CHAPTER 4

DATA ANALYSIS, INTERPRETATION OF FINDINGS AND LITERATURE CONTROL

4.1   INTRODUCTION

In this chapter, the analysis of data obtained through guided reflective interviews and narrative descriptions is discussed. Results are interpreted and findings compared with previous research findings and data obtained from the literature. The reason for conducting a literature control is to place the findings of this research in the context of what is already known (Brink 1996:76; Streubert & Carpenter 1999:20).

Data obtained from the verbatim transcriptions of the guided reflective interviews and the narrative descriptions written by the participants were coded, categorised and analysed. The data were grouped together into themes, categories and subcategories that emerged during the coding process. The researcher manually coded the data. Two independent qualitative researchers validated the coding and interpretation of the data obtained from the transcribed interviews. The coded data are tabulated (Tables 4.1-4.26) under the headings 'category', 'subcategory', 'guided reflective interviews' and/or 'narrative descriptions', and 'theory or practice'. The columns 'guided reflective interviews' and 'narrative descriptions' contain examples of the raw data. The 'theory or practice' column indicated whether theoretical knowledge or practical skill was applied by the participant, as interpreted by the researcher on the basis of experience gained as a clinical nurse specialist.

The four main themes that emerged during the coding process and data analysis were *description, critical analysis of knowledge, critical analysis of feelings,* and *new perspective*.   Categories and subcategories belonging to each theme and the application of theoretical knowledge and practical skills will be discussed. Examples of relating verbatim transcripts support the discussion of themes, categories and subcategories. Some of the raw data are presented in Afrikaans (the native language of

some of the participants), but most were translated into English. Translations are indicated. Literature relating to the data is provided as a literature control.

Data obtained that did not relate to the research topic had been omitted, as suggested by Taylor and Bogdan (1984:138). Annexure II contains an excerpt of the verbatim transcription of an interview held with a participant. A description of the data analysis approach is provided in Chapter 3.

4.2 AN OVERVIEW OF THE THEMES, CATEGORIES AND SUBCATEGORIES IDENTIFIED DURING THE DATA ANALYSIS

During the data analysis the researcher realised that the participants were describing not only their experiences of guided reflection but also the incidents to which guided reflection was applied and relevant knowledge.   The adapted framework of Johns, namely the *Guideline for the Facilitation of Reflection as Teaching Strategy*, used during the unstructured interviews, contributed to this course of events.

The researcher decided to also report on the data obtained about the participants' experiences of the relevant incidents and relating knowledge aspects. The four major themes, the different categories and subcategories, and the relationships between the themes, categories and subcategories (within the context of the study) are discussed. On the strength of the data, and on the basis of her expertise, the researcher could indicate whether theoretical knowledge was applied to practice.

Table 4.1 on page 61 presents an overview of the major themes, categories and subcategories that emerged from the guided reflective interviews and the narrative descriptions written by the participants. Figure 4.1 on page 62 displays the different themes, categories and subcategories and graphically illustrates the relationships between them.

Note: Each table displaying the raw data about the category and its subcategories is followed by the discussion of the category/subcategories. However, the number of the page, on which the table is positioned, is indicated if, for practical reasons, the table does not precede the discussion.

4.3   THEME 1: DESCRIPTION

The first theme *'description'* deals with the descriptions of the clinical incidents given by the participants during the guided reflective interviews. Lombard (1996:188) defines 'description' as an attempt to accurately formulate the incident, which stimulated covert and overt actions, in words. Each participant chose and described a clinical incident in which the participant was involved and which occurred while the participant was caring for a critically ill patient. Categories that emerged from the descriptions of these incidents are 'patient data, doctor action, nurse action, treatment, communication, experience, and outcome'. Each category will be discussed.

4.3.1   Category: Patient data

Table 4.2 displays the category 'patient data'.

TABLE 4.2 PATIENT DATA			
CATEGORY	**SUB-CATEGORY**	**GUIDED REFLECTION INTERVIEWS**	**THEORY/ PRACTICE**
Patient data	Assessment findings	And when this patient came, he was semi-comatose and was from a clinic; the name was not known (4). They gave a history of hypertension (5). But he came in he had staph. aureus septicaemia and went into, umm, I think in a heart block (145). Hy het 'n massiewe pulmonale embolus gehad wat eee sy pulmonale arteries totaal en al afgesluit het, met ander woorde die pasiënt het aan die einde van die dag geen kardiale uitwerp gehad nie (239).	Theory and practice
	Critical assessment findings	So he had started having bradycardia, desaturation and he convulses kind of seizures (40) Waarna hy gefibrilleer en gearres het (240) Geroep deur 'n besoeker wat by hom was omdat hy erg skielik erg sianoties begin raak het dus uhm saturasie het baie baie erg geval, van 95-80 (395) Uuu het hy kardia-, kardiale arres gehad (397)	Theory and practice

The category 'patient data' refers to the patient's clinical data. Either a nurse or a medical doctor obtained the data.

The following is an example of patient data:

> *'And when this patient came, he was semi-comatose and was from a clinic; the name was not known' (Data unit: 4)*

From the category 'patient data', the subcategories 'assessment findings' and 'critical assessment findings' emerged. Assessment findings can be described as assessment conclusions that are drawn by the nurse after all the relevant patient data is obtained. A participant described the assessment findings as follows:

> [Translation] *'He had a massive pulmonary embolus … his pulmonary arteries were totally occluded, in other words, at the end of the day this patient had no cardiac output' (Data unit: 239)*

As revealed by data units 4, 5, 145 and 239 (Table 4.2), the participants applied some theory to practice. For example, concerning data unit 239, the participant had theoretical knowledge of the clinical manifestations of a patient who had no cardiac output, and she knew pulmonary embolism was a possible cause (theory).

Under 'patient data', the subcategory 'critical assessment findings' is described. This subcategory includes assessment findings that represent critical events and possible life-death situations. The following statement represents a critical assessment finding:

> [Translation] *'Was called by a visitor who was with him, because he very suddenly became severely cyanotic, and therefore ... umm his saturation dropped very, very much, from 95 to 80. Uuu he had cardiac, cardiac arrest' (Data units: 395, 397).*

The above description of cardiac arrest can be seen as a critical assessment finding because the finding represents a critical situation and the life of the patient is at stake. Cardiac arrest is a state when the circulation ceases; the vital organs are deprived of oxygen and have no signs of circulation (American Heart Association 2001:65).

Data units 40, 240, 395 and 397 (Table 4.2) also represented critical assessment findings, which indicated the application of theory to practice. Participants were able to

diagnose cardiac arrest (data units 395 and 397). In order to be able to indicate clinical manifestations that could lead to cardiac arrest, such as desaturation and cyanosis, participants should have theoretical background.

Patient data include diagnostic observations made by nurses. They base these observations on the patient's history, physical assessment of the patient, observations, and laboratory reports (Naudé, Meyer & Van Niekerk 2000:34; Woods, Froelicher, Halpenny & Motzer 1995:226, George 1995:17). The gathering of clinical patient data is an important step in rendering competent nursing care, as incorrect data could lead to malpractice. In the nursing environment, the gathering of clinical data is the first step of the nursing process (George 1995:18; Mellish *et al.* 1998:16; Naudé *et al.* 2000:26). The value of a correct nursing diagnosis is individualised nursing care, planning of nursing interventions, interdisciplinary communications, autonomy and accountability (Naudé *et al.* 2000:45).

4.3.2 Category: Doctor action

Table 4.3 displays statements relating to the category 'doctor action' and the subcategories 'medical diagnosis', 'life-saving actions' and 'routine actions'.

TABLE 4.3 DOCTOR ACTION			
CATEGORY	**SUB-CATEGORY**	**GUIDED REFLECTION INTERVIEWS**	**THEORY/ PRACTICE**
DOCTOR ACTION	Medical diagnoses	He feels that the patient had got irreversible brain damage, but not brain dead (27) Uhm, ons kan maar die CPR stop; dis onsuksesvol (404)	Theory and practice
	Life-saving actions	Was immediately intubated and mechanically ventilated (10). Teater toe – toe is, toe is hy naderhand, toe is hy teater toe gewees. Hulle het 'n pasaangeër ingesit. 'n Permanente pasaangeër (474, 475) But I know that before we came on duty they've taken him to cath. lab*, they've put in an arterial and ventricular pacemaker (146) Ongevalledokter is onmiddellik geroep; uhm, hy was binne twee minute daar (403)	Theory and practice
	Routine actions	Dokter het aangevra vir borskas x-straal (483).	Theory and practice

* Cath. lab = Catherisation laboratory where heart catherisation is done

The gathering of clinical patient data is usually followed by actions that include doctor actions, such as requests for nursing or medical interventions (for instance, the request to do chest x-rays). Action implies doing something towards a goal; it is the process of doing something in order to achieve what is proposed (Microsoft Encarta World English Dictionary 1999; Oxford Advanced Learners Dictionary 2000:11). In the context of this study, actions or interventions are actions that are performed by a doctor or a nurse while caring for a patient.

A medical diagnosis (subcategory) was described as follows:

> *'He feels that the patient had got irreversible brain damage, but not brain dead'*
> *(Data unit: 27).*

In this scenario, the doctor made a medical diagnosis of irreversible brain damage that eventually guided the nurse's actions toward the patient. The participant described the doctor's diagnosis of irreversible brain damage at the beginning of the guided reflective interview, but at a later stage indicated that she did not immediately realise its implications, as she lacked theoretical knowledge pertaining to neurological patients (Subsection 4.5.1).

In another instance, a doctor made a medical diagnosis regarding a patient's clinical status that guided the participant's actions, as indicated in the following statement:

> [Translation] *'Umm, we can stop the CPR, it is unsuccessful' (Data unit: 404).*
> CPR = cardiopulmonary resuscitation

At this stage of the interview, the participant did not indicate that she had applied theoretical knowledge or practical skills; she merely described the situation and stated the diagnosis made by the doctor. However, at a later stage during the interview, the participant questioned the doctor's actions, implicating application of knowledge to practice. This event is described in Subsection 4.9.1. In addition to medical diagnoses, life-saving doctor actions were described by participants, for example:

> *'Was immediately intubated and mechanically ventilated' (Data unit: 10).*

Intubation is the placement of an endotracheal tube through the oropharynx or nasopharynx to maintain an open airway to ventilate a patient. It represents a life-saving action. Regarding most of the life-saving actions (data units: 10, 474, 475, 146) indicated in Table 4.3, practical skill and theoretical knowledge were needed. However, these skills and knowledge were mainly applied by the doctor. Data unit 403 described the time span it took the doctor to reach the patient. The speedy arrival of the doctor in case of emergency represents a life-saving doctor action.

Besides medical diagnoses and life-saving actions, a third subcategory, namely routine actions, is described. Routine actions represent actions that are routinely done, for example:

> [Translation] *'The doctor requested chest x-rays' (Data unit: 483)*

Chest x-rays are routinely done in the critical care nursing environment. Although the participant only mentioned the routine medical action, it is necessary for the critical care nurse to have theoretical knowledge about the indications for a chest x-ray and the interpretation of x-ray results.

Doctor actions (such as medical diagnoses, life-saving actions and routine actions) are aimed at the care and recovery of a patient. Critical care nurses should acquire the theoretical knowledge and practical skills in order to implement the necessary actions and provide quality patient care.

4.3.3 Category: Nurse action

From the category 'nurse action', the subcategories 'routine actions' and 'life-saving actions' emerged. These are displayed in Table 4.4. Nurse actions include all actions performed by nurses while caring for patients. Patient care is dictated by the needs of the patient.

Table 4.4 on page 68 displays statements that are relevant to the category 'nurse action' and the subcategories 'routine actions' and 'life-saving actions'.

TABLE 4.4 CATEGORY: NURSE ACTION			
CATEGORY	**SUB-CATEGORY**	**GUIDED REFLECTION INTERVIEWS**	**THEORY/ PRACTICE**
NURSE ACTION	Routine action	Ons het die pasiënt opgetel (481) So, I did my routine bed washing and I finished about 08:30 tidy up the patient (25) Because umm …obviously, to help to turn the patient (165)	Theory and practice
	Life-saving action	We immediately do a blood gas, which revealed a metabolic acidosis (12) I was going to ensure that the metabolic acidosis was relieved by giving the correct …ee tidal volume and, you know, given the correct treatment to unfit [sic] some of these problems that actually umm, m, m, you confronted by the patient (57)	Theory and practice

One of the participants described the following routine actions:

> *'So, I did my routine bed washing and I finished about 08:30 tidy up [sic] the patient' (Data unit: 25).*

Bed bathing is a routine nursing action that requires mainly practical skills of the nurse. However, in the critical care environment, theoretical knowledge relating to specific situations, such as the handling of invasive devices during the procedure, is required. Nurses should know how to prevent accidental extubation of an endotracheal tube while they bed bath a patient. Theoretical as well as practical knowledge is necessary to perform even routine actions in the critical care unit. Data units 481, 25 and 165 (Table 4.4) have reference.

Life-saving nurse actions were revealed in the following data:

> *'Interpretation of blood gas. I was going to ensure that the metabolic acidosis was relieved by giving the correct …ee tidal volume and, you know, given the correct treatment to unfit [sic] some of these problems that actually umm, m, m, you confronted by the patient' (Data unit: 57).*

The participant explained why she did a blood gas analysis for a patient who presented with metabolic acidosis. Metabolic acidosis is a metabolic imbalance that is caused by

an increase in the hydrogen ion concentration (pH) of the blood. Acidosis can have serious implications for the patient's metabolic processes. Therefore, critical care nurses should have a sound knowledge of the underlying pathophysiological reactions caused by these imbalances, for example kidney failure. The critical care nurse frequently interprets blood results and implements the necessary nursing actions to rectify these imbalances. S/he, for example, has to alter the ventilation settings on a ventilator. These actions could save a life. Practical skill and theoretical knowledge, as illustrated in data units 12 and 57, are needed to implement these actions, which means both theory and practice are of vital importance in the critical care environment.

4.3.4 Category: Treatment

Participants also described treatment given to patients. From the category 'treatment', the subcategory 'medication' emerged. Treatment is defined as the provision of medical care; or the application of medical care to cure diseases, heal injuries, or ease symptoms (Microsoft Encarta World English Dictionary 1999). Table 4.5 displays statements that relate to treatment and medication.

TABLE 4.5 CATEGORY: TREATMENT			
CATEGORY	**SUB-CATEGORY**	**GUIDED REFLECTION INTERVIEWS**	**THEORY/ PRACTICE**
TREATMENT	Medication	Phenylephrine running at 14 ml per hour, Dobutrex at 10ml per hour, then dextrose and saline at 80 ml per hour, the Intropin at 5 (13) They started Nimotop at 10ml per hour (15) I stopped the Phenylephrine, Dobutrex and the Nimotop (37)	Theory and practice

This category, displayed in Table 4.5, includes the administration or discontinuation of crucial medication or drugs prescribed by the doctor. The following statement serves as an example:

> *'Phenylephrine running at 14 ml per hour, Dobutrex at 10 ml per hour, then dextrose and saline at 80 ml per hour, the Intropin at 5' (Data unit: 13).*

Phenylephrine, Dobutrex (*Dobutamine*) and Intropin (*Dopamine*) are adrenergic agonists that stimulate the sympathetic nervous system to increase blood pressure. (Gibbon & Swanepoel 1997:109, 456; Kee & Hayes 1993:222,226.)   Administering these types of drugs or medication intravenously involve careful monitoring of vital signs. Although the doctor prescribes medication, it is the responsibility of the critical care nurse to administer and monitor, or discontinue, medication. Both practical skill and theoretical knowledge are essential to perform these actions (Data units: 13, 15, 37). Although the participants did not indicate whether they had sufficient knowledge of the theoretical aspects of these drugs, they seemed to be aware that this patient was very ill. This could be derived from the manner in which the participants described the scenario. Concerning the administration of medication, it was unclear whether they knew all the correct actions relating to these drugs.

4.3.5 Category: Communication

Table 4.6 displays statements relating to the category 'communication' and the subcategories 'family communication' and 'patient communication'.

TABLE 4.6 CATEGORY: COMMUNICATION (DESCRIPTION)			
CATEGORY	SUB-CATEGORY	GUIDED REFLECTION INTERVIEWS	THEORY/ PRACTICE
COMMUNICATION	Family communication	So actually wanted to contact the family to let them know this is the situation (31) So they have to get somebody who knew this family to go and report to them that the patient were [sic] dead (46)	Theory and practice
	Patient communication	So she told him that it won't happen again; that it can't happen again; that he must try and relax (186) Sy het ingehardloop gekom - het sy die pasiënt gerusgestel terwyl ek gesukkel het om hierdie, want daar was 'n klomp drade (488)	Theory and practice

Family communication refers to communication between nurses and the family of the patient, while patient communication represents communication between nursing personnel and the patient. Communication is an interactive, dynamic and continuous process between people, and includes the transfer and interpretation of a message (Naudé *et al.* 2000:192).

