CHAPTER 4:
NEONATAL NURSING STUDENTS AND REFLECTIVE LEARNING

4.1   INTRODUCTION

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

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

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

4.2   NEONATAL NURSING STUDENTS

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

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

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

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

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

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

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

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

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

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

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

4.3 PROCESS OF REFLECTIVE LEARNING

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

4.3.1 Learning

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

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

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

Table 4.1: Summary of learning theories

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

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Table 4.1: Summary of learning theories (continue)

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

Table 4.1: Summary of learning theories (continue)

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

Table 4.1: Summary of learning theories (continue)

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

Table 4.1: Summary of learning theories (continue)

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

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

4.3.2 Reflection, reflective thinking, reflective reasoning and reflective learning

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

- Dewey describes reflection as *validity testing* (Wong, Kember, Chung & Yan 1995:49-50), and reflective thinking as *thought patterns* responsible for *transformation* of a situation in which obscurity, doubt, conflict, disturbance of some sort is experienced followed by a clear, coherent, settled and harmonious condition (Dewey 1933:101-102).

- Schön (1983:15-16) makes a significant contribution to the theory of reflection with his description of reflection as *reflection-in-action* and *reflection-on-action*. Reflection-in-action refers to the reflective thinking one is doing while doing the action and reflection-on-action occurs after the experience has taken place.

- Foster and Greenwood (1998:166), and Van Manen (in Foster and Greenwood 1998) agree with Schön, but also include *anticipatory reflection* or *reflection-before-action*, where reflection takes place even before the action has taken place.

- Atkins and Murphy (1993:1189) describe reflection as the *involvement of the self* and the outcome of reflection as a *changed conceptual perspective*.

- Kim (1999:1207) describes reflection as *consciously examining* what has occurred in terms of thoughts, feelings and actions against underlying beliefs, assumptions, knowledge and

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

- Saylor (1990:11) describes reflective thinking as *artistry of combining a professional repertoire with current clinical problems to invent unique responses*.

- Jarvis (1992:174-181) describes reflective thinking as thinking, which seeks to *problematise* many situations of professional performance so that they can *become potential learning situations* and in that way the practitioners can continue *to learn, grow and develop* in and through their practice.

- Reid (1993:305-309) defines reflection as follows: "Reflection is a process of *reviewing* an experience of practice in order to *describe, analyse, evaluate* and so *inform learning* about practice." The starting point is ones own experience.

- Teekman (2000:1125-1135) develops from a study of reflective thinking in actual nursing practice the following definition:

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

- Boud, Keogh and Walker (1985) are among the earliest theorists to define reflection in learning: "Reflection in the context of learning is a generic term for those *intellectual and affective activities* in which individuals engage *to explore their experiences* in order to lead to *new understandings and appreciations*."

- Boyd and Fales (1983:99-117) define reflective learning as "the process of *internally examining and exploring and issue of concern*, *triggered by an experience*, which *creates and clarifies meaning* in terms of self, and which results in a *changed conceptual perspective*."

- Getliffe (1996:361-374) describes reflection in general terms as a *reconsideration of ideas or experiences*, and from a professional or education viewpoint as a *conscious and deliberate process of thinking* about and *interpreting* experience in order *to learn* from it. Reflection is not automatic but takes place in response to experience and with a definite purpose. It is a highly personal process, which can result in a *changed perspective* of learning.

- Chiu (2006:186-195) concludes from studies on reflection that

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

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

- Driscoll and Teh (2001:96) describe reflection as a process that allows practitioners to *uncover and expose thoughts, feelings and behaviours* that are present in a period of time.

- Alsop (2005:174-184) describes the essence of reflection as "*revisiting the experience* in our mind, *taking note of key features* of the event, *exploring* for ourselves what happened and what the consequences were, and *establishing how this adds to, or changes*, what we already know". Reflection "should also help practitioners to *identify how they can make modifications* to practice in the light of new experience, knowledge and insights, and so *improve their practice.*" It is triggered by situations that are not normal, or are in need of special attention. It can be undertaken alone, or in dialogue and debate with others.

- Johns (1995:226-234) describes reflexivity as the essential nature of *learning through experience*. Learning through reflection is a process of *enlightenment* ('understand who I am'), *empowerment* ('action to change who I am') and *emancipation* ('liberate myself from previous ways of being to become who I need to be').

