possibilities for action, to make considered decisions about which possibility to follow, and to perform the chosen action' (Council on Higher Education 2002:49). Practical competences are based on coordination (example eye-hand coordination), gross motor functions and/or fine psychomotor skills applied to execute technical tasks (Olivier 2002:37-38; Van der Horst & McDonald 2001:36).

The different levels of practical competences are:

- *imitation* (the ability to re-demonstrate),
- *manipulation* of the task (the ability to perform acts on instruction),
- *precision and control* (the ability to produce a high level of proficiency),
- *articulation* according to the situation (the coordination of a series of activities), and
- *automation* or naturalisation (the ability to act with maximum proficiency and the minimum expenditure of energy).

To have practical competences in nursing an individual needs to know how to do something; this requires knowing subject-specific skills and algorithms (nursing skills), subject-specific techniques and methods (nursing process and procedures), and the criteria for determining when to use appropriate procedures such as diagnostic and laboratory tests (Duan 2006:4 Mellish & Brink 1990:34).

Reflexive competences

Reflexive competences are the demonstrated abilities to integrate and connect performances and decision making with understanding and with an ability to adapt to change and unforeseen circumstances, and to explain the reasons behind such adaptation (Council on Higher Education 2002:48-49; Geyser 2004b:145).

Reflexive competences involve cognitive and meta-cognitive processes that enable one to understand the meaning of knowledge. These processes include (Van der Horst & McDonald 2001:31-39):

- identifying concrete concepts,
- identifying abstract concepts,
- discriminating or distinguishing between concepts,

- constructing rules or formulas,
- recalling or remembering content,
- comprehending content,
- applying or generalising content,
- analysing content,
- synthesising content and
- evaluating content.

These cognitive and meta-cognitive skills underpin the process of reflective learning, with different skills related to each phase of the process.

Activities linked to the **descriptive phase**, the first and least complex phase of reflective learning, are *description* of the situation or incident (actions, thoughts and feelings as experienced) and *examination* of these descriptions for genuineness and comprehensiveness without attaching interpretations to them. The skills required (Duan 2006:1-12; Gravett 2004:34-35; Hillier 2002:17; Olivier 2002:91-92; Smith & Lovat 2003:49; Van Rensburg & Lamberti 2004:67-68) are relatively low-level cognitive skills needed to:

- gain knowledge of the facts, including the abilities to:
  - observe (hear, see, feel, etc.),
  - memorise or remember facts and figures and reproduce them;
- gain comprehension or insight into the content so as to:
  - understand, interpret, explain and summarise it,
  - emphasise the essentials of the content and
  - anticipate the implications or results of action;
- give meaning and create his/her own perception of what is observed; and
- use appropriate language and cognitive and linguistic abilities to communicate it.

Prior learning and experiences play a significant role in guiding perception and description of the situation (Gravett 2004:34-37). The person must be able to describe his/her own emotions or feelings in the particular context with a certain degree of detachment (Kim 1999:1207-1208). Other vital skills are the abilities to find and use resources; observe, analyse and make judgements; and define and ask questions (Alsop 2005:182).

During this phase, the information generated about a topic, situation or incident can be:

- scientific (use and application of empirical knowledge, whether general, discipline-specific or personal),
- ethical (meanings and attitudes)

- aesthetic (forms of self-presentation and creativity) (Kim 1999:1208; Hillier 2002:18-20) or
- personal (the individual's perceptions and grasp of the situation) (Johns 1995:228).

Activities associated with the **reflective phase** include reflective analysis against *espoused theories* (professional and personal), reflective analysis of the *situation* and reflective analysis of *intentions against actual practice* (Kim 1999:1205-1212). The main focus during this phase is on the 'why' and not the 'how' of a particular topic, situation or incident (Van Aswegen *et al*. 2000:124). Meaning, coherence, consistency, inconsistency, disparities, commonalities, uniqueness, intentions, application, usefulness and need for change or learning are sought to develop 'models of good practice' or 'theories of application and knowledge' (Alsop 2005:182; Kim 1999:1208-1209).

The abilities that underlie this phase include:

- analysis (the ability to analyse a situation into its different components and indicate the relationship between them),
- application (the ability to explain a relationship between facts or concepts and to generalise the knowledge) and
- manipulation or utilisation of knowledge (the use of knowledge or skills in new or other situations) (Duan 2006:1-12; Olivier 2002:91-92; Smith & Lovat 2003:49).

These abilities or cognitive skills are present at different levels of complexity and within various contexts. They include clinical reasoning, critical thinking, critical reasoning, reflective thinking, reflective learning and reflective clinical reasoning (Elcock 1997:138; Kuiper & Pesut 2004:386-391; Olivier 2002:38; Smith & Lovat 2003:55; Van der Horst & McDonald 2001:34-35). Synthesis starts in this phase and continues into the critical or emancipatory phase of reflective learning.

The last and most complex phase of reflective learning is the **critical / emancipatory phase**, which involves critique of practice in terms of conflicts, distortions and inconsistencies (values or beliefs with practice; intentions with actions; and clients' needs with nurses' actions), and engagement in emancipatory and change processes (Kim 1999:1205-1212). In this phase the individual's perspective changes, and consequently so does his/her practice, depending on the nature of the theory-practice connection (Hillier 2003:15-20). The aim of the phase is to explain the nature and meaning of practice to practitioners, correct and improve any sub-optimal or ineffective practice through self-reflection and criticism and generate models of 'good' practice and theories of application through reflection and critique of actual

occurrences. The desired outcome is self-emancipation and an emancipatory culture in clinical settings (Kim 1999:1206-1209; Kuiper & Pesut 2004:386-391).

The critical phase involves mainly meta-cognitive processes of critical reflective thinking, also known as critical reflection or 'thinking about thinking and learning' (Kuiper & Pesut 2004:386-391). These include (Duan 2006:1-12; Olivier 2002:91-92; Smith & Lovat 2003:49; Van Aswegen *et al*. 2000:130):

- fair-minded evaluation,
- creative synthesis,
- well informed and multi-logical reasoning,
- proactive thought,
- focused enquiry,
- deliberate and principled thinking about the thinking process and
- insight.

This phase is described by Argyris and Schön as double-loop learning, where a person not only evaluates a situation or incident against a set goal or plan by thinking reflectively, but also questions and evaluates the validity of the set goal or plan (Foster & Greenwood 1998:168; Hillier 2002:18, 23).

These three phases of reflexive competences cannot be clearly distinguished, since they are to an extent integrated and interdependent. A person needs prior learning and low-level cognitive abilities to understand and communicate facts and figures, reflection to develop from a novice to a competent professional and critical reflection to develop from a competent professional to an expert and change agent (Hillier 2002:23).

Foundational competences

Foundational competences refer to the demonstrated understandings of knowledge and thinking that underpins the action/s taken (Council on Higher Education 2002:48-49; Geyser 2004b:145). If reflexive competences, described above, involve understanding and thinking, foundational competences are the content or components about which one thinks. The terms 'foundational competences' and 'foundational knowledge' are synonyms, and in this study are referred to by the term 'knowledge'.

Knowledge includes the information, data, facts, theories and concepts used as thinking constructs to build rules, concepts, principles, codes and formulas, according to their interrelationship with reality, and the challenges and problems of the specific context. This knowledge is used to clarify and understand logic, sequences and relations (Olivier 2002:37; Van der Horst & McDonald 2001:36-39). It is dynamic, biased rather than neutral and influenced by viewpoints, ideologies, philosophies and experiences (Smith & Lovat 2003:32-34, 78-79). It is never complete, predetermined and entirely discipline-related, but rather continuous and constructed in specific social and historical settings (Waghid 2001:80).

Knowledge can be distinguished according to its origin into hidden, scientific and personal knowledge. *Hidden knowledge* is the unintended and implicit 'common-sense knowledge and understandings that we form from the information, skills, beliefs, norms, perceptions, meanings and feelings we absorb from our dominant culture, the values and view of which this knowledge reflects. It is picked up through messages of acceptance, rejection and/or legitimation in relationships and socialisation (Smith & Lovat 2003:34-37). *Scientific knowledge* (also known as espoused, explicated, formal, empirical, theoretical or declarative knowledge) is generated through science, technical or factual and supposed to guide practice (Johns 1995:226-234 & 1996:1135-1143; McEwen & Wills 2002:13-15; Powell 1989:825; Waghid 2001:80). *Personal knowledge* (theory-in-use, tacit, intuitive or informal knowledge) belongs to the individual and is based on assumptions and experience. It is produced in practice and tailored to specific situations. The practitioner is intimately involved in generating and validating this type of knowledge (Kim 1999:1206; McEwen & Wills 2002:13-15; Powell 1989:825).

Knowledge can also be categorised according to complexity or difficulty, as empirical-analytical, historical-hermeneutic or critical/self-reflective knowledge (Smith & Lovat 2003:88-90). The differences between these levels are not always exact, as the types are integrated and build on each other to create the whole meaning. These different levels of foundational knowledge correspond with the different stages of the process of reflective learning.

Empirical-analytical knowledge has the following features (Duan 2006:4; McEwen & Wills 2002:13; Smith & Lovat 2003:88-90; Van Der Horst & McDonald 2001:36-39):

- It is concerned with the facts and figures associated with the subject and their technical control.
- This knowledge is factual, and includes the basic elements a person must know to be acquainted with a discipline or solve problems in it, namely terminology, definitions and descriptions.

- It is supposedly objective, abstract, generally quantifiable, exemplary, discursively formulated, and verifiable.
- This knowledge draws on traditional ideas that can be verified through observation, or through experimental, historical or phenomenological research.

This type of knowledge is the base for historical-hermeneutic and critical/self-reflective knowledge.

Historical-hermeneutic knowledge (also known as conceptual knowledge) has the following characteristics (Duan 2006:4; McEwen & Wills 2002:15; Smith & Lovat 2003:88-90; Van der Horst & McDonald 2001:36-39):

- It involves understanding meanings and relationships, or exploring the inner dimensions of the subject.
- It consists of abstracted and generalised knowledge gained from empirical and personal knowledge and put in a form that reveals patterns and relationships between the basic elements of a field.
- This knowledge thus includes classifications, categories, principles, generalisations, theories, models and structures.

Critical or self-reflective knowledge (also known as internalised or meta-cognitive knowledge) has the following characteristics (Duan 2006:5; Jarvis 1992:178; Rolfe 2000:175-178; Smith & Lovat 2003:88-90; Van der Horst & McDonald 2001:36-39):

- It involves critically reflecting on the subject matter, scrutinizing and appraising the adequacy of the information, evaluating its meaning and finally making an autonomous decision about what to do with this knowledge.
- This knowledge combines experiential and research-based knowledge through the process of reflection and leads to change and emancipation.