Communication with family members is sometimes problematic, especially if they live in rural areas where transport and communication routes are often inaccessible. The following statement illustrates this:

> 'So they have to get somebody who knew this family to go and report to them that the patient were [sic] dead' (Data unit: 46).

The situation described above was complicated by the fact that none of the family was present when the patient died. Practical skills are required to locate family members and inform them about the death of a loved one. However, critical care nurses should know the principles of effective communication in order to be supportive and to deal with situations such as the one described in data units 31 (Table 4.6) and 46 (above).

Communication with the patient in a critical care unit is a challenge to the critical care nurse. Verbal communication is complicated by the fact that the patient is often intubated or sedated (Thelan, Davie, Urden & Lough 1994:702). The following statement illustrates communication with a patient who can communicate only non-verbally:

> 'So she told him that it won't happen again, that it can't happen again, that he must try and relax' (Data unit: 186).

A disconnected pacemaker resulted in a temporary loss of heartbeat, and the patient experienced this situation as terrifying. The unit manager (the registered nurse in charge of the unit) demonstrated communication skill by reassuring the patient. She correctly understood the nonverbal communication of the patient, realised that he was frightened, and therefore tried to reassure him. Through her actions, she also set an example to the participant.

Critical care nurses should adhere to the SANC regulation pertaining to their Scope of Practice, Regulation R. 2598, 1987, Subsection 2(2)(s), which states that the registered nurse should act as an advocate for the patient who is not able to communicate. Experience and practical skill play an important role in the interpretation of the patient's needs, but critical care nurses should also know and understand the principles and purpose of effective communication in the unit. Data unit 186 is a good example of how

a critical care nurse should act in a similar situation. The participant experienced first hand how a patient should be comforted. The positive results of the unit manager's actions were confirmed by the participant who repeatedly described the situation.

It seemed that the participant experienced this situation as stressful, as described in Subsection 4.7.2. Not only lacked the student the necessary skill and knowledge to reassure the patient, but she also lacked previous exposure to similar situations. Although she knew that a disconnected pacemaker wire would result in a possible loss of the conduction of the heart, she did not immediately know what to do and was confused. This event also relates to the next category, namely 'experience'.

4.3.6 Category: Experience

The category 'experience' emerged as participants described their exposure to practical situations. The term/concept 'experience' is widely used, and different attributes, such as exposure to a particular event, exposure to practical skills, knowledge generated from experience, and an expert opinion, are given to the concept (Watson 1991:1119). According to Boyd and Fayles (1983:100), the core issue regarding 'learning from experience' is not to repeat the same experience several times, but to learn from different experiences in such a way that cognitive and affective changes may develop.

Table 4.7 displays statements relating to the category 'experience'.

TABLE 4.7 CATEGORY: EXPERIENCE (DESCRIPTION)			
CATEGORY	SUB-CATEGORY	GUIDED REFLECTION INTERVIEWS	THEORY/PRACTICE
EXPERIENCE	Experience	Mmm, ek het nog nie self na 'n pulmonale-embolus-pasiënt, uhh tot op hede gehad wat 'n vars pasiënt was nie (238) Actually, I did what I did because I didn't know the, the implication of what I did. Okay, I do know of, when you take a patient off the ventilator to a T piece, they, they can't cope (63)	Theory and practice

The relationship between previous exposure, nursing interventions required for a specific medical condition, and experience is illustrated in the following statements:

[Translation] *'Mmm, up till now, I haven't looked after a pulmonary embolus patient uuu, that was a fresh patient' (Data unit: 238).*

'Actually, I did what I did because I didn't know the, the implication of what I did. Okay, I do know of, when you take a patient off the ventilator to a T piece, they, they can't cope' (Data units: 63)

It seemed that participants did not have previous exposure to similar patients or situations, were uncertain about the required nursing interventions and, therefore, had difficulty coping with the situation. In data unit 63, the participant indicated that she did not know what the result (or outcome) of her nursing action would be despite the fact that she was knowledgeable. This illustrates the importance of practical exposure to, or experience of, practice-theory integration.

4.3.7 Category: Outcome

The category 'outcome' emerged from the descriptions given by participants, as indicated in Table 4.8.

TABLE 4.8 CATEGORY: OUTCOME (DESCRIPTION)			
CATEGORY	**SUB-CATEGORY**	**GUIDED REFLECTION INTERVIEWS**	**THEORY/ PRACTICE**
OUTCOME	Outcome	So, within fifteen minutes, there was no heartbeat. The patient stopped breathing (41)	Theory and practice

In the nursing context, the term 'outcome' means the measurable change in the patient's condition in response to health care (Potter & Perry 1997:139). The anticipated outcome provides direction to nursing actions by including assessment criteria for the achievement of certain goals within a given time (Naudé *et al*. 2000:49).

With reference to data unit 41, the outcome was death due to neurological dysfunction. (See Table 4.8 and below.)

'So, within 15 minutes, there was no heartbeat. The patient stopped breathing' (Data unit: 41).

However, the participant lacked the necessary theoretical knowledge and did not realise that death was the inevitable outcome due to irreversible brain damage. She primarily applied practical skills when the inotropic drugs were discontinued. She did not apply theoretical knowledge to practice because she only acquired theoretical knowledge when the doctor provided evidence of irreversible brain damage, as illustrated by the following statement:

> *'There was irreversible damage, you know, and he proved it to me'* (Data unit: 73).

4.4.   SUMMARY OF THE THEME 'DESCRIPTION'

In the preceding discussion on the theme 'description', the categories 'patient data, doctor action, nurse action, treatment, communication, experience and outcome' were identified and discussed.   Data relating to the theme 'description' revealed that participants were mostly aware of the importance of theoretical knowledge and the necessity of applying theory to practice (Subsections 4.3.1, 4.3.2 & 4.3.3).   With reference to the category 'patient data' (Subsection 4.3.1), in most cases, theory-practice integration did occur.   Applying theory to practice is the first step in making a correct nursing diagnosis.   According to the literature, the formulation of a nursing diagnosis is important in the planning and implementation of nursing care (Thelan *et al*. 1994:11).

Concerning the category 'experience' (Subsection 4.3.6), participants seemed unable to integrate theory with practice.   This was most probably due to a lack of previous exposure to patients with similar problems.   This situation could be improved by managing learning opportunities for students, ensuring exposure to different kinds of clinical problems in the critical care unit.

In the category 'outcome' (Subsection 4.3.7), the participants demonstrated a lack of theory-practice integration regarding patients with neurological problems.   Participants did not anticipate that a patient with irreversible brain damage would stop breathing when inotropic drugs were discontinued.   A sound understanding of the possible outcomes of nursing actions is important to ensure safe nursing.   Ensuring that novice

nurses receive guidance from more experienced nurses who were exposed to similar situations could eliminate this element of surprise in the critical care unit.

Regarding the categories 'experience' (Subsection 4.3.6) and 'outcome' (Subsection 4.3.7), the researcher observed that participants initially did not seem to integrate theory with practice. However, during the guided reflection interviews, participants became aware of the importance of theory-practice integration (Subsection 4.9.3). This observation concurs with the opinion of Foster and Greenwood (1998:168) that students do not necessarily have the ability to reflect, and that reflection should be learned (Subsection 2.5.2). Strategies such as guided reflection could enhance the student's ability to reflect and grow as a professional nurse.

The 'critical analysis of knowledge' was identified as a major theme.

4.5   THEME 2: CRITICAL ANALYSIS OF KNOWLEDGE

Reflective authors describe the critical analysis of knowledge as a process whereby existing knowledge is analysed through challenging assumptions and imagines, and new knowledge is generated through the exploration of alternatives. (Atkins & Murphy 1993:1189-90; Burton 2000:1012). According to Atkins and Murphy (1993:1189), four thought processes are involved in the analysis of knowledge, namely: *association, integration, validation,* and *appropriation*.

These processes are briefly described.

• Association is a mental connection between ideas (Oxford Advanced Learners Dictionary 2000:58). It is the connection of ideas and feelings that form part of the unique experience (the incidents described during guided reflection) with existing knowledge and attitudes (Atkins & Murphy 1995:32). In this research, some of the participants indicated that they had previous experience that was similar to the clinical incidents they described. For this reason, they could connect recent incidents with similar experiences. (Refer to Subsection 4.5.6, data unit: 65.)

• To integrate new thinking patterns and ideas, relationships between pieces of information are sought (Atkins & Murphy 1995:32). Participants were able to

generate new ideas, such as suggested training methods. This is discussed in Subsection 4.9.7 (Data unit: 323).

- Validation implies testing the consistency of existing knowledge and beliefs, as well as the authenticity of ideas and feelings that resulted from the critical analysis of knowledge (Atkins & Murphy 1995:32). Some of the participants questioned the appropriateness of nursing actions, which indicated a desire to validate the nursing actions of personnel. (Refer to Subsection 4.5.3, data unit: 242.)

- 'Appropriation' means making knowledge one's own (Atkins & Murphy 1995:32). The desire to appropriate knowledge was expressed by one participant who said she needed to know cardiology patients the way she knew burn patients.   This participant realised that she was responsible for her own leaning (Refer to Subsection 4.9.4, data unit: 210.)

According to Teekman (2000:1132), the critical analysis of knowledge and feelings includes actions that range from comparing and contrasting to discourse-with-self for the purpose of creating meaning, in order to act. In this research, it seemed that participants tried to create meaning by analysing knowledge relating to the incidents, and by describing their feelings.

The theme *'critical analysis of knowledge'* is divided into the following categories: *'knowledge, doctor/nurse action, medication, theory-practice integration, outcome, experience, communication, student reasoning,* and *malfunctioning of equipment'.* In the category 'knowledge', examples are given of participants dissecting the incident and discussing the details in order to reach an understanding of the event.

4.5.1 Category: Knowledge

Subcategories that emerged were 'lack of knowledge' and 'the need to update knowledge'.

Relevant statements are presented in Table 4.9 on page 77.

TABLE 4.9 CATEGORY: KNOWLEDGE (CRITICAL ANALYSIS OF KNOWLEDGE)			
CATEGORY	**SUB-CATEGORY**	**GUIDED REFLECTION INTERVIEWS**	**THEORY/ PRACTICE**
KNOWLEDGE	Lack of knowledge	Ja [Yes], with my knowledge of eeh eeh neuro-, I should have been able to know that the decision was the right one. (137) More of neurological interaction with the body. I have to really know how does eeh… the neuro-, neurological part of the body take, you know care. (139) I didn't feel I know enough to help him. (170) Miskien is my kennis dalk swak. (370) Miskien, miskien is daar iets wat ek nie geweet het nie. (372) Uhm, maar ek dink daar is nog 'n paar dinge wat ek sou, ek sou meer as gevolg van hierdie insident wil … weet om myself gerus te stel (496)	Theory and practice
KNOWLEDGE	The need to update knowledge	Ek dink, nee ek dink 'n mens kan nooit genoeg weet nie. Mens moet ten alle tye op datum bly met die nuwe medikasie. Elke dag is daar nuwe verwikkelinge en nuwe medikasie ... (288) Jy sal nooit genoeg kennis hê nie. (439) Almal moet bewus wees van die toegepaste behandeling (443) Ek sou meer wou weet van, uhm, van wat kan jy doen in so 'n situasie, sou die pasaangeër nie ingeskop, jy weet, nie gewerk het nie. (519)	Theory and practice

One of the participants described her lack of knowledge as follows:

'I didn't feel I know enough to help him.' (Data unit: 170)

The participant referred to an incident where a disconnected pacemaker wire resulted in a patient experiencing an asystole. She had no previous experience of similar incidents and, as she did not have the theoretical knowledge, could not apply the theory to practice. Most participants indicated that their knowledge was insufficient (data units 137, 139, 170, 370, 372, 496); therefore, they were unable to integrate theory with practice. The lack of knowledge was expressed as a need to update knowledge.

The following statement is relevant:

> [Translation] *'I think, no, I think one could never know enough. One should be up to date with new medication at all times. There are new developments and new medication every day …' (Data unit: 288).*

Data units 439, 443 and 519 (Table 4.9) illustrated the need of participants to gain more knowledge. These statements did not necessarily imply that participants would strive to increase their knowledge. However, by acknowledging their lack of knowledge and expressing the need for up-to-date knowledge, they might have indicated the intention of accepting responsibility for own learning. Johns (1995a:28) stated that reflective practice could encourage people to accept the responsibility for becoming more effective practitioners. Continuous learning is seen as the professional responsibility of a nurse. Nursing is dynamic, and it is exposed to changes that demand continuous learning (Muller 1996:308). For this reason and in order to deliver quality nursing care, knowledge is needed.

A situation might generate new knowledge if it were analysed. New knowledge, as described by Johns (1995a:25), who cited Carper (1978), comprises the empirical, personal, ethical and aesthetical ways of knowing. Empirical knowledge is knowledge that can be observed, recorded, measured, and predicted (Chambers 1999:951). The aesthetical knowledge is the art of nursing, for instance, organising the immediate environment around the patient's bed (Carr 1996:289). Ethical knowledge has a moral component. It deals with moral dilemmas - things that ought to be done. Personal knowledge implies knowing oneself in the context of the practice.

Statements relating to empirical and personal knowledge emerged during the analyses of the incidents, for example:

> *'More of neurological interaction with the body. I have to really know how does eeh… the neuro-, neurological part of the body take, you know care [Sic]' (Data unit: 39).*

> [Translation] *'Maybe my knowledge was perhaps inadequate' (Data unit: 370).*

Concerning data unit 370, the participant realised that her knowledge was inadequate. Her admission implied a certain level of (new) personal knowledge; she realised that her actions were influenced by an internal factor (her lack of knowledge). Thus, empirical and personal knowledge was apparently addressed within the theme 'critical analysis of knowledge'.

In research conducted by Durgahee (1996:25) about reflective practice and palliative care nursing, it was found that students learned about themselves and the effect their work had on their behaviour towards others. According to Burton (2000:1014), Durgahee (1996) was the only researcher who partly attempted to investigate the effect of reflective practice on patient care. His research, however, provided inconclusive evidence that reflective practice improved patient care. Although the realisation of inadequate knowledge could lead to knowledge acquisition and, ultimately, better patient care, knowledge of oneself might not have this effect.

In both subcategories, a lack of theoretical and practical knowledge was evident. The participants did not know enough to help the patients, which resulted in a personal need to update knowledge. Due to a lack of relevant knowledge, theory was not integrated into practice.

4.5.2 Category: Doctor/nurse action

Subcategories that emerged from the category 'doctor/nurse action' were: 'motivation for actions, life-saving actions, questioning actions, consequences of actions, and exclusive doctor actions'. These subcategories are presented in Table 4.10 on page 80.

Participants explained or motivated their actions, as indicated in the subcategory 'motivation for actions' (Table 4.10). One participant motivated her actions as follows:

> [Translation] *'To give the patient cardiac output, to maintain a blood pressure so that we could maintain his perfusion' (Data unit: 253)*

TABLE 4.10 CATEGORY: DOCTOR/NURSE ACTION			
CATEGORY	**SUB-CATEGORY**	**GUIDED REFLECTION INTERVIEWS**	**THEORY/ PRACTICE**
DOCTOR/ NURSE ACTION	Motivation for actions	Because the blood pressure was low (20) Om vir die pasient kardiale uitwerp te gee; om 'n bloeddruk te handhaaf sodat ons sy perfusie kan handhaaf (253) En haar antwoord aan my was die kere wat gebruik is, is … uhm dit was 'n mediese geval gewees. Dr. X het dit gebruik; hy het dit direk in die cathlab toegedien en dit is soos wat sy dit het. Soos wat sy dit het, dit is soos dit gedoen moet word. Dis alleenlik, alleenlike wyse hoe dit gedoen word [sic]. (410)	Theory and practice
	Life-saving actions	If desaturated, I know I could increase my oxygen or do 'adoptalative' [sic] treatment by suctioning, by turning ehh clear (67) Uhm, ons het onmiddellik begin met hartmassering en ook umm geambu (geresussiteer) sonder enige effek. Daar's plus minus vir kwartier tot twintig minute aangehou met resus (resussitasie) (399) Die dokter, plus minus 'n kwartier nadat die reaksie begin, is die CPR begin, is, het hy gearriveer en hy het ook 'n tydjie aangegaan (402)	Theory and practice
	Questioning actions	Dan wonder jy maar is dit dan nou reg; hulle sê dan hulle wil nou weer aangaan met die behandeling. Dit skep verwarring - jy weet nie regtig wat is jou eie, eie 'goal' dan nie. (338) Nou het die dokter alweer besluit, maar nee, miskien moet hy nou nie 'step down'* toe gaan nie, miskien moet hy maar liewers hier bly en laat die hospitaal 'step down'-fasiliteite-tariewe betaal. (352) Die pasiënt is sy laaste opsie; hy gaan in elk geval dood. Hy is in fase' al. Hoekom is daar nie uhm onmiddellik in elk geval dit gegee nie? (408)	Theory and practice
	Consequences of actions	Okay, from now his turn off the ventilator, but we, but we don't know the next action. (33-34) Maar daai ontkoppeling mag nie plaasvind nie en dat hy nie vasgehaak het nie, dis die pacemaker en hulle moes toe geplak en gepleister. (181)	Theory and practice
	Exclusive doctor action	Uhm, Actilyse, sover my kennis strek, mag net deur 'n dokter toegedien word (415) Ek sal dit persoonlik nie wil doen dat ek nie konsekwensies daarvan dra vir hierdie massiewe bloeding wat volg [sic]. (417)	Theory and practice

* A step down facility is a facility where care, but not specialised care, is given to patients

With reference to data unit 253, the participant knew the term 'cardiac output' and the implication of maintaining the cardiac output in order to maintain tissue perfusion. Thus, the participant had the theoretical knowledge to implement the practical action of

maintaining the cardiac output. In a similar way, actions were motivated by some of the participants (data units 20 and 410). Their ability to motivate their actions was an indication of theory-practice integration. By motivating or substantiating their actions, the participants were making deductions, which according to Quinn (2000:79) was an indication of critical thinking. According to Burton (2000:1013), critical thinking is an important part of reflection.

