

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.

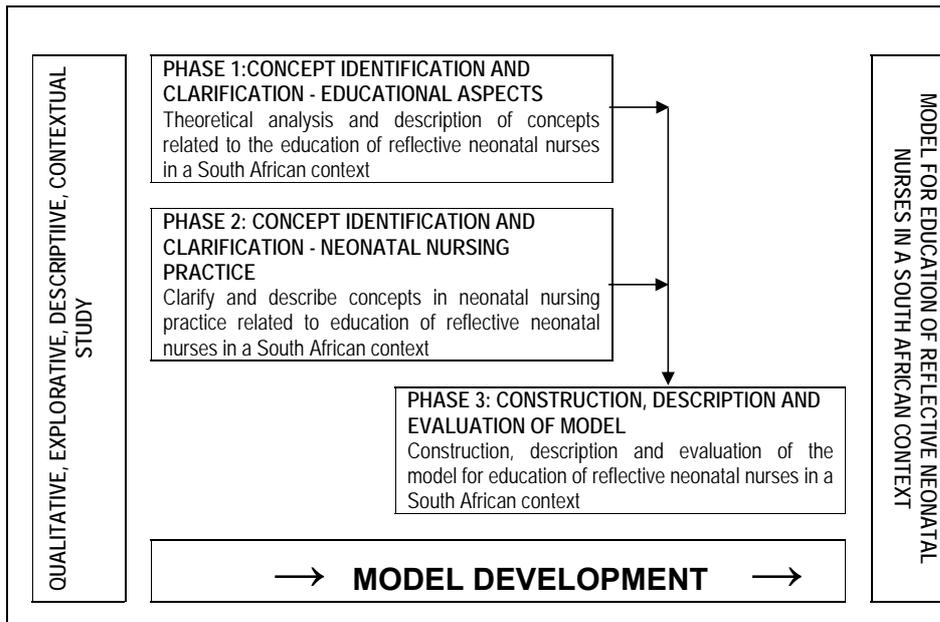


Figure 7.1: Schematic presentation of methodology applied in study

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 <i>et al</i> 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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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.