Foundational competences include all three types of knowledge, empirical-analytical, historical-hermeneutic and critical/self-reflective. Foundational competences in neonatal nursing therefore include knowing the facts and figures required to understand and make sense of the demands of neonatal nursing practice; understanding the meanings of all these facts and figures, the relationships between them and the implications thereof; and internalising this knowledge to scrutinize and evaluate its meaning.

7.3.4.3 End-product outcomes

End-product outcomes are the final results of the programme, the product, service or decisions made up of the critical and specific outcomes as a unity. End-product outcomes only become observable after students have experienced a range of learning activities (Olivier 2002:32-33, 41). These end-product outcomes include professional outcomes for the individuals involved and reflective practice for the community.

The end-product outcomes of our programme are schematically presented in Figure 7.6 in the centre, symbolic of being central to the process of educating reflective neonatal nurses. The outcomes relevant to the neonatal nursing students themselves are referred to as professional outcomes, while reflective practice is indicated as an end-product outcome that is not an integral outcome within the students. The broad base at the bottom is a symbolic demonstration of the various aspects related to professional outcomes that serves as a foundation for all that occurs. The shape of the broad base though does not have any particular meaning. The upside-down triangle indicates the growth that takes place related to the different levels of the process of reflective learning (critical outcomes) on the one side and the levels of applied competences (specific learning outcomes) on the other side. (Please turn page over.)

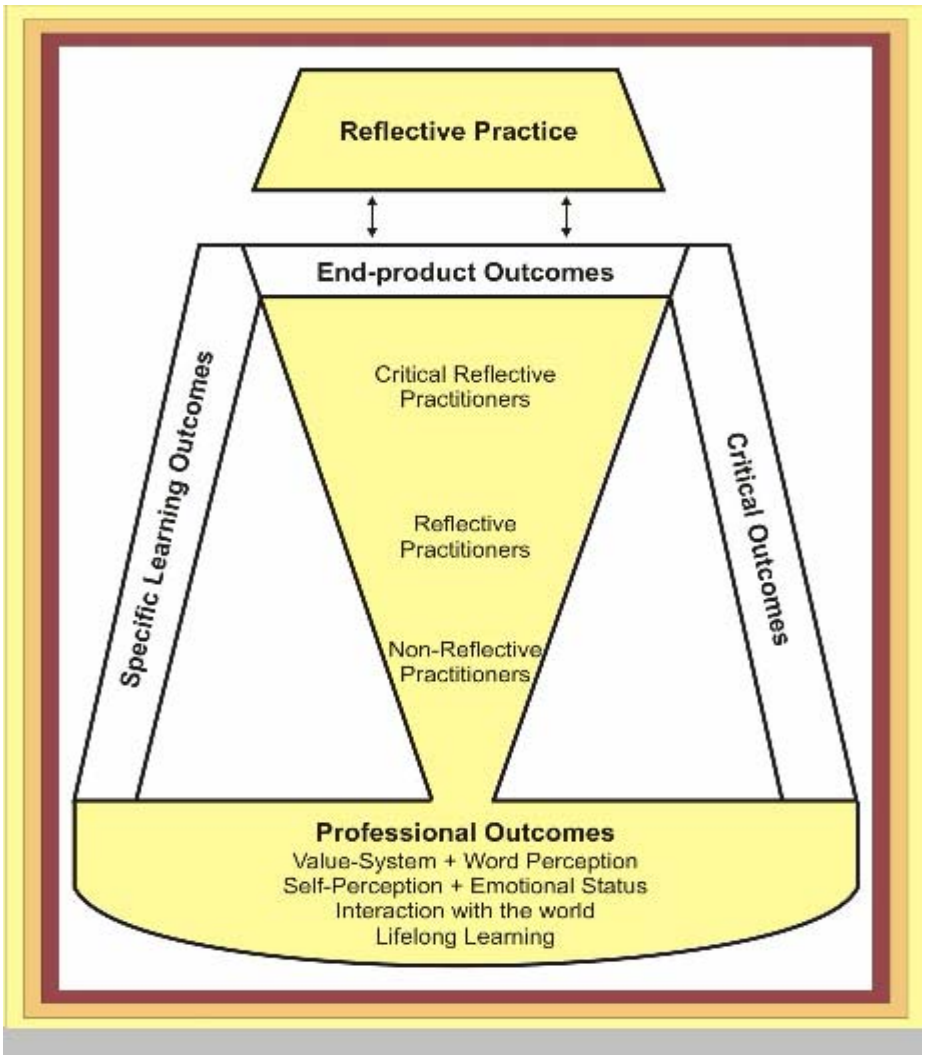

Figure 7.6: End-product outcomes

Professional outcomes

Professional outcomes are the end-results that affect the working lives of, and the quality of the service delivered by the individuals involved, and are largely determined by the individuals' characteristics and needs.

Personal characteristics are those that determine how individuals perceive and use knowledge and apply their skills, while in turn being influenced by these knowledge and skills, to produce professional outcomes observable in their service delivery. Personal characteristics depend in

part on the individual's core value system and perception of the world, and perception of his/her self and emotional status. The observable results of these characteristics are that individual's interaction with the outer world, and an attitude of lifelong learning.

An individual's core *value system and worldview* include his/her beliefs, values and perceptions about the world. These are what the individual thinks is important, what he/she is prepared to suffer for, and what guides his/her choices. These choices are usually not based on what the individual wants to do, but rather on what the individual believes he/she ought to do (Curtin & Flaherty 1982:8-9; Mellish 1988:104-105; Searle 1988:123).

Certain values and perceptions promote reflective learning and practice, including (Olivier 2002:39-40; Smith & Lovat 2003:55; Van Aswegen *et al*. 2000:130; Van der Horst & McDonald 2001:35-41):

- positive attitudes,
- value for life,
- morality and moral integrity,
- confidence in ones interpretation of right and wrong,
- dignity,
- respect for others and their property,
- respect for and recognition of other values and views,
- empathy and concern for others,
- appreciation for religious convictions,
- respect for authority,
- recognition of human rights and
- a passion for life.

A person's values and worldview guide their choices, but their *perception of themselves and their emotional state* significantly influence *how* they make and implement these choices. Self-perception and emotion often go hand-in-hand, but emotions can be rapidly influenced by the individual's circumstances to various extents and for various periods, while self-perception is usually stable or changes only slowly over an extended period of time. Individuals' self-perception or self-esteem has three dimensions, namely competence, worth and control. Competence in this sense is the belief individuals have that they can accomplish tasks and achieve goals; worth is the extent to which individuals like and value themselves; and control is the degree to which individuals feel they can influence events around them (Henniger 2004:132-133).

Emotion is central to the process of rational thought and what a person learns is organised by his/her emotions. Positive emotions such as a sense of well-being and a state of relaxed alertness are needed for learning, while negative emotions such as depression, anxiety and threat inhibit learning (Gravett 2004:38-39).

States of self-perception and emotion that support reflective learning include (Carroll *et al.* 2002:36-41; Olivier 2002:39-40; Smith & Lovat 2003:55; Van Aswegen *et al*. 2000:130; Van der Horst & McDonald 2001:35-41):

- self-confidence,
- self-respect,
- acknowledgement of ones own competences,
- taking responsibility for ones own life,
- accepting accountability for ones own decisions and activities,
- internal motivation,
- self-discipline,
- honest self-evaluation,
- devotion to truth against self-interest,
- emotional stability and stability of character,
- a need for continuous personal and professional growth,
- willingness to take risks,
- clarity about important issues,
- courage and perseverance, and
- the ability to cope with challenge, stress, change, frustrations, emotional turmoil and death.

Individuals' *interaction with their outer world* involves the manner in which they present themselves and how others perceive them; in other words, it is their *observable attitudes and behaviour* resulting from their values and world view, self-perception and emotional state, and their foundational knowledge, practice competences and reflexive competences.

Observable attitudes and behaviour manifest in a person's verbal and non-verbal communication with others, including written expression and observable action in practice. Based on their interaction with their world, individuals can be categorised as non-reflective, reflective or critically reflective practitioners. As suggested in Chapter 4, *non-reflective practitioners* are not suitable to become neonatal nurses, as they will not be able to make the appropriate decisions in practical situations that might be the difference between life and death

for an infant or have long-term sequelae for that infant and his/her family. This does not mean that such a person should not be allowed to nurse in a NICU, since he/she might have other sought-after qualities such as warmth, caring and reliability, and function very well under the supervision of a neonatal nurse. *Reflective practitioners* are suitable to be neonatal nurses, as they will be able to integrate the relevant information and take appropriate action to the advantage of infants and their families. These nurses will probably provide quality holistic neonatal care, and be able to take charge of the unit if necessary. Finally, *critically reflective practitioners* have the potential to be leaders and change agents in neonatal nursing practice, able not only to provide quality holistic neonatal care, but also to lead others to improve practice.

Non-reflective practitioners are 'routinised nurses' relying on routine care and 'recipes' to cope with the day-to-day demands of neonatal nursing even if these are unsuitable for the specific patient (Foster & Greenwood 1998:170). Their practice is at the level of actions. In reflection these practitioners (Duke & Appleton 2000:1557-1568; Wong *et al*. 1995:48-57):

- describe rather than analyse experiences,
- making invalid assumptions without trying to test them for validity,
- view situations in a relatively straightforward way, without considering the context,
- tend more to concrete rather than abstract thinking, and
- describe their experiences impersonally and superficially.

These characteristics correlate with:

- the lowest level of reflexive competence, of which the main skills are memory and communication;
- the descriptive phase of the reflective learning process, of which the main activities are thinking and reasoning; and
- the lowest level of foundational competence, namely empirical-analytical knowledge.

Reflective practitioners (Alsop 2005:182-183; Atkins & Murphy 1993:1190; Driscoll & Teh 2001:98; Greenwood *et al.* 2000:1106; Powell 1989:830; Reid 1993:305; Rolfe 2000:155-163; Teekman 2000:1125-1135; Van Aswegen *et al.* 2000:126; Waghid 2001:81):

- have specialised theoretical knowledge and clinical skills in their field of specialisation or interest;

- are skilled in critical thinking, critical analysis, synthesis and evaluation of situations, debate and discussion, decision-making, self-awareness, self-directed learning and practicing nursing as an art;
- are adaptable, flexible, open-minded and have a need for personal growth
- see change as a challenge,
- identify learning opportunities in daily activities,
- take responsibility for ensuring that others benefit from their expertise,
- draw others into debate about practice,
- demonstrate autonomy,
- support peer and team learning,
- encourage reflective processes
- improvise within existing practice.
- accept that knowledge can emerge from within or outside clinical practice,
- recognise the consequences of reflection
- are courageous to act on reflection and
- are lifelong learners.