The subcategory 'life-saving actions' referred to those actions that could save a patient's life. One of the participants described such an action:

> [Translation] *'Umm, we immediately started heart massage and we also umm, Ambu'd* without any effect. It was maintained for about fifteen to twenty minutes, the resuscitation' (Data unit: 399).*
> * Using an Ambu bag – a hand operated resuscitator to deliver oxygen

When the heart has ceased to function, heart massage is done to artificially augment a patient's heart to pump blood to the brain and vital organs (Woods *et al.* 1995:602). The recognition of cardiac arrest and the performance of CPR suggest the application of theoretical and practical knowledge. Similarly, data unit 402 indicated the application of theoretical knowledge to practice. In situations such as these (data units 399 and 402), theory-practice integration could have a positive outcome. Therefore, it implies safe patient care.

According to the subcategory 'questioning actions', participants questioned the actions of other members of the healthcare team in order to determine or discuss the merits of decisions taken. The following statement is relevant:

> [Translation] *'Now the doctor again has decided, but no, perhaps he shouldn't go to step down, perhaps he (the patient) should rather stay here and let the hospital pay step down tariffs' (Data unit: 352).*

In this case, the doctor was unsure whether he should consider all the possible treatment options despite his prognosis. The participant questioned the actions of the doctor, which created confusion.

She stated:

> [Translation] *'But one wonders if this is right; they say they now want to continue with the treatment again. This creates confusion – you then don't really know what your own, own goal should be'* (Data unit: 338).

In order to question the actions of the doctor, the participant should have had theoretical background as well as practical experience of similar situations. According to the description given by the participant, the patient in this scenario had a poor prognosis due to his age and type of infection. The participant revealed the ability to challenge the situation, which is a characteristic of critical thinking. According to Atkins and Murphy (1993:1190), existing knowledge is analysed through challenging assumptions. The participant also questioned the right or wrong of the clinical situation, making it an ethical issue. Streubert and Carpenter (1999:5) state that moral knowledge reflects the ethical obligations in a situation. The participant illustrated ethical knowledge by recognising conflicting values and questioning the ethics of the doctor's decision.

Data units 338, 352 and 408 (Table 4.10) revealed the ability of participants to question decisions that related to ethical issues. The inference can be drawn that critical care nursing students are knowledgeable about ethical issues pertaining to the prognoses of patients and treatment options. These participants questioned the actions of medical personnel, which did not concur with their knowledge of ethical dilemmas, in other words, the participants realised that theory was not implemented in practice. However, not all particpants demonstrated the ability to argue and challenge situations, and not all could anticipate the consequences of actions.

The subcategory 'consequences of actions' is clearly illustrated by the next statement:

> *'Okay, from now his turn off the ventilator, but we, but we don't know the next action'* (Data unit: 33-34).

The participant was unsure about what would happen to the patient if he was disconnected from the ventilator, which showed that the participant was not exposed to similar practical situations and did not have the theoretical grounding to anticipate the consequences of the action.

The following statement (Table 4.13) is relevant:

> *'What is likely to happen? So to my greatest surprise within 5 minutes …eee I removed it, I disconnected the… umm the ventilator from the ET tube, put him on T piece with about 50% oxygen. The patient starts desaturating'* (Data unit: 36).
> ET = endotracheal tube

In this description of the event (data units 33-34,36), the participant did not demonstrate adequate theoretical and practical knowledge. She did not know that a patient with severe brain damage would not maintain adequate oxygenation once the ventilator was disconnected. By contrast, the participant describing the pacemaker incident was aware that if the pacemaker wire were tightly secured, disconnection would not have happened. Regarding consequences of action, this participant illustrated the ability to integrate theory into practice (data unit 181; Table 4.10).

According to Microsoft Encarta World English Dictionary (1999), 'exclusive action' means restricted use or only available to; or used by one person, group, or organisation. The subcategory 'exclusive doctor action', presented in Table 4.10, indicated those actions that are exclusively performed by a doctor. One of the participants stated:

> [Translation] *'Uhm, Actilyse, to my knowledge, could only be administered by a doctor'* (Data unit: 415)

A tissue plasminogen activator Actilyse or Actilyse (tPA) is a thrombolytic agent that causes lysis, or dissolves blood clots that obstruct the blood flow (Woods *et al.* 1995:506). It could be administered to dissolve blood clot formation in patients with a myocardial infarction or pulmonary embolism. Bleeding is the most serious complication associated with thrombolytic therapy (Woods *et al.* 1995:509) and, for this reason, the participant stated that it should be administered by only a doctor (Data unit: 415). On the basis of her statement, the assumption could be made that the participant was knowledgeable. However, she lacked practical experience of similar situations, as was illustrated by the following statement in which she questioned the actions taken:

> [Translation] *'We had a CVP line* and they said, we learned that uhh you should preferably administer it in cath. lab directly in the heart via the sheath*

otherwise via Swan (Swan-Ganz catheter), otherwise via CVP* [sic]. So we had the correct access route. Why didn't we use it?' (Data unit: 409).

CVP = central venous pressure (line)

Data unit 417 (Table 4.10) illustrated the participant's knowledge regarding the administration of Actilyse (tPA), because she indicated that massive bleeding could be a complication in the patient. Although the participant knew that exclusive doctor action was the only option, she probably lacked practical experience regarding administering Actilyse (tPa). Therefore, it could be inferred that, although her theoretical knowledge was adequate, she lacked practical experience (Data units 415 & 417). More participants discussed or questioned the administration of medication, as is evident in the following category.

4.5.3   Category: Medication

From this category, the subcategories 'life-saving medication' and 'questioning medication' emerged. Table 4.11 displays data relating to the subcategories 'life-saving medication' and 'questioning medication'.

TABLE 4.11 CATEGORY: MEDICATION			
CATEGORY	**SUB-CATEGORY**	**GUIDED REFLECTION INTERVIEWS**	**THEORY/ PRACTICE**
MEDICATION	Life-saving medication	So obviously, this means the patient was sustained by those …ehh inotropes. (39) Met al die nodige resusmedikasie (resussitasiemedikasie) naamlik Atropien vir die afwesige pols. Daar is gedefib (gedefibrilleer) 'n paar keer en daar is ook umm Adrenalien en, en, en ook so ver ek weet, is daar Cordarone X gegee. (400)	Theory and practice
	Questioning medication	As student [sic] het ons gevra hulle nie kan uhm Metalyse of Actilyse gee wat 'n trombolitiese middel is om die stolsel op te los uhm om die pasiënt te help nie. (242)	Theory and practice

The concept 'life-saving medication' is illustrated in the following statement:

[Translation] *'With all the necessary resus (resuscitation) medication, namely Atropine for an absent pulse. They defibrillated a few times, and also uhm*

Adrenaline and, and, and to my knowledge, Cordarone X were given.' (Data unit: 400).

Resuscitation is defined as the revival of an unconscious person or a person who is very nearly dead. The medications Atropine, Adrenaline (*Epinephrine*) and Cordarone X (*Amiodarone*) are used in resuscitation situations (Kloeck 2002:5,6). Participants demonstrated a sound theoretical knowledge of medications that were used to increase cardiac output. They also knew how to administer and manage the medications (data units 39 and 400) and, for this reason, it is concluded that theory-practice integration did occur.

Some of the participants proposed administering certain medications, which led to the identification of the subcategory 'questioning medication'. This subcategory should be distinguished from the subcategory 'exclusive doctor action', in which the actions taken by the doctor concerning the administration of medication were questioned by participants. The subcategory 'questioning medication' (Table 4.11) includes the following example of a participant who asked whether certain thrombolytic drugs could not be used to dissolve a clot:

> [Translation] *'As a student [sic] we asked umm couldn't one administer Metalyse or Actilyse, that is a thrombolytic drug, to dissolve the clot umm to help the patient' (Data unit: 242).*

Suggesting the possibility of administering certain drugs to help a patient reflected the participant's ability to apply theoretical knowledge. As mentioned in Subsection 4.5.2, this participant had no previous exposure to similar situations, and therefore lacked experience of administering such drugs in practice (Data unit: 409). However, the participant demonstrated an eagerness to implement theory in practice.

4.5.4 Category: Theory-practice integration

For the purposes of this research, theory is viewed as knowledge that is acquired in a classroom, or from any other source; while practice represents the practical skills that are required of nurses to implement nursing actions. (Refer to Chapter 2.)

Table 4.12 displays the statements that are relevant to the category 'theory-practice integration'.

TABLE 4.12 CATEGORY: THEORY-PRACTICE INTEGRATION			
CATEGORY	**SUB-CATEGORY**	**GUIDED REFLECTION INTERVIEWS**	**THEORY/ PRACTICE**
THEORY-PRACTICE INTEGRATION	Application of theory to practice	Jy moet jou fisieke toestande ken sodat jy dit kan, jy moet jou teorie ken vir al jou siektetoestande sodat jy kan staaf hoekom is [sic] die spesifieke behandeling effektief sal wees of hoekom dit ten minste probeer moet word. (438) Uhm, wel in die eerste plek het ons geleer umm wat om te doen tydens 'n resus (resussitasie) en umm met praktiese toepassing - hoe ons dit in die, in die praktyk doen volgens umm die pasiënt se toestand (255) Ons het 'n CVP-lyn gehad en hulle het gesê dit het ons geleer umm jy gee dit verkieslik in cathlab direk in die hart via skede andersins via Swan (Swan-Ganz-kateter), andersins via CVP (lyn) [sic] - so ons het die korrekte toegangsroete gehad. Hoekom het ons dit nie gebruik nie? (409)	Theory and practice

The following example in the subcategory 'application of theory to practice' illustrates that sufficient theoretical knowledge is a prerequisite for safe patient care:

> [Translation] *'You must know your physical conditions so that you can... you must know your theory of all your disease conditions so that you can verify why the specific treatment would be effective or why it should at least be tried out' (Data unit: 438).*

Smith (1998:897) found evidence that reflection involved both theoretical knowledge and practical experience. She found that students did not accept information but asked questions, especially about its appropriateness to practice. The following statement illustrated that guided reflection probably had a similar effect in this study:

> [Translation] *'We had a CVP line and they said, we learned that uhh you should preferably administer it in cath. lab directly in the heart via the sheath otherwise via Swan (Swan-Ganz catheter), otherwise via CVP [sic]. So we had the correct access route. Why didn't we use it?' (Data unit: 409).*

According to Foster and Greenwood (1998:167), reflection can be used to reframe problems in practice. It, therefore, translates aspects of theory into everyday practice. Although most of the authors agree that reflection can be used as a tool to integrate theory with practice, some disagree and claim that it rather reinforces than eliminates inappropriate action tendencies (Greenwood 1993:1999). According to these authors, reflection serves to consolidate rather than diminish the theory-practice gap in nursing.

Data units 438, 255 and 409 (Table 4.12) indicate that theory affects practice. However, theory is not always implemented due to factors such as a lack of previous exposure and relevant experience (Data unit: 409). In some instances, participants were apparently well grounded in the theory of critical care nursing, but they failed to implement theory in practice. Possible reasons for the inability to integrate theory with practice are lack of clinical exposure and the inherent qualities of a student. The ability to integrate theory and practice has an effect on the outcome of patient treatment.

4.5.5 Category: Outcome

From the category 'outcome', the subcategory 'patient outcome' emerged. In Subsection 4.3.7 (Table 4.8), the category and subcategory 'outcome' were discussed as they bore upon the descriptions of the incidents. In this subsection, 'patient outcome' will be discussed in terms of the analysis of outcomes.

Table 4.13 displays statements relating to the category 'outcome' and the subcategory 'patient outcome'.

TABLE 4.13 CATEGORY: OUTCOME (CRITICAL ANALYSIS OF KNOWLEDGE)			
CATEGORY	**SUB-CATEGORY**	**GUIDED REFLECTION INTERVIEWS**	**THEORY/ PRACTICE**
OUTCOME	Patient outcome	'en uhm, soos ek sê, ons het, ons het die pasiënt op die einde verloor; die pasiënt is oorlede'. (243) What is likely to happen? So to my greatest surprise, within 5 minutes …eee I removed it, I disconnected the.. umm the ventilator from the ET tube, put him on T piece with about 50% oxygen. The patient starts desaturating (36) So all of a sudden I had no time to actually assess my patient; I'm knowing that, okay, that this patient are [sic] not actually, we're having a prognosis. (58)	Theory and practice

One of the participants described the outcome of a patient's prognosis as follows:

> *'So all of a sudden I had no time to actually assess my patient; I'm knowing that, okay, that this patient are [sic] not actually, we're having a prognosis'* *(Data unit: 58).*

Prior to the above statement, the participant described how she was informed to disconnect the ventilator from a patient who had no prognosis and who eventually died. The following statement is relevant:

> *'What is likely to happen? So to my greatest surprise, within 5 minutes …eee I removed it, I disconnected the.. umm the ventilator from the ET tube, put him on T Piece with about 50% oxygen. The patient starts desaturating'* *(Data unit: 36).*

With respect to the above incident, the participant was not previously exposed to such a situation, and did not have the theoretical knowledge to anticipate the outcome of the intervention. This incident demonstrates that nurses not only learn from practical experience, but also need theoretical grounding to render nursing care. Smith (1992:18) says understanding the theoretical basis of each practical step facilitates optimal learning.

In the subcategory 'patient outcome' (Table 4.13), data unit 36 demonstrates a lack of theory-practice integration, whereas data units 243 and 58 reflect knowledge of the underlying disease. As the participants involved in the last-mentioned incidents were grounded in the theory, they correctly anticipated the outcome, namely death.

4.5.6 Category: Experience

From the category 'experience', the subcategories 'previous experience' and 'first experience' emerged. In Subsection 4.3.6 (Table 4.7), the category 'experience' was discussed in terms of the description of events. In this subsection, experience will be discussed as it relates to the analysis of knowledge.

Table 4.14 on page 89 displays the subcategories 'previous experience' and 'first experience'.

TABLE 4.14 CATEGORY: EXPERIENCE (CRITICAL ANALYSIS OF KNOWLEDGE)			
CATEGORY	**SUB-CATEGORY**	**GUIDED REFLECTION INTERVIEWS**	**THEORY/ PRACTICE**
EXPERIENCE	Previous experience	But what I know, I have nursed a patient on a ventilator; then you wean, to put a patient on a T piece so that he can breathe on his own for ten minutes. (65) Umm, I will say, ee … from my own learning opportunities, I, I … am feeling that I got assisted from this experience that the doctor, one, was right, with his diagnosis and possible consequences. (87) Ja, ag, uhm riglyne en volgens uhm mens se uhm ervaring van vorige ervarings en uhm met met uhm resus (resussitasie) uhm medikasies en goeters. (257) Dan jou uhm uhm praktykervaring van medikasies wat ons geleer het. (261)	Theory and practice
	First experience	Ja, [Yes] this is the first situation I have actually encountered. (64) Uhm, ek sou sê met vorige ervaringe het uhm het ek nog nooit te doen gehad met pulmonale uhm, uh, ek het met pasiënte met mikro- pulmonale embolieë [sic] gewerk (298)	Theory and practice

The following statement illustrates the importance of previous experience:

'But what I know, I have nursed a patient on a ventilator; then you wean, to put a patient on a T piece so that he can breathe on his own for ten minutes' (Data unit: 65).

As illustrated in Table 4.14, the participants tried to interpret recent incidents in terms of previous experience. Teekman (2000:1134) found that learning from past experience through reflective thinking could contribute to practical knowledge. Reflective thinking in nursing gives meaning to practical incidents and, therefore, promotes the planning of nursing actions. However, in order to give meaning to a practical situation, critical care nurses should have a nursing education background. They should, for example, know what to expect if a patient were weaned off a ventilator.

Various authors describe the significance of experience, especially of learning through experience (Mellish *et al*. 1998:99; Naude *et al*. 2000:89). According to Klopper (2001:46), adult learners are most productive when they relate learning content to past experiences, and apply it to a new situation.