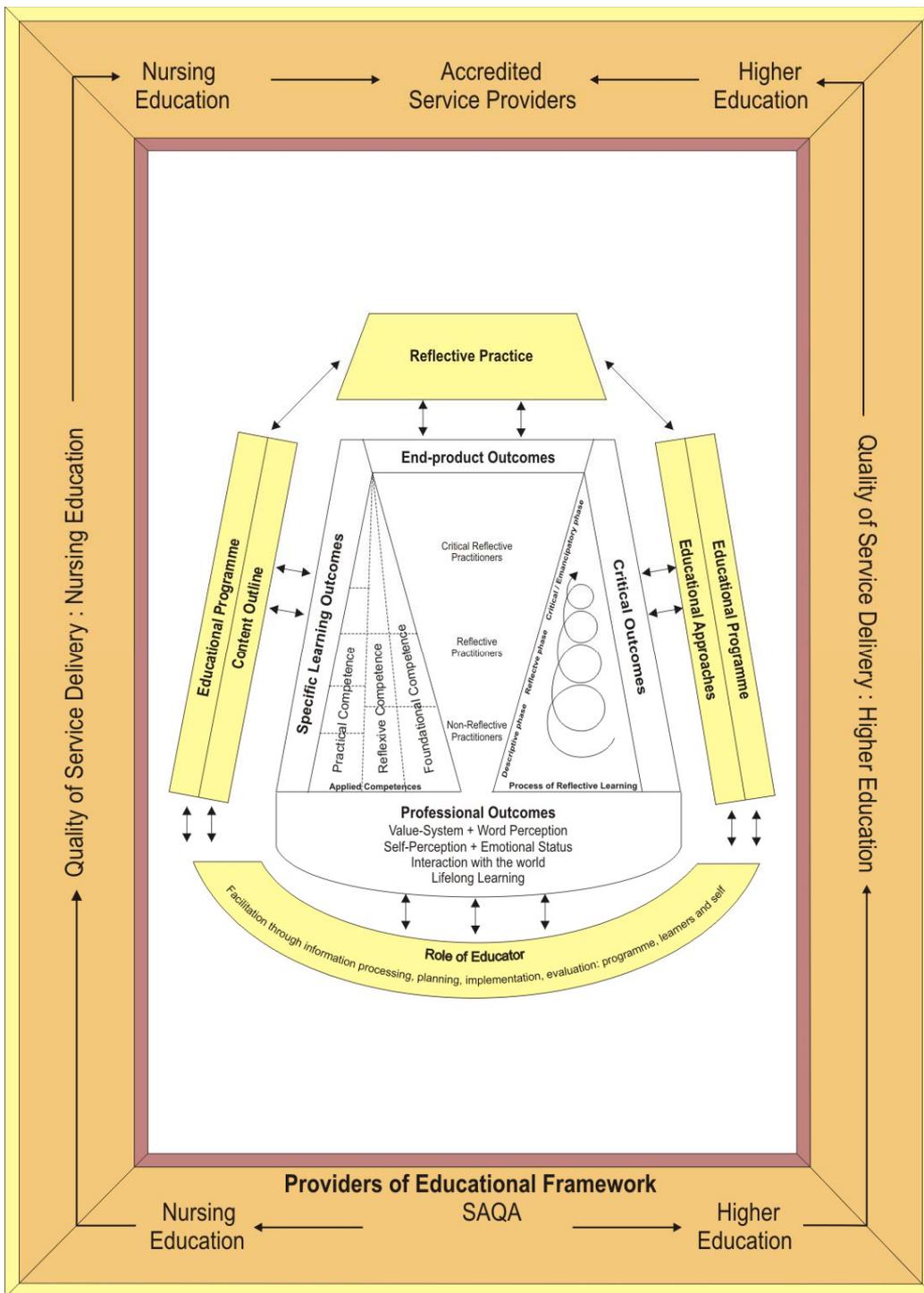


Figure 7.2: Model for education of reflective neonatal nurses

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 & Geysler 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.