These practitioners function within:

- the reflective phase of the reflective learning process, of which the main activities are critical thinking/reasoning and reflective thinking / reasoning;
- the level of reflexive competences with higher cognitive and reflective skills; and
- the foundational competences of empirical-analytical and historic-hermeneutic knowledge

Critically reflective practitioners have the same features as reflective practitioners, and more besides; they are able to (Driscoll & Teh 2001:98; Duke & Appleton 2000:1557-1568; Hillier 2002:23,25; Kuiper & Pesut 2004:386; Wong *et al*. 1995:48-57):

- integrate experience with discussion,
- frame the problem in context,
- look at alternative possibilities,
- draw on a wide number of resources,
- validate, appropriate and/or reflect on knowledge,
- critically evaluate experiences and themselves,
- frame a problem in its context,
- adopt a wide and multi-dimensional perspective in dealing with issues,

- pursue alternative views or possibilities by drawing on a number of resources, including prior knowledge, existing information and literature,
- be courageous in trying out different methods,
- be amenable to change and
- decline 'habitualisation' of practice and refuse to take things for granted.

Such practitioners continuously try to ensure that the outcome of any action are close to what is anticipated by theory and previous experience combined (Van Aswegen *et al*. 2000:130-131). They function on:

- the critical reflective or emancipatory phase of the reflective learning process, of which the main activities are critical reflective thinking/-reasoning;
- the highest level of reflexive competence, of which the main skills are critically reflective; and
- all levels of foundational competence, including empirical-analytical, historic-hermeneutic and critical-/self-reflective knowledge.

Lifelong learning is a significant additional professional outcome of reflective learning. One of the aims of higher education in the South African context is autonomy of learning, defined by the Council on Higher Education (2002:49) as

> a learner's capacity for lifelong learning, i.e. the extent to which a learner can undertake action for learning independently, the extent to which a learner takes responsibility for his/her own learning and the extent to which a learner is self-reflexive about, and can evaluate the quality of his/her learning, and eventually that of others. Progression in this category of learning is from dependence on other-regulation, to full self-regulation, and from close supervision to creative, self-directed learning and the ability to supervise the learning of others.

Lifelong learning is a necessity, as what we learn does not last for a life-time but changes at tremendous speed with the development of science, technology, communication and knowledge. Lifelong learning is constant, a dynamic growth and maturation in order to maximize our potential in terms of knowledge, attitudes and skills. In professional practice this learning is associated with the formal process of continuing professional development, which aims to improve health- and social-care services to the benefit of the users of those services. It is associated with career development and is a way of maintaining employability (Buckingham & Palmer 2005:202, 213; Maehl 2000:xi). The practice of reflection has the potential to lead to significant personal and professional growth, thus helping an individual to develop a career and keep him/her excited and challenged throughout years in a particular occupation (Henniger 2004:369; Kuiper & Pesut 2004:382). Through reflection she shows who

she is as a reader, writer, thinker and human being (Murphy 1998:7) and therefore who she is as a nurse.

Without lifelong learning it would be senseless for nurses to specialise in a dynamic field like neonatal nursing science, for which formal education only provides a foundation. Thereafter the onus is on the individual to remain updated and continue to grow professionally, a responsibility with which reflective learning can help enormously.

Reflective practice

Nursing practice is characterised by complexity, uncertainty, instability, diversity and value conflicts, and theory to resolve these problems is not readily available. Practitioners are forced to reframe problems in order to find solutions (Getliffe 1996:362). Change appears to be endemic in nursing practice (Reid 1993:309), and the theory-practice gap is a given (Getliffe 1996:362; Powell 1989:824-832; Reid 1993:306). Professional practice involves not a simple linear application of theory to practice but a much more complex process in which the professional has to juggle the demands of the situation, intuition, experience and knowledge. This entails critique of practice in terms of conflicts, distortions and inconsistencies, and engagement in emancipatory and change processes (Kim 1999:1206-1212; Reid 1993:305). Reflective practice is the most suitable way of addressing the challenges of complex, dynamic and constantly changing nursing practice and developing the profession (Alsop 2005:174-177; Chiu 2006:184; Johns 1995:226-234).

The potential outcomes of reflective practice include (Burton 2000:1009-1017; Driscoll & Teh 2001:97-98; Foster & Greenwood 1998:165-172; Hallet 1997:103-110; Jarvis 1992:178; Kuiper & Pesut 2004:386; Powell 1989:826; Reid 1993:305-309; Scanlan & Chernomas 1997:1138-1143):

- narrowing the theory-practice gap,
- helping practitioners to respond to changing situations,
- continuous development of the practitioner,
- prevention of habitualisation and
- many uses as an educational tool in the training of nurses.

Reflective practice is thus an approach that meets the demands of a specific context by using more than just rational and evidence-based knowledge and skills; it includes experience and personal growth, based on the underlying processes of reflective learning and the hierarchy of competences. Such practice has positive outcomes for the clients/community.

7.3.5 Role of the educator in educating reflective neonatal nurses

The educator is the agent of the activity, the person responsible for educating reflective neonatal nurses. As the responsible person, the educator has to fulfil specific expectations. These responsibilities and expectations include information processing, planning and implementation, and evaluation, and give rise to certain qualities expected of a reflective educator. The role of the educator in the education of reflective neonatal nurses is schematically presented in Figure 7.7 below the central figure (neonatal nursing students) and within the educational framework. The arrows between the role of the educator and the central figure indicate the bi-directional flow of communication during the facilitation process. The bi-directional arrows between the role of the educator and the educational programme and –approaches indicate the use of the programme by the educator as part of the facilitation process. The shape used to indicate the role of the educator does not have any particular symbolism, neither does the shape of the educational programme and –approaches.

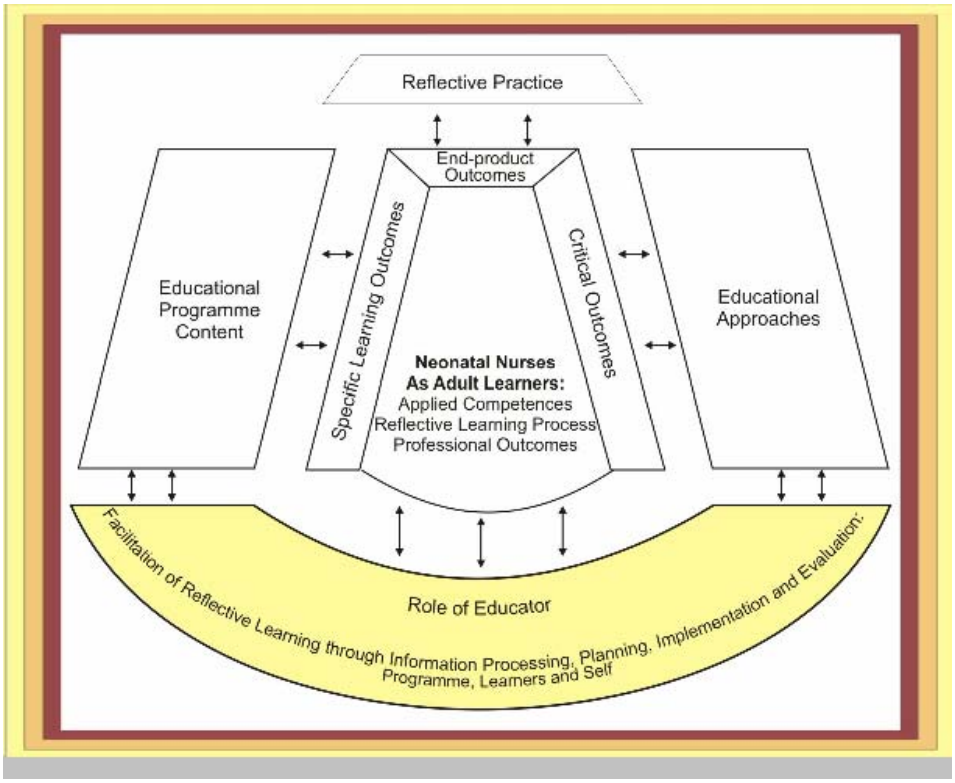

Figure 7.7: Educator's role in educating reflective neonatal nurses

The educator is only a facilitator of the educational process, the person who takes teaching beyond content by using a more process-oriented approach and a variety of educational approaches and teaching strategies. The emphasis is on learning through reflection and self-assessment to integrate formal theory with experiential knowledge (Hatcher & Bringle 1997:153; Pee *et al*. 2000:754-761; Piterman & McCall 2000:30-37; Rolfe 2000:84-124).

Information processing (assessment) is the first step of an educator's practice, in which he/she becomes familiar with (Hillier 2002:142-167; Olivier 2002:101-105):

- the programme to be taught (including its content and expected outcomes);
- the students to whom it will be taught (including their needs and expectations, perceptions, prior knowledge and experience);
- the framework and context within which the teaching takes place (including relevant institutional policies and culture, student selection methods, available resources, related subjects or programmes, and clinical situations in which practical work will be done); and
- the educator's own beliefs and assumptions.

Planning and implementation in the teaching process involves choosing appropriate educational approaches and teaching/learning activities; planning resource use, socialisation and enculturation; establishing a community of inquiry and interpretation; and managing the logistics of this community. The main purpose is to develop reflective students and reflective practitioners. To achieve this, educators must plan and implement the following:

- use the learner's prior knowledge and experience as point of departure and build on that (Gravett 2004:37);
- create meaningful relationships with students (Burton 2000:1014-1015; Getliffe 1996:364; Powell 1989:826);
- create a safe and nurturing social environment for reflective learning and practice (Mann 2005:330);
- create an optimal learning environment with a healthy balance between support, interest, enjoyment and challenge without threat (Gravett 2004:39);
- provide practical support and encouragement for students to 'unlearn' what has been done routinely in practice, and provide potential space for them to intentionally reflect on practice (Driscoll & Teh 2001:98-99);
- consider individual learning styles of students and offer opportunities for structured reflection on and open discussion of these (Getliffe 1996:363-364, 370);

- plan deliberately to enhance socialisation and enculturation by managing groups and interaction, enhancing communication, encouraging participation and sharing, explaining concepts, and being explicit about the meanings of terms used, especially those related to assessment (Henniger 2004:176-177; Olivier 2002:101-106; Van Rensburg & Lamberti 2004:67-89);
- establish a community of inquiry and interpretation (Gravett 2004:29-30);
- empower all those involved in the teaching/learning process to become self-determining (Waghid 2001:80);
- facilitate both one-on-one and group learning according to the needs of their students;
- monitor the learning process;
- choose the most appropriate course of action to achieve desired outcomes;
- use a variety of teaching methods and techniques;
- assess students and give proper feedback;
- support and propagate creativity;
- assume a variety of roles including mentor, coach, facilitator, co-ordinator, demonstrator, advisor, manager, assessor, moderator and guide (Henniger 2004:176-199; Olivier 2002:101-106);
- make decisions and overcome barriers to or logistical problems with reflective learning and practice (Burton 2000:1014-1015; Henniger 2004:60-61);
- ensure that students get skilled accompaniment on practical activities (Powell 1989:830-831);
- plan and prepare lessons;
- plan for logistical matters on a daily, weekly, quarterly and yearly basis (Van der Horst & McDonald 2001:160-174).