Data units 65, 87, 257 and 261 (Table 4.14) illustrate the importance of previous experience and the link between previous experience and theory-practice integration. It appeared that participants used previous theoretical and practical knowledge to understand the situation, and plan and execute nursing actions. These participants were able to integrate theory with practice.

First experiences are also illustrated in Table 4.14. One participant simply stated:

'Yes, this is the first situation I have actually encountered' (Data unit: 64).

First experiences (as illustrated in data units 64 and 298) represented learning opportunities that the student could recall and use as reference points. Therefore, first experiences could contribute to future theory-practice integration. In contrast with the subcategory 'previous experience', the participants had no practical experience to which they could relate. However, it seemed that the participants had theoretical knowledge, and knowledge in combination with exposure to new practical situations could contribute to the integration of theory and practice.

4.5.7 Category: Communication

Table 4.15 displays the category and subcategory 'communication'.

TABLE 4.15 CATEGORY: COMMUNICATION (CRITICAL ANALYSIS OF KNOWLEDGE)			
CATEGORY	**SUB-CATEGORY**	**GUIDED REFLECTION INTERVIEWS**	**THEORY/ PRACTICE**
COMMUNICATION	Communication	The patient is from a very poor background and they were living in a uh remote village were there is no light and water and even there is no motor travel. So they actually have somebody to go there physically. I mean they had no means of communication. (112) I couldn't contact the family members (82)	Theory and practice

Communication with the patient and his/her family, which related to the theme 'description', was described in Subsection 4.3.5 (Table 4.6). In this subsection, data on communication is analysed in accordance with the theme 'analysis of knowledge'.

Some of the participants stated that practical obstacles prevented them from communicating with family members of the deceased, resulting in family members being offended. Data units 112, 82 (Table 4.15) and 48 (below) are relevant.

> *'So the family member now was furious. So why didn't we contact one of the*
> *family members to tell' (Data unit: 48).*

The lack of transport and telecommunication facilities in remote rural areas often hinders communication with the family members of patients. One of the participants related the following incident:

> *'The patient is from a very poor background and they were living in a uhh*
> *remote village where there is no light and water and even there is no motor*
> *travel [sic]. So they actually have somebody to go there physically. I mean*
> *they had no means of communication.' (Data unit: 112).*

The participant identified practical issues that prevented them from communicating with family members of the deceased. Although it was their intention to communicate (data units 112 and 82), they did not succeed due to difficult logistical problems. Thus, theory could not be implemented in practice.

4.5.8 Category: Student reasoning

The category 'student reasoning' is displayed in Table 4.16.

TABLE 4.16 CATEGORY: STUDENT REASONING (CRITICAL ANALYSIS OF KNOWLEDGE)			
CATEGORY	**SUB-CATEGORY**	**GUIDED REFLECTION INTERVIEWS**	**THEORY/ PRACTICE**
STUDENT REASONING	Student reasoning	Moes massief van aard gewees het, want dit het onmiddellik, uhm ek (het) 'n afleiding gemaak [sic], bilateraal die twee hoof brongusse ge-occlude (406)	Theory and practice

Student reasoning is illustrated in the following statement:

> [Translation] *'Must have been massive, because it immediately umm, I draw a*
> *conclusion, occluded the two main bronchi bilaterally' (Data unit: 406).*

According to the Oxford Advanced Learners Dictionary (2000:937), reasoning is the power of the mind to think in a logical way, and to have opinions.

With respect to data unit 406, the participant used theoretical knowledge as well as practical skill to reach the conclusion that the bronchi were occluded. However, the description is not quite correct, because it must have been the blood vessels supplying blood to the bronchi that were occluded and not the bronchi themselves (Woods *et al*. 1995:116). The misconception of what happened could be attributed to a manner of speaking, but if the participant meant what she said, incorrect theory was applied to practice. However, if students were guided in reflection by a clinical expert, misconceptions or misinterpretations could be eliminated, and theory-practice integration enhanced.

Reasoning is part of the process of critical thinking (Klopper 2001:39). Eby (1996:214) defines critical thinking as a complex set of thinking skills and processes that is believed to lead to fair and useful judgements. Kyriacos (1992:48) states that it is essential to develop the critical thinking skill of students. By applying knowledge and evaluating their thinking processes, students can change behavioural patterns. Burton (2000:1016) also emphasises the important role of critical thinking in reflection. Some theorists believe that critical thinking (as a cognitive process) is grounded in reflection (Baker 1996:19).

4.5.9   Category: Malfunctioning of equipment

A variety of technical equipment is found in the critical care nursing environment, and the possibility always exists that some of the equipment could be malfunctioning. The following statement illustrates this situation:

> [Translation] 'I meant I made sure that all the wires and all (were secure) … So
> I don't know, don't know whether it was a fault, or most probably a fault, or the
> pacemaker itself. It has since been written off'   (Data unit: 485).

In this scenario, the participant had the necessary theoretical background. She knew that a malfunctioning pacemaker (a pacemaker with disconnected wires) could result in the patient experiencing an asystole or a cardiac standstill. The participant apparently

found that a mechanical fault in the equipment itself had caused the failure. The participant demonstrated that she could integrate theoretical knowledge and practical skill when she secured the wires of the pacemaker. A similar scenario of a malfunctioning pacemaker was described by another participant. (Refer to Subsection 4.5.1 Category: knowledge.) By contrast, this participant was unable to integrate theory with practice, as she lacked the necessary knowledge and skill (data unit: 519).

Table 4.17 displays the category 'malfunctioning of equipment', as it relates to the theme 'critical analysis of knowledge'. Data units 485, 514 and 527 illustrate integration of theory and practice, because the participant demonstrated adequate theoretical and practical knowledge regarding the mechanism of a pacemaker.

TABLE 4.17 CATEGORY: MALFUNCTIONING OF EQUIPMENT			
CATEGORY	**SUB-CATEGORY**	**GUIDED REFLECTION INTERVIEWS**	**THEORY/ PRACTICE**
MALFUNCTIONING OF EQUIPMENT	Malfunctioning of equipment	Ek meen ek het seker gemaak dat al die drade en alles nie …so weet nie, weet nie of dit 'n fout, of heel waarskynlik 'n fout, of die pasaangeër self. Hy is daarna afgeskryf. (485) 'n Mens sou sê hulle is veronderstel om al twee uhm hulle is veronderstel om saam te pace, as 'n mens dit so kan stel, en toe die een uhm af was, het die ander een nie ingeskop nie. (514) Dis net die, dat daai klampies uhm so driehoekige punt, daai klampies was nie effektief gewees nie. (527)	Theory and practice

4.6   SUMMARY OF THE THEME 'CRITICAL ANALYSIS OF KNOWLEDGE'

From data analysed, the second major theme, namely *'critical analysis of knowledge',* emerged.   Within this theme, the categories *'knowledge, doctor/nurse action, medication, theory-practice integration, outcome, experience, communication, student reasoning,* and *malfunctioning of equipment'* were discussed.

Concerning the theme 'critical analysis of knowledge', the analysis of data revealed that participants realised the importance of theoretical and practical knowledge (Subsection

4.5.1-9). However, it seemed that theory was not always integrated into practice, especially if participants lacked previous exposure to similar practical situations (Subsection 4.5.6).

In some instances, the participants realised that their lack of theoretical knowledge and/or practical skills prevented them from integrating theory and practice (Subsection 4.5.1). Some of the participants realised that they needed to update their knowledge (Subsection 4.5.1). These participants probably intended taking responsibility for their own learning, which is a characteristic of adult learning.

Although participants demonstrated the ability to reason (Subsection 4.5.8), it did not necessarily mean that theory-practice integration did occur. One specific incident revealed that participants could misinterpret information. If practical actions were based on theoretical misconceptions, the theory-practice gap would widen. This incident also emphasised the value of guided reflection. If students were guided in reflection by a clinical specialist, misconceptions and misinterpretations could be rectified, and future theory-practice integration enhanced.

Integration of theory and practice was apparently accomplished in situations that concerned life-saving actions, administration of life-saving medications, communication with family members, and malfunctioning of equipment (Subsections 4.5.2, 4.5.3, 4.5.7 & 4.5.9.) The inference could be drawn that participants accomplished theory-practice integration when a patient's life was at stake. Life-saving actions require the integration of knowledge and practical skills, and the conclusion is that student nurses focus on both theory and practice when it is a matter of life and death.

Communication is an essential part of nursing. As the participants were post-basic students, it could be inferred that they had already mastered communication skills during their basic training. It seemed that they understood and applied the principles of effective communication.

Regarding the malfunctioning of equipment, it appeared that most participants realised that they needed knowledge about the workings of equipment in order to implement practical skills. In the case of malfunctioning equipment, theoretical knowledge is indispensable to ensure theory-practice integration.

It was further found that participants applied critical thinking skills while they were motivating their actions (Subsection 4.5.2), or when they, of own accord, questioned the actions of other medical personnel (Subsection 4.5.3). However, this ability probably only came to the fore because guided reflection was facilitated. The value of guided reflection in stimulating the development of the critical thinking skill in critical care nursing students is a secondary, but positive research result.

By questioning and challenging the decisions and behaviour of medical personnel, participants demonstrated an awareness of moral dilemmas within the critical care environment (Subsection 4.5.2). The participants also demonstrated the desire to integrate theory into practice by suggesting treatment options. Guided reflection assisted students in relating a particular incident, thereby enabling them to gain knowledge that could be applied in similar situations.

Data about the consequences of actions illustrated both the implementation of theory in practice and the absence of theory-practice integration (Subsection 4.5.2). Theory and practice integration seemed to take place if participants had previously experienced similar situations. However, in the case of first experiences, theory-practice integration often did not realise (Subsection 4.5.6).

The category 'theory-practice integration' illustrated that participants were aware that theoretical knowledge should be applied to practice (Subsection 4.5.4). Again, exposure to similar practical incidents seemed to influence the realisation of theory-practice integration.

Concerning the second theme, the 'critical analysis of knowledge', participants demonstrated the ability to analyse their actions and thoughts in order to clarify issues they have experienced.

The 'critical analysis of feelings', the third major theme, will be discussed in Section 4.7.

4.7   THEME 3: CRITICAL ANALYSIS OF FEELINGS

A third main theme emerged during the data analysis process, namely 'critical analysis of feelings'. This theme comprised the affective component of the study data. Rich and Parker (1995:1052) emphasise the importance of analysing positive feelings and removing obstructive feelings to generate new knowledge in order to move to a perspective transformation. According to Teekman (2000:1132), the critical analysis of knowledge and feelings includes actions that range from comparing and contrasting to having a discourse-with-self for the purpose of creating meaning of events, in order to act. (Refer to Section 4.5.)

Categories falling under this theme are *'experience'* and *'expression of feelings'*. The feelings experienced and expressed by participants are also discussed as they relate to the application of theory and practice in the nursing environment.   However, the manifestation of theory-practice integration within the theme 'critical analysis of feelings' seems to be more implicit than in the two previously discussed themes, namely 'description' and 'critical analysis of knowledge'.

4.7.1   Category: Experience

From the theme 'critical analysis of feelings', the category 'experience' emerged, which was further subcategorised into 'unpleasant or traumatic experience versus ordinary experience' and 'overwhelming experience'. These subcategories should be distinguished from the category 'experience', which fell under the theme 'description', and which reflected the experience of participants in terms of their *exposure to different situations* (Subsection 4.3.6). In this category, experience constitutes the *affective* experiences of participants.

Table 4.18 on page 97 displays statements relating to the subcategories 'unpleasant or traumatic experience versus ordinary experience' and 'overwhelming experience'. Some of the participants described the incidents as traumatic or unpleasant. One of the participants put it simply:

> *'Then again it was a traumatic experience for me!' (Data units: 50).*

TABLE 4.18 CATEGORY: EXPERIENCE (CRITICAL ANALYSIS OF FEELINGS)			
CATEGORY	**SUB-CATEGORY**	**GUIDED REFLECTION INTERVIEWS**	**THEORY/ PRACTICE**
EXPERIENCE	Unpleasant/ traumatic experience versus ordinary experience	Then again it was a traumatic experience for me. (50) So that for me (it) was really a traumatic experience. (80) It was nerve-racking! (159) Maar ek het my morsdood geskrik. (486) Ek dink ons het net so groot geskrik soos die pasiënt. (489) Maar na die tyd het ek, uhm, toe alles verby is, pasiënt is rustig, so, so halfuur daarna het ek in trane uitgebars. (507) The sister in charge, you know, is like, is, is daily jobs for them. So they didn't see it as some kind of a problem. (90)	Practice and theory
	Overwhelming experience	And, you know, I couldn't take it. And the family were far away; we couldn't reach them. (43)	Theory and practice

Most of the participants described incidents that had an element of trauma – incidents in which they witnessed a patient die or fight for life. Although the participants were registered nurses who had some experience of death and patients dying, it appeared that their involvement in caring for the patient changed the whole situation. This was especially true when the outcome of a life-saving action, such as CPR, to some extent, depended on the involvement of the nurse. Some of the participants described these situations as nerve-racking, traumatic, or terrifying (Data units 50, 80, 486).

In the critical care unit, the emphasis usually is on saving a patient's life by providing intensive or emergency care. Emotions experienced by critical care nurses while caring for the critically ill usually do not receive priority. During basic training, nurses acquire knowledge about the way they should control their feelings while they care for the critically ill or the dying patient. However, from their emotional responses obtained during the guided reflection interviews (Data units: 50, 80, 486), it could be inferred that some of the participants did not succeed in controlling their emotions during or after traumatic incidents. Therefore, it seemed that they did not apply their theoretical

knowledge about self-control and the expression of emotions in the critical care unit to practice.

The effect of the death of a patient on a nurse has been described in a research study conducted by Smith (1998:894). Smith's study, which dealt with undergraduate nurses who were mastering the skill of reflection, revealed that nurses experienced discomfort at the death of a patient. Due to the psychological trauma that nurses experience in such a situation, the implementation of critical incident stress debriefing after CPR is suggested as good practice (American Heart Association 2001:206). In the hospital in which this research was conducted, formal debriefing does not occur, but informal discussions on the incident might take place, if time permits.

Data units 50, 80, 159, 486, 489 and 507 (Table 4.18) described the unpleasant feelings experienced by participants. Participants showed that they were able to integrate theory into practice during life-saving interventions (Subsection 4.5.2). However, these actions or interventions resulted in unpleasant and upsetting experiences (trauma), as the participants were unable to distance themselves from the patient and the outcome of the emergency situation. The researcher is of the opinion that feelings of this nature are normal, and should be present, but how these feelings are dealt with might be of greater importance.

As mentioned, debriefing sessions could enable the participant to gain perspective, as would guidance by an expert. Concerning the theory that relates to personal emotions and the loss of patients, it is unclear whether participants were well versed in the subject. However, techniques such as debriefing and guided reflection could help participants not to dwell on an incident, but to keep things in perspective. Gaining perspective is a way of gaining distance, and once the student understands this principle and applies it to practice, s/he will be able to deal with similar feelings or experiences in future.

It was the perception of one of the participants that regular personnel who usually care for critically ill or dying patients experienced the performance and outcome of life-saving actions as ordinary experiences. Refer to data unit 90. By contrast, critical care student nurses experienced the same incidents as unpleasant or traumatic. The participant made the following statement:

> *'The sister in charge. You know is like, is, is daily jobs for them. So they didn't see it as some kind of a problem' (Data unit: 90).*

Thelan *et al*. (1994:77) stated that frequent exposure to traumatic experiences could be the cause of psychological and behavioural changes in personnel. Thus, the behaviour of regular personnel, as perceived by student nurses, could be attributed to frequent exposure to traumatic events.

Data unit 90 describes the observation of a participant concerning the behaviour of the unit manager who approached a traumatic incident as if it were an ordinary or common event. However, if all personnel could be involved in debriefing sessions, the participant might discover that all personnel shared similar emotional feelings. Staff, who were frequently exposed to traumatic incidents, adapted to the environment because they needed to carry on with nursing care. Therefore, theoretical knowledge about adapting to traumatic experiences should be included in teaching critical care nursing students in order for them to understand staff behaviour. It could be that this participant did not fully understand the emotional responses to dealing with death and dying, and therefore the conclusion could be drawn that theory was not fully integrated into practice.

Concerning the subcategory 'overwhelming experience', one of the participants described her feelings as follows:

> *'And you know, I couldn't take it. And the family were far away; we couldn't reach them' (Data unit: 43).*

This statement referred to a situation in which the participant had to disconnect a ventilator, which resulted in the death of the patient. The fact that the participant was unable to reach the family of the deceased made this experience even worse. The participant was overwhelmed by emotions, as she had neither the theoretical grounding nor the skills to cope with the situation, as was described in Subsection 4.5.5.