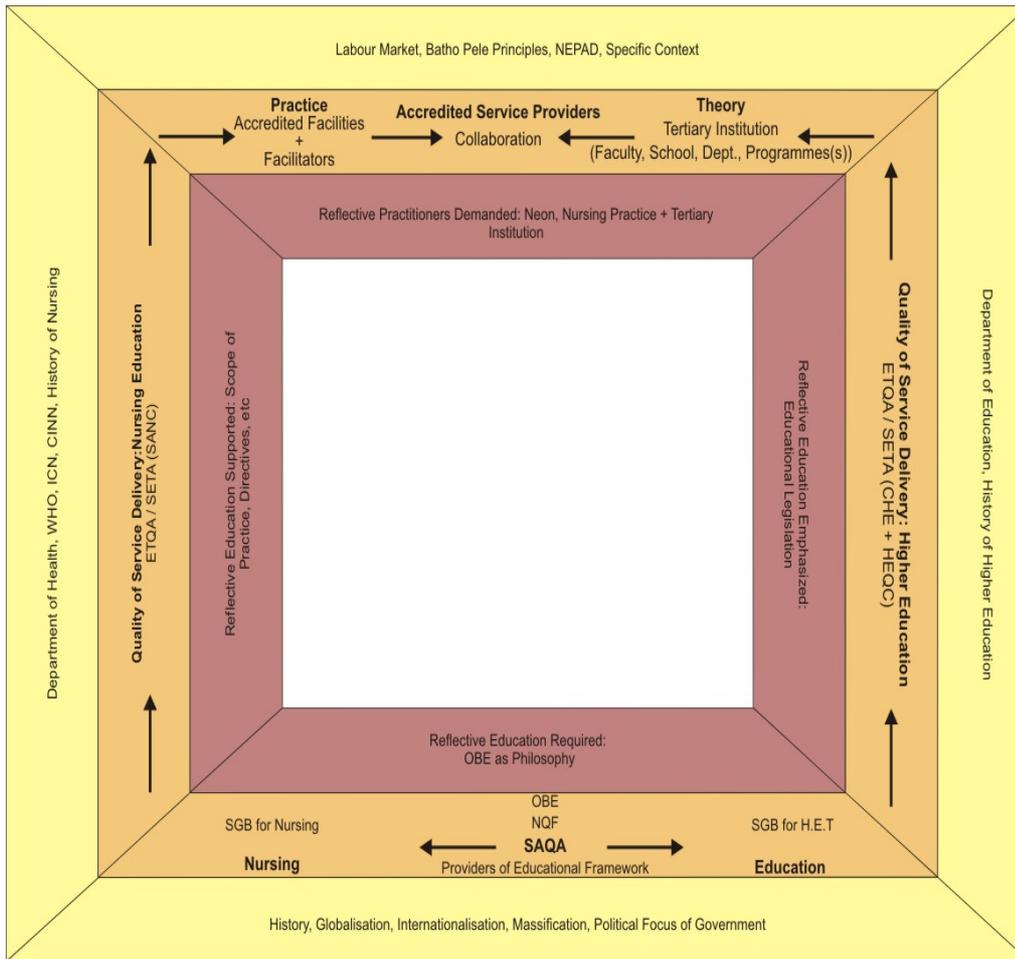


Figure 7.3: Framework for education of reflective neonatal nurses

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; Geysers 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; Geysers 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 voluntarily 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.