Evaluation is a very important aspect of reflective teaching and includes student assessment and feedback, evaluation and accreditation of the programme, and self-evaluation. This evaluation is not done only at the end of the academic year or programme, but is integrated throughout the learning process.

Any evaluation must adhere to the requirements of the Council on Higher Education, which stresses that, to be accredited, a programme must (Higher Education Quality Committee 2004b:12):

> have appropriate policies and procedures for internal assessment; internal and external moderation; monitoring of student progress; explicitness, validity and reliability of assessment practices; recording of assessment results; settling of disputes; the rigour and security of the assessment system; RPL; and the development of staff competence in assessment.

Assessment is defined by the Council on Higher Education (Higher Education Quality Committee 2004b:33) as 'systematic evaluation of a student's ability to demonstrate the achievement of the learning goals intended in a curriculum.' The educator is responsible for the following:

- Adhering to the institution's policies of student assessment, while also using assessment constructively as an integral part of learning: to do this the educator must focus not only on *what* has to be assessed but also on *how* it can be assessed to create a learning opportunity (Geyser 2004a: 90-91). Carefully selected assessment methods can bring out different qualities in students and concentrate on particular processes and products for the students' individual education and so be learning experiences in themselves, and help to avoid bias (Burton 2000:1014-1015; Getliffe 1996:363-364, 370).
- Following the following principles of assessment (Geyser 2004a:92-99):
  - Assessment should be an integral part of learning, focus on deep, active learning and involve high-order cognitive skills.
  - Assessment should be an integral part of programme- and module design, matching the learning outcomes.
  - The purpose of assessment should determine its methods and techniques (e.g. diagnostic, formative or summative assessment).
  - The relevant assessment criteria should be clearly identified and applied.
  - Assessment processes should be reliable and valid.
  - Assessment should be transparent and fair.
  - Assessment tasks should be practical and realistic in terms of available resources, time, etc.
  - Assessment should include a wide range of approaches and methods (e.g. self-, peer, group-based and workplace-based assessment).
  - Assessment should provide feedback to support the learning process.
  - Assessment should be integral to quality assurance procedures.
- Taking part in the evaluation and accreditation of programmes: the programme has to meet the requirements set by the Department of Education (Higher Education Act no. 101 of 1997), should be registered with SAQA on the NQF, and has to comply with the requirements stipulated by the Council on Higher Education (Higher Education Quality Committee 2004a & 2004b) for accreditation, as well as the profession's ETQA and councils (SANC in this study).
- Preparing for external accreditation: part of this process is internal or self-accreditation by the institution offering the programme, to evaluate its status against these prescribed requirements. The educator responsible for a particular programme is expected to

participate in the evaluation of the particular programme, and then to make the changes necessary for compliance (Boughey 2004:1-21).

- Evaluating the programme personally, focusing on whether the presentation of the programme can be improved, and if so, how: this is also part of the educator's own personal growth and lifelong learning (Henniger 2004:8; Killen 2004:181-182). Educators have a responsibility to engage in reflexive praxis, so that they stay updated on educational approaches and techniques and continue to improve their own practice through reflection (Waghid 2001:77-83).

7.3.6 Educational programme for educating reflective neonatal nurses

The educational programme, in the model for the education of reflective neonatal nurses, is the procedure component, or the technique or protocol of the activity. The two main aspects of the educational programme that are particularly important in the education of reflective neonatal nurses are the outline of content and the selected educational approaches. Each of these will now be briefly discussed.

7.3.6.1 Outline of content

This outline of content for a programme for educating reflective neonatal nurses is the domain-specific or specialised knowledge of a particular discipline, in this study neonatal nursing science. The outline of content is related to the competences required from reflective neonatal nurses, as well as the expected professional characteristics of reflective neonatal nurses to be inculcated by the programme. These had been subjected to the first level of assessment by experts in neonatal nursing practice and education.

The content of the proposed programme was outlined in terms of the expected outcomes listed by SAQA, namely foundational, reflexive and practical competences. Foundational and reflexive competences, which are the 'building blocks' and the 'building process' of learning, are put together in one category. The content outline and corresponding expected outcomes are presented in Table 5.8 in Chapter 5.

7.3.6.2 Educational approaches for educating reflective neonatal nurses

The educational approach has to be chosen according to the purpose or desired outcomes of the programme. The outcomes can be foundational competences, reflexive or practical

competences and professional characteristics. The approaches can be broadly classified as behavioural, cognitive-constructivist, humanistic, social and reflexive approaches.

Behavioural approaches are based on the theory that students learn as they modify their behaviour in response to environmental feedback. This feedback can be positive (reinforcement) or negative (discouragement). The behavioural approaches entail highly organised, carefully planned teaching methodology to change behaviour (Henniger 2004:185-186).

Cognitive-constructivist approaches (also known as information processing approaches) are based on the premise that students make sense of their world as they are helped to organise the information around them. Students process the information differently depending on their stage of intellectual development and construct or build their own interpretation or understanding of it (Henniger 2004:187-188; Kaufman 2003:4).

Humanistic approaches are based on the assumption that each individual must take responsibility for his/her own learning, while striving to reach full potential. The educator's role is to help students grow in self-understanding and so develop physically, emotionally and socially to become productive members of society (Henniger 2004:186-187).

Social approaches are based on the premise that students learn best as they interact with peers and teachers in learning communities. The role of the educator is to create learning communities and provide strategies that enable students to communicate effectively with each other, build relationships and achieve educational outcomes (Henniger 2004:188; Hillier 2002:142-167; Olivier 2002:96). Examples of a social approach include cooperative learning, teamwork, study groups and projects (Bitzer 2004:54-59; Henniger 2004:188; Van der Horst & McDonald 2001:137-149).

Reflexive approaches are based on the assumption that learning occurs best when it is based on reflection. Reflective learning is a process of conscious and intentional examination by an individual of the thoughts, feelings and/or actions experienced in a situation, compared to underlying beliefs, assumptions, knowledge and the particular context. This learning can occur as reflection-before-action, reflection-in-action and reflection-on-action, at any of a set of hierarchical levels of complexity. It results in a changed perspective and consequent changes in practice. The sequence or levels of complexity include a descriptive, reflective and critical / emancipatory phase.

The different approaches use different teaching techniques to facilitate learning, and make different contributions to achieving the expected outcomes for the education of reflective neonatal nurses. The best course is not to use a single selected approach, but rather a combination of approaches suited to the particular expected outcomes, available resources and context. It is crucial that the educator understands the theories underlying the approaches, the advantages and disadvantages of the different teaching techniques, and the principles or 'rules' of the techniques prior to implementing them.

7.4 SUMMARY

This chapter focused on developing a model for the education of reflective neonatal nurses, based on the findings of the different phases of the study. The model has been described in terms of the different components thereof, namely the educational framework, neonatal nursing students, reflective learning, programme outcomes, role of the educator and the educational programme. Evaluation of the model by experts, limitations, conclusions and recommendations will be presented in the next chapter.

CHAPTER 8:
EVALUATION OF MODEL, LIMITATIONS, CONCLUSIONS AND RECOMMENDATIONS

8.1 INTRODUCTION

The aim of this study was to develop a model for the education of reflective neonatal nurses in a South African context. A process based on the theory development process described by Walker and Avant (1983:145-161) was followed, using structural components based on the 'agents' described by Dickoff, James and Wiedenbach (1968:545-554). The methodology is described in Chapter 2 and the three phases are discussed in Chapters 3 to 6. The constructed model is described in Chapter 7.

This chapter presents the expert evaluation of the model, and discusses the limitations, conclusions and recommendations of the study.

8.2 EVALUATION OF THE MODEL

The model was submitted for evaluation to experts knowledgeable in higher education, nursing education, reflective practice, neonatal nursing practice and/or model development. These experts were chosen by purposive sampling. Those experts who agreed to participate were provided with a hard copy and/or electronic copy of a description and graphic design of the model and an evaluation form (Annexure 3). They were requested to familiarise themselves with the model, clarify uncertainties with the researcher, evaluate the model and then give feedback verbally, in writing or in electronic format (Hollis *et al*. 2002:2-8). Evaluation criteria for the model were (Chinn & Kramer 1991:127-137; McEwen & Wills 2002:91-108; Walker & 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.

8.2.1 Input from expert review

In total, 13 persons were invited to participate. They were purposively selected to represent specified fields of expertise, but it turned out that most of them were experts in more than one relevant field. Three of the invited persons were not able to assist in the evaluation of the model; the other ten responded. Five of the respondents had doctoral degrees and five had master's degrees. The number of respondents according to field/s of expertise is indicated in Table 8.1.

Table 8.1: 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

Evaluation of the model as obtained from these respondents is indicated in Table 8.2.

Table 8.2: Evaluation of model by experts

Criteria	Not acceptable or needs major revision	Acceptable with recommended changes	Acceptable as described	Comments from experts
Clarity, simplicity and consistency		1	9	Some concepts can be described earlier in model Clarify meaning of 'recipient' and 'tools'
Appropriateness and relevance			10	
Comprehensiveness		1	9	Role of student assessment not highlighted
Adaptability and generalisability			10	Can be easily adapted to education of trauma and emergency nurses Can be adapted for education of other medical professions The model has potential for wider conceptualisation than only the nursing profession

Table 8.2: Evaluation of model by experts (continue)

Criteria	Not acceptable or needs major revision	Acceptable with recommended changes	Acceptable as described	Comments from experts
Practicality and usefulness			10	Might experience difficulty to overcome resistance against change with implementation Would like examples of application of the model
Accessibility			10	
Importance for research, practice and education			10	Very valuable – we need such practitioners!
Validity or trustworthiness			10	
Others				
Additional comments: Clear, consistent and of great potential use				

8.2.2 Adjustments made to the model

It was not necessary to make any major adjustments based on the feedback from the expert evaluations. The only refinements carried out were cosmetic changes of visual presentations and language.

8.3 CONCLUSIONS

This model attempts to simplify and synthesise a large number of factors influencing the education of reflective neonatal nurses into a broad, usable and flexible structure that can be used to enhance neonatal nursing education and practice and do away with trial-and-error approaches. The education of reflective neonatal nurses remains a complex and multi-dimensional phenomenon, integrating many processes and components. The model for the education of reflective neonatal nurses must be interpreted in the particular context of this study to accommodate particular policies and the preferences and needs of the individuals involved.

The process for developing the model followed a description of theory development by Walker and Avant (1983:145-161), which was conducted in three phases. The objectives of each phase had been identified in the beginning of the study to develop the model.

