

**PREPARATION OF NURSING STUDENTS  
FOR OPERATING ROOM EXPOSURE**

**by  
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the requirements for the degree  
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***In the  
DIVISION HEALTH SCIENCES EDUCATION  
FACULTY OF HEALTH SCIENCES  
UNIVERSITY OF THE FREE STATE  
BLOEMFONTEIN***

**Date: 30 January 2017**

**STUDY LEADER  
Dr M.J. Labuschagne**

## **DECLARATION**

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**I, Shimoné Chantel Breedt, hereby declare that the content of this mini-dissertation that I herewith submit to the University of the Free State is the result of my own independent work and that I have never submitted it at any other institution for the purpose of obtaining a qualification. I declare that this mini-dissertation has been submitted for the first time at this institution towards obtaining a Master's degree in Health Professions Education.**

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## DEDICATION

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*I want to dedicate this to  
Dawie-my husband, my best friend, my stability,  
who has been my constant motivator and supporter.  
Without his love and sacrifices this would not have been possible,  
to Dawné, Chanté and Leoné,  
my three daughters  
whose love and support helped to keep my focus on my goals.*

*"Whatever you do, you need courage.  
Whatever course you decide upon,  
there is always someone to tell you that you are wrong.  
There are always difficulties arising  
that tempt you to believe your critics are right.  
To map out a course of action and follow it to an end  
requires some of the same courage that a soldier needs.  
Peace has its victories,  
but it takes brave men and women to win them."*

**— Ralph Waldo Emerson**

\*\*\*\*\*

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*"Cultivate the habit of being grateful for every good thing that comes to you,  
and to give thanks continuously.*

*And because all things have contributed to your advancement,  
you should include all things in your gratitude."*

**— Ralph Waldo Emerson**

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## **LIST OF ACRONYMS**

<b>B.Soc.Sc (nursing):</b>	<b>Baccalaureate of Science in Nursing students of the School of Nursing, UFS</b>
<b>CSUM:</b>	<b>Clinical Simulation and Skills Unit at the School of Medicine</b>
<b>DENOSA:</b>	<b>Democratic Nursing Organization of South Africa</b>
<b>DoH</b>	<b>Department of Health</b>
<b>FoHS:</b>	<b>Faculty of Health Sciences</b>
<b>NGT:</b>	<b>Nominal Group Technique</b>
<b>NQF</b>	<b>National Qualifications Framework</b>
<b>ODP:</b>	<b>Operating Department Practitioners</b>
<b>OR:</b>	<b>Operating Room</b>
<b>RN:</b>	<b>Registered Nurse</b>
<b>SANC:</b>	<b>South African Nursing Council</b>
<b>SoM:</b>	<b>School of Medicine</b>
<b>SoN:</b>	<b>School of Nursing</b>
<b>UFS:</b>	<b>University of the Free State</b>
<b>USA</b>	<b>United States of America</b>
<b>WHO:</b>	<b>World Health Organization</b>

## **SELECTED DEFINITIONS AND TERMS**

For the purpose of this study the following definitions will be applicable unless otherwise indicated.

### **Preparation**

Preparation of the nursing student refers to the steps taken to increase or strengthen the operating room clinical knowledge and steps, as to ensure that the nursing students are able to contribute to this clinical placement (Researcher).

### **Baccalaureate in Science of Nursing**

An academic nursing degree awarded on satisfactory completion of a 4-year course of study in nursing at a university.

### **Student Nurse (Nursing Student)**

A student nurse in the context of this study refers to the B.Soc.Sc (Nursing) Student and may also be referred to as a student.

### **Registered Nurse**

Is a person who is registered with the South African Nursing Council as a nurse in terms of the Nursing Act (SANC:1978)

### **Operating Room (OR)**

A room(s) in a hospital which contains an operating table or similar device, generally accommodating on patient at a time, during which, under the direct supervision of a medical or dental practitioner, the patient undergoes an operative procedure for the prevention, cure, relief or diagnosis of disease, or in pregnancy, childbirth (The free dictionary 2003).

### **Operating Department Practitioners (ODP's)**

Operating Department Practitioners (ODPs), also called Operating Department Assistants (ODAs), are mostly found in the United Kingdom, Ireland and Scotland. They are considered as being members of the surgical team, working in the operating theatres. They provide care to the pre-, intra- and post-operative patient, but what they do on a day-to-day basis varies widely from hospital to hospital.

Their work includes the setting up and maintenance of an array of complex anaesthetic equipment, as well as assisting the anaesthetist (in a role not entirely dissimilar to that of the theatre nurse assisting the surgeon). Recently an increasing number of ODPs are being employed in the operating theatre itself, their work is limited to a 'technician' role (for instance setting up equipment) (Timmons & Tanner 2004:online).

### **Perioperative Nursing (OR/Operating Room Nursing)**

Nursing care provided to surgery patients before and during the procedure and in the recovery room. Also, referred to as a scrub nurse that indicates the registered nurse that is working within the sterile surgical field during the procedure (Anon 2010: online)

### **Nominal Group Technique**

This is a structured small group discussion with the aim of reaching consensus regarding a topic (Botma, Greeff, Maulaudzi & Wright 2010:251).

### **'Round robin' feedback**

This is where all the participants share one idea one person at a time until all ideas have been shared, with the participation of all participants (Botma *et al.* 2010:251).

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## SUMMARY

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**Key-terms:** Operating room (OR), preparation of the student nurse, preparation programme

The South African Nursing Council (SANC) requires that all nursing students rotate and work in the operating room. Most of these students have never been inside an operating room and feel unsure of what is expected of them due to the fact that they are not proficient in most of the skills that will assist them in their participation within this set-up. These students are unable to participate and learn on their first rotation in the operating room, leaving the students often feeling in the way and with a negativity regarding operation room nursing. Implemented preparation programmes in the United States of America and the United Kingdom, has proven that improved preparation programmes are successful.

A study was conducted to establish what should be in such a preparation programme, as well as what teaching strategies would be most beneficial. The study was done in the field of Health Professions Education and lies in the domain of academic programme development, as the view was to improve the student nurse's preparation for OR rotation. The study was interdisciplinary, as it reaches across Health Professions Education and Nursing.

For this study, a descriptive qualitative inquiry was used by means of two nominal group sessions for data collection and the assimilation of a literature review on the topic. One nominal group was undertaken with third-year nursing students that had just completed their placement in the operating room and the other group comprised of personnel working in the operating room where the students were placed. The data were written verbatim on a flip board and categories were identified by the researcher. These categories were compared and discussed with regard to the findings and the recommendations of the literature review in mind.

The categories identified were:

- Documentation
- Swab and instrument control
- Maintaining of sterility
- Equipment
- Orientation
- Theatre preparation.

Preferred teaching strategies that were identified:

- Formal lecture with written test
- Practical group sessions
- Pre-placements preparation
- Simulation and demonstration
- Visual learning.

All of the participants agreed that the current preparation/orientation programme do not adequately prepare the students for optimal participation or learning during their placement and that a programme that ensured that the students are able to perform certain tasks from the first day of placement would be equally beneficial for personnel and students. This could improve learning of the students while improving their overall experience of the operating room.

This study provides recommendations on the content for a preparation programme and the results may be used to develop an improved preparation programme.

## OPSOMMING

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**Sleuteltermes:** Operasiesaal, voorbereiding van student verpleegkundiges, voorbereidingsprogram

Die Suid-Afrikaanse Raad op Verpleging vereis dat alle verpleegkunde studente roteer en werk in the operasiesaal. Die meeste van hierdie studente het nog nooit die binnekant van enige operasie saal gesien nie en voel onseker van wat van hulle verwag word aangesien hulle geen vaardighede het wat deelname in die operasiesaal kan bevorder nie. Die onvermoë om deel te neem en aktief te leer tydens hulle eerste rotasie, het tot gevolg dat die studente meestal in die pad voel en los hulle met 'n negatiewe houding ten opsigte van operasiesaalverpleging. Voorbereidingsprogramme wat geïmplementeer word in die Verenigde State van Amerika en die Verenigde Koninkryk, het bewys dat die voorbereidingsprogramme suksesvol geïmplementeer is.

'n Diepte studie is uitgevoer om vas te stel wat behoort in so 'n voorbereidings program te wees, so wel as watter leer strategieë die mees voordeligste sal wees. Die studie was uitgevoer in die veld van Gesondheidsorg onderrig en lê in die domein van akademiese program ontwikkeling, aangesien die studie gedoen word met die oog op die verbetering van die student verpleegkundige se voorbereiding vir operasie saal rotasie. Die studie is interdisiplinêr, aangesien dit gesondheidsorg onderrig en verpleegkunde kruis.

Vir die studie was 'n beskrywende kwalitatiewe ondersoek gebruik deur data in te samel deur middel van twee nominale groepe en die samestelling van 'n literatuuroorsig oor die onderwerp. Een nominale groep is gedoen met derdejaar student verpleegkundiges wat hulle plasing in die operasie saal voltooi het en die ander groep was die personeel wat in die operasie saal werk waar die student verpleegkundiges geplaas was. Die data is verbatim neergeskryf op 'n blaaibord en kategorieë is geïdentifiseer deur die navorser. Die kategorieë is vergelyk en bespreek met betrekking tot die bevindinge en voorstelle van die literatuuroorsig.

Geïdentifiseerde kategorieë was:

- Dokumentasie
- Depper en instrumentasie kontrole
- Handhawing van steriliteit
- Toerusting
- Oriëntasie
- Teater voorbereiding.

Voorkeur leer strategieë wat geïdentifiseer was:

- Formele lesings met geskrewe toetse
- Praktiese groep sessies
- Voor plasing voorgebereiding
- Simulasie en demonstrasie
- Visuele lering.

Al die deelnemers stem saam dat die huidige voorbereidings-/oriëntasieprogram nie die studente

voldoende voorberei vir optimale deelname of leer tydens hulle plasing, en dat 'n program wat verseker dat die student sekere take kan doen, vanaf die eerste dag van plasing, voordelig sal wees vir beide die personeel en die studente. Dit sal ook die studente se leer tydens plasing verhoog sowel as hulle algehele belewenis van die operasiesaal.

Die studies verskaf aanbevelings aangaande die inhoud van 'n voorbereidingsprogram en die reslutate kan gebruik word vir die ontwikkeling van 'n verbeterede voorbereidingsprogram.

# **PREPARATION OF NURSING STUDENTS FOR OPERATING ROOM EXPOSURE**

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## **CHAPTER 1**

### **ORIENTATION TO THE STUDY**

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#### **1.1 INTRODUCTION**

In this research project, a study was done by the researcher with a view to determine if an improved preparation programme for the nursing students at the University of the Free State (UFS), for their first rotation in the operating room (OR).

In South-Africa, it is mandatory for all undergraduate nursing students to rotate in the OR as part of their clinical requirements. Meyer (2014:2) highlights some of the challenges students face in the private sector's operating rooms. The author mentions that regardless of the potential learning opportunities that are available, it was found that the students' view of this clinical area was mostly perceived as negative (Meyer 2014:2).