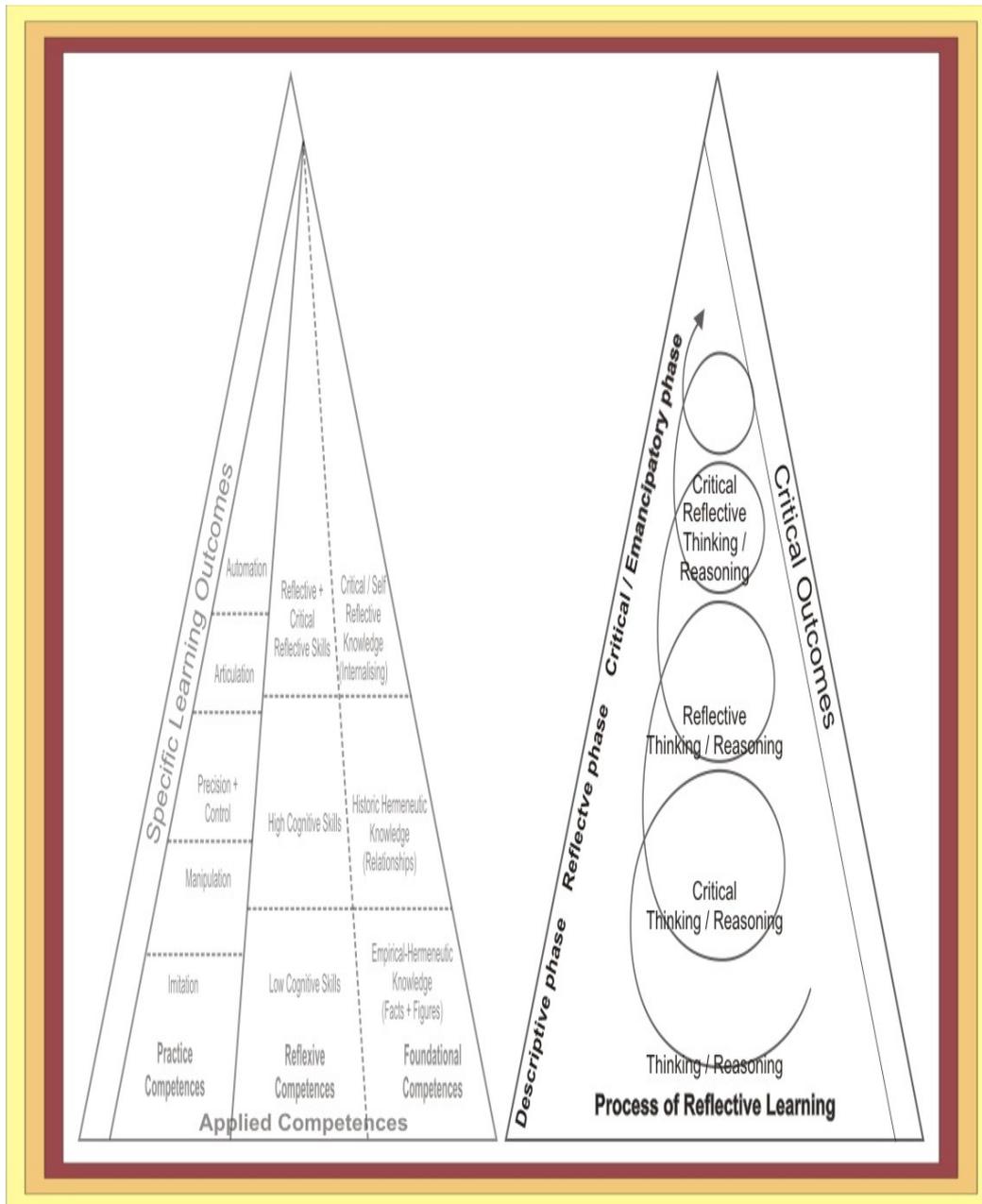


Figure 7.4: Process of reflective learning

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 responsibly 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.