Objectives of 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

The conclusions of phase 1 resulted in descriptions of the educational framework, reflective learning, the outcomes of education and the role of the educator, which are summarised as follows:

- The *educational framework* provides the legal and professional structures for education of reflective neonatal nurses from the points of departure being nursing education, and higher education in the South African context and the demands of neonatal nursing practice that have to be met. The framework is described in terms of the providers of the education framework, quality assurance of service delivery and accredited service providers.
- *Reflective learning* is the process of conscious and intentional assessment by individuals (neonatal nursing students in this study) of what occurred in terms of thoughts, feelings and/or actions against underlying beliefs, assumptions, knowledge and the particular context. This process can occur as reflection-before-action, reflection-in-action and reflection-on-action on a hierarchy of levels of complexity. The sequence or levels of complexity is related to a descriptive phase, reflective phase and critical / emancipatory phase that entails different cognitive and metacognitive abilities. The phases are not clearly distinguished, but are characterised by increasing difficulty and abstraction. The process of reflective learning results in a changed perspective and consequential changes in practice.
- The *outcomes of the education* of reflective neonatal nurses are the end-results of the education programme and are described in terms of specific learning outcomes, critical outcomes and end-product outcomes. The specific learning outcomes refer to applied competences that are obtained, namely foundational-, reflexive-, and practical competences. Critical outcomes are the generic cross-curricular outcomes achieved by the

education programme. The end-product outcomes include the final results of the education programme that are reflected as professional outcomes for the individuals and reflective practice that benefits the clients/community.

- The *role of the educator* is to facilitate the education of reflective neonatal nurses to achieve the expected outcomes within the existing framework, by utilising the education programme efficiently. This role entails information processing, planning, implementation and evaluation of various aspects regarding the students, programme, institution, resources and self.

Objectives of 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 educational programme for reflective neonatal nurses

The conclusions of phase 2 include descriptions of neonatal nurses as students, and the domain-specific education programme. These are summarised as follows:

- *Neonatal nursing students* are the recipients of the education in whom the process of reflective learning takes place resulting in changes of applied competences and professional outcomes.
- The *education programme* is used by the educator to facilitate the education of reflective neonatal nurses, with the domain-specific content on the one side and the educational approaches on the other side. The content is especially related to specific learning outcomes, while the educational approaches are of significance in the facilitation of the process of reflective learning and include the techniques of teaching and assessment. The content outline for the education of reflective neonatal nurses with the related competences and professional characteristics is described. These had been subjected to evaluation by experts in neonatal nursing practice and education.

Objectives of 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 last phase was a culmination of the previous phases to meet the overall aim, namely to develop a model for the education of reflective neonatal nurses in a South African context. The model is graphically presented in Figure 8.1 and briefly described, while a detailed explanation can be found in Chapter 7.

The model has six components, which were identified in terms of the agents described by Dickoff, James and Wiedenbach (1968:545-554). These components include a framework (the educational framework), dynamics (reflective learning), recipient (neonatal nursing students), purpose (outcomes of the education of reflective neonatal nurses), agent (the role of the educator) and procedure (the educational programme for educating reflective neonatal nurses):

- The *educational framework* provides the legal and professional structures for education of reflective neonatal nurses.
- *Reflective learning* is the dynamic process that occurs in the neonatal nursing students to result in consequential changes in practice.
- *Neonatal nursing students* are the recipients of the education in whom the process of reflective learning takes place.
- The *outcomes of the education* of reflective neonatal nurses are the end-results of the education programme and the changes in neonatal nursing students.
- The *role of the educator* is to facilitate the education of reflective neonatal nurses to achieve the expected outcomes within the existing framework.
- The *education programme* is used by the educator to facilitate the education of reflective neonatal nurses.

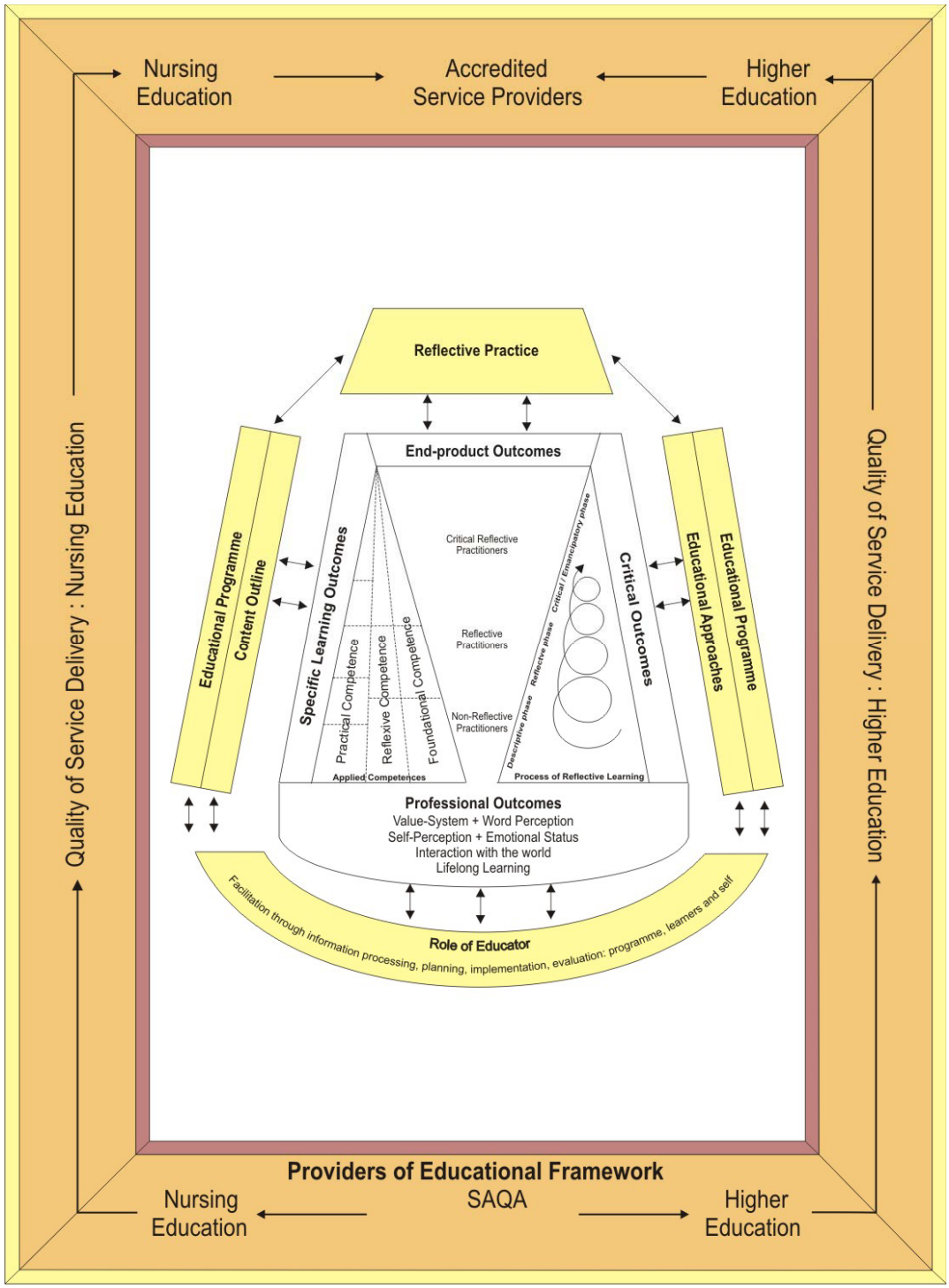

Figure 8.1: Model for education of reflective neonatal nurses in a South African context

8.4 LIMITATIONS OF THE STUDY

A limitation of this study is the restriction of the study to the education of reflective neonatal nurses in a South African context, which implies limited generalisation. However, the study does have potential for a broader interpretation as indicated by some of the expert evaluators of the model.

As the study covers a large quantity of data on various different aspects of neonatal nursing education, it was not possible to cover all these aspects in depth. Additional research and articles on various aspects would definitely be useful, for example a full description of an educational programme for reflective neonatal nurses.

8.5 RECOMMENDATIONS

These recommendations draw on the results of this study, and focus on disseminating the model of educating reflective neonatal nurses, nursing education, neonatal nursing practice, and further research.

8.5.1 Dissemination of the model for education of reflective neonatal nurses

The model has been constructed and evaluated by experts, but has not been implemented. The model should be implemented and tested in real life for usefulness and generalisability of the model's underlying theory (McEwen & Wills 2002:79). This step lies outside the scope of this study, but could be done as a post-doctoral study.

Possible methods for disseminating the model include the following:

- Implementing the model in the neonatal nursing programmes at the university where the researcher works;
- Publishing articles in appropriate accredited journals;
- Presenting the model at national and international conferences;
- Developing a visual presentation for conferences;
- Participating in in-service-training opportunities at healthcare facilities and tertiary institutions to make the model known and to implement it;

- Making it available at the University of Pretoria's UPeSpace to increase accessibility to a wider interest group doing an Internet-search on the key-words of the model; and
- Continuing research on this topic (see discussion in section 8.5.4).

The model was developed specially for neonatal nursing science, and should ideally be implemented in the field of neonatal nursing education at the various tertiary institutions in South Africa that present neonatal nursing education. In addition, the model could be used in other fields of nursing education such as midwifery, trauma- and emergency nursing and critical care nursing. This would require a proper situational analysis in each of these fields to determine the content outline of the programme and the best educational approaches.

The model may be made relevant to education of other health professionals in the South African context, by replacing the nursing education framework with a framework provided by the relevant professional bodies, and the nursing content with content appropriate to the discipline or field of speciality, for example occupational therapy or physiotherapy.

The model could also be used in other countries, after revision of the framework to replace the South African providers, quality assurance officers and accredited service providers with those of the relevant country.

8.5.2 Recommendations for nursing education

As a contribution to professional nursing education, the model should be made available to the SANC, which is the regulatory body of the nursing profession responsible for the quality of nursing education in South Africa. The principles of the model could be included in the general regulations or guidelines for nursing education programmes. The designed programme, particularly its content outline, should be included in SANC regulations for post-basic education in neonatal nursing. These recommendations are made in light of the current revision of regulations, policies and guidelines to correspond with the new Nursing Act, no. 33 of 2005 (South Africa 2005a), that will come into operation on a date determined by the President by proclamation in the Gazette (SANC 2006:Circular 03/2006).

The model should be implemented in the neonatal nursing programmes run at the Department of Nursing Science where the researcher works. It could also be presented at this department. Should any other lecturers be interested in implementing the model in their fields of

specialisation, they could be given further training in the interpretation of the model and its suggested implementation.