Lyon (2003:online) states that the OR is a demanding environment to work in, especially for emotionally unprepared students. This could be attributed to the fact that it is a highly pressured, intense and isolated working environment, functioning in a way that is in most of the cases not familiar to the student.

Meyer (2014:4) found that the operating room aroused feelings of anxiety in students as it is a 'highly stressful environment', which the students ascribed to their lack of preparation prior to being placed in the operating room. Therefore, it is vital that educators make every effort to improve the students' learning experience while rotating in the operating room, to ensure that they leave this clinical area having had a positive clinical experience (Emanuel & Pryce-Miller 2013:19).

This study could serve as a directive for the School of Nursing to incorporate more operating room theory and practical sessions into the current curriculum, to enhance the student nurse's preparation for their first rotation in the OR.

The aim of the first chapter is to familiarise the reader with the problem identified and researched. This is attained by presenting the reader with background to the research problem, followed by the problem statement, research questions, the overall goal, aim and objectives of the study.

Additionally, a demarcation of the study, highlighting the significance and value of the study will be presented. Thereafter, a short overview of the research design and methods of investigation are presented and the chapter is concluded by a layout of the subsequent chapters and a brief, summative conclusion.

## **1.2 BACKGROUND TO THE STUDY**

### **1.2.1 General shortage in Registered Nurses**

The global shortage of qualified registered nurses in general exacerbates the shortage of nurses in specialised units such as the OR (Bailey & Hawker 2004: online; Ball, Doyle and Oocumma 2015: online; Bowden 2008: online; George, Quinlan, Reardon & Aguilera 2012: online). This is a great concern for all who are passionate about nursing, but even more so for those who are passionate about OR nursing.

As a qualified registered OR nurse, the statistics released by the SANC (2014:online) causes great concern because it shows a decreased production of clinically specialised nurses. OR nursing is one of the specialties that are affected negatively by this problem (SANC 2014:online). This SANC report indicates that DENOSA stated that there was a decline in numbers of student registering for the four-year comprehensive programme, resulting in fewer qualified registered nurses that add to the number of registered OR nurses, or any other nursing speciality.

### **1.2.2 Postgraduates return to OR**

The researcher, who is a qualified registered nurse for 17 years, with 10 years' experience as a qualified operating room nurse, observed several students with the potential to become proficient registered OR nurses, but who have no interest in returning after their post-basic qualification to work in the OR.

Many student nurses, before being placed in the OR, find operating room nursing an attractive profession, but this does not remain true for many newly graduated nurses. It is found that there is a definite link between the level of exposure that the student nurse has to this specialty's theory and practice during their initial training and the unpopularity of this career path of OR nursing. Numerous student nurses rotating in the OR feel and are most of the time "in the way", as they do not know what was expected of them or how to do anything; what makes this fact even worse is that the OR can be a demanding, high-paced and high-stress working environment (Meyer 2014:5). Brinkman's (2013: online) investigation showed that even experienced RNs with limited OR exposure experienced the OR as a hostile and overwhelming environment therefore, it could be expected that students find the OR even more overwhelming.

Ball *et al.* (2015:116), point out that the OR can be placed at the top of the list of places in hospital that is outside the student nurses' frame of reference. Meyer (2014:4) acknowledges that students have indicated that the high pace and time constraints made their experience even more stressful. By understanding or trying to understand the student nurse's experiences during rotation in the OR, educators may provide the tools to potentially prepare these student nurses for their first OR rotation and that would hopefully make it a positive experience.

### **1.3 PROBLEM STATEMENT AND RESEARCH QUESTIONS**

The problem that was addressed is that the student nurses rotating for the first time in the OR is not adequately prepared for their exposure to this discipline, resulting in the student not knowing what is expected of them, feeling out of place and 'useless'. A fact that highlights the need for an improved preparatory programme, is the shortage of OR personnel as a result of students not interested in returning to the OR post-graduation. This problem often results from the expectation, on the part of the OR personnel, that the student nurse has to function as a part of the OR team, usually within a day or two of arriving in the OR (Meyer 2014:24; Ball *et al.* 2015:136).

In most cases, the student nurse is orientated in the department and then immediately placed in the different OR's or in the recovery room. Thereafter, it is expected from these student nurses to be able to function at the same level as the permanent OR- or recovery room nurses. Furthermore, the students' expectations or preconceived ideas, formulated by stories (at times horror stories) regarding the OR, heard from qualified nurses or student nurses, may also have

an effect on how students' experience the OR and/or how they function in it (Hattingh 2015:Personal Communication, Van der Merwe 2005:4-5).

Limited study concerning the gap in the preparation programme for the student nurse prior to their rotation in the OR could be traced within the South-African context. This conclusion was reached after searching various databases, such as the electronic library of UFS, Google scholar, Medical Teacher as well as various other medical and nursing journals. After personal communication with P.L. van der Merwe, whose Magister Degree focussed on the topic: "Die Studentverpleegkundige se Belevenis van die Operasiesaal" (translation: "The Student Nurse's experiences of the Operating Room"), it was found in her study that she made recommendations that link her research with this study. With this study, the experiences of the student will be taken into consideration, but the focus of this study is on an improved preparation programme for the student nurse prior to their clinical placement in the OR and what components should be included in such a programme.

Van der Merwe's (2005:3&89) study indicates that the student nurses are placed in the OR with the goal of learning some primary skills in the perioperative context and that they do receive some theoretical background with regards to the OR prior to placement. She indicates that due to the constantly changing health care requirements, it is expected of the student nurse to master certain technical skills and that the mastering of these skills must be planned by the training school in collaboration with the clinical training facilities (Van der Merwe 2005:143). However, van der Merwe (2005:145-146) found that the preparation of the student nurse is inadequate and recommends that students be presented with a guide book and/or audiovisual technology that explains the clinical skills needed in the OR and that they practice and master these skills in simulation before placement in the OR.

In conclusion, there was no extant scientific study concerning the gap in the preparation programme for the student nurse prior to their rotation in the OR within the South-African context.

In order to address the problem stated, the following research questions were formulated:

- What should an operating room preparation programme consist of?
- What is the most optimal way to present the programme?



## **1.4 OVERALL GOAL, AIM AND OBJECTIVES OF THE STUDY**

The goal, aim and objectives of the study are as follows:

### **1.4.1 Overall goal of the study**

The overall goal of the study is to determine how the OR preparation programme can be improved to better prepare the student nurse for the OR placement, as well as determine the best modes of delivery of such a programme.

### **1.4.2 Aim of the study**

The threefold aim of the study is to determine what should be included in a OR preparation program, what the best modes of delivery of such a programme could be and if an improved preparation programme would improve the learning and perception of the nursing student regarding the OR. At the same time, this study will attempt to address some of the recommendations made by van der Merwe (2005:143,145-147), such as mastering of clinical skills needed in the OR in simulation before placement.

### **1.4.3 Objectives of the study**

To achieve the aim, the following objectives were pursued:

- To determine from the nursing students as well as the personnel of the OR, where the nursing students were placed, what should be included in an OR preparation programme. **(Nominal Group Technique)**
- To determine from the nursing students as well as the personnel of the OR, where the nursing students were placed, what modes of delivery would be the most effective for such an OR preparation programme. **(Nominal Group Technique).**

## **1.5 DEMARCATION OF THE FIELD AND SCOPE OF THE STUDY**

This study was conducted in the field of Health Professions Education (HPE) and lies in the domain of academic programme development, with the view to explore the efficacy of the student nurse's preparation for OR rotation for the improvement of the value thereof. The study is interdisciplinary because it reached across Health Professions Education and Nursing education.

The findings of the study could be applied in the B.Soc.Sc (Nursing) Student's programme prior to clinical placement in the OR at the School of Nursing at UFS with the goal of enhancing their preparation prior to their first clinical placement in the OR.

Registered nurses (RN's), Auxiliary Nurses (AN's) working in the OR where the student nurses are placed for clinical rotation as well as nursing students that have completed their placement in the OR were recruited for the nominal group discussions. In the discussion, the participants were given the opportunity to discuss whether the students were adequately prepared for their placement. The opportunity was presented to them to make suggestions on what should be in a preparatory programme, and what modes of delivery in their opinion would be the most optimal.

This study was conducted from February 2015 to December 2016, with the empirical research phase from April 2016 to May 2016.

## **1.6 SIGNIFICANCE AND VALUE OF THE STUDY**

The value of this research study could be to ensure that students enrolled in the Baccalaureate of Science in Nursing Programme in the SoN, Faculty of Health Sciences, UFS could be better equipped with sufficient knowledge and skills to be competent partakers in the practical rotation in the OR.

It is imperative that student nurses are prepared in a way that would make them productive members of the surgical team for them to be able to start learning from the onset, to build their practical knowledge. The area of preparation of student nurses for their first rotation in OR, in the South-African context is under-explored and the findings of this study could contribute towards the improvement and/or development of a student nurses' preparation

programme for OR rotation. If the students' fears and uncertainties could be adequately addressed, they could be kept excited about working in the OR and it could even improve the recruitability of the postgraduate student nurses to operation room nursing.

## **1.7 RESEARCH DESIGN OF THE STUDY AND METHODS OF INVESTIGATION**

Research design at times are found to be referred to as research strategy or strategies of inquiry (Botma, Greeff, Maulaudizi & Wright 2010:189). Methods or methodology as referred to by Lues and Lategan (2006:11) are the actions, techniques and instruments that will be used by the researcher to address the research problems under investigation.

### **1.7.1 Research design of the study**

The qualitative research design applied in this study is described in more detail in Chapter 3. The research design used for this study was a qualitative research design, because the focus was on the feelings, experiences and expectations of the participants. For this study, a descriptive qualitative inquiry was used, as the participants for this study all shared the same unique experiences during the training for their profession and this is what was investigated.

### **1.7.2 Methods of investigation**

The methods that were used and which formed the basis of the study consisted of a literature review and nominal group technique sessions.