- Murphy (1998:7) and Scanlan and Chernomas (1997:1138-1143) describe reflective learning as the *process of change through reflection*. It contributes to change in theoretical knowledge and conceptualisation, clinical competences and skills of reflective thinking (including critical thinking). It facilitates understanding of the self within the dimensions of practice, provides students with an avenue for self-evaluation and opens mental activities to inspection. Reflective learning accommodates self-directed learning as it helps students to learn how to learn effectively. In looking back, students can see how far they have come. They set their own agendas as students to decide where they should go next and respond accordingly.

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

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

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

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

4.3.3 Definition of the process of reflective learning

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

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

- Argyris and Schön (in Burton 2000:1012-1013; Foster & Greenwood 1998:168; Wong *et al.* 1995:49-50) describe single- and double-loop learning: *single-loop learning* involves reflection on the outcomes of the experience or intervention, but without reflection on its strategies, values and goals; and *double-loop learning* involves reflection on the experience accompanied by questioning of the norms, values and social relationships underpinning the experience i.e. reflecting on learning systems and ones own role in them. This second loop learning thus occurs at a higher level; it is also called 'critical reflection'.

- Mezirow (1981:3-24) described seven levels of reflectivity. The first four were referred to as 'consciousness' (*how* questions concern process and content) and included reflectivity, affective reflectivity, discriminating reflectivity and judgemental reflectivity; while the last three were referred to as 'critical consciousness' (*why* questions concern with reasons and consequences) and included conceptual reflectivity, psychic reflectivity and theoretical reflectivity.

- Day (1993:83-93) describes three levels of reflection: reflection concerned with the techniques needed to reach objectives (actions); reflection on the relationship between principles and practice; and reflection that addresses ethical and political concerns.

- Kim (1999:1205-1212) describes levels of reflection as phases of critical inquiry: a *descriptive phase* that involves descriptions of practice events (actions, thoughts and feelings) and examination of descriptions for genuineness and comprehensiveness; a *reflective phase* that entails reflective analysis against espoused theories (scientific, ethical and aesthetic), reflective analysis of the situation and of intentions against actual practice; and a *critical / emancipatory phase* that entails critique of practice in terms of conflicts, distortions and inconsistencies (between values / beliefs and practice, intentions and actions, and clients' needs and nurses' actions), and engagement in emancipatory and change processes.

- James and Clarke (1994:82-90) describe levels similar to Kim's phases and add a fourth phase, namely *personal or deep reflection*, a process of becoming aware of what is known and how it is known.

- Duke and Appleton (2000:1557-1568) confirm experimentally that reflection takes place at different levels of complexity and can be developed over time. They classify reflective activities as: *description, focus, analysis of feelings, analysis of knowledge, analysis of context, synthesis, practice implication, action planning, clarity, referencing of sources and self-evaluation.*

- Boud, Keogh and Walker (1985:18-40) describe the key elements of the reflective process as *attending to feelings*, *association* (relating new data to that which is already known), *integration* (seeking relationships among the data), *validation* (determining the authenticity

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

- Teekman (2000:1125-1135) describes reflective thinking as a dynamic process involving *facing the situational gap*, *categorising perceptions* (use of collegial support and the value of experience to make sense of the situation), *recognising patterns*, *framing* (putting things together) and *discourse-with-self* (debating in own mind focusing on eliminating gaps involving the client, the self and the system). Reflective thinking occurs on three consecutive levels, namely *reflective thinking-for-action, reflective thinking-for-evaluation and reflective thinking-for-critical-inquiry*.

- Boyd and Fales (1983:99-117) describe reflective learning as a process involving *a sense of inner discomfort* triggered by a life experience, identification or clarification of the concern that makes the nature of the problem or issue more evident (conceptualisation), *openness to new information* from internal and external sources with the ability to observe and take from a variety of perspectives, *resolution* ('aha'-stage or new perspective) where one experiences that the change or learning that has occurred is personally significant, *internalisation of new perspective* or change in oneself, followed by *operationalisation* that entails decision-making, problem-solving or changed practice as an outcome.

- Getliffe (1996:365) identifies and uses the following categories to evaluate students' level of reflection: *factual* (referring to events that occurred), *prudential* (evaluating the effectualness of actions or suggesting alternative actions), *justificatory* (focusing on reasons why particular actions occurred or why alternatives would be suitable), and *critical* (referring to values, beliefs, assumptions underlying the reasons given to support a course of action or a potential action).