4.7.2 Category: Expression of feelings

A vast variety of feelings, such as confusion and frustration, feelings of incompetence, loss, denial, guilt and anger, feelings of acceptance/non-acceptance, feelings towards

colleagues, and feelings concerning discrepancies were described by participants, and are displayed in Table 4.19 on page 100 as 'expression of feelings'.

TABLE 4.19 CATEGORY: EXPRESSION OF FEELINGS (CRITICAL ANALYSIS OF FEELINGS)			
CATEGORY	SUB-CATEGORY	GUIDED REFLECTION INTERVIEWS	THEORY/ PRACTICE
EXPRESSION OF FEELINGS	Feelings of confusion and frustration	And the family were far away; we couldn't reach them. (44) Dis wat dit so moeilik maak, dis wat dit vir 'n mens so verwarrend maak … (333) Maar as die dokters eers begin twyfel oor wat wil hulle doen, dan begin jy ook twyfel as verpleegkundige (336) Gevolge vir die pasiënt is hy maak sulke op en af wippe, want jy dink jy kry hom beter, en dan besluit hulle weer hulle gaan die goed stop en dan word hy maar weer slegter, en vir jou bly dit, jy bly verward en jy bly die heeltyd (in) konflik met jouself om te weet wat moet jy nou doen. (345)	Theory and practice
	Feelings of incompetence	Helpless (188) Ek het eintlik half uhm ontsteld gevoel omdat ek gevoel het my hande, dis af, afgekap. (277) Like A. afterwards, she wanted T to put somebody else there, but T said: No, it could've happened to anybody. (179) Because I, I can tell you, like CPR, I know it backwards, but come in that situation, it feels like I know nothing. (193)	Theory and practice
	Feelings of loss	So all of a sudden I had no time to actually assess my patient; I'm knowing that, okay, that this patient are [sic] not actually … we're having a prognosis, so the, I was like felt taken away from me. (58-60) I, I couldn't assess the situation and it was something taken away from me (116)	Theory and practice
	Feelings of denial	I think it was like a denial for me too. (66) I think it was like a denial for me too. (78) Sy mense is ongelukkig in 'n ontkenningsfase - hy't bietjie psigo-sosiale probleme in die familie uhm soos sy seun, hulle is heeltemal in 'n ontkenningsfase. Hulle wil hom eintlik, en hulle wil hom gesond hê… (346)	Theory and practice
	Feelings of guilt	En ek het baie sleg gevoel daaroor. Ek het niks opsetlik gedoen om hom te na te kom nie - dit het gevoel asof hy my verkwalik vir dit wat gebeur het en S. gesê het sy het sy lewe gered. (502) Uhm, ek weet net nie hoe gaan ek van die skuldgevoel ontslae raak nie, want die pasiënt is toe	Theory and practice

TABLE 4.19 CATEGORY: EXPRESSION OF FEELINGS (CRITICAL ANALYSIS OF FEELINGS)			
CATEGORY	SUB-CATEGORY	GUIDED REFLECTION INTERVIEWS	THEORY/PRACTICE
		uiteindelik oorlede (538)	

TABLE 4.19 CATEGORY: EXPRESSION OF FEELINGS (CRITICAL ANALYSIS OF FEELINGS)			
CATEGORY	SUB-CATEGORY	GUIDED REFLECTION INTERVIEWS	THEORY/PRACTICE
	Feelings of anger	So the family member now was furious. So why didn't we contact one of the family members to tell. (48,49) 'n Ander ding wat ek ook gesien het, wat my nogal uhm wat, wat, wat my nogal kan vies maak, is die, die een persoon wil nie saam met die ander persoon werk nie, maar hulle wil nie eintlik redes verskaf hoekom hulle nie saam mekaar wil werk nie [sic], en maak nie saak dat daar redes is nie, ek voel net … (326)	Theory and practice
	Feelings of acceptance/non-acceptance	Even if it is a critically ill patient, we need the family member to bond with this patient and, you know, by begin the family approach situation [sic] that this patient cannot live… (51) So you can call the important people to see him and say goodbye, and whatever they want to say - bond with him, then they can decide: now it is okay, you can come and do whatever (121) Because initially, I think, I was not thinking, nursing them in totality, that not knowing that there is a particular part of the body, which actually takes control of the whole set, to which is the brain [sic] (102).	Practice and Theory
	Feelings towards colleagues	Ja [Yes], actually, I, I actually talked to them because they didn't, I, I feel that they were not sympathetic (96) Uhm, toe maak hulle ons af as wat weet julle - julle is net juniors! So ons was eintlik ongelukkig daaroor, want ons het die, ja, so, en toe uhm het hulle ons net heeltemal geïgnoreer en hulle ding aangegaan mee en umm (308)	Theory and practice
	Feelings concerning discrepancies	Uhm wat hulle gesê het ons moet vir die dokter wag. Uhm wat vir my gevoel het dit is kosbare tyd wat verlore gaan (243)	Theory and practice

The category 'expression of feelings' (Table 4.19) reflects the feelings experienced by participants, as well as feelings experienced by their colleagues or family members of the critically ill, as perceived an expressed by the participants. The expression of feelings seemed to play a major role in the participants' descriptions of the incidents they chose to share with the researcher.

In the subcategory 'feelings of confusion and frustration', one participant described confusion that resulted from indecision. She stated as follows:

> [Translation] *'Consequences for the patient were that his condition manifested in a seesaw picture (his condition kept changing), which let you think you will get him better, but then they decided to stop the things, and then he (his condition) once again became worse. And … you are confused and you stay in conflict with yourself the whole time, to know what you should do next' (Data unit: 345).*

The doctors' indecision regarding the extent of treatment led to confusion and frustration for the participant. Evidence of expression of confusion was also found in research conducted by Smith (1998:895), but this expression of confusion was mainly related to situations in which undergraduate students feared to be alone and felt unsafe when they were caring for a patient.

In contrast to the findings of Smith's research, this study revealed feelings of confusion and frustration that resulted from the apparent indecision of doctors, and nurses' inability to reach family members who lived in remote rural areas. (Refer to data units 44, 333, 336 and 345.) In these instances, the participants tried to make sense of the situation, but they experienced conflict and confusion. They apparently had the theoretical background and knew what had to be done, but they lacked practical experience. However, participants seemed to reach clarification on the situations while they were guided in reflection during the interviews. Clarifying or making sense of a situation is a fundamental aspect of reflection (Boyd & Fayles 1983:107; Davies 1995:173).

Feelings of incompetence also emerged from data obtained during the guided reflection interviews. Incompetence refers to the inability to do something properly (Microsoft

Encarta World English Dictionary 1999). The following statement illustrated the feeling of incompetence:

> *'Because I, I can tell you, like CPR, I know it backwards, but come in that situation, it feels like I know nothing' (Data unit: 193).*

Smith (1998:895) found similar descriptions of a feeling of inadequacy, but this feeling was related to the fear of the unknown. Quinn (2000:420), quoting from Hebb (1972), stated that stress at work had a significant effect on work performance, which included cognitive and physical performance. Concerning data unit 193, it seemed that the participant knew how to apply CPR. However, its application in practice caused tension that resulted in feelings of inadequacy. The inference is made that this participant could not integrate theory into practice. Data units 188, 179 and 277 probably also indicated feelings of incompetence, because participants were unable to apply theory to practice while they seemingly knew what to do.

In the subcategory 'feelings of loss', the next statement demonstrates the feeling of loss experienced by one of the participants:

> *'So all of a sudden I had no time to actually assess my patient; I'm knowing that, okay, that this patient are [sic] not actually… we're having a prognosis, so the, I was like felt taken away from me' (Data unit: 58-60).*

Loss means no longer having something (Microsoft Encarta World English Dictionary 1999). In this case, the death of the patient was the immediate cause of feelings of loss experienced by the participant. The participant wanted to assess the patient but was unable to do so, because, when she put the patient on a T piece, he desaturated and died. The result was a feeling of loss. (Refer to data units 58-60 & 116, Table 4.8 & data unit 41.)

It seemed the participant had difficulty integrating practical and theoretical knowledge, as she was not exposed to similar situations before. As second-year critical care nurses already should have acquired the theory relating to brain injury patients, it appeared that lack of exposure to various situations was a key element in the lack of theory-practice integration.

Palmer *et al*. (1994:100), citing Field and Webber (1989), stated that nurses still experienced anxieties despite the fact that they were regularly exposed to dying patients and their families. When second-year critical care nurses were confronted with a dying patient, they experienced a variety of feelings.

A feeling of denial emerged, as illustrated in the following statement:

> *'I think it was like a denial for me too' (Data unit: 66).*

The statement pointed to the moment the participant disconnected the ventilator and the patient died. While the participant was critically analysing her feelings during the reflective interview, she came to the conclusion that she did not accept the patient's death at that stage. The fact that she did not apply the theory that she acquired about patients with severe brain injuries could have contributed to a feeling of denial, as illustrated by the following statements:

> *'So to my greatest surprise, within 5 minutes …umm I removed it, I disconnected the... umm the ventilator from the ET tube, put him on T piece with about 50% oxygen. The patient starts desaturating' (Data unit: 36).*

> *'Because initially, I think, I was not thinking, nursing them in totality, that not knowing that there is a particular part of the body, which actually takes control of the whole set, to which is the brain [sic]' (Data unit: 102).*

It was found that not only participants but also family members, who did not want to accept the prognosis, denied the death of a patient. (Refer to data unit 346 in Table 4.19.) With this statement, the participant demonstrated her ability to identify the denial of death as a phase, and therefore the participant proved that she could integrate theory with practice. The theory regarding the different phases of acceptance of death is presented in basic nursing training.

In the subcategory 'feelings of guilt', the following statement describes a participant's feeling of guilt concerning the death of a patient:

> [Translation] *'I don't know how I am going to get rid of these feelings of guilt, because the patient eventually died' (Data unit: 538).*

At first, the participant expressed feelings of guilt (data unit 538), indicating an apparent inability to integrate theoretical knowledge with practice, but at a later stage during the guided reflection interview she acknowledged the importance of more practical experience, as can be seen in the following statement:

> [Translation] *'One could have seen it as a learning opportunity, one should perhaps have more practical knowledge, but I think at that stage it wouldn't have help me… ' (Data unit: 541).*

With regard to students who reflected on their practice towards the end of their basic nursing course, Smith (1998:895) describes similar feelings of guilt associated with perceived inadequacy. She concludes that the more students gain experience, the more they develop feelings of guilt. With reference to this finding of Smith, it is possible that the feelings of guilt experienced by the post-basic nursing students who participated in this study could be related to their level of experience.

In the subcategory 'feelings of anger', the following statement is relevant:

> [Translation] *'The other thing that … annoys me, is one person who will not work together with another person, but they won't really give reasons why they won't work together, and it doesn't matter what the reasons are, I just feel…'*
> *(Data unit: 326)*

Insufficient support of colleagues, as indicated by Quinn (2000:421), can contribute to stress that manifests in different ways, such as anger, aggression, apathy, and depression. Smith (1998:895) documented similar foundings of feelings of anger and frustration that resulted from relationships with colleagues. As Smith argues, the relationship with colleagues is a cause of stress, as derived from the following statement:

> *'Not prepared to do it, and the people are fighting because they don't want to work with the patients. This causes umm stress.' (Data unit: 325).*

Participants also described the anger voiced by family members of the deceased, as illustrated by the following statement:

'So the family member now was furious. So why didn't we contact one of the family members to tell' (Data units: 48,49).

These statements were relevant because they revealed that the participants did not know how to deal with anger expressed by colleagues or the family members of patients. It was apparent that the participants lacked theoretical knowledge as well as practical skills, and therefore theory-practice integration could not realise, to the detriment of collegial and nurse-patient relationships.

Critical care nursing personnel sometimes have to deal with family members who will not accept the death of a loved one. The following statement from the subcategory 'feelings of acceptance/non-acceptance' is relevant:

'Even if it is a critically ill patient, we need the family member to bond with this patient and, you know, by begin (at the beginning) *the family approach the situation that this patient cannot live* (implies prognosis*)' (Data unit: 51).*

The participant felt that family members should have the opportunity to come to terms with a patient who apparently had no prognosis. In this specific instance, because of logistical problems, the family were not able to do that (Subsection 4.3.5). This explained the feeling of anger that the family experienced when they were informed about the patient's death (Data units 48 and 49). The participant applied practical skill as well as theoretical knowledge in this situation. She knew that the family had to accept the prognosis, and that they needed time to part from the patient and say goodbye.

In the subcategory 'feelings towards colleagues', the following statements are relevant:

[Translation] *'Umm, and then they do not take us seriously – with: What do you know? You are just juniors! So we actually felt upset about that, because we had, yes, … they totally ignored us and carried on with their thing…' (Data unit: 308).*

'Ja [Yes], actually, I, I actually talked to them because they didn't, I, I feel that they were not sympathetic' (Data unit: 96)

In the study conducted by Smith (1998:896), it was found that students undergoing basic training were confronted with the anger and dominance of colleagues, especially doctors. In this study, the participants experienced rejection from their colleagues. They also felt that their colleagues were unsupportive and unsympathetic.

Data unit 308 described how senior personnel ignored the participants who wanted to apply their theoretical knowledge about the administration of thrombolytic drugs (Data unit: 242). From the available information, it was unclear whether the suggestion was appropriate, and therefore the integration of theoretical knowledge into practice could not be evaluated.

In the subcategory 'feelings concerning discrepancies', one of the participants described her feelings concerning what was done, and what she felt should have been done. She stated as follows:

> [Translation] *'Umm, they said we had to wait for the doctor. Umm, I felt valuable time was lost' (Data unit: 243).*

Feelings concerning discrepancies were experienced because the participants felt that their theoretical knowledge differed from what was being implemented in practice, as demonstrated by the next statement:

> [Translation] *'As a student [sic] we asked: Umm couldn't one administer Metalyse or Actilyse, which is a thrombolytic drug, to dissolve the clot umm to help the patient?' (Data unit: 242).*

Although the participant expected that the theory should be implemented in practice, it did not materialise. Thus, the lack of theory-practice integration was due to circumstances, and not because the participant was at fault. The phenomenon discrepancies, *i.e.* differences between what is taught (theory) and what is done (practice), reflects the theory-practice gap, and is identified by several authors. (Chun-Heung 1997:458; Hewison & Wildman 1996:755; Landers 2000:1551; Lowe & Kerr 1998:1031; McCaugherty 1991b:1059.)

4.8   SUMMARY OF THE THIRD THEME 'ANALYSIS OF FEELINGS'

The categories *'experience'* and *'expression of feelings'* emerged from the third theme, 'critical analysis of feelings'. Data comprising the theme revealed feelings that the participants experienced while they were caring for the critically ill.

Two inferences could be drawn from data about the emotions or feelings experienced by participants. Firstly, it seemed that participants did not have the ability to control their emotions evoked by unpleasant/traumatic incidents in the unit, which indicated that participants did not integrate the theory regarding emotions and self-control with practice (Subsection 4.7.1). Secondly, it seemed that the participants did not fully comprehend the feelings experienced by senior colleagues, who probably appeared cold and distant because of repeated exposure to traumatic events.

Feelings of anger were also experienced towards colleagues, as they were not supportive (Subsection 4.7.2). Understanding the feelings of colleagues would probably enhance theory-practice integration. Although theory was taught with regard to trauma in the critical care unit and the emotional responses of personnel, participants did not acquire the necessary skills to cope with traumatic incidents. Guided reflection could play a role in helping students develop the ability to confront similar situations in future. Ultimately, it could enhance theory-practice integration.

The unexpected death of a patient with irreversible brain damage overwhelmed a participant and evoked feelings such as denial and a feeling of loss (Subsections 4.7.1 and 4.7.2). Lack of theoretical knowledge about the functioning of the brain contributed to this situation. If the participant acquired the necessary theoretical knowledge, she probably would have expected the outcome. Acquisition of knowledge, therefore, is a prerequisite for theory-practice integration.

Feelings of incompetence were experienced due to the apparent inability to perform CPR (Subsection 4.7.2). Pressure, stress, tension, and the urgency of the situation could affect the abilities of participants to apply theory to practice. Debriefing sessions or guided reflection could help nurses deal with feelings of incompetence. Competence reflects the ability to integrate theory with practice.

In some situations, participants demonstrated knowledge of the relevant theory, but did not observe it being implemented in practice. These observed discrepancies led to

feelings of confusion and frustration (Subsection 4.7.2). Some of these discrepancies could be related to the fear of doctors and nurses to make decisions that could have serious consequences. Discrepancies in the nursing field reflect the theory-practice gap. Guided reflection could be used to assist nursing personnel in understanding the link between theory and practice.

Although the participants could apply theory to practice with respect to situations that were traumatic, they were not able to distance themselves from unpleasant experiences. This resulted in feelings of guilt (Subsection 4.7.1). They repeatedly said that they did not know how they could be relieved of the feelings of guilt (Subsection 4.7.2). However, participants did reach clarity on their feelings while they were being guided in reflection during the interviews (Subsection 4.9.5). This indicates the value of guided reflection in stress management.