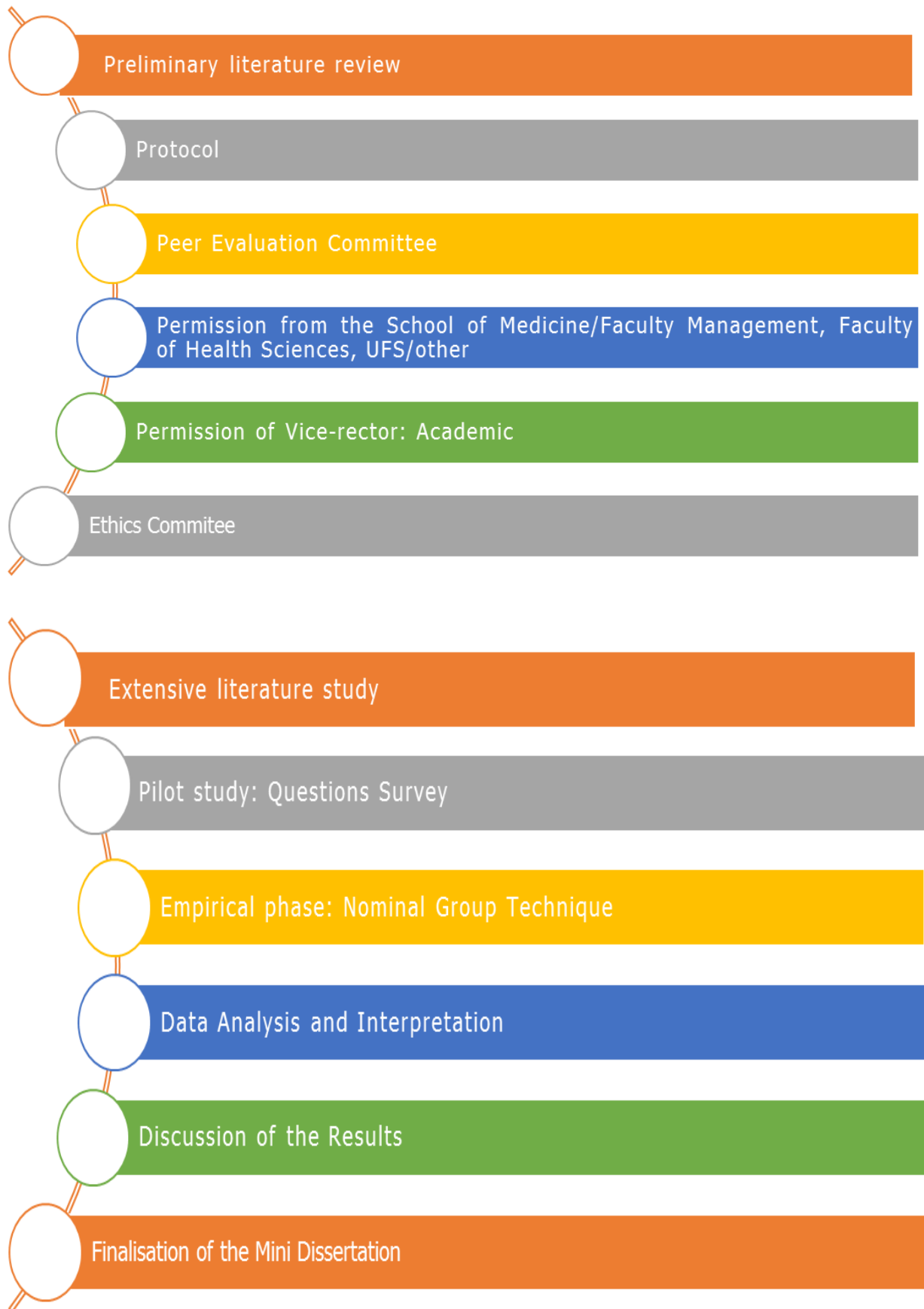
The research included a literature review that focusses on nursing shortages as well as perioperative nursing as a career, with the education and training that a career in nursing requires. Focus was placed on the shortage of registered perioperative nurses in light of the general, international and South African nursing shortages. Literature was reviewed on the operating room as a learning environment and if an improved preparation programme would improve not only the students' experience in the OR, but also their learning.

The literature review was followed up with nominal group technique sessions that was held with two groups; the groups consisted of nursing student that had rotated in the OR as well

as RN's and AN's currently working in the OR where the nursing students are clinical placed. The nominal group technique sessions were used to determine what the student nurses' experience during their first rotation in the OR were, if the preparation programme of the student nurses were adequate in relation to the demands of the OR environment and what the students perceived needed to improve in terms of the preparation programme that could result in the improvement of the students' OR learning experience.

The results from the literature review and the NGT sessions were used to determine if there is a need for an improved preparation programme for nursing student's pre-clinical placement.

A detailed description on the population, sampling methods, data collection and techniques, data analysis and reporting and ethical consideration is given in Chapter 3. A schematic overview of the study is given in Figure 1.1 on the following page.



**FIGURE 1.1: SCHEMATIC OVERVIEW OF THE MINI-DISSERTATION**

## 1.8 IMPLEMENTATION OF THE FINDINGS

This study was undertaken to create awareness of the need for the nursing student's to be better prepared to be a productive member of the surgical team and to increase the students' learning during their placement. Additionally, it could improve the student nurse's experience and attitude towards the discipline, which may result in more students being interested in a post-basic permanent placement in the OR and potentially to specialise in operating room technique.

## 1.9 ARRANGEMENT OF THE REPORT

The study report is structured as follows:

In this chapter, Chapter 1, ***Orientation to the Study***, the background to the study was provided and the problem, the goals, aim and objectives were stated. The overall purpose, aim and objectives were provided and the research design and methodology used were briefly discussed to give an overview of what the content of this report. It further demarcated the field of the study, and the importance of the investigation was emphasised.

In Chapter 2, ***Improved preparation enhance operating room experiences of nursing students***. Attention will be given to nursing and operating room nursing as a career and the shortages experienced. The attitudes and experiences towards OR nursing will be explored in the literature. This chapter will serve as the theoretical framework for the study.

In Chapter 3, ***Research design and research technique***, the research design and the methods applied will be described in detail. The data collection methods and data analysis process will be discussed.

In Chapter 4, ***Findings of the nominal group discussions***, will entail a report on the results obtained from the nominal groups and the findings will be discussed.

In Chapter 5, ***Discussion of the categories and statements of the participants regarding the preparation of the student nurses prior to first placement***, will be discussed on the basis of the literature and the research results. The chapter will suggest ways to enhance the preparation and the modes of delivery of a preparation programme will be elucidated.

In Chapter 6, ***Conclusions, recommendations and limitations of the study***, an overview of the study, conclusion, recommendations and the limitations of the study will be provided.

## **1.10 CONCLUSION**

Chapter 1 provided the background and introduction to the research undertaken regarding the preparation of nursing students for operating room exposure

In the next chapter, Chapter 2, ***Improved preparation enhance operating room experiences of nursing students***, these themes will be explored and discussed. Attention will be given to nursing and operating room nursing as a career and the shortages experienced as well as the attitudes of nurses towards OR nursing. This chapter will serve as the theoretical framework for the study.

## CHAPTER 2

### IMPROVED PREPARATION ENHANCE OPERATING ROOM EXPERIENCES OF NURSING STUDENTS

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*"Research is to see what everybody else has seen,  
and to think what nobody else has thought"*

**Albert Szent-Gyorgyi, Hungarian Biochemist 1937 Nobel prize winner of Medicine**

#### 2.1 INTRODUCTION

This chapter will briefly give an overview of the role that preparation for operating room (OR) exposure plays in the training of the undergraduate nursing students. Literature was investigated in order to develop the theoretical framework to support the empirical part of this study. The compilation of the literature spanned the length of the study, to prevent the researcher from having pre-conceived preferences for the findings of the study.

#### 2.2 BACKGROUND REGARDING THE SHORTAGE OF OPERATING ROOM NURSES

Nursing education is the training of student nurses, to deliver a service to the community in a specific and safe manner with the mission to ensure that nursing education programmes train nurses to practise safely within the legal and ethical framework of their practice (SANC 2005:1).

The history of perioperative nursing training was very difficult to establish, as most academic nursing history ignores perioperative nursing altogether (Timmons & Tanner 2004:online). This may lead to the question, has this continued ignoring of this specialised discipline of nursing, to some degree over the years, not contributed to this field still being 'ignored' by nurses as a career path?



For a student nurse to be able to learn how to apply the knowledge acquired in the classroom it is essential and also mandated by SANC that this student be placed in a clinical setting for the student to develop his/her clinical competence (SANC s.a.:online). This type of clinical placement will be worthwhile if the students' placement is supported by some classroom acquired knowledge of the field of placement.

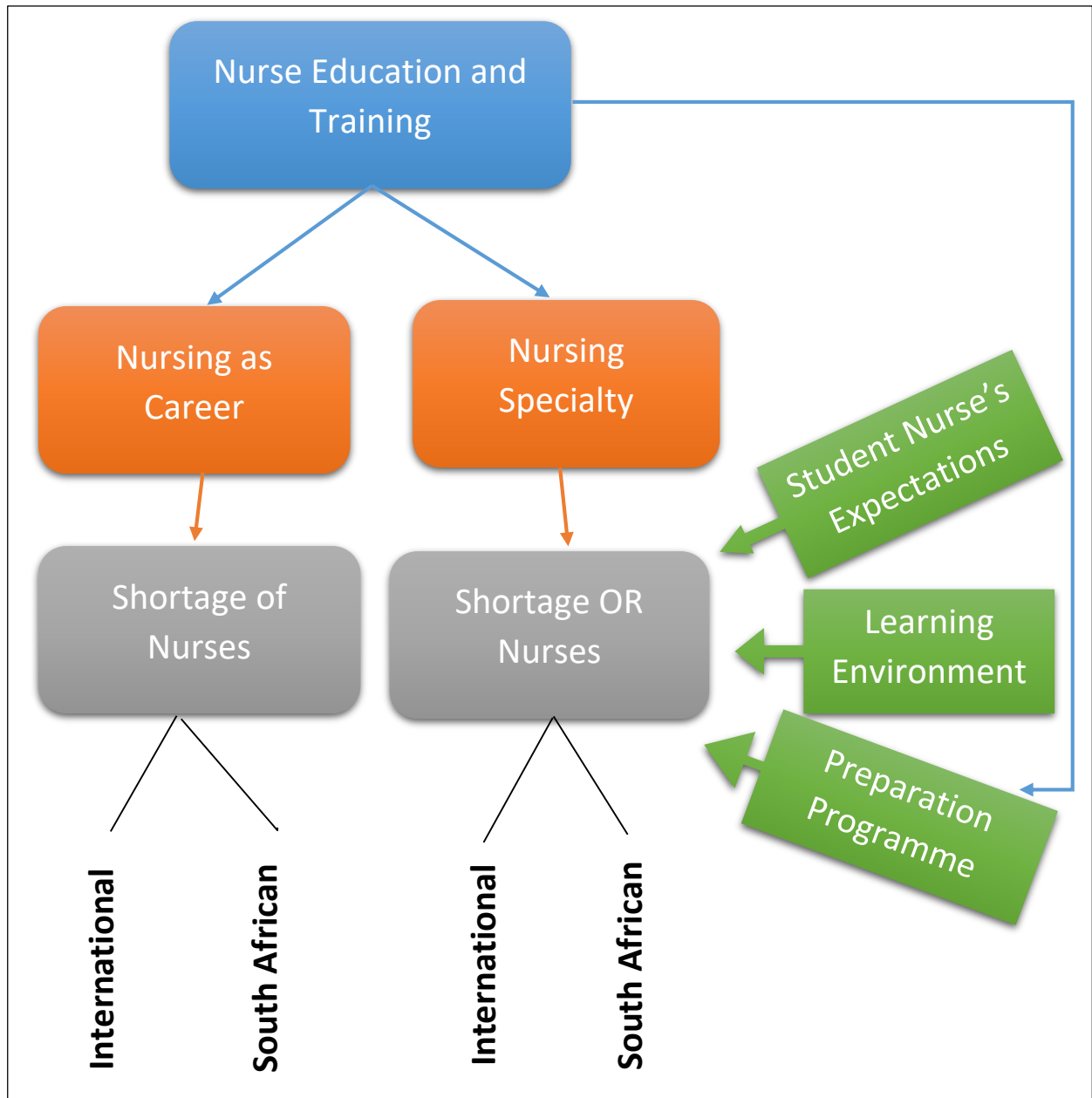
This currently poses a problem within the South-African context, where students are being placed in the OR with very limited theoretical teaching or practical training, in preparation for their OR placement (Van der Merwe 2005:3,4). The student nurse's clinical placement is even further compromised by the effect of the current global as well as local shortage of qualified registered nurses (Bailey & Hawker 2004:online).