The model could be presented to other universities where neonatal nursing science is presented as a course, for possible implementation.

Deliberate efforts must be made to overcome the barriers to reflective learning (discussed in Chapter 4). More research is needed, as suggested in section 8.5.4.

8.5.3 Recommendations for neonatal nursing practice

One of the expected end-product outcomes of the implementation of the model is reflective practice. It is important that the accredited providers of the practical component of the programme (healthcare facilities) are informed about the model and the processes it involves. These providers must be educated about reflective practice and what it entails, since this approach to practice has significant implications for them as employers and managers, and might even have monetary implications.

Obtaining this cooperation from the healthcare providers requires that good relationships be maintained between the tertiary institution and the healthcare facilities, that formal collaboration agreements be signed and that training be provided to the relevant people such as clinical facilitators, preceptors and mentors.

Research into the implementation of the model is needed (see section 8.5.4).

8.5.4 Recommendations for research

One of the influencing factors of the study is the dynamic nature of its setting, with changes occurring often in the higher education system, the nursing profession, nursing education and neonatal nursing practice both in South Africa and globally. As the components of the model will not change, their detailed descriptions will need to be revised from time to time to include significant changes.

Further, much is known about reflective learning and what it entails, but a great deal is not yet clear and requires more research, such as:

- whether a person who functions at various levels of reflection at different times (e.g. in two related subjects) can be a reflective practitioner in one aspect but not in another;
- what criteria to use to assess reflectiveness;
- a reliable tool for quantifying reflexive competences;
- whether students can be forced to reflect;
- whether students can still become good qualified neonatal nurses (advanced nurse practitioners) if they are unable to reflect;
- how to overcome personal barriers to reflection in educational situations, e.g. lack of positive trusting relationship between student and supervisor;
- how to overcome practical barriers to reflective learning e.g. overcrowded facilities;
- the compulsory implementation and assessment of reflective learning, should it be made obligatory by the SANC, and monitoring of the continuous professional development it is supposed to bring about;
- how to assess the effects of reflective learning over an extended period of time, without interference from other factors (e.g. changed circumstances, personality types, etc.);
- what the most appropriate educational approaches are for inculcating various applied competences in reflective neonatal nursing;
- how to overcome barriers to reflective learning if the working context is not supportive of reflective practice;
- which selection criteria are appropriate for identifying students with potential reflexive abilities;
- exact definitions of and differentiation between reflection, reflexivity, reflectivity and reflective learning (Atkins & Murphy 1993:1188-1192; Burton 2000:1012-1014; Teekman 2000:1125);
- the complexity and richness of the underlying processes of reflective learning (Chiu 2006:187);
- the extent to which reflection improves practice (Burton 2000:1014; Getliffe 1996:371); and
- whether encouragement of reflection in students really creates thoughtful, critical nurses (Burton 2000:1015).

Though these questions remain unanswered, the researcher agrees with Burton (2000:1015-1016) that,

> notwithstanding all the criticisms presented, it is felt on balance that there should be a place for the application of reflective principles because if reflection really can inform nursing practice, help nurses to think critically before, after and in practice with subsequent improvements in the care that patients receive, its plausibility as an essential skill for the profession to acquire

becomes evident. At present, a conceptually defined, less flawed, more supported, but equally practical alternative, is simply not available.

8.6 SUMMARY

The challenge to educate reflective neonatal nurses was addressed in this study through the development of a model for the South African context. The model was described in terms of the framework for educating reflective neonatal nurses, the process of reflective learning, the neonatal nursing students, programme outcomes, the role of the educator in the process, and the educational programme in terms of content and approaches.

In this chapter the evaluation of the model by experts was described, as well as the limitations, conclusions and recommendations.

The challenge is now to use the model to educate reflective neonatal nurses.

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ANNEXURE 1: ATTRIBUTES, DEMANDS, AND EXPECTED COMPETENCES AND PROFESSIONAL CHARACTERISTICS

Neonatal Patients		
Attributes	Demands	Expected competencies
Basic physiological needs: Comfort, nutrition, thermoregulation, ventilation, hygiene, cord care, rest and sleep, and a safe environment	Basic newborn care	Knowledge: Basic physiological needs of newborn Normal transition from intrauterine to extrauterine life Skills: Basic newborn care Decision making regarding basic care Professional characteristics: Sensitivity and caring attitude towards newborns
Unique physical attributes: Small and vulnerable Size, appearance and anatomy differ according to gestational age	Competent advanced care, irrespective of vulnerability or gestational age and appropriate to their abilities	Knowledge: Anatomy and physical characteristics of neonates according to gestational age Developmental care Skills: Accurate and precise skills with invasive procedures and other interventions Implementation of developmental care Professional characteristics: Gentleness, patience and precision
Immaturity: Immature physiology, very sensitive and unpredictable responses to stimuli and treatment Inability to cope extra-uterine Immaturity can affect any or all systems, namely the neurological, respiratory, endocrine, gastrointestinal, renal, cardiovascular, haematological or musculo-skeletal system, skin or special senses Common source of ethical problems High mortality	Provide advanced care and administer treatment in spite of inability or unpredictability of neonate Provide developmental care Decide on ethical issues Cope with dying patients and death	Knowledge: Development and maturation of fetus and neonate Neonatal physiology and presentation thereof Adaptation from intra-uterine to extra-uterine life Developmental care Skills: Accurate assessment and interpretation of observations Basic newborn care Advanced neonatal care Implementation of developmental care Critical thinking and ethical and clinical decision making Professional characteristics: Ability to cope with stress and take charge Confidence in herself and her abilities Emotional strength to cope with death of newborns
Common neonatal health problems: Large variety and scope, complex, serious and unpredictable actual or potential health problems Might need to be transported Any or all systems can be affected High mortality and morbidity Often results in ethical problems Diverse opinions on management	Advanced neonatal care anywhere of health continuum, anytime with or without assistance Provide developmental care Make decisions regarding ethical problems	Knowledge: Causes, pathophysiology, clinical presentation and management of neonatal conditions Developmental care Skills: Basic newborn care Accurate assessment of all the biophysical systems, interpretation of findings and appropriate planning and execution of interventions, including resuscitation, prevention, cure and rehabilitation Use of medical technology Administration of medication Care of the premature, critically ill, recovering and dying newborns Safe transport of newborns Implementation of developmental care Critical thinking and clinical and ethical decision making Professional characteristics: Ability to cope with stress Confidence in herself and her abilities Leadership Interest in advanced neonatal nursing Emotional strength to cope with death
Congenital conditions: Variety possible with various levels of seriousness, visible or not, and with sudden or progressive deterioration Multiple systems are commonly affected Common cause of mortality or morbidity Often elicit emotions and contribute to ethical dilemmas Might need to be transported	Provide advanced neonatal care irrespective of appearance or seriousness Provide developmental care Ethical decision making Cope with emotional responses	Knowledge: Causes, pathophysiology, clinical presentation and management of congenital conditions Developmental care Skills: Basic newborn care Accurate assessment of all the biophysical systems, interpretation of findings and appropriate planning and execution of interventions, including resuscitation, prevention, cure and rehabilitation Use of medical technology Administration of medication Care of the premature, critically ill, recovering and dying newborns Safe transport of newborns Implementation of developmental care Critical thinking and clinical and ethical decision making Professional characteristics: Ability to cope with stress and emotional turmoil Leadership Confidence in herself and her abilities

(CONTINUE) ANNEXURE 1: ATTRIBUTES, DEMANDS, AND EXPECTED COMPETENCES AND PROFESSIONAL CHARACTERISTICS

Attributes	Demands	Expected competencies
Poor communication skills and total dependency: Inability to proper communication Incapable of decision-making and self-care Very vulnerable and exposed	Basic and advanced care according to their needs, which they are unable to communicate	Knowledge: Neonatal communication (i.e. physiological and behavioural cues) Patients' and parental rights and roles Neonatal nurses' role and responsibilities Skills: Appropriate response to neonatal communication Critical thinking and decision-making Professional characteristics: Protection of patients' and parental rights Professionalism and moral integrity
Mental health needs: Bonding and attachment Safety and security	Mental health care of the infant and family-centred care to facilitate bonding and attachment	Knowledge: Mental health needs of an infant Family-centred approach Skills: Implementation of family-centred approach Facilitation of parent-infant bonding and attachment Provision of safety and security Professional characteristics: Sensitive and caring attitude towards the infants and their families
Parents of Neonatal Patients		
Attributes	Demands	Expected competencies
Parental adaptation and coping with stress: Emotional turmoil aggravated by admission in NICU Phases of adaptation Coping with stress Damaging circumstances for parent-infant bonding and attachment Need for post-discharge information Experiences of loss of infant	Deal with parents irrespective of the parents' coping mechanisms and how it presents Facilitate parent-infant bonding and attachment Post-discharge health education Bereavement counselling	Knowledge: Adaptation and stress management Family-centred care Counselling Post-discharge care of a high risk infant Skills: Implementation of family-centred care Facilitation of parent-infant bonding and attachment Empowerment, emotional support, counselling and bereavement counselling Good interpersonal, teaching and communication skills Professional characteristics: Caring and compassionate attitude Emotional strength and self-awareness
Parental diversity: Diversity of parents in terms of age, marital status, sexual preference, socio-economic status, race, culture, history, political views, religion, value-systems, language, personalities and informed status Likelihood for interpersonal and internal conflict	Provide family-centred care irrespective of the diversity of parents Resolve internal and interpersonal conflict	Knowledge: Understand diversity of parents Family-centred care Skills: Apply family-centred care in different circumstances to variety of parents Conflict management Good interpersonal and communication skills Professional characteristics: Respect for others, their rights and preferences Self-knowledge and integrity Cope with emotional-loaded situations
Parental role in NICU: Caretaking roles become diffused between parents and nurses Meaningful relationships common, but also conflict situations about care-taking issues Relationships influenced by diversity of parents and nurses	Empowerment of parents to become primary caretakers Resolve interpersonal conflict	Knowledge: Rights, needs and responsibilities of parents Family-centred care Skills: Empowerment of parents Conflict management Counselling Good interpersonal and communication skills Decision-making skills Professional characteristics: Professionalism Moral integrity