- Chiu (2006:183-203) describes four forms of knowledge or reflection that exist in an interdependent and dynamic cyclical hierarchy: *experiential reflection* or knowledge (experience a felt encounter), *presentational reflection* or knowledge (grasp and present it), *propositional knowledge or critical reflection* (mediate through intellectual processes of concept forming and conceptual organization, analysis, inferences and synthesis, and express it propositionally) and *practical reflection* or knowledge (generate practical knowledge through synthesis and extend it into action). A new experience is created by action and the cycle starts again. Chiu describes these processes as they taking place from first-, second- and third-person perspectives.

- Driscoll and Teh (2001:95-103) describe the process of reflection as 'What?', which entails a *description* of the event; 'So What?', which refers to *analysis* of the event; and 'Now What?' which refers to the *proposed actions* following the event. The process allows

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

The meaning and implications of the researcher's definition of reflective learning are discussed in more detail later in this chapter:
- The different phases or levels of reflective learning in section 4.4: 'Applied competences and reflective learning';
- Value-system and individual perspective in reflective learning in section 4.5: 'Professional characteristics and reflective learning'
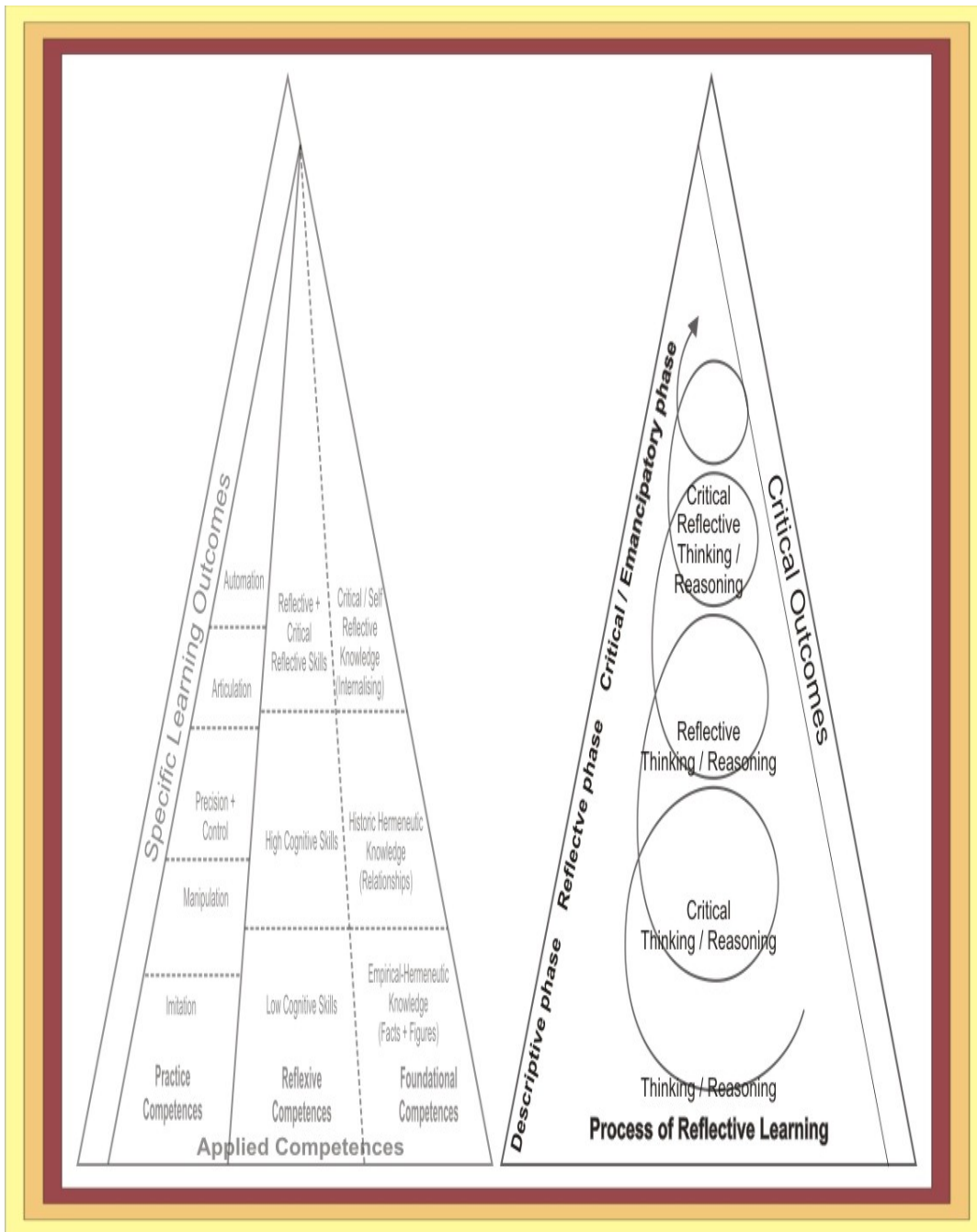- Changed perspective and practice in section 4.6: 'Outcomes of reflective learning'