The result of this shortage of personnel is that the personnel of the OR is feeling the pressure of being overworked and are constantly on the verge of burn out (Ehlers 2003:67). This places more stress on the student nurse that must cope during rotation in the OR, which is already a high-paced, high-pressured and unfamiliar environment with overworked, nearly burned out personnel. The nurses working in the OR not only have to function in a stressful environment, but need to be educated, skilled and alert because the OR nurse is always being held accountable for all that is being done (Prince 2007:i).

Regarding OR nursing literature, it was found that there are very few sources that discuss the student within the OR as clinical learning environment within the South African context (Meyer 2014:1). The limited South African sources make it difficult to make conclusions in the local context, but it seems that other countries - such as the United Kingdom - similarly has limited information on the specialisation field (Timmons *et al.* 2004:3).

In this literature review the researcher will attempt to gather and assess the student nurses' perceptions of the OR as a clinical learning environment in a South African context. In addition, looking at the learning challenges experienced by students placed in the OR and what can be done to improve their experience in the exciting world of the operating room.

Figure 2.1 provides a schematic overview of the different aspects that will be discussed and that will constitute the theoretical framework for the study.



**FIGURE 2.1: SCHEMATIC OVERVIEW OF THE DIFFERENT ASPECTS OF THE STUDY COMPILED BY BREEDT (2016)**

### 2.3 NURSING AS A CAREER

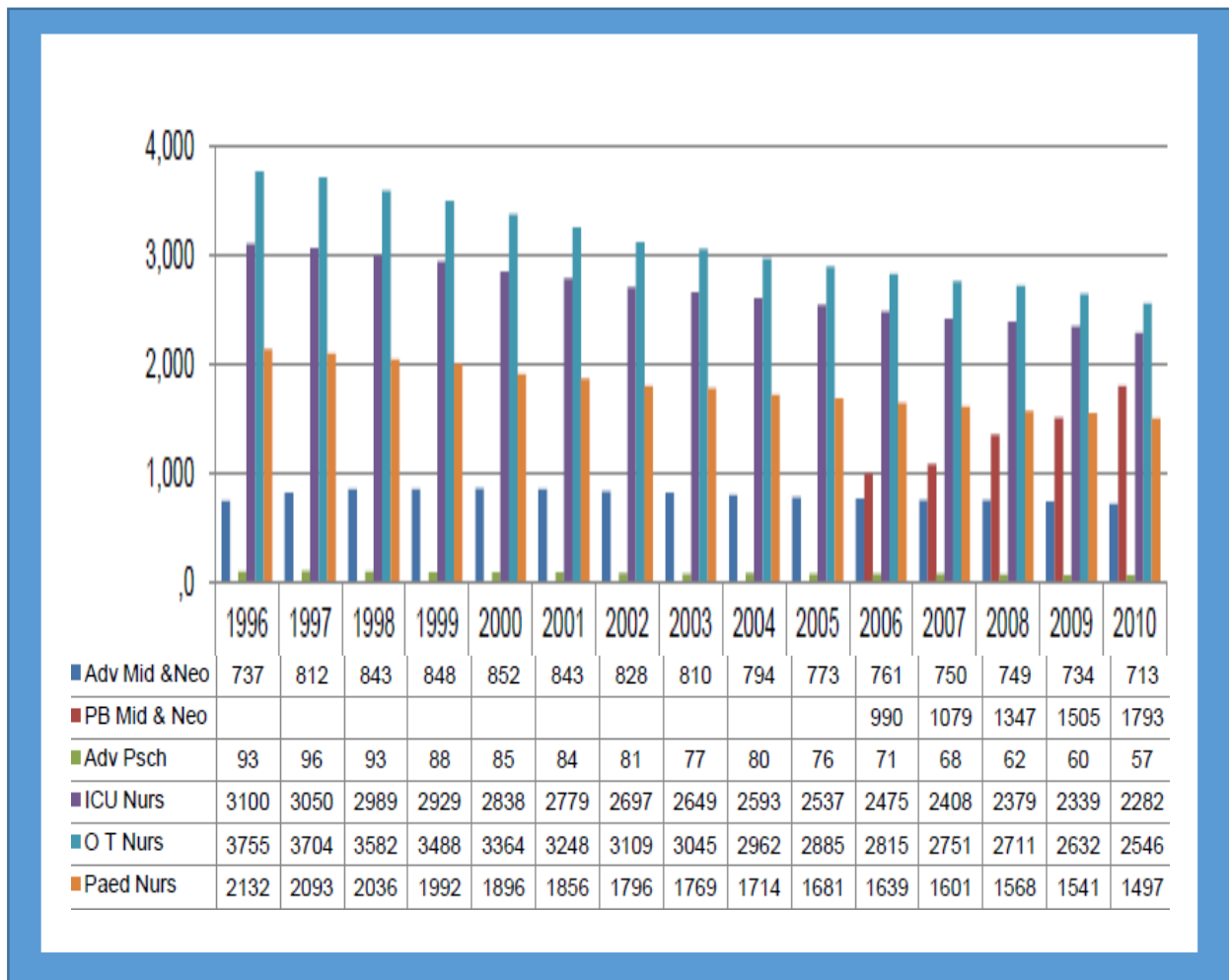
In a paper by Neilson and Lauder (2008:688) it is stated that when enquiring from pupils at school what career they want to pursue after completion of school, nursing is not mentioned in the top of the list of career choices. This can be attributed to the general feeling that nursing as one of the careers in the field of health professions has a lower status if measured against other health professions such as a medical doctor. Nursing as a career seems to be an undesirable career selection for the academically successful pupil, who feels that the work of a doctor is more superior and academic (Neilson & Lauder 2008:688). Neilson and Jones (2012: abstract) add that school pupils felt that nursing is the career choice of females and for those who have below average academic capability.

O'Brien, Mooney and Glacken's (2008:1843) report on the perceptions of nursing students on their chosen career path preceding their first clinical experience. The authors report that the student nurses recognised that the media has a definite influence on their perceptions as well as the public's perception of nursing. Students found it upsetting that there were so many negative connotations linked to their choice of career (O'Brien *et al.* 2008:1843).

The South African healthcare system is mainly nurse-based and it is necessary for nurses to be competent and experienced, as these qualities are needed to meet and manage this country's disease-burdened healthcare needs (RSA, Department of Health's Strategic Plan for Nurse Education 2012/13–2016/17:9).

Ehlers, Oosthuizen, Bezuidenhout, Monareng and Jooste (2003:25) reported that a contributing factor, as stated by Democratic Nurses Organisation of South Africa (DENOSA), is the decline in the number of students following and completing the four-year comprehensive programme to obtain the qualification Bachelor's Degree in Nursing and Midwifery, resulting in fewer registered nurses.

SANC (2014:online) has released statistics that show that clinical specialisations, such as Operating Theatre Nursing Science, showed a decreased in numbers of students qualifying (Figure 2.2). This could be the result of smaller numbers of nurses qualifying, but other factors could also play a role here.



**FIGURE 2.2: NUMBER OF OPERATING ROOM NURSING SPECIALIST (INDICATED IN BLUE) DECLINING FROM 1996-2010 (DOH:2012/13–2016/17)**

## 2.4 NURSING EDUCATION AND TRAINING IN SOUTH AFRICA

SANC (2009:online) has amended their policies regarding the recognised nursing qualification that is for inclusion in the National Qualifications Framework (NQF). The new nursing qualifications are the following (SANC 2009:online):

- Bachelor's Degree in Nursing and Midwifery
- Diploma in Nursing: Personnel Nurse
- Higher Certificate: Auxiliary Nursing
- Advanced Diploma in Midwifery.

In South Africa, it is required from professional nurses to have a minimum qualification of a Bachelor's Degree in Nursing and Midwifery, resulting in registration as a professional nurse and this qualification is situated at NQF level 8. Professional RN's can pursue any number or only one of the following Master's Certificate Electives (SANC 2009):

1. Community Health Nursing
2. Critical Care Nursing
3. Critical Care Nursing (adult)
4. Emergency Nursing
5. Family Practice
6. Midwifery and Neonatal Nursing
7. Nephrology Nursing
8. Nursing and Health Services Management
9. Nursing Education
10. Occupational Health Nursing
11. Operating Theatre Nursing
12. Ophthalmic Nursing
13. Orthopaedic Nursing
14. Palliative and Oncology Nursing
15. Paediatric Nursing
16. Psychiatric Nursing

The Bachelor's Degree in Nursing and Midwifery has very little to no theoretical exposure to the field of perioperative nursing, but SANC does have a mandatory number of hours that the student must work in the OR to be able to qualify. This exposure does not prepare a registered nurse for working in the OR. Considering this, it is to the advantage of the registered nurse working in the OR's, though not compulsory, to pursue specialised training in this specialised field. A Master's Certificate in Operating Theatre Nursing will then be the next step. This qualification is offered by accredited Higher Education Institutions such as the University of the Free State (UFS SoN yearbook 2016:137).

### **2.4.1 Perioperative Nursing as a Career**

Perioperative nursing is an area of nursing that requires specialised training and education to cultivate a distinctive and advanced set of knowledge and skills. This area of practice in nursing is directed towards patients undergoing operative and or other invasive procedures. The perioperative registered nurse is an essential member of the surgical team, who is not only a specialized expert in the practice of perioperative nursing care, but in many cases the only advocate for the patient's safety during surgery (Anon 2010:online).

Due to their training in the scientific basis of nursing, the perioperative registered nurse is able to manage the behavioural, technical components and educate on the care of the perioperative patient. The aim is to provide high-quality nursing care through patient assessment, planning and evaluation (Anon 2010:online; The free dictionary 2003:online).

The field of perioperative nursing is perpetually developing and becoming more complicated, making specialisation in this field of nursing a necessity. The OR, as a specialised department, also referred to as "the economic engine of a hospital", can generate up to 60% of the facility's revenue (Ball, Doyle & Oocumma 2015:117) but proficiency is a requirement. It is essential that OR personnel ensure that OR's run smoothly and operate optimally. Therefore, even though not mandatory, most perioperative registered nurses will undertake a one-year part-time study to obtain a specialist qualification in OR nursing (Timmons *et al.* 2004:online).

## **2.5 GENERAL NURSE SHORTAGE**

With nursing not seeming to be the career of choice for the upcoming generation, it appears that nurses will become members of a minority group in the near future, given the global and local general shortage of nurses. This decline in the nursing workforce numbers is affecting developed countries just as much as developing countries (Durano 2014:1).

### **2.5.1 International Shortage**

In 2001, the United States of America (USA) faced the peak of their RN shortage; this resulted in 13% of registered nurse positions being unfilled and this led to many hospitals having to either close some of their nursing units or restrict their operations. At the moment, the USA is facing an increased workforce entry of RNs; this can be attributed to the recession that this country has been facing. Even with the current state of affairs in the USA, they are still projecting that from about 2018, there will be a significant shortage of RNs and that this shortage will continue to grow up to 2025 (Buerhaus, Auerbach & Staiger 2009:657,660,663).