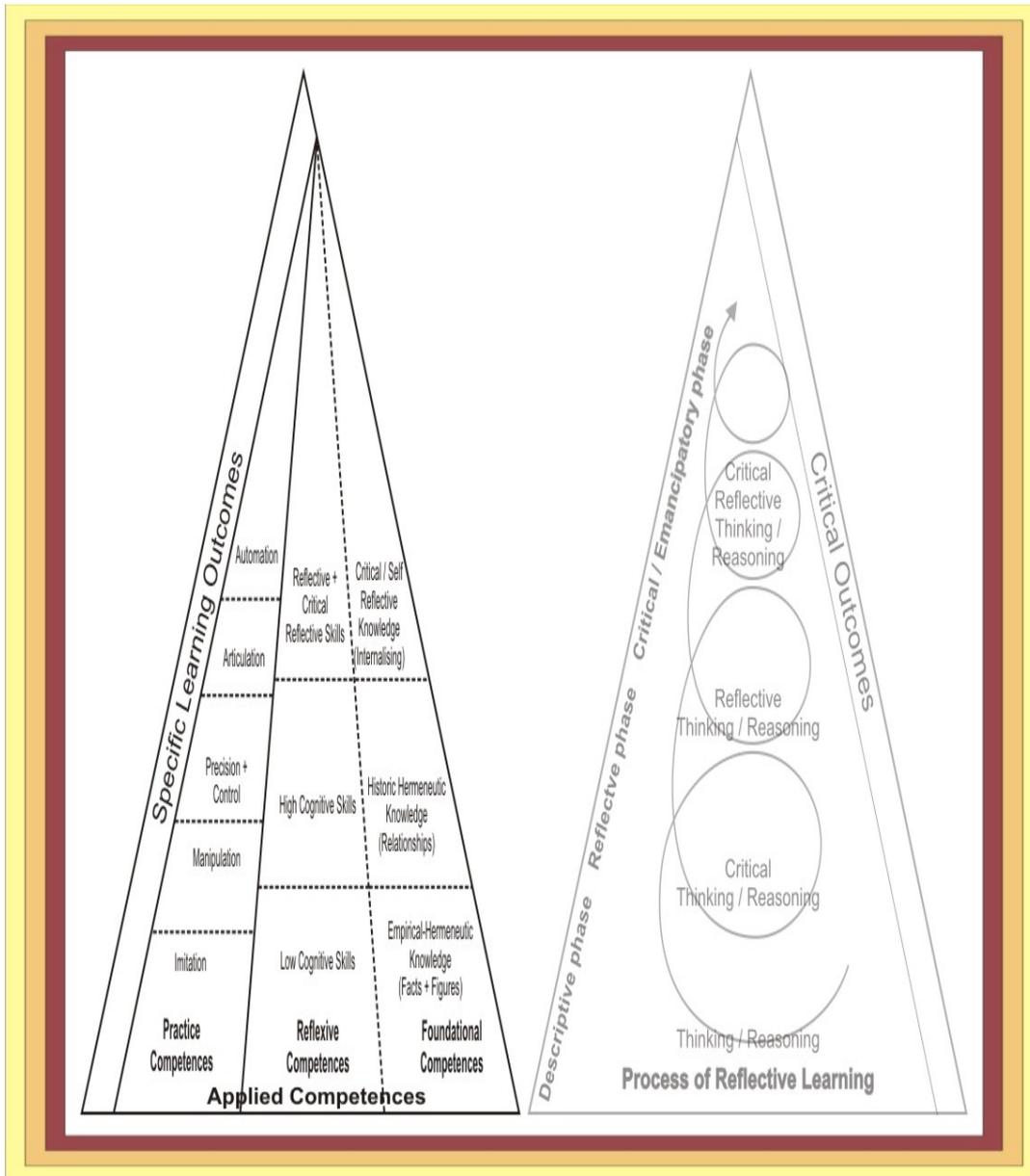


Figure 7.5: Applied competences

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.)