Figure 4.1: Process of reflective learning

4.4   APPLIED COMPETENCES AND REFLECTIVE LEARNING

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

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

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

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

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

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

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

4.4.1 Practical competences

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

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

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

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

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

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

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

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

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

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

4.4.2 Reflexive competences

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

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

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

4.4.2.1 Reflexive competences in the descriptive phase

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

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

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

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

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

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

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

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

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

4.4.2.2 Reflexive competences in the reflective phase

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

4.4.2.3 Reflexive competences in the critical or emancipatory phase

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

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

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

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

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

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

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

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

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

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

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

4.4.3 Foundational competences

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

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

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

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

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

4.4.3.1 Types of knowledge: hidden, scientific and personal knowledge

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

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

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

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

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

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

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

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

4.4.3.2 Hierarchy of levels of knowledge

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

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

Empirical-analytical or factual knowledge

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

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

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

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

Historical-hermeneutic knowledge

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

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

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

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

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

Critical or self-reflective knowledge

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

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

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

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

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

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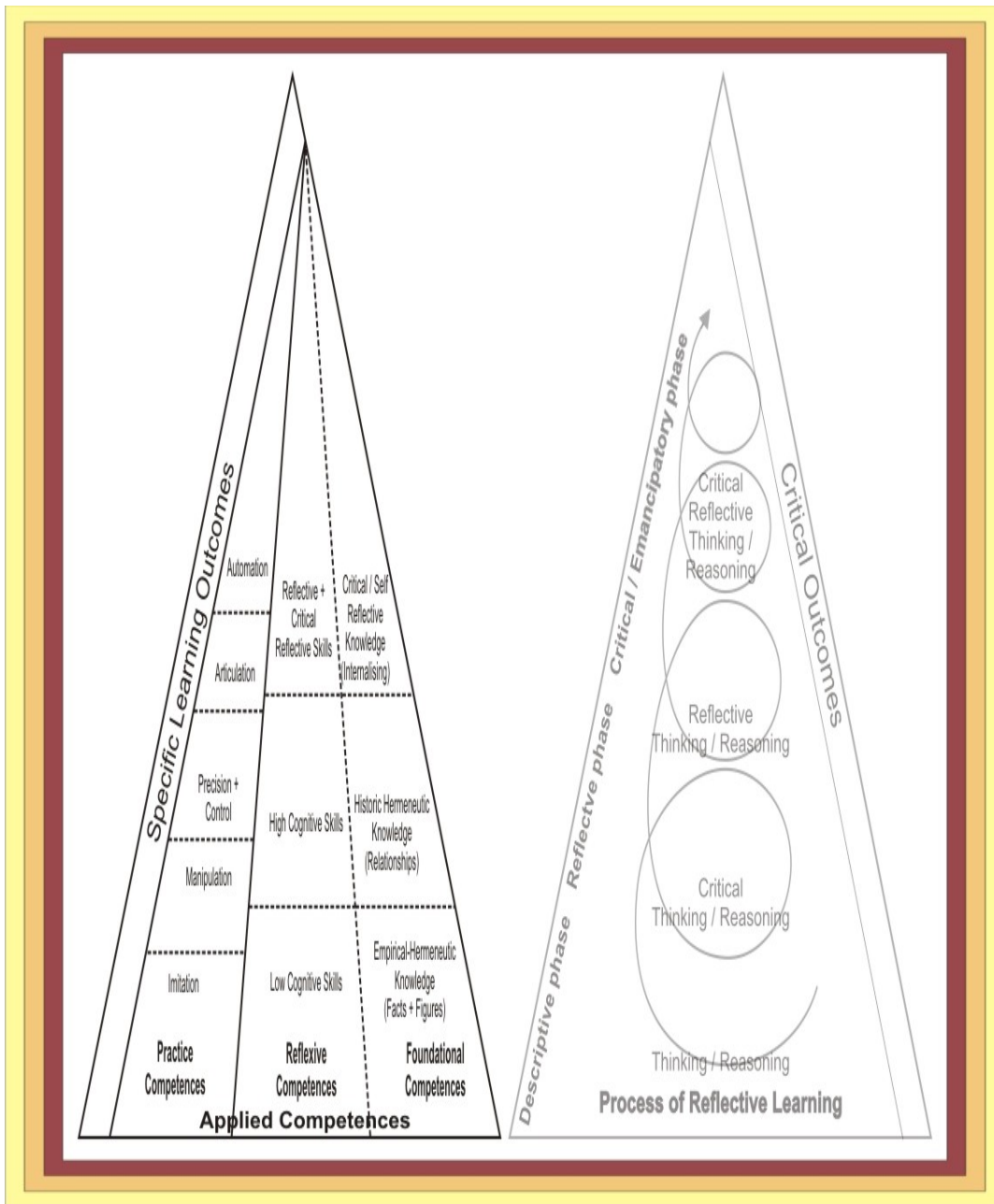
Figure 4.2: Applied competences