Durano's (2014:50 & 51) study indicates that the same nursing shortages are affecting Norway and England, and that these countries are also projecting an undersupply of nurses in the future. Other countries such as Sweden and New Zealand's health care are also affected by these shortages (Blegeberg *et al.* 2008:abstract; Johnston 2005:online). Demographic changes, poor working conditions, and cost containment to migration of nurses are some of multiple factors that are underwriting the shortage of nurses in these countries (Durano 2014:50,51).

This reasoning behind the predicted shortage in the future workforce of the USA could be attributed to the large number of baby-boomer registered nurses retiring within the next decade. This retiring group will then be replaced by a smaller group of registered nurses (born in the 1960s), but the next group (born in 1970s and 1980s) will not be able to meet the projected demands of the nursing labour market (Buerhaus *et al.* 2009:664; Messina, Ianniciello & Escallier 2011:online).

The rapid increase in nursing enrolments since 2002 brought about that many qualifying applicants had to be turned away from nursing education programmes, as these institutions do not have enough educators to train this increased number of qualifying applicants. If the capacity of the nursing education institutions of the USA is not increased, the future imbalances in the nurse labour market will be unavoidable (Buerhaus *et al.* 2009:665,657).

### 2.5.2 South African Shortage

In a publication of the World Health Organisation (WHO) that in approximately 78% of the African countries; there was a critical shortage of health care personnel, this would include the health care personnel of the nursing profession (George *et al.* 2012:1).

There are several warning signs with regards to the shortage of health care providers in South Africa, particularly in the field of perioperative nursing - which is one of the main areas of concern. He states that all the blame for this problem cannot be placed solely at the door of the Department of Health (DoH), as there are many other countries, including developed countries, with the same problem (Cullinan 2006:21).

George *et al.* (2012:4-5) estimate that in 2009 there were approximately 17.6% of registered nurses that were sedentary, most likely due to being retired or working abroad. Another worrying fact, mentioned by the same authors, is that an estimated 65% of nurses who were trained between 1997 and 2005 did not appear on the SANC register, meaning that more than half of the nurses trained in that period are not practicing in South Africa or not practicing at all. Another complicating factor is mentioned by George *et al.* (2012:5) in that 76% of registered professional nurses at the time of their report was over the age of 40 years of age. This results in three quarters of the currently practicing, experienced RN in South Africa facing retirement within the next decade. This will have a massive impact on the number of practicing nurses in South Africa, as even the projected influx number of students, which will or currently are registering as professional nurses, will not be able to remedy this dilemma. South Africa is not only heading for an even greater shortage of nurses but will have to cope with a group of young and inexperienced registered nurses, that may not have the support system of a big cluster of experienced registered nurses to guide them through the initial days of finding their way in their new roles as registered nurses.

The other contributing factor to the nursing shortage that the healthcare profession of South Africa faces is the emigration of registered nurses, especially our specialised registered nurses, to other countries in search of better working and living conditions (Bailey *et al.* 2004:online).



In a report by Bailey *et al.* (2004:online) it was found that in the first five months of 2004, more than a 1 000 South African nurses, requested that the verifications of their qualifications to be sent to health agencies in other countries. It was also stated that approximately 300 verifications of qualifications are being sent to other countries on a monthly basis, as South African nurses are considering to leave in search for better prospects. A spokesperson for SANC stated that these figures do not automatically mean that all of these nurses are leaving South Africa permanently.

Many South African hospitals are struggling due to the exodus of their nurses to financially stronger countries, resulting in an approximate shortage of 20 000 qualified nurses. Ehlers *et al.*'s (2003:25) research found that 58.3% of the pool of qualified RN's in the study were at that moment considering work in other countries. In the study 56.3% of the RN's considered working in other countries and 59.8% would immigrate and work in other countries if given the opportunity (Ehlers *et al.* 2003:25).

RSA DoH's (Republic of South Africa. Department of Health) Strategic Plan for Nurse Education (2012/13–2016/17:9) has also pointed out that the South African healthcare system, which is predominantly nurse-based, necessitates competent and experienced nurses to meet and manage South Africa's burden of disease and healthcare requirements. The quadrupled burden of diseases and the shortage of healthcare workers, especially looking at nursing in the context of this research, has had a disheartening and crippling effect on the performance of the healthcare workers of South Africa (RSA DoH's Strategic Plan for Nurse Education 2012/13–2016/17:9).

### **2.5.3 Shortage of Perioperative Nurses**

Ball *et al.* (2015:115) predict a worldwide shortage of perioperative nurses. This critical shortage of and the demand for OR nurses is becoming greater annually as only a small percentage of nurses want to or enter the OR work environment (Ball *et al.* 2015:115). Of particular concern is the fact that SANC (2014:online) has released statistics that showed that the clinical specialisation of OR Nursing Science show a decrease in numbers of students qualifying in this programme. This problem is further complicated by the fact, as stated by DENOSA, that there is a decline in the number of students following the four-year comprehensive programme (Ehlers *et al.* 2003:25), resulting in fewer RN's qualifying.

In research done by Gregory, Bolling and Langston (2014:103-104), it was found that nursing school exposure to perioperative nursing has an influence on whether the student will choose perioperative nursing as a career path or not. Ball *et al* (2015:115) and Brinkman (2013:online) agree with Gregory *et al.* that an attributing factor to the shortage of theatre - qualified registered nurses is the absence of perioperative curricula in most nursing programmes, resulting in reduced interest in theatre as an employment opportunity by newly qualified nurses.

Nurses with no or very limited previous exposure to OR nursing might quit during the intensive initial orientation period (Ball *et al.* 2015:116). These shortages in OR nursing are intensified by the following trends (Ball *et al.* 2015:115,116):

- The decreased exposure to OR nursing both in the classroom as well as in the clinical setting;
- An aging OR workforce that are nearing retirement or have reached retirement age and are joining the group of retired nurses;
- A patient population that have evolving needs that require more intense complex nursing care interventions; and
- Technological advancements that call for intense education and skill variations.

The small number of new OR nurses entering the field as well as the loss of experienced OR nurses play a role in the current shortage of OR nurses. Ball *et al.* (2015:116) report on a 2012 survey among OR nurse leaders, of which the results predicted shortages of OR nursing leaders in future. During the survey, the authors found that 73.4% of respondents reported to be older than 50 years at the time of the survey, with 76% of them having 20 or more years of nursing experience and about 65% of them reporting to have plans of retiring within 10 years (Ball *et al.* 2015:116). Taking into consideration what the survey found, it can be predicted that by the year 2022, there would be a loss of more than half of their experienced OR leaders.

To better understand the magnitude of this loss, one must understand what OR leaders are. They are registered OR nurses that have inherent qualities that they have developed while working in the OR over an extended period of time, through events and experiences they had in this department. Due to these developed inherent qualities, OR leaders are able to influence the attitudes, beliefs, behaviours and feelings of other registered nurses new to the OR department, in a way that nursing leaders from other nursing disciplines will not be able to do

(Kelly & Tazbir 2013:3). And the loss of a high number of these valued OR leaders will leave a tangible vacuum.

This constant and predicted, continuing increased shortage of specialised registered nurses in the OR necessitates the training of theatre technicians/operation department practitioners (ODP's). However, this emerging profession, in South Africa, is still struggling to achieve some sort of recognised status. The formalisation of a centralised training programme for these practitioners will be a major step, because currently the training is still determined by each health care institute - resulting in different curricula (Timmons *et al.* 2004:online).

## **2.6 FACTORS INFLUENCING STUDENTS' CHOICE FOR OPERATING ROOM NURSING AS CAREER PATH**

The factors that influence the learning of the student in the OR are the same factors that influence them not to pursue a career in the OR. Meyer's study (2014:17,18,23) indicates that factors such as feelings of inadequacy, not being part of the team and not being acknowledged, influenced the students' perception of the OR.

Emanuel and Pryce-Miller (2013:19) point out that the anxiety experienced by students can be reduced by ensuring that they are emotionally and clinically supported, by accepting and respecting them as a member of the team, by entrusting them with practise opportunities and by acknowledging them for their contributions. These will provide the student with a positive learning experience that should result in a positive OR experience, that could have a positive impact on the student nurses' choice of an OR career path (Emanuel & Pryce-Miller 2013:19).

### **2.6.1 Students' Experience in the Operating Room**

Timmons *et al.* (2004:online) state that with the OR personnel shortage in South Africa, in combination with the low number of post-graduate students and registered nurses choosing perioperative nursing as their career path, poses an concerning impact on the numbers of perioperative nurses; they may become a minority group (Timmons *et al.* 2004:online).

When the researcher, while working in the OR would ask student nurses or registered nurses why they do not consider working in the OR, their answers would all have a common underlying emotion, anxiety.

Meyer's study (2014:24,25) also outlines this as one of the main reasons why students do not see their placement in the OR as positive: it made them anxious. In addition, they did not know what to expect; what was expected of them; the high pace; and lack of time for them to learn or complete their assignments. This combination of factors increased their stress levels, and according to Meyer (2014:24,25) this was found to be especially true of the private sector OR (Meyer 2014:24,25).

#### **2.6.1.1 *Demanding work environment***

Most of the replies given by the student nurses, after rotating in the OR, can be attributed to the fact that the OR is a difficult place to work in (Meyer 2014:24,25). As this department functions, mostly as a high-pressured environment, it can be a very frightening and stressful environment, especially for the inexperienced student nurse. The OR has an inaccessible setup and with the perspective that it is the most isolated department in the hospital with extremely limited access for 'outsiders', the OR is usually an unfamiliar nursing setup for the nursing student (Lyon 2003:683). These factors contribute to the student nurses' negative perception of the field of perioperative nursing.

#### **2.6.1.2 *Operating room personnel***

On many occasions, the department's personnel influences student nurses' perception negatively, because often they do not have the time nor the motivation to give the student nor nurses a proper orientation or to support them with their teaching and learning requirements (Meyer 2014:25). The issue of the personnel's reaction towards the student nurses is for the most part not personal in nature, but rather due to other factors (Meyer 2014:25). According to Anon (2016:online) and Hubbs (s.a.:online) many of the personnel working in the field of perioperative nursing have personalities that borders on being perfectionistic, they want things done well, in time and right the first time (Anon 2016:online; Hubbs s.a.:online).

The strong personality type in combination with the high pressured environment and overworked state of the personnel creates an environment where a student nurse could easily misinterpret the theatre personnel's behaviour, way of working, attitude or even the

personnel's behaviour as being rude (Anon 2016:online; Hubbs s.a.:online; Meyer 2014:17,18).

The above-mentioned factors may have a negative effect on the students' learning, as the student may interpret the personnel as being unwilling to teach them anything (Meyer 2014:25). When this happens, the student nurses may not have the confidence to approach the perioperative personnel when they see learning opportunities arising (Meyer 2014:18,25,26).