(CONTINUE) ANNEXURE 1: ATTRIBUTES, DEMANDS, AND EXPECTED COMPETENCES AND PROFESSIONAL CHARACTERISTICS

Members of Multi-Professional Health Team		
Attributes	Demands	Expected competencies
Neonatal nurses: Different categories of nurses with majority professional nurses Various levels of knowledge and competency Severe staff shortages Use of temporary staff complicates nursing practice Heavy workload, more responsibilities and increased risks for medical-legal errors	Provide quality neonatal care in spite of staff shortages, limited resources and temporary staff Supervise, support and train nurses with lower levels of knowledge and competency Emotional support, counselling and debriefing	Knowledge: Basic and advanced neonatal care Basic personnel management and education Skills: Basic and advanced neonatal care Supervision, support and on-the-spot training in neonatal care Risk management Time management Emotional support, counselling and debriefing Critical thinking and clinical decision making Good interpersonal relationships and communication Professional characteristics: Coping with stress Leadership and role model
Medical doctors: Responsible for medical care Rely on neonatal nurses for certain functions On-site availability varies Variety of protocols/regimes, styles and preferences	Cooperate with doctors for proper neonatal care Provide care with consideration of doctors' individual styles, preferences and regimes Make appropriate decisions in absence of doctor	Knowledge: Basic and advanced neonatal care Teamwork and group dynamics Skills: Basic and advanced neonatal care Interprofessional cooperation Good interpersonal relationships and communication Critical reasoning and clinical decision making Professional characteristics: Value professional interdependency Flexible and adaptable Respect and recognition for other professions
Other members of multi-professional team: Other neonatal professionals: paediatric surgeon, occupational therapist, physiotherapist, speech-language therapist, audiologist, dietician, pharmacist, social worker, ophthalmologist and psychologist Involvement in NICU varies Private sector: involvement on consultation by doctor or neonatal nurses Neonatal nurse important role in coordination of teamwork	Often gatekeeper to consult appropriate person at appropriate time Coordinate input and communication between members of multi-professional team, especially in private sector	Knowledge: Basic and advanced neonatal care Functions, abilities and criteria for consultation of various multi-professional neonatal health team members Systems for multi-professional teamwork in particular context Skills: Multi-professional team member Coordination and communication Good interpersonal and communication skills Clinical decision making Professional characteristics: Leadership Professionalism
Role clarification of multi-professional team members: Certain professional functions are distinct, but certain responsibilities overlap between professions Sharing and differentiation not always clear and not always consistent Interprofessional, interpersonal and internal conflict, and ethical issues not uncommon	Fulfil her role and execute responsibilities towards patients and families in situation where her role is not always clear or consistent Is often gatekeeper, messenger and coordinator of health team	Knowledge: Basic and advanced neonatal care Scope of practice, dependent, independent and interdependent role Functions and responsibilities of other professions Skills: Work as a professional team member Good interpersonal and communication skills Critical thinking, clinical and ethical decision making Professional characteristics: Team worker Leadership Professionalism
Diversity of multi-professional team members: All professionals are individuals with diverse backgrounds, educational levels, personalities, races, cultures, religions, value systems and circumstances, with common interest in neonatal care Practice is dynamic and ever-changing, with interprofessional and interpersonal relationships negative or positive and often stressed	Be part of a diverse mulit-professional neonatal health care team Support others if they are negatively affected	Knowledge: Independent, interdependent and dependent roles Understand diversity of a group and the consequential group dynamics Emotional support and counselling Skills: Be an effective team member in a diverse team Conflict management, emotional support and counselling Good interpersonal and communication skills Professional characteristics: Flexible, but adaptable and assertive to cope in dynamic, changing and stressful environment Leadership Moral integrity, role model and professionalism

(CONTINUE) ANNEXURE 1: ATTRIBUTES, DEMANDS, AND EXPECTED COMPETENCES AND PROFESSIONAL CHARACTERISTICS

Physical aspects		
Attributes	Demands	Expected competencies
Facilities and equipment: Taken for granted: electricity, lighting, medical air supply, oxygen supply, vacuum supply, running hot and cold water Spaciousness varies Appearances from 'classy, upmarket' to 'run-down' Medical technology dynamic and advancing at rapid pace Various types and amount of medical equipment, not necessarily corresponding with acuity of patients Technical assistance for equipment often unavailable and maintenance of equipment often problematic	Provide quality care irrespective of availability of facilities and equipment Know how to use equipment, how to sort out problems, how to maintain it Sometimes to be innovative in the use thereof Keep up-to-date with advancing of medical technology and use thereof Give input in buying and replacement of equipment	Knowledge: Basic and advanced neonatal care Legal requirements of NICU and medical equipment Basics of medical technology and use thereof Basic management Skills: Use of medical technology in neonatal care Management of problems related to medical technology Give input in buying / replacement of equipment Critical thinking and clinical decision making Professional characteristics: Continuous development and keeping up-to-date Innovation
Linen, stock and other consumables: Used daily in NICU, but supplied by other departments Availability and quality varies Demand for control thereof and control systems vary Parents responsible for diapers and clothing, which often leads to frustration and conflict	Provide quality care irrespective of availability and quality of clothing, diapers, linen, stock and other consumables Manage conflict and frustrations	Knowledge: Basic and advanced neonatal care Physical necessities to provide neonatal care Basic management Skills: Use what is available to provide neonatal care or find alternatives Implement mechanisms to control levels of necessities Good interpersonal and communication skills Professional characteristics: Teamwork and cooperation Manage conflict and frustrations
Environmental manipulation: Environmental manipulation as part of developmental care possible to various extents: lighting, noise and smells Actual manipulation to benefit patients varies	Manipulate the environment to the benefit of the neonatal patients	Knowledge: Basic and advanced neonatal care Developmental care Skills: Implementation of developmental care Change agent Professional characteristics: Leadership Professionalism
Management		
Attributes	Demands	Expected competencies
Management of the unit: At all times a neonatal nurse responsible for the management of the unit Many facets that need to be managed: patient care, family-centred care, personnel, safety, facilities and equipment, linen and other consumables, administration Management thereof influenced by availability of resources, interpersonal relationships, personalities, institutional policies and others Workload heavy and stressful Often conflict and ethical issues	Efficient management irrespective of the diversity and various facets of NICU	Knowledge: Basic and advanced neonatal care Family-centred care Basic personnel management Basic management Administrative functions Skills: Management of all facets of the unit Critical thinking, decision making and problem solving Good interpersonal and communication skills Professional characteristics: Leadership and professionalism Moral integrity Ability to cope with stress and emotional situations
Hospital management: Neonatal nurses have various responsibilities and rights as employees of a hospital Management has positive or negative impact on climate and staff morale Impact influenced by communication and feedback, management style, institutional policies, availability of resources and support to staff	To be a 'good' employee Provide quality neonatal care irrespective of climate, morale or organisational circumstances	Knowledge: Rights and responsibilities as employee Rights and responsibilities as neonatal nurse Institutional policies and guidelines Skills: Compliance with her rights and responsibilities and institutional policies Critical thinking and decision making Professional characteristics: Professionalism Moral integrity

(CONTINUE) ANNEXURE 1: ATTRIBUTES, DEMANDS, AND EXPECTED COMPETENCES AND PROFESSIONAL CHARACTERISTICS

Professional practice		
Attributes	Demands	Expected competencies
Nursing process: Systematic approach to care for neonatal patients in terms of basic and advanced care Steps: Assessment, diagnosis, planning, implementation and evaluation Influenced by knowledge, skills and characteristics of individuals involved	Provide quality basic and advanced neonatal care according to the nursing process	Knowledge: Nursing process Specialised neonatal knowledge Skills: Application of the principles of the nursing process in basic and advanced neonatal care Teaching and supervision of the implementation of the nursing process Logic and systematic reasoning Professional characteristics: Leadership and role model
Legal risks: Prone to legal claims due to complex and specialised nature, and vulnerability of patients	Provide specialised care in spite of legal risks involved Risk management	Knowledge: Basic and advanced neonatal care Ethico-legal framework of nursing practice Risk management Skills: Provision of safe ethico-legal basic and advanced neonatal care Risk management Critical thinking Sound clinical and ethical decision making Professional characteristics: Caring attitude and recognition of human rights Moral integrity
Ethical issues: Ethical issues and dilemmas are common due to nature of neonatal nursing practice Ethical issues often have emotional consequences	Provide specialised care in the midst of ethical issues Participate in ethical decision-making Support, counsel or debrief emotional role-players	Knowledge: Basic and advanced neonatal care Ethico-legal framework of nursing practice Emotional support, counselling and debriefing Skills: Make and implement sound ethico-legal decisions Provide emotional support, counselling or debriefing Critical thinking Sound clinical and ethical decision making Good interpersonal and communication skills Professional characteristics: Caring attitude and moral integrity Professionalism and leadership
Quality of care: High demand for quality of care Various perceptions on meaning of quality of care	Deliver quality, competent care in various circumstances Implement change if new information available or new treatment prescribed	Knowledge: Basic and advanced neonatal care Quality improvement Evidence-based care Skills: Provide quality evidence-based neonatal care Management of change Quality improvement Critical evaluation of new information and appropriate decision making Professional characteristics: Remain updated on advances in neonatal care Flexible and open-minded Leadership and change- agent if appropriate
Professional and personal outcomes for neonatal nurses: Personal outcomes vary from job-satisfaction to severe stress and burnout, and a variety of interpersonal relationships Personal outcomes influenced by several personal factors Professional outcomes mainly related to personal growth with limited opportunities for promotion or incentives	Provide quality neonatal and family care in a complex and stressful environment with high demands and risks, large opportunities for personal growth and interpersonal relationships and limited opportunities for promotion or other incentives	Knowledge: Basic and advanced neonatal care Other demands of neonatal nursing practice Skills: Competent neonatal care Management of demands of neonatal nursing practice Good interpersonal and communication skills Professional characteristics: Cope with stress and emotional turmoil Flexible, open-minded and adaptable Self-awareness and need for professional and personal growth Internal motivation Prepared to sacrifice if required

ANNEXURE 2: LETTER OF INVITATION AND INFORMED CONSENT FOR PEER REVIEW OF PHASE TWO'S FINDINGS

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0001
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15 March 2005

Dear _____

Re: PEER REVIEW OF DESCRIPTION OF NEONATAL NURSING PRACTICE

Hereby you are cordially invited to participate in the peer review of the description of neonatal nursing practice as part of a PhD-study in nursing science.

Purpose of the study

The purpose of this study is to develop a model for the training of reflective neonatal nurses in a South African context. The study is planned in different phases, including a non-empirical or theoretical phase to describe the concepts related to training of neonatal nurses, and their relationships, and an empirical phase to describe the attributes and demands of neonatal intensive care practice and the core competencies expected from neonatal nurses. The information from the non-empirical and empirical phases is integrated in the last phase of the study to describe a model for the training of neonatal nurses in a South African context.

During the empirical phase of the study, I have collected data in three purposive selected neonatal intensive care units regarding the attributes and demands of neonatal intensive care practice, and the competencies expected from neonatal nurses. The data collection will be done by means of observation of real-life activities in the neonatal intensive care units as they occur, as well as interviews with neonatal nurses. This data has been analysed to describe the core competences and personal characteristics expected from neonatal nurses that has to be addressed in an educational programme for them to become reflective neonatal nurses.