The inference could be drawn that the feelings experienced by students and personnel while caring for the critically ill were not sufficiently dealt with. It was up to them to deal with emotions that were evoked by stressful situations. If they could be taught to reflect in a constructive manner, they probably would be better equipped to deal with similar events in future.

'A new perspective' was the fourth theme that emerged from the data.

4.9   THEME 4: A NEW PERSPECTIVE

'A new perspective' was the fourth and last theme that emerged from the data obtained. Various authors state that a new perspective is the result of learning. (Atkins & Murphy 1993:1190; Wilson 1996:136.)   Van Vuuren and Botes (1999:33) describe a new perspective as an integrated, internalised knowledge network and a value system. By internalising knowledge, persons could gain a new perspective on cognitive, practical and affective skills.

In order to reach a new perspective, information should be analysed and synthesised. Analysis includes investigating aspects of the situation, identifying existing knowledge, employing challenging suppositions, and considering imaginative and explorative alternatives. Synthesis is the integration of new knowledge with previous knowledge in

order to solve problems (Atkins & Murphy 1993:1190; Klopper 2001:36.) New insights and perspectives regarding theoretical and practical experiences may enhance the integration of these two entities.

4.9.1 Category: View on doctor/nurse action

In the category 'view on doctor/nurse action', issues pertaining to a new perspective are described. From this category, the following subcategories emerged: 'agree/disagree', 'diagnosis', 'emergency treatment' and 'suggested treatment'.

Concerning the themes 'description' and 'critical analysis of knowledge', the categories 'doctor action' and 'nurse action' also emerged, but these categories were discussed in terms of the different themes. (Refer to subsections 4.3.2, 4.3.3 and 4.5.2.)

The subcategories are displayed in Table 4.20.

TABLE 4.20 CATEGORY: VIEW OF DOCTOR/NURSE ACTION			
CATEGORY	**SUB-CATEGORY**	**GUIDED REFLECTION INTERVIEWS**	**THEORY/ PRACTICE**
VIEW ON DOCTOR/ NURSE ACTION	Agree/ Disagree	So when I thought about the whole thing, I feel that the doctor was right to have taken a quick decision. (113) 'uu conclusion for this patient was, is, for to stop the Phenylephrine, Nimotop and Dobutrex, Intropin. Then just maintain patient on 80 ml of dextrose of saline, disconnect the ...uhm the ventilator, put him on a T piece.' (30) I feel he should have been on it straight away, so that you don't turn him, and with the chest… Is it really necessary? 'Cause you can see the pacemaker on the monitor is working. Is [sic] the chest x-rays that necessary? (190) Of hulle sê vir jou in woorde: die pasiënt gaan nie hier uitkom nie. Sy prognose is nul. Hy het een persent kans op oorlewing, maar ons mag nie stop nie; ons moet voluit gaan. (319)	Theory and practice

		TABLE 4.20 CATEGORY: VIEW OF DOCTOR/NURSE ACTION	
CATEGORY	**SUB-CATEGORY**	**GUIDED REFLECTION INTERVIEWS**	**THEORY/ PRACTICE**
		Ja, as iemand nie 'n prognose het nie, dan los jy hom of jy gaan, en dit ook, óf jy gaan voluit, óf jy los alles, maar nie halfpad-halfpad nie. (361) Of hulle sê vir jou ons gaan voluit gaan, maar nie met inotrope begin nie. Of ons gaan voluit gaan, maar hulle spesifiseer nie. (392) I wouldn't have turned that patient for me, if it had, as dit van my afhang, né, so ('n) ou wat so hemodinamies onstabiel is, né. Met opname sal ek hom op 'n nimbus gesit het, in elk geval lat [sic] hy net…(197) Was dit regtig nodig vir die draai? (200)	
	Diagnosis	But he has convinced that beyond, without a doubt. Even if this guy is not brain dead, he had, you know, he had practically brain damage. You know, he showed me some of the, of his findings to see that he practically …(131) There was irreversible damage, you know, and he proved it to me. (73) But he just said, even if he was not brain dead, there is nothing he can do about the irreversible brain damage. (76)	Theory and practice
	Emergency treatment	Uhm, ons, jy sou dadelik kon optree, want daar is 'n protokol beskikbaar uh in geval van 'n noodtoestand by so 'n pasiënt (303) As ek voor die tyd geweet het dat dit nie gewerk het nie, sal ek dalk, hoe sal ek sê, 'n ekstra pasaangeër gehad het of uhm dalk gewag het met die x-strale of gewag het tot dokter gekom het, net om seker te maak. (521)	Theory and practice
	Suggestion about treatment	In die toekoms as dit my spesifieke pasiënt is, sal ek die toegepaste (toepaslike?) behandeling voorstel, alreeds, voordat die pasiënt, die dokter sy voet daarin gesit het. (449) Kom ons stel dit so, dit was vir my, as ek die woord kan gebruik, 'n proefkonynsituasie. In dié konteks, want ons het reeds met 'n pasiënt gesit wat besig was om te sterf, wat in 'n fase was om te sterf, hoekom nie hierdie laaste opsie uitoefen nie? As hy steeds daar, as hy nog steeds gesterf het, ongeag van die laaste opsie, dan sou ek gevoel het, ek het alles probeer. (453)	Theory and practice

The first subcategory 'agree/disagree' reflects doctor/nurse actions to which the participants agreed/disagreed. The following statement reflects agreement:

> 'So when I thought about the whole thing, I feel that the doctor was right to have taken a quick decision' (Data unit: 113).

Prior to this statement, the doctor requested the nurse to disconnect the ventilator, which resulted in the death of the patient (Data units 30, 36). The participant became upset about the situation (Data unit 42). However, the statements presented in Table 4.20 (Data units 113, 30) revealed a new understanding of the situation. The participant gained a new perspective, namely the realisation that the doctor had taken the correct decision. Theoretical knowledge that she gained about the prognosis of the patient (Table 4.14, Data unit 87) and a practical demonstration by the doctor convinced her that the doctor had taken the correct decision.

Another participant described her perspective as follows:

> [Translation] 'Or they say in words that the patient is not going to live. His prognosis is zero. He has a one percent chance of surviving, but we are not allowed to discontinue (treatment). We must go all the way' (Data unit: 361).

It was clear that the participant held her view concerning the treatment of the patient. She implied that treatment should be discontinued, as the patient had no prognosis. She later stated that medical expenses could become a problem, because the patient had no funds available (Data unit: 352).

When asked, the participant could not recall whether ethical issues were part of the critical care nursing curriculum. She rather thought that they might have been discussed during basic training (Data unit: 377). It was possible that limited theoretical knowledge of moral dilemmas and lack of experience could have influenced her in taking this view. Carr (1996:292) refers to moral dilemmas that arise from situations of uncertainty. The uncertainties that participants experienced and resulting moral issues are reflected in data units 319, 361 and 392 that deal with the continuation or discontinuation of treatment.

Data units 190, 197 and 200 referred to a nursing decision that had serious consequences. The decision to turn a patient caused the disconnection of a pacemaker, which resulted in the patient experiencing a temporary asystole. Although participants apparently had mastered the relevant theory, the practical consequences of turning the patient, namely the disconnection of the pacemaker and a heart standstill, were not anticipated. In this instance, theory-practice integration did not occur. However, participants gained a new perspective on the incident and questioned the necessity of the nursing action.

The following statement is relevant concerning the subcategory 'diagnosis':

> *'But he has convinced that beyond, without a doubt [sic]. Even if this guy is not brain dead he had, you know, he had practically brain damage [sic]. You know, he showed me some of the, of his findings to see that he practically… '*
> *(Data unit: 131).*

The doctor convinced the participant via a practical demonstration that the medical diagnosis of irreversible brain damage was relevant. Quinn (2000:183) emphasises the contribution of non-nursing personnel, such as doctors, to student learning. In this instance, it resulted in the participant gaining new insight into the situation. (Refer to data units 73 and 76.) Owing to guidance by the doctor, theory was integrated into practice.

Regarding the subcategory 'emergency treatment', a participant felt that a protocol should be available to guide nursing actions in times of emergencies. This is illustrated in the following statement:

> [Translation] *'Uhh... we, you could immediately act because a protocol is available uhh… in case a patient experiences an emergency'* *(Data unit: 303).*

The participant referred to the administration of thrombolytic medication in an emergency situation. These drugs are prescribed by a doctor, because they could cause serious complications in a patient, such as massive bleeding (Woods *et al*. 1995:508). Because the nursing staff were previously exposed to situations where thrombolytic medicines were administered under uncontrolled circumstances, they

preferred to wait until the doctor arrived. However, the participant felt that valuable time was lost.

Regarding emergency treatment, participants suggested alternative actions, such as the development of a protocol for future use in similar situations (Data units 303 and 521). Participants realised that certain nursing interventions could only be implemented if a doctor prescribed them. Although second-year critical care nursing students were knowledgeable about the administration of medicines, they still lacked knowledge about serious complications associated with medications. However, proposing a protocol for use in similar situations demonstrated creative and critical thinking and the development of a new perspective.

In the subcategory 'suggestions about treatment', the following statement is relevant:

> [Translation] *'In future, if it was specifically my patient, I would suggest the applicable treatment, even before … the doctor set foot in there' (Data unit: 449).*

The participant was adamant to commence treatment as early as possible. However, it was pointed to the participant that the suggested treatment could be detrimental to the patient. The patient had a cardiopulmonary bypass graft three days ago, which is a contraindication for administering thrombolytic medicine (Woods *et al.* 1995:508). The participant intended to apply her theoretical knowledge to practice, which appeared not to be the correct decision, because the patient could have developed severe bleeding. Thus, theory had not been integrated into practice. The opinion held by the participant was that they could have taken the risk. The following statement illustrates her point of view:

> [Translation] *'Let's put it this way; it was, for me, if I can use the word, a guinea-pig situation. In this context, because we already had a patient who was dying, …who was in this phase … why not apply the last option? … If he died despite the last option, then I would have felt that I had tried everything' (Data unit: 453).*

This view about the administration of thrombolytic medicine under such circumstances could probably be ascribed to limited practical experience and inadequate knowledge of the applicable theory.

4.9.2 Category: Outcome

Participants also gained a new perspective on the outcome of patient treatment and nursing interventions. Thus, from the theme 'new perspective', the category 'outcome' emerged. This category is discussed in terms of a new perspective on 'life-saving action' and 'death' (subcategories). In this context, the category 'outcome' differs from the categories 'outcome' that fell under the themes 'description' (Subsection 4.4.7) and 'critical analysis of knowledge' (Subsection 4.5.5). While the last-mentioned categories presented the participants' descriptions and analyses of the outcome of nursing interventions, this category discusses the *new perspective* that participants gained on the subject.

Table 4.21 displays data that are relevant to the category 'outcome'.

TABLE 4.21 CATEGORY: OUTCOME (NEW PERSPECTIVE)			
CATEGORY	**SUB-CATEGORY**	**GUIDED REFLECTION INTERVIEWS**	**THEORY/ PRACTICE**
OUTCOME	Life-saving action	Ek weet wat jy vir my wil sê umm met groot chirurgie, nie binne 30 dae nie, maar as dit, ek sou dit nog steeds gegee het, want ek het reeds gestaaf dat ons sal onmiddellik 'n dag na chirurgie as hy massiewe bloeding hê en definitief kardinaal, maar het hy nie 'n beter kans nog steeds te oorleef nie [sic] (462) Konsekwensies is vir hom bloeding, maar ons kan sy lewe red miskien. (451)	Theory and practice
	Death	That this patient cannot live. (51) You know, say about what he wishes to want for the patient, and allowing to die in peace. (72) Uhm, ek, ek glo in my werk; en ons, ons werk as verpleegkundiges of as susters is om umm lewe te bewaar en lyding te verlig, en ons het probeer om die man se lewe te bewaar en en sy lyding te verlig en dit was baie uh onsuksesvol. (284) Konsekwensies vir die pasiënt - hy het gesterf. (412) Dan dink jy, nee, hy sal nie regkom nie; dis eintlik beter	Theory and practice

TABLE 4.21 CATEGORY: OUTCOME (NEW PERSPECTIVE)			
CATEGORY	**SUB-CATEGORY**	**GUIDED REFLECTION INTERVIEWS**	**THEORY/ PRACTICE**
		om die behandeling te stop en laat hy maar step down toe gaan en daar rustig doodgaan. Die volgende oomblik, dan dink jy weer, nee, eintlik, miskien kan hy tog regkom. (356)	
		Okay, daar het, dink ek, glo ek nogal, as aan, as iemand nie 'n prognose het nie, moenie hom martel om behandelings toe te pas, maar jy weet eintlik dit gaan nie effektief wees nie (360)	

Life-saving action emerged as a subcategory of 'outcome'. One of the participants stated as follows:

> [Translation] *'I know what you want to tell me uhh... with major surgery, not within 30 days; but if it would, I still would have given it, because I already proved that we immediately would a day after surgery, if he bled massively, and definitely vitally… But doesn't he have a better change of surviving?'* (Data unit 462)

The participant felt that she would have taken the risk of administering 'life-saving' drugs, although the patient could bleed severely (Data units: 462, 451). The participant was convinced that she would have tried anything to help the patient. She wanted to apply theory to practice, but was unable to do so, partly because of the risk and partly due to a lack of previous exposure to similar situations.

With regard to life-saving actions, the following statement by Graham (1995:31) on the value of reflection is relevant*:* 'One learns to analyse the sources of one's own interpretations, to question and resist the predefined meanings one is encouraged to adopt'.

During the data reflection interviews, participants analysed and questioned actions relating to the incidents that they described. The realisation that risk was involved resulted from the analyses, and therefore the participants learnt to accept situations that could not be changed.

From the category 'outcome', 'death' emerged as a subcategory.   One of the participants described the issue as follows:

> [Translation] *'Uhh… I, I believe in what I do; and we, our job as nurses or as sisters are to uhh… to preserve life and to alleviate suffering, and we tried to preserve the life of this man and to alleviate his suffering and it was very uhh… unsuccessful.' (Data unit: 284).*

The participant believed that the application of theory to practice could save the patient, but she was unable to apply theory to practice. She believed that the permanent staff did not want to take the risk of administering drugs that could result in complications, because of their experience or possible lack of experience with this specific drug (Table 4.20, Data unit 453).

Data units 51, 72, 412, 356 and 360 (Table 4.21) referred to the death of patients. According to the patients' prognoses, death was inevitable. However, the participants felt that some patients were not allowed to die in peace. Regarding a poor prognosis and applicable treatment, it could be inferred from the data that participants were not allowed to apply theory to practice. A possible reason was the inability of doctors to make ethical decisions concerning the continuation/discontinuation of treatment.

Death is a natural event. Through reflection, it seemed that some of the participants moved towards the final stage of accepting the reality of death. This was in sharp contrast to the descriptions of their feelings surrounding treatment and death (namely confusion and denial, and feelings of loss and non-acceptance), which were discussed in Subsection 4.6.2. Changes observed in the participants illustrate what reflective practitioners describe as the development of a new perspective. The ultimate lesson learnt or new perspective gained by participants was the fact that patients could not be cured in certain circumstances (Atkins & Murphy 1993:1190).

4.9.3 Category: Participants' view on theory-practice integration

The category 'participants' view on theory-practice integration' differs from the category 'theory-practice integration' that is discussed in Subsection 4.5.4 under the theme

'critical analysis of knowledge'. Regarding the last-mentioned category, participants *critically analysed* their knowledge on theory-practice integration. However, participants developed a new perspective on the integration of theory and practice, and their points of view will be discussed in this subsection.

Table 4.22 on page 118 displays statements that relate to the view of participants on theory-practice integration.

Statements made by participants during guided reflection interviews are complemented by quotations from the narrative descriptions of the interviews that were written by the participants.