#### **2.6.1.3 *Expectations***

Ball *et al.* (2015:116) point out that the lack of OR knowledge and skills combined with limited exposure to this environment results in the student nurses having unrealistic expectations regarding their rotation in the OR. Due to these expectations not living up to the reality of OR work, many students were left being dissatisfied and disappointed and in many instances this leads to negative perceptions being made regarding the OR (Ball *et al.* 2015:116).

O'Brien *et al.* (2008:1843) documents that the first clinical experience serves as validation for the student about their choice in career and determining the perceptions of nursing in the future. It is also noted that Grainger and Bolan's (2006:online) study indicate that there is a link between the nursing student's perception of nursing (or fields in nursing) and their decision to pursue the career or to withdraw from the program.

#### **2.6.1.4 *Clinical Placement***

Bowden's (2008:51,52) study revealed that clinical placement came second on the list of reasons why students wanted to leave nursing, as they had to make good first impressions repeatedly, adjust to new persons and their ways of working and they found this very stressful. This shoving around between different clinical placements increased the students' stress levels and to rotate in a difficult clinical setting such as the OR causes stress for the students, as they express that they had a need to belong somewhere. Another stressor is that these OR-inexperienced students often have no idea what is clinically expected of them and what is expected of them to do (Bowden 2008:51,52).

Therefore, students rotating in theatre experience increased levels of stress and find it a confusing place to learn in. Challenges that increase the stress levels of the students are not

only the new physical environment that they are unaccustomed to, but also the different way of functioning that takes place in the OR (Lyon 2003:680).

#### **2.6.1.5 *Preparation for placement***

Another issue as mentioned by Meyer (2014:20,21,24,25) is that students felt inadequate, undermined and underestimated as they are not given a chance to participate or contribute. Others had feelings of apprehension before even starting their perioperative rotation, caused by a fear of the unknown as well as negative previous encounters with not always so friendly perioperative personnel.

Meyer (2014:13) described the students' experiences in the private sector operating room, state that the students reported a lack of mentoring and teaching, as the personnel focuses on profitability and cost to patient, because if time was taken during a procedure to teach a student nurse something, it would increase the cost toward the private patient.

#### **2.6.1.6 *Positive experience***

It must also be noted that Meyer (2014:20,25) did find that there were some students who found their rotation in the OR to be a positive experience from which they learnt and developed. These students reported that the doctors in the OR where they were placed had positive attitudes, interacted with the students in a respectful manner and acknowledged them. The student ascribed their increased number of learning opportunities to the doctors' positive attitude (Meyer 2014:25). It can be said, with some amount of certainty, that the doctors' positive attitude rubbed off from the personnel's positive attitude, or vice versa.

If focus is placed on increasing the students' awareness of what their roles and responsibilities as a nurse in the OR are, as recommended by Cockrell (2002:118), many wrong or negative perceptions of the OR could be corrected. Ball *et al.* (2015:116) also suggest that the experiences of the students, during their exposure to the OR, may have a better and more positive impact on them if it was not only limited to the occasional observational assignment in OR. The student needs to retain an insight into the full scope of the OR specialty during surgical procedures, bridging the gap between theory and clinical nursing education (Ball *et al.* 2015:116).

## **2.6.2 The Operating Room as a Learning Environment**

Meyer (2014:20,25) and Van der Merwe (2005:69,113,114) point out that learning is most effective where the students feel that they are supported, encouraged and made to feel as part of the team. The OR may cause anxiety for the student for several reasons and this is not conducive to learning (Van der Merwe 2005:67,68).

Both Van der Merwe (2005:67,68) and Meyer (2014:21,24) state that anxiety may be caused by the student feeling overwhelmed by the unfamiliarity of the OR environment and routine. To the student, it may seem unstructured and unpredictable, this with the fear of making mistakes can increase the levels of anxiety of the student (Van der Merwe 2005:67,68; Meyer 2014:21,24).

To decrease anxiety and promote learning, the student nurse should cope with the complex environment of the OR and this can only be done if the student nurse is sufficiently prepared (Emanuel & Pryce-Miller 2013:18).

### **2.6.2.1 *Preparation programme***

Lyon (2003:687) states that all medical, as well as nursing, programmes expect students to attend the OR as part of their studies and that these students, as learners, have a right to the OR environment. But Lyon's case study reported that this was in fact not the experience that the students had during their time in the OR. Lyon's (2003:685) article highlight the point that 77% of the total number of students that completed the questionnaire agreed that the students needed a comprehensive orientation programme to prepare them for their OR placement. Lyon (2003:386) holds that such a programme would validate the student as a competent adult learner that was prepared for a new and challenging learning environment, rather than feeling humiliated by learning from mistakes or 'picking things up' in the passing (Lyon 2003:685-687).

Literature has international examples where the implementation of preparation programmes had a positive impact learning, recruiting and retaining of nursing personnel.

In the United States of America, in the city of Richmond, Educators of Virginia Common Wealth University collaborated with the Medical College of Virginia hospital Nursing Services to create

a pilot undergraduate nursing course to enhance the student nurse's preparation for the OR setting (Gregory *et al.* 2014:97).

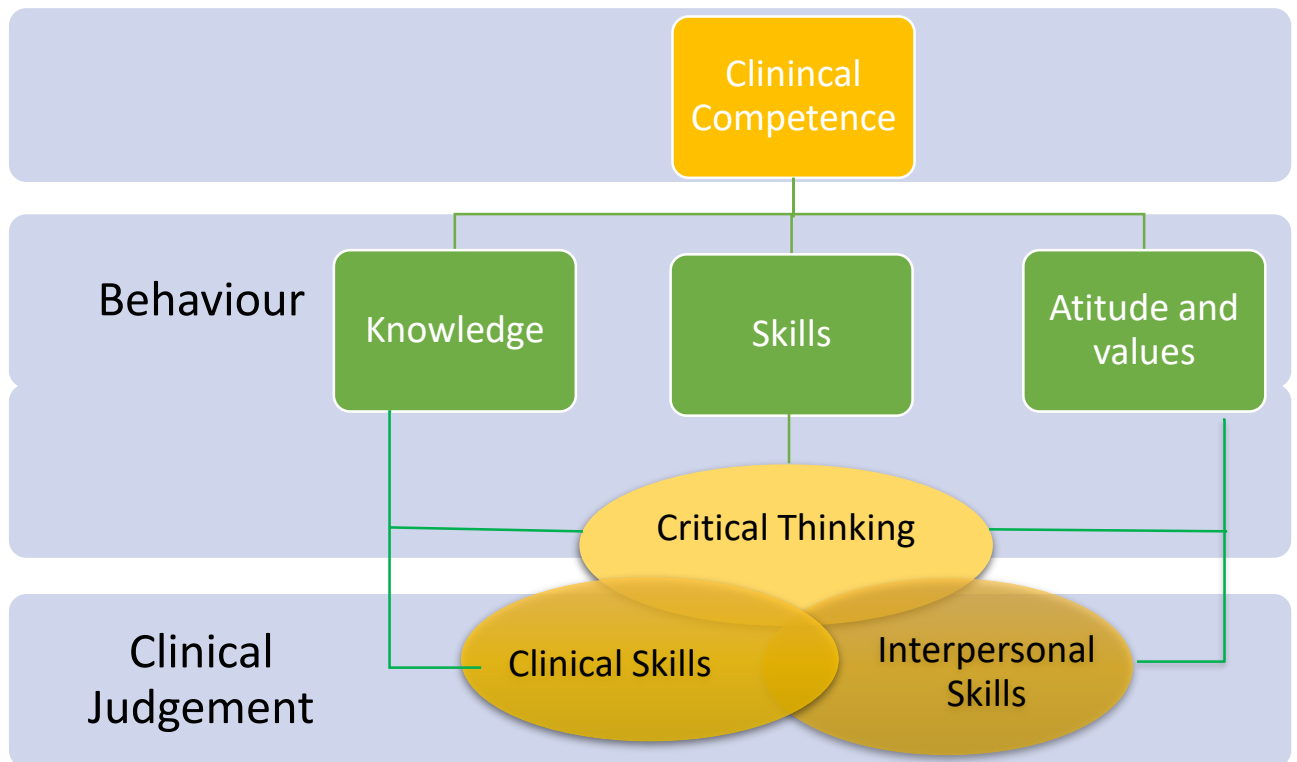
In the same way in the United Kingdom, a University in the North of England developed a condensed semester course that include online activities, simulation experiences, classroom discussions and clinical experiences (Hope, Garside & Prescott 2011:online). As a result of these semester courses that were implemented, there was an increase of nursing students, who decided on perioperative nursing as a career after graduation (Hope *et al.* 2011:online).

In the United States in another study done at the Midwestern Hospital in Chicago, it was mentioned that two out of the four nursing students who attended the simulation-based elective semester course at that time were employed straight into the perioperative setting after graduation (Ball *et al.* 2015:115). The Virginia Commonwealth University collaborated with the Medical College of Virginia hospital's perioperative educators to develop a programme that provides senior nursing students with a 15-week clinical experience in perioperative nursing (Gregory *et al.* 2014:97,99). Meyer (2014:24) and Van der Merwe's (2005:137) studies indicate that students need an improved programme preparation before being placed in the OR. In Meyer's (2014:19,24) study a participant expressed the need for improved orientation/preparation/workshop prior to being placed (Meyer 2014:19,24; Van der Merwe's 2005:137).

For preparation for clinical placement, medical and nursing educational books discuss approaches such as demonstration, small group work, simulation and practical assessment that are effective, not forgetting that feedback is crucial for learning (Dent & Harden 2013:69,207,307; Hughes & Quinn 2013:198,201,226,271,291). This preparation would empower the student nurse as such a programme should give the student nurse clinical competence. Clinical competence (as seen in described in figure 2.3) is when the student nurse demonstrates the ability to integrate knowledge, skills, values and attitudes in their behaviour and critical thinking, clinical skills and interpersonal skills in exercising their clinical judgement (Bruce, Klopper & Mellish 2011:262,264).

The researcher herself believes any OR related clinical competence obtained prior to placement in the OR will be beneficial to the student nurses' learning, perception and experience of the OR.