4.5 PROFESSIONAL CHARACTERISTICS AND REFLECTIVE LEARNING

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

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

4.5.1 Values and worldview

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

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

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

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

4.5.2 Self-perception and emotional status

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

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

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

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

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

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

4.5.3 Interaction with the outside world

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

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

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

4.5.3.1 Non-reflective practitioners

Wong *et al.* (1995:48-57) studied diary entries of nursing practitioners and describe the features of non-reflective practitioners. Such practitioners tend to:
- be very descriptive without analysing their experiences,
- make assumptions without trying to test them for validity,
- view situations in a relatively straightforward way without considering contextual factors,
- use mostly concrete thinking rather than abstract thinking, and
- describe their experiences impersonally as if in an academic paper.

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

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

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

4.5.3.2 Reflective practitioners

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

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

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

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

As far as professional characteristics are concerned (American Philosophical Association 1990:315-423; Carroll, Curtis, Higgins, Nicholl, Redmond & Timmins 2002:36-41; Kuiper & Pesut 2004:385; Olivier 2002:39-40; Smith & Lovat 2003:55; Van Aswegen *et al.* 2000:130; Van der Horst & McDonald 2001:35-41) reflective practitioners tend to:
- maintain good personal relationships;
- be receptive and sensitive to others and their needs;
- be caring and compassionate;
- stay responsive;
- share freely;
- be approachable and reasonable;

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

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

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

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

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

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

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

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

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

4.5.3.3 Critically reflective practitioners

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

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

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

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

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

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

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

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

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

4.5.3.4 Most suited practitioners for reflective nursing practice

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

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

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

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

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

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

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

4.5.4 Lifelong learning

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

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

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

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

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

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

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

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

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

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

4.6   OUTCOMES OF REFLECTIVE LEARNING

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

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

4.6.1 Reflective and critical reflective practice

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

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

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

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

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

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

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

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

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

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

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

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

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

- Development of knowledge through reflection, which contributes to practice-generated theory; this 'inside-out' growth of theory complements the usual application of theory form 'outside-in', and helps narrow the theory-practice gap (Driscoll & Teh 2001:97).

- As a powerful educational tool, reflection can facilitate the integration of theory and practice, increase self-awareness, enhance critical thinking, challenge habitual practice and identify tacit knowledge (Burton 2000:1009-1017; Foster & Greenwood 1998:165-172; Hallet 1997:103-110; Kuiper & Pesut 2004:386).

- Reflective practice helps create a transformative environment where students are accountable for thinking for themselves and trying to interpret before being told; they have to become aware of their own understandings, each other's understanding and their educator's understandings – all learning from each other and creating ongoing change to enhance quality (Waghid 2001:82).

- Reflection-in-action helps make professional practice more effective, both for present clients / patients and future ones, because it teaches practitioners to learn from practice (Powell 1989:826).

- Reflective activities encourage critical thinking abilities and therefore clinical decision-making (Burton 2000:1013; Scanlan & Chernomas 1997:1138-1143).

- Reflective practice can lead the professional to understand of how historical, social, cultural, cognitive and personal experiences contribute to professional knowledge acquisition and practice (Wilkinson, 1999:36).