TABLE 4.22 CATEGORY: PARTICIPANTS' VIEW ON THEORY-PRACTICE INTEGRATION				
CATEGORY	**SUB-CATEGORY**	**GUIDED REFLECTION INTERVIEWS**	**NARRATIVE DESCRIPTIONS**	**THEORY/ PRACTICE**
PARTICIPANTS' VIEW ON THEORY-PRACTICE INTEGRATION	Theory-practice integration	I would know, my theoretical knowledge now. Though it is quite mm difficult, because theoretical [sic] and relating it practically doesn't correlate so much. Because you learned it theoretically, but, but practically you feel that you can do a lot to improve what you know. (107) So theoretically, I would say, we just learn these things but practical, I would said [sic], it is most important, but, though without theory there is no way you can know what to do practically. (108)	This process allowed me to practise it mentally, thereby gaining, I feel, a certain amount of non-practical experience (549)	Theory and practice

TABLE 4.22 CATEGORY: PARTICIPANTS' VIEW ON THEORY-PRACTICE INTEGRATION				
CATEGORY	**SUB-CATEGORY**	**GUIDED REFLECTION INTERVIEWS**	**NARRATIVE DESCRIPTIONS**	**THEORY/ PRACTICE**
		Ek sou nie so sê nie. Ek sou sê, op die oomblik, die die kursus wat ons nou doen, uhm behandel die teorie en die praktyk uhm hand aan hand. Ek sou sê dit gaan uhm redelik gekorreleerd. My teorie, my teorie, die feit die die die diagnose wat gemaak is, my teorie waarmee ek dit kon staaf, het vir my beïnvloed dat ek daai spesifieke aksie wou uitvoer. (436)		
		Omdat /dit nie/ alles wat ek daaruit geleer het, lewensles is; jy gaan voort met daardie teorie met die probleem sodat jy nie stagneer in die praktyk nie. (459-460)		
		Umm sodat 'n mens jou teorie-en-praktykkorrelasie kan kry. Sodat jy nie net sê: Ag, ek leer dit, maar ek gaan dit tog nooit toepas nie. Sodat jy dit van toepassing kan maak /kan maak/ in elke dag se werk. (526)		

One of the participants described her view on theory-practice correlation as follows:

> *'I would know, my theoretical knowledge now. Though it is quite mm difficult, because theoretical (knowledge) [sic] and relating it practically doesn't correlate so much. Because you learned it theoretically, but, but practically you feel that you can do a lot to improve what you know' (Data unit: 107).*

Various authors support the view of some of the participants (data units 107,108) that theory does not always correlate with practice. (Chun-Heung 1997:458; Hewison & Wildman 1996:755; Landers 2000:1551; Lowe & Kerr 1998:1031.) As opposed to these participants and authors, one of the participants was of the opinion that theory-practice correlation does occur. She put it as follows:

> [Translation] *'I wouldn't say that. I would say the course that we do now uhh teaches theory and practice uhhh hand in hand. I would say that they are reasonably correlated.' (Data unit: 436).*

Most of the participants felt that theory should be applied to practice, and some expressed the opinion that qualified critical care nurses should keep up to date with the newest developments (Data units: 459-460, 526).

Regarding the utilisation of guided reflection as a method to describe theory in relation with practical experiences, the following statement was provided in a narrative description:

> *'This process (guided reflection) allowed me to practise it mentally, thereby gaining, I feel, a certain amount of non-practical experience' (Data unit: 549).*

It was the opinion of the participant that participation in the process of guided reflection enhanced her ability to apply theory to practice, even though reflection was a 'mental' or 'non-practical' event. According to Palmer *et al.* (1994:62), students felt that reflection allowed them to amalgamate the appropriate theory with practice. Foster and Greenwood (1998:167) state that reflection is a method of reframing problems in practice. Therefore, according to these authors, it translates aspects of theory into everyday practice. Wilkinson (1999:37) suggested that reflection could unify theory and practice, and that theory could be evaluated by asking practice-generated research questions.

Although most authors agreed that reflection could be used as a tool to integrate theory and practice, some authors, for example Greenwood (1993:1999), claimed that it would rather reinforce than eliminate inappropriate action tendencies. Greenwood concluded that reflection could serve to consolidate rather than diminish the theory-practice gap in nursing.

Issues relating to theory and practice have been discussed in Subsection 2.4. It is the opinion of the researcher that guided reflection, if it is facilitated by a clinical expert, may enhance theory and practice integration. Facts could be clarified, and practical issues critically analysed and evaluated.

4.9.4 Category: Knowledge

From the category 'knowledge', the following subcategories emerged: 'responsibility for own learning', 'the need to increase knowledge', 'subject-specific knowledge' and 'the effect of knowledge'. This category differs from the category 'knowledge' that falls under the theme 'critical analysis of knowledge' (Subsection 4.5.1). In Subsection 4.5.1, the *critical analysis* of several aspects of knowledge is discussed, while a discussion on the above-mentioned concepts (or subcategories) will indicate how the participants evaluated the theory and practice to gain a *new perspective* on knowledge.

Participants realised they were responsible for own learning, as illustrated by the following statement:

> [Translation] *'Yes, uhh I have really seen how uhh be responsible for your own knowledge. If you want to know something, you have to find it out' (Data unit: 231).*

Being responsible for own learning is a characteristic of an adult learner. Klopper (2001:43) states: *'An adult regards himself as responsible for his own life and existence'.* The humanist and theorist Burton (2000:1010) holds the view that both the educator and learner have to take the responsibility for learning. Graham's (1995:31) view is that reflection results in people taking responsibility for their actions.

Table 4.23 on pages 121-2 displays data relating to the category 'knowledge'.

TABLE 4.23 CATEGORY: KNOWLEDGE (NEW PERSPECTIVE)				
CATEGORY	**SUB-CATEGORY**	**GUIDED REFLECTION INTERVIEWS**	**NARRATIVE DESCRIPTIONS**	**THEORY/ PRACTICE**

TABLE 4.23 CATEGORY: KNOWLEDGE (NEW PERSPECTIVE)				
CATEGORY	**SUB-CATEGORY**	**GUIDED REFLECTION INTERVIEWS**	**NARRATIVE DESCRIPTIONS**	**THEORY/ PRACTICE**
KNOWLEDGE	Responsibility for own learning	Well, it is still the neurological uhh, uhh, knowledge, which I, I spotted … the other day. Then I started to ask a lot of questions, what, and I went to the book too and (it) gave me a lot of insight that… (it) showed me the Monroe Kelly ... hypothesis. (141) Ja, uhm ek het nou regtig gesien hoe uhm be responsible for your own knowledge. If you want to know something, you have to find it out. (231) …twee of drie keer te gaan nalees oor 'n, oor 'n siektetoestand - as uhm jy onseker is oor 'n siekte-toestand en die mense kom vra' (320) A little bit of knowledge is dangerous. You must know what you are doing when you treat a patient. (219)		Theory and practice
	Subject-specific knowledge	The knowledge, the knowledge of neuro-; now, I would say, I have actually, it has changed my mindset regarding patients with neurological problems. (101) How a pacemaker works. Umm, if something happens, what to… I can't just glance at the monitor or glance at the patient and know which part of it is not working, umm, and what to do in an emergency. (211).	I personally feel that more knowledge of neurological nursing is needed prior to the care of this patient. (Data: 551)	Theory and practice

TABLE 4.23 CATEGORY: KNOWLEDGE (NEW PERSPECTIVE)				
CATEGORY	**SUB-CATEGORY**	**GUIDED REFLECTION INTERVIEWS**	**NARRATIVE DESCRIPTIONS**	**THEORY/ PRACTICE**
		And secondly, I took it as if uhm, neurologically this patient cannot control his own breathing, I mean, you know, you can't ventilating [sic] him for ever. So it was when I got to my … start realising is was at that for this ehh that particular [sic]. (88-89) I realised then that I have to know, I have to get to know umm cardiac patients like, like I know the burns patients …(210)		
	The effect of knowledge	They say knowledge is power. (326) Ek kon nie iets anders doen nie. Ek, alhoewel ek die kennis gehad het van, ek kon leer, ek kon iets nog gedoen het om te probeer om die situasie om te skakel. (278)		Theory and practice

Data units 141, 231 and 320 illustrate the intention of participants to take responsibility for own knowledge acquisition. The implication was that participants had not acquired all the theory that they needed to implement their practical skills. Participants specifically needed subject-specific knowledge. Subject-specific knowledge emerged as a subcategory, because participants realised that they needed knowledge of specific subjects, for example, the workings of a pacemaker, as illustrated in the following statement:

'How a pacemaker works. Umm, if something happens, what to … I can't just glance at the monitor or glance at the patient and know which part of it is not working, umm, and what to do in an emergency' (Data unit: 211).

One of the participants stated that she would like to know more about the administration of medications. She also felt that she should be entitled to administer certain medications.

The following statement is relevant:

> *'Uhm I would say uhh, I would really like to know more about medications which one could administer in such a case without yes… as a nurse can administer, without the doctor being present, yes, where one uhm could make it part of one's practice'* (Data unit: 289).

However, the SANC regulation on the Scope of Practice, Regulation R. 2598, 1987 (Subsection 2(2)(b)), which regulates the practice of the registered nurse, including the administration of medication, does not allow the critical care nurse to prescribe medicine. Scribante *et al.* (1995:438) emphasised that critical care nurses should know the indications, contraindications and complications associated with medication, as they are responsible for administering medication.

All participants expressed the need for subject-specific knowledge, such as knowledge about the pacemaker, medications, and patients presenting with neurological and cardiology problems, in order to be in a better position to apply their practical skills in practice (Data units: 101, 211, 88-89, 210, 289). The inference is that a lack of theoretical and practical knowledge may hinder the integration of theory into practice.

Participants also described their view on the effect of knowledge. One of the participants stated simply:

> *'They say knowledge is power'* (Data unit: 326).

Although some held the belief that knowledge is power, the next statement illustrates that sufficient knowledge could lead to a feeling of powerlessness if it was not applied to practice:

> [Translation] *'There was nothing else that I could do. I, although I had knowledge of, I could learn, I could have tried something else to reverse the situation'* (Data unit: 278).

The acquisition of knowledge is only worthwhile if knowledge is implemented in practice.

4.9.5 Category: Feelings

The feelings of the participants are described to indicate the new perspective that the participants gained on their emotions as a result of the process of guided reflection. From the category 'feelings', the subcategories 'stress feelings', 'feelings of guilt', 'conflicting feelings', 'feelings of acceptance' and 'positive feelings' emerged. (Refer to Table 4.24 on pages 125-6.) The emphasis on positive feelings in this category is in sharp contrast to the negative feelings (such as confusion, frustration, anger, guilt, loss and denial) experienced by participants during and after the incidents. The critical analysis of feelings is discussed in Subsection 4.7.2 as 'expression of feelings'.

Through guided reflection, participants gained a new perspective on their feelings. They could determine the effect of their feelings on the clinical situation (Foster & Greenwood 1998:168). In the subcategory 'stress feelings', participants described how their feelings of stress affected the situation in the clinical care unit. The following statement is relevant:

> *'How not to stress, because as soon as you stress the whole situation falls to pieces' (Data unit: 207).*

In this scenario, the participant indicated that she knew the theory relating to CPR, but once she had to implement CPR, she could not think properly. Due to feelings of stress, this participant was unable to implement theory in practice. The conclusion is that feelings of stress hinder the integration of theoretical knowledge into practice.

One participant described the positive effect that guided reflection had on her ability to deal with feelings of stress. She said:

> *'Speaking about it reduced much of the nightmarish experience' (Data unit: 547).*

Palmer *et al*. (1994:107) found that engagement in the process of reflection enabled students to be in touch with the feelings that they experienced while they were caring for patients. The same effect was evidenced above (data unit 547).

TABLE 4.24 CATEGORY: FEELINGS (NEW PERSPECTIVE)

CATEGORY	SUB-CATEGORY	GUIDED REFLECTION INTERVIEWS	NARRATIVE DESCRIPTIONS	THEORY/ PRACTICE
FEELINGS	Stress feelings	When I get stressed I can't think. (190) How not to stress, because as soon as you stress the whole situation falls to pieces. (207)	Speaking about it reduced much of the nightmarish experience (547)	Theory and practice
	Feelings of guilt	Ek het myself verkwalik, want ek moes seker gemaak het alles is vas en styf. (532)	Ek dink dit is goed om terug te gaan deur hierdie metode en duidelikheid (557) te kry oor wat jy kon gedoen het en of dit wel sou help en klaarheid in jouself te kry en nie aan te hou om jouself te verwyt nie. (558)	Theory and practice
	Conflicting feelings	Alhoewel hy nou nog baie infeksies en goeters het, dan kry jy hom jammer en dink jy, ai, eintlik kan jy hom nie net los nie. (357)		Theory and practice
	Feeling of acceptance	But with subsequent acceptance I got, (I) know that, you know that it was the best out of the situation. (135)		Theory and practice
	Positive feelings		On the whole, the experience was positive. It helped me to realise that I had already started to recognise certain weak spots (Data: 544, 545) I can look for the positive and learn the necessary skill to improve my management of stress situations (Data: 549) The therapeutic effect on me was that I could get rid of the negative feelings and questions of the specific scenarios in an anonymous, confidential milieu, which had the value that I could show my true feelings. (561)	Theory and practice

TABLE 4.24 CATEGORY: FEELINGS (NEW PERSPECTIVE)				
CATEGORY	SUB-CATEGORY	GUIDED REFLECTION INTERVIEWS	NARRATIVE DESCRIPTIONS	THEORY/ PRACTICE
			After the interview, I learnt to reflect positively on the incident rather than being emotional (Data: 554)

The interview relating to | |
| | | | pulmonary emboli and other practice and theory contributed to me feeling more positive in delivering a contribution to in-service training (566) | |
| | | | This talk gave me the opportunity to think about what happened and let me see a different view of the situation. Though it was traumatic, I learned a lot from it. (555)

I think it is good to go back by this method and to get clarity of what could have been done (Data: 577)

And to get clarity of oneself and not to go on experiencing feelings of guilt (Data: 558)

It especially clears uncertainties (Data: 565) | |

Table 4.24 (above) displays the subcategories 'stress feelings', 'feelings of guilt', 'conflicting feelings', 'feelings of acceptance' and 'positive feelings', as they emerged from the category 'feelings'.

The subcategory 'feelings of guilt' reflects the participants' feelings of guilt, as illustrated by the following statement:

> [Translation] *'I blamed myself, because I should have ensured that everything was tied properly' (Data unit: 532).*

The feelings of guilt expressed by the participant are connected with the pacemaker incident.   The participant apparently had the theoretical knowledge, but lacked

experience and, therefore, did not anticipate the disconnection of the pacemaker. Not being able to integrate theory into practice evoked feelings of guilt.

As was the case with stress feelings, it seemed that guided reflection helped students to get rid of feelings of guilt. The following quotation from a narrative description of guided reflection is relevant:

> [Translation] *'I think it is good to reflect by making use of this method, and to get clarity on what you could have done and whether it would have helped. It assists one to get clarity and not to keep on blaming oneself' (Data units 557, 558).*

Teekman (2000:1133) supports this statement when he claims that reflection brings about a personal understanding and self-control and, therefore, self-empowerment. Guided reflection assisted this participant in understanding the source of her feelings of guilt, which led to clarity, and empowerment to deal with the situation. Nursing students could gain a new perspective on nursing and nursing interventions, if they understood the reasons of, or the factors that contributed to, feelings of guilt. An understanding of the clinical situation, self-control, and self-empowerment could enhance theory-practice integration.

Participants experienced conflicting feelings due to differences in opinion about treatment options. The following example relates to a patient with a poor prognosis and the indecision of the doctors regarding treatment. The participant experienced conflicting emotions, because she did not totally agree with the treatment suggested by the doctors.

The following statement is relevant:

> [Translation] *'Although he still has many infections and things; then you feel pity for him and you think, oh, really, you can't just leave him'* (Data unit: 357).

The participant did not accept the situation and questioned the approach followed by the doctors. The treatment options that she would have chosen (theory and practice) seemed to be in conflict with those exercised by the doctors. Theoretical knowledge could not always be implemented in practice, due to differences in opinion or the indecision of members of the healthcare team.

However, feelings of non-acceptance could change if the student acquired the relevant theoretical and practical knowledge. The following statement illustrates this point of view:

> *'But with subsequent acceptance I got, (I) know that, you know that it was the best out of the situation'* (Data unit: 135).

In this particular incident, the participant accepted the death of a patient with irreversible brain damage once she realised that there was no other possible outcome. The participant gained a new perspective due to the acquisition of relevant theoretical and practical knowledge.

The participants reacted positively to guided reflection. Assisted by guided reflection, one of the participants realised that she had to rectify knowledge deficiencies, as illustrated by the following statement:

> *'On the whole, the experience was positive. It helped me to realise that I had already started to recognise certain weak spots'* (Data unit: 544).

Similar results about reflection were found in an explorative study conducted at the University of Wolver Hampton (UK) on advanced nurse practitioners' perceptions of reflection. These practitioners viewed their experiences of the development of reflective skills as positive. According to them, they became more aware and gained more insight. (Burnard 1995:1171; Glaze 2001:643.)

In this study, the participants demonstrated growth by identifying knowledge deficiencies (Data units: 544, 545). Graham (1995:31) describes professional growth as moving to a situation of autonomy and taking responsibility for the effects of your actions.   It seemed that guided reflection assisted participants in gaining insight into the application of theory to practice, and in accepting responsibility for actions (such as own learning).

All the participants were of the opinion that guided reflection contributed to their ability to view the incidents in a positive way. It helped them to deal with negative feelings (such as feelings of guilt), and to reach clarity on many issues. (Refer to data units 544, 545, 549, 561, 554, 566, 555, 577, 558 and 565.)

Johns (1995a:28) emphasises the value of reflection in learning about one's feelings when care is given to patients. Some of the participants stated that they reached clarity on issues such as personal issues, critical care interventions, and uncertainties regarding theoretical and practical issues (Data units: 577, 558, 565). Thus, the inference could be drawn that guided reflection eventually would enhance the ability of second-year critical care students to integrate theory with practice.