**FIGURE 2.3: THE INTERRELATIONSHIP BETWEEN BEHAVIOUR AND CLINICAL JUDGEMENT (ADAPTED FROM BRUCE *ET AL.* 2011:264)**

Some of the learning methods that could be incorporated into a preparation programme to improve learning in the OR are:

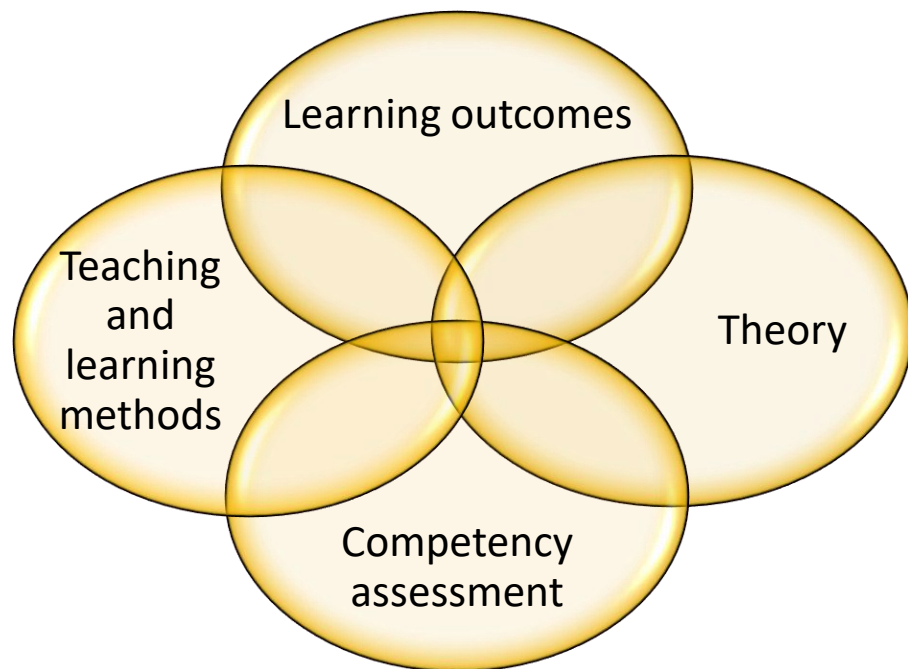
❖ Practical and theoretical (preparation) guide

Van der Merwe's (2005:146) study proposed that a perioperative theoretical and practical guide should be developed. This guide should consist of complete descriptions of all the students' outcomes and competencies. A participant in Meyers (2014:24) study stated that it would be useful to understand the role of everybody in the OR before being placed. Van der Merwe suggests that the guide could be accompanied by video or a CD, which should be made available to the students (Van der Merwe's 2005:146; Meyer 2014:24).

Bruce *et al.* (2011:254) state that: "Clinical teaching aims to produce a competent professional nurse capable of providing nursing care based on sound knowledge and decision-making, practiced skill and professional values."

For a practical and theoretical guide to be effective it must have the four main characteristics of educational delivery, as depicted in figure 2.4. These four characteristics

are closely related to each other and should be taken into consideration when developing a perioperative preparation guide (Hughes & Quinn 2013:103).



**FIGURE 2.4: CHARACTERISTICS OF EDUCATIONAL DELIVERY (ADAPTED FROM HUGHES & QUINN 2013:103)**

The starting point of a guide like this would be to determine the outcomes that the students need to reach during their OR placement and then to include the theory the students will need to reach the set outcomes. The teaching and the learning methods that would best aid the student to achieve their outcomes will be decided upon and clearly defined. Finally, the student's competency must be assessed by using the appropriate and relevant assessment tools (Hughes & Quinn 2013:103). Bruce *et al.* (2011:254) point out that because nursing is a combination of clinical skills and theoretical knowledge, it is important to assess the student nurse's clinical competence as a part of the total assessment procedure.

#### ❖ Simulation

Van der Merwe's (2010:145) study proposes that student nurses practice and master competencies in a simulation laboratory before placement in the OR. Simulation education and training provide students (as well as any other personnel members) with the opportunity to learn or improve on an array of practical skills, in a controlled environment (Mullen & Byrd 2013:419). The students will then be able to apply their practiced

competencies (Van der Merwe's 2005:145). In the study by Hope *et al.* (2001:online) students responded positively to the simulation learning approach that provides a safe and controlled environment to enact the integration of theory and practice, underpinning the theory-practice connection and the students felt prepared for the clinical exposure.

Bruce *et al.* (2011:265) mention that due to the complexity of clinical environments, limited and high cost of resources and the nature of the student nurse's competencies, the nursing educator are increasingly employing simulation in clinical teaching and that this will continue to be an important and useful educational method in the future (Bruce *et al.* 2011:254).

Ball *et al.* (2015:119-120) state that in perioperative nursing critical thinking, of which problem solving is one of the main aspects, is a core skill and cannot be developed or promoted by using traditional teaching approaches. The acquisition of critical thinking is related to structured practice that promotes active learning, which would assist the student nurse in making theory-practice links (Hughes & Quinn 2013:66). Ball *et al.* (2015:119-120) state that critical thinking can be practiced using simulation, as simulative experiences can aid novice students in understanding OR specific situations.

Through simulative experiences, the student develops an increased sense of confidence, enhanced problem-solving abilities and communication skills as well as develop psychomotor and practical skills, and it is also an excellent way to establish or provide evidence of competency (Hope *et al.* 2011:online; Hughes & Quinn 2013:59; Mullen & Byrd 2013:419). Emanuel and Pryce-Miller (2013:19) specify that by using simulation, the student's anxiety could be significantly reduced, as the students are given the opportunity to practice skills by using scenarios and case studies of real-life situations, in a safe and non-threatening environment.

The students can practise without the fear of compromising surgical patient safety while at the same time being prepared to know what their role and responsibilities will be while being placed in the OR (Emanuel & Pryce-Miller 2013:19; Hughes & Quinn 2013:59,66; Mullen & Byrd 2013:419).

A University in the North of the United Kingdom used simulation for teaching and learning in the attainment of clinical competency in the preparation for their students for clinical exposure; simulation bridged the gap between theory and practice (Hope *et al.* 2011:online). In this case; the perioperative programme obtained a regulatory

agreement, that recognises the time spent in simulation as part of the students' required practical hours. This practice has become a fixed feature of the pre-registration nursing programme (Hope *et al.* 2011:online). This can be applied in the South African context as simulation sessions are recognised as clinical practical hours by the SANC, and therefore could contribute towards the mandatory hours for OR exposure required by SANC (SANC 2005:33).

Simulation-based medical education (SBME) plays an increasing role as a tool for teaching and learning the healthcare professions and disciplines and consist of a complex series of activities and processes (Issenberg, Ringsted, Østergaard & Dieckmann 2011:155,159). SBME can be used for training as it allows for optimisation of the interplay of persons, tasks and working conditions. SBME can also be used for interprofessional education to teach students the art of collaborative practice, communication skills and professionalism (Frank & Danoff 2007:642-647; HPCSA 2014; WHO 2010)

Hughes and Quinn (2013:226) indicate that with SBME the transference of learning is done by recreating real-life situations, whereby insight into how OR procedures operate should be retained as the student nurse participates in the scenario. An important hallmark of SBME is that, no matter what the scenario of the simulation is, the student nurse must react and behave in the way they feel is appropriate (Hughes & Quinn 2013:227). The student nurse should deal with the simulative situation using normal, everyday behaviour, while learning to adapt, prioritise and change a plan of action on the spot, a skill needed in the high pace and demanding environment of the OR (Bruce *et al.* 2011:265,265; Hughes & Quinn 2013:227).

The simulation laboratories utilise various kinds of simulation modalities which can be divided into the following:

- High-fidelity human patient simulation: these devices are full-body patient manikins with a certain degree of sophistication with which students interact. The simulators vary in level of technology and realism (Milkins, Moore and Spiteri, 2014 2014:11).
- Low-fidelity simulation: these devices or techniques have limited or low interaction and does not respond to the students' actions (Bruce *et al.* 2011; Hughes & Quinn, 2013:225-227+243-244). Task trainers are devices or bench top models that replicate only a part of the body to teach specific tasks or skills e.g. a pelvis for gynaecological examination (Milkins *et al.*, 2014:11).

- Simulated patient (SP) is an actor trained to play the role of a patient in a healthcare scenario and can even give feedback to the students (Milkins *et al.* 2014:11).
- Hybrid simulation is a combination of two or more simulation modalities such as a simulated patient and a task trainer (Milkins *et al.*, 2014:11).

"Simulation based medical education (SBME) in its widest sense should be defined as any educational activity that utilizes simulative tools and methods to create learning opportunities for participants" (Dent & Harden 2013:207). Dent and Harden (2013:209), state that with the planning of SBME, the learning objectives should be identified and the correct tools should be selected. Consideration is given to the context and setting in which the acquired knowledge will be applied before a scenario can be developed. On completion of the SBME, sufficient time must be allocated for debriefing of the students, as this is a vital part of the learning process of SBME (Dent & Harden 2013:207,209).

Debriefing is an integral part of SBME and this is where most of the learning takes place. It is recommended that debriefing should be part of each of the simulation sessions.

The simulation laboratory could also be utilised for clinical assessment of the nursing student; the aim of clinical assessment is to monitor and improve the student nurses' performance in the clinical placement environment (Bruce *et al.* 2011:272,279), which in this context is the OR.

#### ❖ Demonstration

Hughes and Quinn (2013:198) define demonstration as a visualised explanation of nursing procedures, showing the student nurses how to do a procedure by using the actual equipment required in the procedure and is presented to the student nurse with the aim that the student nurses should learn to reproduce the procedure and become competent in it (Bruce *et al.* 2011:213). Bruce *et al.* (2011:213,214) point out that it is imperative that demonstrations are backed up by theory, as it is important that student nurses not only know how to do a procedure, but also why a procedure is done and what the potential dangers of the procedure are.

Bruce *et al.* (2011:266) indicate that clinical demonstration is a predominantly useful practical teaching tool and is usually done in combination with return demonstration, where the student will practice the skill by demonstrating the skill under the supervision of the educator. Nursing educators are increasingly making use of computer-based

programmes and audio-visual recordings to demonstrate skills; the incorporation of this enables the student nurse to practice the skills until the student feels that they have mastered the skill (Bruce *et al.* 2011:266). Emanuel and Pryce-Miller (2013:18) points out in their article that is important for student nurses to be able to demonstrate their fitness to practice.

❖ Accompaniment

Van der Merwe's (2005:145) study stated that the student nurses did not expect of their tutor to train them in the OR, but they and the personnel of the OR expected regular clinical visitation from the tutor. This would assist the student nurse that has adjustment problems with clinical problems, to solve these problems as they arise (Van der Merwe's 2005:145).

Bruce *et al.* (2011:254,255) state that clinical accompaniment is to purposefully guide and support students, based on each student's unique needs; this is done by creating learning opportunities that will give the student nurse the opportunity to grow from being passive to involved and finally becoming a nurse that can practice critically and independently. Accompaniment requires for the nurse educator to be directly involved and physically present, at least for a part of the time, in the OR in order to teach the students (Bruce *et al.* 2011:254,255).

❖ Mentoring/preceptor

Emanuel and Pryce-Miller (2013:18,19) found that many students feel that the support or mentoring during their placement in the OR is insufficient. Emanuel and Pryce-Miller place the lack of sufficient mentoring at the door of the organisational constraints or an increased workload preventing the mentors from adequately supporting these nursing students, as patient care tends to be prioritized over student learning.

Dent and Harden (2013:142,144) define mentoring as a relationship between the mentor and the mentee, where the mentor is sincerely interested in the professional growth and development of the mentee. Hughes and Quinn (2013:374) and Bruce *et al.* (2011:255) describe a mentor/preceptor as a qualified and experienced member of the practice-placement personnel that enters into a formal arrangement to provide the student nurse with educational and personal support throughout the period of their placement. Some of the roles of a mentor is that of a teacher, advisor, coach, role model and a sponsor. Seen from the roles, the mentor's functions are to assist the mentee with professional

socialisation, showing the mentee how to behave in a particular context, to ensure that the student understands the OR culture. The mentor aids with the mentee's learning and development by supplying information, coaching them and giving feedback where needed. The mentor also supports the mentee during difficult and demanding times (Dent & Harden 2013:142,144; Bruce *et al.* 2011:255).