- Reflective practice draws from situated, individual instances of nursing practice to develop and augment the knowledge necessary to improve practice, because it recognises that practice involves not only using knowledge but also gaining new knowledge as well. Nursing as a profession is entering a new era of the fusion and synthesis of knowledge for its application to practice (Kim 1999:1205).

- Reflecting on the outcome of practice can lead to trying out new skills and new, creative ways of doing things (Jarvis, 1992:178).

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

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

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

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

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

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

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

4.6.2.1 Critical outcomes

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

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

The generic outcomes determined by SAQA for all teaching and learning include (Higher Education Quality Committee 2002b:34; Olivier 2002:33-34; South Africa 1995):
a) Identifying and solving problems in which responses show that responsible decisions using critical and creative thinking have been made;
b) Working effectively with others as a member of a team, group, organisation or community;
c) Organising and managing oneself and ones activities responsibly and effectively;
d) Collecting, analysing, organising and critically evaluating information;
e) Communicating effectively using visual, mathematical and/or language skills in the modes of oral and/or written persuasion;
f) Using science and technology effectively and critically, showing responsibility towards the environment and the health of others;
g) Demonstrating an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation; and
h) Contributing to the full personal development of each learner and the social and economic development of society as a whole, by making the underlying intention of any programme of learning known and to make an individual aware of the importance of:
   (i) Reflecting on and exploring a variety of strategies to learn more effectively,
   (ii) Participating as responsible citizens in the life of local, national and global communities,
   (iii) Being culturally and aesthetically sensitive across a range of social contexts,
   (iv) Exploring education and career opportunities, and

(v) Developing entrepreneurial opportunities.

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

4.6.2.2 Specific learning outcomes

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

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

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

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

4.6.2.3 End-product outcomes

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

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

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

4.6.3 Barriers to reflective learning

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

4.6.3.1 Barriers related to individuals involved

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

- Different skills are required in the different phases of reflective learning, varying from fairly low-level cognitive skills in the descriptive phase to complex metacognitive skills in the critical or emancipatory phase. Not all individuals have these skills. If students are unable to be reflective, they resist change and are unwilling to develop theory in practice or acknowledge research (Getliffe 1996:370). Wong *et al.* (1995:48-57) describe such people as non-reflective practitioners, who tend to focus on concrete descriptions and have difficulty to reflect on their experiences in practice.

- Previous learned knowledge and competences may help during reflective learning in some cases and hinder in others (Mann 2005:318). While it may be liberating to learn from and challenge the way we practice, it might also be very difficult to 'unlearn' what has been done routinely (Driscoll & Teh 2001:98).

- Sometimes people deny their ignorance, or are simply satisfied with their current level of performance whatever it is. This kind of certainty about a situation premature closes off

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

- Conversely, reflection on negative situations can promote helplessness, hopelessness, loss of self-confidence and damage self-esteem (Kuiper & Pesut 2004: 386).

- The processes of reflection can be emotionally problematic. A person's memory can be uncertain and biased. Reflection can trigger anxiety and other painful emotions. This can cause students to feel threatened or exposed and vulnerable, and to react extremely to giving or receiving feedback. Competent support and trusting relationships are needed for this kind of education. Psychological morbidity is always a risk (Burton 2000:1014-1015).

- Individuals often fear standing out from the crowd, challenging conformity in practice, being a lone voice, being less satisfied with the way practice is carried out, wanting to find out more about why things are done a particular way, being labelled a troublemaker by suggesting alternative ways of working, being faced with making difficult choices, not having knowledge of how to proceed with an idea, having more questions than answers, finding that others may not have answers to practice concerns, and rocking the boat in relation to future promotion or ambitions. All these fears can inhibit reflective learning and practice (Driscoll & Teh 2001:98).

- Learning from reflective thinking does not happen automatically, but requires active involvement, unveiling of personal feelings and self-examination. This can create anxiety and conflict in the individual (Foster & Greenwood 1998:166; Getliffe 1996:366; Teekman 2000:1125-1135). Students may view the inclusion of the affective domain in reflective education as an invasion of privacy (Baker 1996:21).

- Interpersonal factors can also hinder reflective learning, if the honesty and openness of discussions is limited by poor student-educator relationships, group dynamics or motivational factors (Getliffe 1996:370-371).

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

4.6.3.2 Barriers related to circumstances

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

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

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

4.6.3.3 Barriers related to the educational programme

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

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

4.7   SUMMARY

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