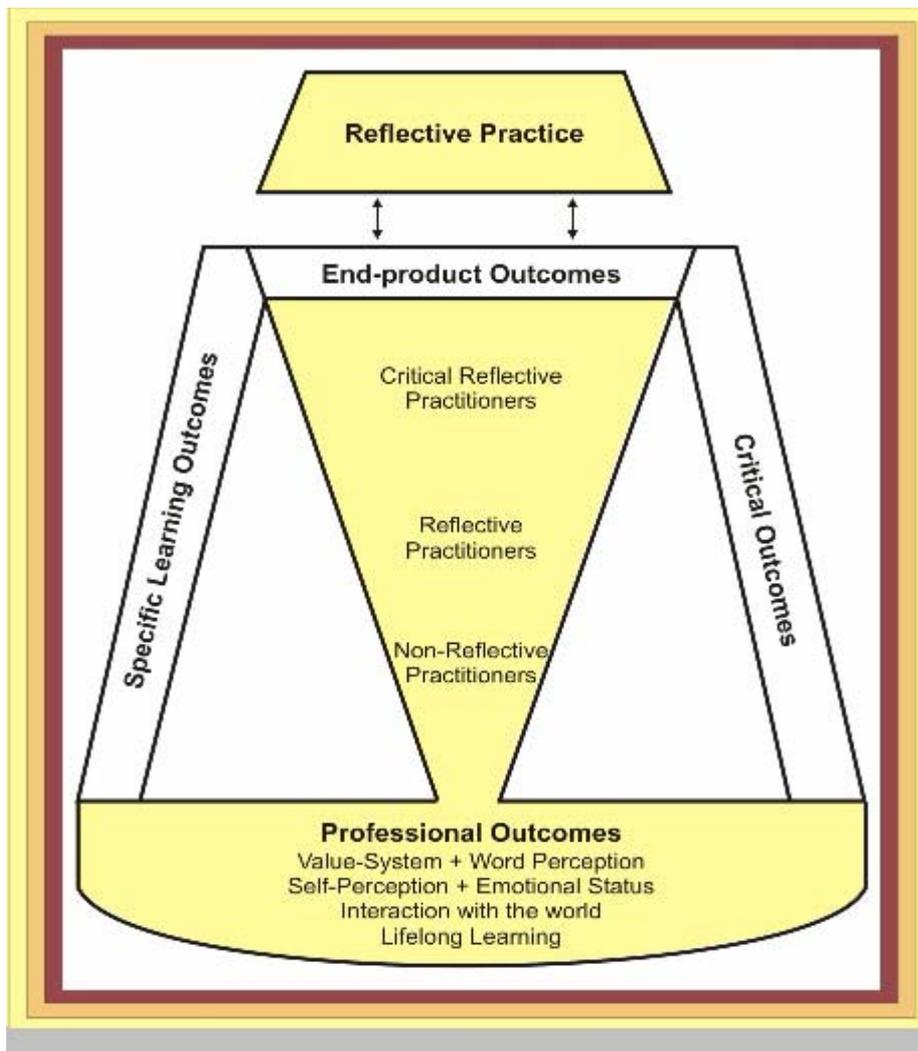


Figure 7.6: End-product outcomes

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 habituation 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.

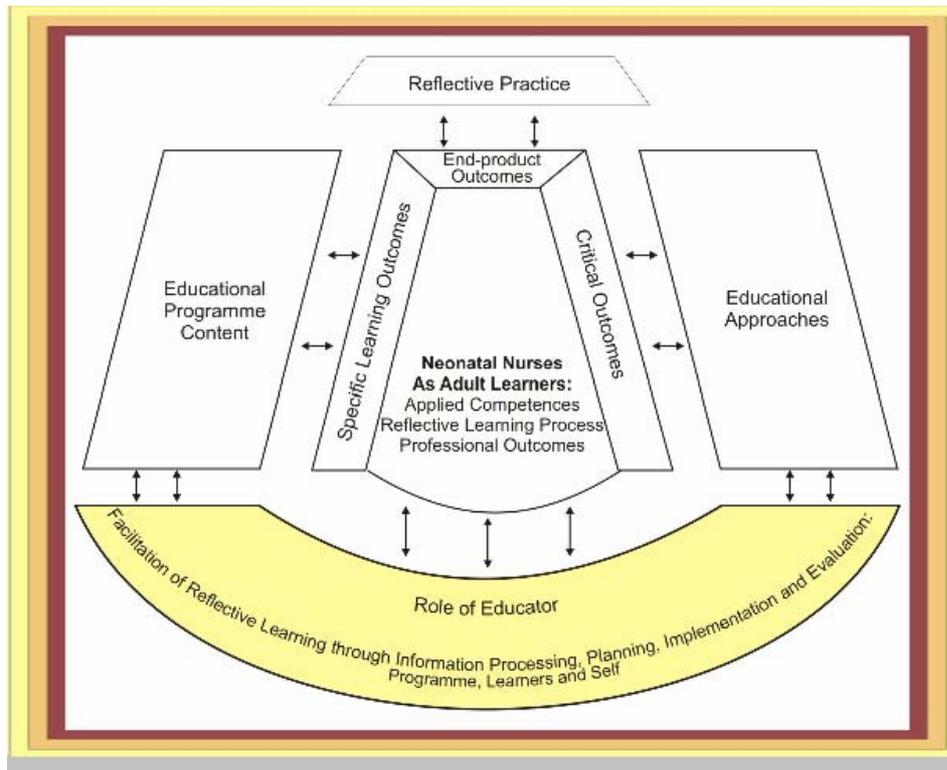


Figure 7.7: Educator's role in educating reflective neonatal nurses

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 (Geysers 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 (Geysers 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.