4.9.6   Category: Communication

Within the category 'communication', the subcategories 'patient-related communication' and 'staff-related communication' were identified.

Communication was previously discussed in terms of the description of incidents (Subsection 4.3.5) and the critical analysis of knowledge (Subsection 4.5.7). In this subsection, the new perspective gained by participants on communication is discussed.

Table 4.25 on page 130 displays data relating to patient-related communication and staff-related communication.

TABLE 4.25 CATEGORY: COMMUNICATION (NEW PERSPECTIVE)				
CATEGORY	**SUB-CATEGORY**	**GUIDED REFLECTION INTERVIEWS**	**NARRATIVE DESCRIPTIONS**	**THEORY/ PRACTICE**
COMMUNICATION	Staff-related communication	Umm ek kan nie sê dit het my visie soseer verander nie. Ek sou sê dit het my meer gemotiveer om umm meer met uh die dokters te praat oor hulle medikasies en protokolle (319) Ek sou net miskien my, my ervaring vertel het en dat dit vir almal 'n leerproses is. (534) Try to get give-over more fully. Umm, if they ask questions, slow it down. Everybody's so in a hurry to get away to get home. (228)	To discuss it with the appropriate doctor, and (get an opinion on) the impact of administering thrombolytic medicine in a specific case (563)	Theory and practice
	Patient-related communication	Uhmm, subsequent ee, with subsequent cases, I think I'll be in a better position to, to even decide, to said [sic]: Doctor, listen here, let us know within [sic] time, if they're is not in here [sic] let us give up, and let the family member know about it, and be able to decide it is okay. (118) So, dis jong kinders hier ter sprake. So ek voel, ek het nie veel gehad om te verloor (nie), selfs nie voor die aksie uitgevoer is nie, en ek sou tevrede gewees het, want ons het regtig probeer. (454) Mens dink hy verstaan nie, intussentyd praat al… die, dis 'n ander ding, die mense ignoreer hom half, want hulle dink hy hoor nie en hy verstaan nie, maar hy verstaan baie goed. (350)		Theory and practice

The following statement illustrates communication between members of staff:

'Try to get give-over more fully. Umm, if they ask questions, slow it down. Everybody's so in a hurry to get away to get home' (Data unit: 228).

The importance of effective communication between members of staff, which includes the listening skill, is emphasised by the above statement. It was also highlighted by an incident where the patient's pacemaker disconnected and the participant asked for help. However, she apparently did it in such a way that her colleagues did not clearly understand what she meant. Through guided reflection, the participant had come to realise the importance of good communication, especially in stressful situations or in situations where people were unwilling to listen or consider suggestions.

Statements relating to communication between staff members (Data units 319, 534, 563 – Table 4.25) illustrate insight in the situation. Participants suggested alternatives to overcome the problem of inadequate communication. Therefore, the inference is that theory was applied to practice.

In the subcategory 'patient-related communication', incidents where patients were unable to communicate due to intubation, sedation or neurological problems are described. One of the participants described the following misconceptions about patient communication:

> [Translation] '*One thinks he doesn't understand, and in the meantime everybody is discussing… There's another thing. People ignore him because they think he can't hear and don't understand, but he understands pretty well.*'
> (Data unit: 350).

The above statement illustrates the participant's ability to assess and evaluate the situation regarding the apparent inability of the patient to communicate. Communication is a basic nursing skill. The participant realised that, although the patient was unable to talk, he might listen to conversations. To ignore a patient is to violate a patient's human rights, especially the right to dignity. Thus, concerning patient-related communication, it seemed that the participants were able to integrate theory with practice.

A nurse should act as an advocate for the patient if the patient were unable to communicate. This is one of the aspects included in the SANC regulation relating to the Scope of Practice, Regulation R 2598, 1987, which is discussed in Subsection 4.3.5. Being an advocate for a patient implies protecting the patient's rights and ensuring that

the patient's healthcare needs are met (Scribante *et al*. 1995:441). The following statement illustrates this aspect of nursing care:

> *'Uhm, subsequent ee, with subsequent cases, I think I'll be in a better position to, to even decide to said [sic]: Doctor, listen here, let us know within [sic] time, if they're is not in here [sic], let us give up, and let the family member know about it, and be able to decide it is okay' (Data* unit: 118).

Being an advocate for the patient and family (data units 118 and 454) includes evaluating situations and recommending solutions to problems. By doing that, participants implemented both theoretical and practical knowledge. Thus, theory-practice integration realised.

4.9.7   Category: Education

From the category 'education', the subcategories 'in-service training', 'practical placement', 'mentors', 'time constraints', and 'teaching methods' emerged. The term 'education' means to lead someone from the unknown to the known. It, therefore, implies giving guidance, providing opportunities and facilities for learning, and giving assistance to students (Mellish *et al.* 1998:6). As a result of guided reflection, participants gained a new perspective on education. This was apparent from statements made by participants during the guided reflection interviews and in written descriptions of the interviews. These statements are displayed in Table 4.26 on pages 133-4.

In-service training refers to the more informal training that occurs in the unit according to the needs of the employer. It is aimed at improving the professional knowledge of staff in the practical setting. (Muller 1996:317.) In-service training emerged as a subcategory of education, as illustrated in the following statement:

> [Translation] *'I can… uhm in-service training is, is a big factor. Uhm people must know the medications. They must be trained in medications and, I would also say, regarding disease conditions to recognise complications that could arise … and to be able to effectively manage a situation' (Data unit: 312).*

TABLE 4.26 CATEGORY: EDUCATION (NEW PERSPECTIVE)				
CATEGORY	**SUB-CATEGORY**	**GUIDED REFLECTION INTERVIEWS**	**NARRATIVE DESCRIPTIONS**	**THEORY/PRACTICE**
EDUCATION	In-service training	Ek kan umm indiensopleiding is 'n, is 'n groot faktor. Umm die mense moet, moet die medikasies ken. Hulle moet opgelei word in hierdie medikasies en, ek sou ook sê, hulle moet ten opsigte van die siektetoestande opgelei word om die komplikasies en die, en die umm umm moontlike komplikasies wat kan intree, te erken en te umm om 'n situasie effektief te kan hanteer (312) Umm, meer indiensopleiding. (537)	And in future students should be well orientated to the type of nursing care to be expected (552)	Theory and practice
	Practical placement	'…wanneer ons die teorie in die klas behandel, dat ons dalk in daai area werk - kan sien, nadat jy dit gedoen het of terwyl jy dit leer, dat jy dit kan sien en … want dit help om dit te bevestig'(293)		Theory and practice
	Mentors	Maar ek bedoel nou, as, as sulks, die ander mense ook; ek voel net dit is nie net die studente wat 'n mentor nodig het nie. Die ander mense het ook iemand nodig wat hulle moet kan oplei en leer. (323)		Theory and practice
	Time constraints	I think, I felt that she'd been training the people, but the people were working short-staffed and then the people… die mense wat onder hulle werk het nie tyd nie. Hulle doen ander goed, en almal jaag, en dis jy jaag teen tyd, en en niemand kry die onderrig nie. (229)		Theory and practice

TABLE 4.26 CATEGORY: EDUCATION (NEW PERSPECTIVE)				
CATEGORY	SUB-CATEGORY	GUIDED REFLECTION INTERVIEWS	NARRATIVE DESCRIPTIONS	THEORY/ PRACTICE
	Teaching method		If it is possible, I would suggest that if one experiences situations which is [sic] difficult and disturbing, there should be somebody available to talk to in this specific manner (559) I think it is a good teaching method. Sometimes you are confronted with problematic situations and you want to talk to somebody else to get an opinion on the management of it. It also guide and direct your thoughts and thinking pattern of similar future situations (564).	Theory and practice

Participants identified the lack of knowledge of nursing staff regarding pharmacological aspects (theory) and the management of complications in a patient (practice). The situation was analysed, the data were synthesised, and possible solutions, including in-service training and the orientation of nurses, were suggested by participants (Data units 312, 537 and 552).   Thus, the participants gained a new perspective on in-service training and orientation. The implication is that in-service training would enhance the integration of theory into practice.

A participant expressed the need for reinforcing theory in the practical situation whilst the theory is taught. The subcategory 'practical placement' illustrates the importance of applying theory to practice. One of the participants stated as follows:

> [Translation] *'When the theory is presented in class, that we perhaps work in that area … (that you) can see, after you did it (subject) or while you are learning, that you can see it and… because it is good to reinforce it (Data unit: 293).*

This statement has logistical implications for the specific hospital where the research was conducted, because critical care students are not supernumerary and are placed in different critical care units on a rotation basis. The hospital tries to allocate students according to their learning needs, but if all students are placed simultaneously in a particular area (correlating practice with theory), neither the requirements of the hospital nor the needs of students will be fulfilled. This issue is discussed in Subsection 2.4.3.1.

Concerning the subcategory 'mentors', participants identified the need for both students and permanent personnel to have mentors, as revealed in this statement:

> [Translation] *'But I mean… as such, the other people also; I feel it is not only the students who need a mentor. The other people also need somebody who can teach them' (Data unit: 323).*

The participant identified the importance of mentoring. She felt all members of staff (including permanent personnel) could be assigned to a mentor who could guide and teach them. The participant realised that mentoring could reinforce theoretical knowledge.

The terms 'mentor' and 'preceptor' are used interchangeably. Through mentoring, career development, education and job satisfaction could be enhanced (Carrey and Campbell (1994:39). As discussed in Subsection 2.4.3.4, a mentoring system is in place, but the reason for its dysfunction in critical care units is unclear.

From the category 'education', the subcategory 'time constraints' emerged. Due to the shortage of personnel, less time is available for teaching and guiding nurses. One of the participants identified this issue as follows:

> *'I think, I felt that she'd been training the people but the people were working short-staffed and then the people...* [Translation] *The people who were their juniors didn't have the time. They do other things, and everybody is in a hurry, and you are running against time and nobody gets trained' (Data unit: 229).*

The implication is that time constraints adversely affect the education and training of personnel, which in turn has a negative influence on theory-practice integration. Various

research studies confirm that less time is spent on training due to staff shortages (Chun-Heung 1997:459; Maselesele 2000:143; Mongwe 2001:108).

One of the participants took the following view of guided reflection as a teaching method:

> *'If it is possible, I would suggest that if one experiences situations which is [sic] difficult and disturbing, there should be somebody available to talk to in this specific manner' (Data unit: 559).*

Most of the participants expressed the view that guided reflection, as a teaching strategy, had great value in guiding and directing nurses concerning management of situations in the clinical care unit. This implies that guided reflection can contribute to theory and practice integration in the critical care environment (Data units: 559, 564). Furthermore, it is apparent that guided reflection enhances self-understanding, self-control, and self-empowerment, to the benefit of the individual and nursing practice. (Palmer *et al*. 1994:87; Smith 1998:893; Teekman 2000:1133.)

Concerning the reflective approach to education, participants believed that guided reflection as a teaching method assisted them in developing or changing thinking patterns. Participants expressed a need for guided reflection sessions, especially to analyse difficult clinical situations (Data units 559, 564).

Various authors describe reflection as a method to enhance lateral and critical thinking. (Durgahee 1996:25; Foster & Greenwood 1998:169,171; Hancock 1998:39; Platzer *et al*. 2000: 689.) It was also found that guided reflection improved the ability of students to ask critical questions, and to argue, and not to take everything as a given (Smith 1998:897).

4.10 SUMMARY OF THE THEME 'NEW PERSPECTIVE'

Within the theme *'new perspective'*, the categories *'doctor/nurse action, outcome, theory-practice integration, knowledge, feelings, communication,* and *education'* were discussed. The analysis of these categories showed that the participants had gained a new perspective on various issues, such as knowledge deficiencies or the development

of personal skills. Several authors confirm that reflection is a transforming process - it effects learning and develops reflective skills in students. (Glaze 2001:645; Graham 1995:31; Mountford & Rogers 1996:1133.)

Concerning the category 'doctor/nurse action', it seemed that participants applied new knowledge to practice and, to some extent, used creativity to solve problems. Suggestions made included the use of protocols (Data unit 303) and the adoption of different approaches to future treatment (Data unit 449). Participants also demonstrated the ability to evaluate the actions of medical personnel and to form their own opinions regarding aspects such as treatment options (Subsection 4.9.1).

Drawing inferences, making deductions and interpretations, and evaluating the subject are part of critical thinking (Klopper 2001:40; Quinn 2000:79). Through reflection, one could analyse the sources of one's interpretations and preconceived ideas to reach autonomy and take responsibility for one's actions. This is, according to Graham (1995:31), the benefit of reflection. In this research, the participants analysed their actions and made deductions.

However, in some instances, as indicated in Subsection 4.9.4, theory was not integrated into practice, as participants demonstrated a lack of subject-specific knowledge (Data units 101, 211, 88-9 and 210). Participants also expressed the need to update knowledge, and acknowledged that they were responsible for own learning (Data units 141, 231 and 230). Some of the participants demonstrated the ability to apply theory to practice, but factors such as the prognosis of a patient prevented them from implementing theory (Data unit: 278).

The category 'feelings' (Subsection 4.9.5) indicated that negative feelings such as feelings of stress, guilt and conflict could be associated with the non-integration of theory and practice. However, through guided reflection, negative feelings were resolved. Guided reflection assisted participants in understanding the reasons for negativity. It brought clarity and a new perspective on nursing problems. In this regard, guided reflection could influence the integration of theory and practice.

The participants described guided reflection as a positive experience (Data units: 544, 549, 561, 554, 566, 555, 577, 558, 565). This finding is supported by various authors,

inter alia Burnard (1995:1171), Graham (1995:31), Mountford and Rogers (1996:1133), Page and Meerabeau (2000:368), as well as Palmer *et al.* (1994:107). Rich and Parker (1995:1055) stated that, in some instances, because of the uncovering of emotions such as anger, frustration and grief, reflection could be a painful experience. Sharing inner thoughts with someone could be distressing. This seemed not to be the case in this research, possibly due to the relationship of trust that existed between the researcher and the participants. In fact, the participants expressed the desire to continue with guided reflection sessions (Data units: 559, 564).

Participants demonstrated the ability to take initiative by suggesting possible solutions to problems. These solutions included a protocol for treatment in difficult situations, taking responsibility for own learning, improving communication, acting as an advocate for a patient, promoting in-service training, placement according to curriculum requirements, and mentoring for both students and permanent personnel. Implementation of these initiatives could enhance theory-practice integration.

With reference to the category 'theory-practice integration', it seemed that participants were divided on whether theory did correlate with practice (Subsection 4.7.3).

It seemed that guided reflection could contribute to theory-practice integration. As a result of guided reflection, participants identified knowledge deficiencies, suggested possible solutions to clinical problems, and demonstrated the intention of taking responsibility for own learning. The core issue of learning from experience is not to repeat the same experience, but to learn from experience in such a way that cognitive and affective changes may develop (Boyd & Fayles 1983:100). In this study, guided reflection apparently had this affect. By reflecting on traumatic experiences, participants demonstrated the ability to develop their critical thinking and reasoning skills. The guided reflection interview also effected a change in the negative feelings experienced by participants, indicating not only cognitive but also affective changes in participants. The researcher, therefore, holds the opinion that guided reflection could complement other teaching strategies in enhancing the ability of students to integrate theory into practice.

4.11 THE RESEARCHER'S EXPERIENCE OF THE FACILITATION OF GUIDED REFLECTION

The researcher's ability to facilitate guided reflection developed with practice. In the beginning, the researcher was anxious and tried to answer questions for the participants. However, the ability to assist the participants in reflecting on incidents improved. Thus, the researcher became more acquainted with the method of guided reflection.

After the interviews, the researcher had certain perceptions about the content of the data obtained during the interviews. However, when the transcriptions were analysed, it became clear that the first impression did not necessarily correlate with the analysis of the data. At first, the researcher did not know how to approach the considerable amount of data, but the more the researcher read and listened, the more the concepts became clear. Certain tendencies were identified. Not all data were explicit; the researcher had to read carefully to interpret indirect or implicit statements.

The researcher conducted a preliminary literature review regarding reflection, and discovered Johns's framework on guided reflection, which is discussed in Chapter 2. The researcher learned to allow the participants to express themselves in terms of their frames of reference. The researcher constantly reflected on the total research process, which enabled her to reach a comprehensive perspective. Most of the literature supported the fact that educators themselves should reflect in order to guide students (Powell 1989:831).

The amount of emotional responses shared by the participants was overwhelming (Subsection 4.7.5), and gave the researcher some insight into the affective component of nursing. What is alarming is that little or no effort is made to assist students and trained personnel to analyse situations that evoke emotional responses.

Through guided reflection, thought processes are developed. Incidents are viewed in a different light, because uncomfortable and negative feelings are released. It appeared that guided reflection could be used as a teaching strategy by the clinical facilitator to facilitate the integration of theory into practice.

4.12   CONCLUSION

In this chapter, the data were analysed and interpreted, and a literature control was done.   In Chapter 5, the conclusions and recommendations of the study will be discussed.