What is expected of you during this study

If you agree to participate you will be invited to a focus group or to give written or verbal feedback on the analysed data (*attached documents) that describe the expected core competence and personal characteristics of neonatal nurses. You would be expected to review it from your expertise in neonatal nursing, keeping in mind that it is for the purpose of educating reflective neonatal nurses.

What are your rights as a participant in this study

Your participation is entirely voluntary and you can refuse to participate or stop at any time without stating any reason. Your withdrawal will involve no penalty or loss of benefits.

Discomfort or inconvenience related to the study

The time that you spent on reviewing the data and attending the focus group or writing a report is highly appreciated.

(CONTINUE) ANNEXURE 2: LETTER OF INVITATION AND INFORMED CONSENT FOR PEER REVIEW OF PHASE TWO'S FINDINGS

Risks involved in the study

There are no risks involved in participation in this study.

Ethical approval of the study

This study protocol was submitted to the Research Ethics Committee of the Faculty of Health Sciences, University of Pretoria. Written approval has been granted (Reference number: S105/2002).

Confidentiality

All information obtained during the course of this study is strictly confidential. Data that may be reported in scientific journals will not include any information that identifies you as a participant in this study.

Source of additional information

If you have any questions during this study, please do not hesitate to approach the researcher:
Mrs. Carin Maree (C) 083 286 6696

Supervisors: Prof. N. Van Wyk (W) (012) 354 2125
Dr. C. Van Der Walt (W) (012) 354 1784

If you agree to participate, please complete the following section. Your participation and contribution will be highly valued and appreciated.

INFORMED CONSENT

I hereby confirm that I have been informed by the researcher, Mrs. C. Maree about the nature, conduct, benefits and risks of the study. I have also received, read and understood the above written information regarding the study. I am aware that the results of the study, including personal details will be anonymously processed into the study report. I am aware that I can, at any stage, without prejudice, withdraw my consent and participation in the study. I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.

Participant's name (Please print) _____

Participant's signature _____ Date: _____

Witness's name (Please print) _____

Witness's signature _____ Date: _____

I, Mrs. C. Maree, herewith confirm that the above participant has been informed fully about the nature, conduct and risks of the above study.

Researcher's name (Please print) _____

Researcher's signature _____ Date: _____

ANNEXURE 3: LETTER OF INVITATION AND EVALUATION FORM FOR EXPERT EVALUATION OF MODEL

P/A Department of Nursing Science
University of Pretoria
P.O. Box 667
Pretoria
0001
E-mail: carin.maree@up.ac.za
Cell phone: 083 286 6696
30 May 2007

Dear _____

Re: EVALUATION OF MODEL FOR EDUCATION OF REFLECTIVE NEONATAL NURSES IN A SOUTH AFRICAN CONTEXT

Thank you very much for your willingness to evaluate the abovementioned model as an expert.

The model has been developed during my PhD-study in nursing science, based on the need for reflective neonatal nurses in neonatal intensive care units and my responsibility as lecturer at the University of Pretoria for the post-basic programmes in neonatal nursing science.

The *attached documents include the model with summarised information on the research methodology followed, as well as the evaluation form that you are requested to complete. The reference list is attached as a separate document to reduce the size of the document containing the model. Please note that the descriptions of the separate components of the model contain more detail than the model as a whole for the reason of not including too much minute detail in the final description.

You are hereby requested to evaluate the model and to give feedback in written or electronic format by completing the attached evaluation form. You are welcome to contact me if more clarity or information is needed on any part or parts of the model. More detailed descriptions are available on request. Please return your evaluation of the model by the 22nd of June 2007.

Your time and effort in participation is highly valued and greatly appreciated.

Yours thankfully,

Carin Maree

*(*The attached documents included a description of the model as it is found in Chapter 7, a reference list and the following evaluation form.)*

(CONTINUE) ANNEXURE 3: LETTER OF INVITATION AND EVALUATION FORM FOR EXPERT EVALUATION OF MODEL

EVALUATION OF MODEL FOR EDUCATION OF REFLECTIVE NEONATAL NURSES IN A SOUTH AFRICAN CONTEXT

- C. MAREE (2007)

DEMOGRAPHIC DATA

Complete the following information with regard to your own data:

Academic qualifications	
Current occupation	

Indicate your field/s of expertise or interest from which you would evaluate the model:

Field of expertise or interest	**Indicate expertise or interest with X**	**Comments (Optional)**
Higher education		
Nursing education		
Reflective practice		
Neonatal nursing practice		
Model development		
Other (specify):		

Please disclose any other information that is of importance for the researcher to take note of regarding the evaluation of the model:

(CONTINUE) ANNEXURE 3: LETTER OF INVITATION AND EVALUATION FORM FOR EXPERT EVALUATION OF MODEL

EVALUATION OF MODEL

Criteria	Not acceptable or needs major revision	Acceptable with recommended changes	Acceptable as described	Comments
Clarity, simplicity and consistency				
Appropriateness and relevance				
Comprehensive-ness				
Adaptability and generalisability				
Practicality and usefulness				
Accessibility				
Importance for research, practice and education				
Validity or trustworthiness				
Other (specify):				

*(*The original evaluation form were printed on 'landscape', and allowed more space per criteria for comments)*

Additional comments:

RESEARCH OBJECTIVES	UNIT OF ANALYSIS / SAMPLING	METHODS OF DATA COLLECTION	DATA ANALYSIS	TRUST-WORTHINESS	DESIGN
PHASE 1: IDENTIFICATION AND CLARIFICATION OF CONCEPTS RELATED TO NEONATAL NURSING EDUCATION IN THE SOUTH AFRICAN CONTEXT				Credibility: * Prolonged engagement * Triangulation of - Methods of data gathering (non-participant observation, interviews, literature control) - Sources of data gathering (different practical settings, various role players, literature) * Member checking * Peer review * Expert review Transferability: * Thick description * Validation of results Dependability: * Triangulation (see "Credibilty") * Inquiry auditability Confirmability: * Confirmable audit route and process	QUALITATIVE, EXPLORATIVE, DESCRIPTIVE, CONTEXTUAL STUDY TO DEVELOP MODEL
* Describe neonatal nursing education in the South African context * Describe higher education in South Africa * Describe additional influences on neonatal nursing education * Describe neonatal nursing students * Describe the process of reflective learning * Describe competencies associated with reflective learning * Describe professional characteristics associated with reflective learning * Describe outcomes of reflective learning * Describe the role of the educator in reflective learning * Describe educational approaches for the education of reflective neonatal nurses	Unit of analysis: * Textual data Sampling: * Theoretical sampling of relevant literature	Data required: * Clarification of concepts and their relationships relevant to neonatal nursing education, neonatal nurses, reflective learning, role of the educator and educational programme Techniques: * Literature review	Conceptual analysis and synthesis		
PHASE 2: IDENTIFICATION AND CLARIFICATION OF CONCEPTS RELATED TO NEONATAL NURSING PRACTICE TO SUPPORT EDUCATION OF REFLECTIVE NEONATAL NURSES					
* Clarify concepts regarding programme design for education of reflective neonatal nurses * Describe the outline of content for an educational programme for reflective neonatal nurses * Describe expected outcomes of education of reflective neonatal nurses	Units of analysis: * Neonatal nursing practice * Textual data supportive of education of reflective neonatal nurses Sampling: * Literature * Three purposive selected NICUs, and neonatal nursing personnel of those units * Neonatal nursing experts	Data required: * Attributes and demands of real-life neonatal nursing practice: activities & processes; physical aspects; role players involved; outcomes; and other relevant information * Expected knowledge, skills and professional characteristics of reflective neonatal nurses * Content outline of educational programme Techniques: * Non-participant observation, with researcher making field notes of observations * Interviews of neonatal nursing staff in NICUs and member checking * Literature control * Expert review	Conceptual analysis Qualitative content analysis		
PHASE 3: CONSTRUCTION AND DESCRIPTION OF A MODEL FOR EDUCATION OF REFLECTIVE NEONATAL NURSES IN THE SOUTH AFRICAN CONTEXT					
* Construct and describe a model for the education of reflective neonatal nurses in the South African context * Evaluate the model	Unit of analysis: * Textual data Sampling: * Findings of previous phases * Purposive sampling of experts in higher education / nursing education / reflective practice / neonatal nursing / model development	Data required: * Clarified concepts and relationships relevant to a model for the education of reflective neonatal nurses in the South African context Techniques: * Synthesis * Expert review	Conceptual analysis & synthesis		

ANNEXURE 4: SUMMARY OF RESEARCH DECISONS

ANNEXURE 5: PERSONAL REFLECTION ON MY STUDY

I cannot remember clearly where or when the idea was born to do a doctorate degree on this topic. I just found myself thinking about a doctorate as an appropriate way to solve a problematic situation that I wanted to change but did not know how to. I love books and the academic world, and I am passionate about neonatal patients. The idea was that if I could combine these interests, I could probably make a difference in the lives of neonates at a time when they are most vulnerable, by making a difference in the approach of the people who care for them. I felt that I was standing in front of an abundant forest of information, and I only had to explore a pathway through it for others to follow. My family was supportive and my circumstances made the costs of such an expedition affordable. It all sounded so simple!

At first I felt very lost trying to decide where to start my exploration, which direction to follow through the forest. It took me quite a while before I found some kind of direction. At this stage countless little moments of achievement gave me satisfaction and the motivation to continue, so that the path through the forest appeared as a strenuous but enjoyable hike.

But after a while I grew tired; I seemed to meet one obstacle after the other, many of which had little to do with the study itself. Once I even hit a swamp, complete with monster and all! Sometimes I felt I was drowning in all the tasks to be done and problems to be solved; other days I struggled through such dry patches, making very little progress. The exploration became a grim battle to survive; the joy was gone and the end was out of sight. Giving up came to my mind a few times, but when I looked back at all the sacrifices that had already been made for this project, especially by my family, I knew I had to find the motivation to continue. I walked on, not glancing to right or left and looking only at the next small task, continuing a step at a time.

Then one day I realised that the next small step that I had to take was finishing off my report! My destination caught me by surprise, and I was a bit overwhelmed – but now I am delighted to be able to rest on the other side of that forest that seemed so daunting not so long ago…

I have learned an enormous amount about my topic, neonatal nursing education, and I am proud of what I have achieved in the academic sense. But I have learned much, much more about human nature and relationships (good and bad); I have met many wonderful people, made new friends and formed a new appreciation for the value of family and friends both old and new. In the end these people gave me courage to continue, carried me along my journey and helped me to grow through rather than just survive this expedition. Of all that I have gained through this study, I am most proud to have them as family and friends!

Was it all worthwhile? I can't answer that question finally yet. Now I look forward to spend time with my family. Later on I shall pick up my walking stick again, and guiding others along the narrow path I forged through the forest, until we have paved a broad, safe highway for all the neonatal nurses of South Africa and beyond.