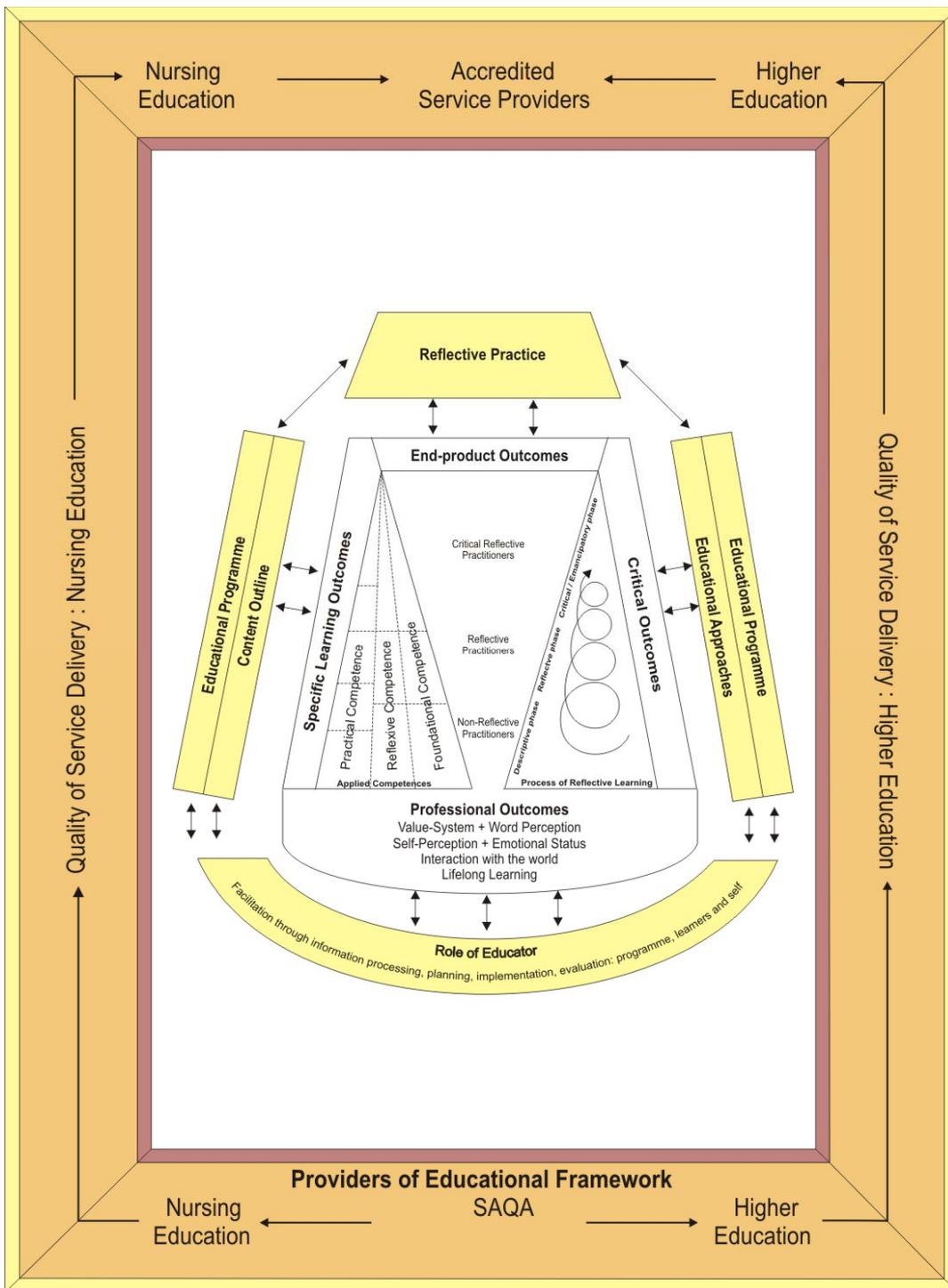


Figure 8.1: Model for education of reflective neonatal nurses in a South African context

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.