Van der Merwe's (2005:132) study suggests that each student nurse should be allocated to a specific RN or even a post-basic OR nursing student to act as mentor for the student. Gregory *et al.* (2014:100) reported, as mentioned before, on a programme that was successfully implemented at a University in Richmond, Virginia in the United States of America; each student in the programme was assigned to a specific person/preceptor. Van der Merwe (2005:132) indicates that it would be this person's responsibility to monitor student nurse's adjustment and progress during the OR placement, as well as being the student nurse's support system in the OR. The need for mentoring was also expressed by a participant of Meyer's (2014:24,25) study where the participant highlighted their need for support in the form of a mentor, a specific person allocated to orientate and introduce the student nurse for a day or even a week. Support and mentoring in the OR is crucial for the promotion of learning in the OR environment (Emanuel & Pryce-Miller 2013:18,19; Meyer 2014:24,25; Van der Merwe 2005:132).

#### ❖ Briefing and debriefing

Briefing and debriefing is a crucial aid to learning of student nurses and it can reduce the anxiety and stress of students. As Lyon (2003:682, 683, 686) states, many students are unprepared for the emotional impact that surgery can and do have on many of them, as many students have not been exposed to any operating procedures (except for those seen on TV). As they have not seen an operation being done on a 'real' person, the students can find it very upsetting. Educators need to recognise that the interpretation of the OR as a learning environment is not always what students expect it to be, as many student nurses, on top of the unfamiliarity of the OR, find it difficult and stressful to manage the social interaction in the OR. Lyon indicates that it is for the above reasons that educators must improve the students' teaching and learning experiences in this unfamiliar environment (Lyon 2003:682, 683, 686).

Van der Merwe's (2005:136) study proposes that if student nurses were to be briefed prior to being placed in the OR, the student nurse will be optimally prepared to take maximum advantage of the clinical experience. The briefing programme should be well planned and

the session should include both the tutor/clinical tutor/supervisor and the student nurse. Van Merwe is also of the opinion that the student nurses should be briefed in a simulation laboratory, as this will give the student the opportunity to master clinical competencies in a low risk environment (Van der Merwe 2005:136).

Debriefing is just as an essential part of simulation, group work and practical training and could be defined as the social practice where participants purposely interact with one another and the environment to reflect on the common experiences they had; this maximises learning and facilitates transformation on an individual and systematic level (Dieckmann, Molin Friis, Lippert & Østergaard 2009:e287). Emanuel and Pryce-Miller (2013:18) wrote that their debriefing focusses primarily on the clinical experience of the student nurse in relation to them meeting their outcomes, pointing out to the students what they have accomplished up to date and to discuss any barriers they may experience that prevents them from reaching their outcomes. This is applicable to the debriefing of the student nurses that are placed in the OR attempting to comply with the set outcomes, and will assist the students in overcoming obstacles in learning.

Van der Merwe (2005:137) also pointed out that debriefing should not only be at the end of the student nurse's academic year or after the completion of the student nurse's OR placement, but on a regular basis during their placement. Debriefing sessions will give student nurses the opportunity to discuss their OR experiences, assist them with the rationalisation of events and aid with the identification of additional needs. By utilising briefing and debriefing sessions, the tutor would be able to identify and address problems experienced by the student nurses (Van der Merwe 2005:137). Briefing and debriefing is an essential part of simulation sessions and must form an integral part of the simulation.

## **2.7 SUMMARY**

The student nurse finds the perioperative environment extremely intimidating. Their negative experiences often caused by misinterpretations and misunderstandings, result in students not learning much while rotating in theatre and not being able to use this opportunity to learn, enjoy or later, post-graduation, even to considering the OR as a career path.



From the literature, students recommended and requested to be better prepared for their theatre rotation. And where students were exposed to a preparatory program, it was found that these students generally did then not experience the OR as negatively (Gregory *et al.* 2014:96-105; Messina *et al.* 2011:online).

Aspects that could be included in a preparation programme for the OR rotation could include some theory, group work and accompaniment and mentoring during clinical placements, but it can be deduced from the literature that simulation had positive results and is found to be an effective educational method and tool for the preparation of student nurses for their exposure to the OR. The encouraging results from preparation programmes for student nurses prior to placement in the OR that was identified in the literature deems that it should have a positive bearing on the learning experiences of nursing students in the South African context.

## CHAPTER 3

### RESEARCH DESIGN AND RESEARCH TECHNIQUE

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*"Qualitative research is directed at providing an in-depth and interpreted understanding of the social world of research participants by learning about their social and material circumstances, their experiences, perspectives and histories"*

**Ritchie & Lewis 2003:3**

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#### 3.1 INTRODUCTION

This chapter describes the research design and research techniques used in this study. Firstly, the theoretical aspects on the research design are stated. Next the process involved in the nominal group technique is discussed in detail. There will also be discussion regarding the sample selection, data analysis, trustworthiness as well as ethical considerations.

#### 3.2 RESEARCH DESIGN

Research design at times are found to be referred to as research strategy or strategies of design (Botma *et al.* 2010:189). The design of the study is predominantly qualitative, as it focusses on the perceptions and experiences of the participants. More specifically, a descriptive qualitative design was used for this study, as the participants for this study all share the same unique experience during their training for their profession, namely the experience of being a novice in the OR.

##### 3.2.1 Descriptive qualitative design

The method of choice, namely descriptive design, was motivated by the fact that the researcher wanted to present a specific description of the phenomenon being examined. The goal of the phenomenon is to carefully describe experiences, based on the feedback from those who have experienced it firsthand and through the eyes of those who observed those who experienced it (Botma *et al.*, 2010:190,194; De Vos, Strydom, Fouché & Delport 2011:96,305).

### 3.2.2 Qualitative research

The choice of qualitative research design is grounded on the researcher's assumptions and influenced by the way in which she collects data (Nieuwenhuis 2014:70). With this design, the researcher aims to describe the phenomenon as truthfully as possible, refraining from any pre-given framework, by remaining factually correct (De Vos *et al.* 2011:316).

This form of research focusses on practical problems (also referred to as a phenomenon) that the participants are experiencing, with the intention of acquiring some practical solutions to the problems (Nieuwenhuis 2014:74). A strong focus is placed on the understanding of the problem and the development of an intervention in collaboration with the persons involved (Nieuwenhuis 2014:74).

Vaismoradi, Turunen and Bondas (2013:398) postulate that the characteristics of qualitative research should be:

- that the researcher is obligated to gain an in-depth understanding of the participants' interpretation of the phenomena;
- the researcher should take into consideration that each participant's perceptions of the reality creates multiple realities, that will adjust as their perception change; and
- data is subjective to the participant's reality and must be reported in a rich and real way.

Choy (2014:102) points out that some of the potential limitations of the qualitative research design is it that can be a time-consuming process. As all researchers' interpretations are limited, some issues may go unnoticed and due to the open-ended nature of the questions, the participants have more influence over the content of the data collected than the researcher. One of the main disadvantages of qualitative research design was stated by Atieno and Muliro (2009:17), who pointed out that the findings of a qualitative analysis cannot be extended to the broader community, not in the same way as it can be done with quantitative research findings.

The research design will lead the researcher to the research method that will collect the data that are needed for the study. Qualitative research is a true-to-life, informative approach concerned with understanding the connotations, beliefs, values, attitudes, interpretations etc., that people attach to phenomena within their social environment (Rithie & Lewis 2003:3)

As Ebrahim (s.a.:196) wrote, when the research question calls for the understanding of developments, events and relationships in a situational context, qualitative research will be the method of choice. Qualitative research aims to produce factual description of the phenomenon under investigation, based on direct knowledge of the participants in their natural settings and is a valuable method to utilize in the process of gaining insight into a specific situation or problem of which one has little knowledge of (Ebrahim s.a.:196). As mentioned before, minimal information exists to the researcher's knowledge of the topic of preparation of nursing students for operating room exposure and further specifically not for the SoN of the UFS.

### **3.3 RESEARCH TECHNIQUE**

The technique used in this study is described below. A literature review was completed to aid in the examination of the data collected for the primary technique that was used, namely nominal group technique.

#### **3.3.1 Nominal group technique (NGT)**

The discussion group was held utilizing the nominal group technique (NGT), under the supervision of an experienced facilitator. The experienced facilitator was in the process of completing a Master's degree in Health Professions Education and is well acquainted with qualitative research and the NGT. The facilitator is a member of staff of the School of Medicine Faculty of Health Sciences, and will therefore be acquainted with any jargon that could arise.

Hiligsmann, van Durme, Geusens, Dirksen, van der Weijden, Reginster and Boonen (2013:133) state that NGT is an ideal method that has been proven to be feasible and reliable for the production and prioritization of responses relating to specific phenomenon inquiry (Hiligsmann *et al.* 2013:133). Harvey and Holmes (2012:189) point out that NGT has been used in a variety of fields including education and health, as is evident in the number of international health-care studies that had employed NGT for data collection.

Nominal group technique is not only a reliable method to determine research priorities, but is also effective where group consensus is required, while giving all the participants a voice in the generation of issues and the priorities for transformation in their field (Harvey & Holmes 2012:189). The effectiveness of NGT in qualitative research is evident in an Victorian (Australia) study, whereby NGT was successfully used to evaluate the changes to teaching and learning implemented in a perioperative setting (Harvey & Holmes 2012:190).

### **3.3.2 Theoretical Aspects**

Nominal Group Technique is an organised small group discussion that will be used in this study to identify key problems or ideas regarding the phenomenon of interest. Information is gathered by asking participants to list suggestions or ideas and then to partake in the prioritisation of the context of the list. This process will result in a set of prioritised ideas or recommendations that will be representative of the group as a whole, as the process will motivate all the participants to participate in the discussion by preventing a scenario whereby one participant attempts to dominate the discussion (eTA 2006).

In the 1960's, nominal group technique was developed as a method to facilitate effective group decision-making in research, and has ever since been used in a wide range of fields including education and health. This makes NGT a method suitable for perioperative-focused Health Professions Educations related research, as it has been utilized in a number of international health-care related studies (Harvey & Holmes 2012:190).

The researcher agrees with Harvey and Holmes (2012:190) concerning their view that nominal group technique is a proven successful data collection method, especially in the context on this study. This method addressed the topic under discussion in a comprehensive manner, while much data were collected in a relatively short time frame. In this study, it was a useful method because a group of perioperative personnel was involved and they had limited time available. Nominal group was collaborative in nature, as all participants were given a voice by limiting the opinionmakers' power and opportunity to contribute in the generation of clinically relevant and participant-centred information, while providing an environment that is conducive to change and leaves the participants with a greater sense of closure (eTA 2006:2; Harvey & Holmes 2012:190).

Harvey and Holmes (2012:190) point out some practical advantages of using this nominal group technique:

- It is time efficient as a substantial amount of information can be collected in a relatively short period of time.
- It is cost effective as the group was held at the participants' place of work, without charge.
- NGT requires little to no preparation from the participant other than showing up for the group.
- This method permits for in-session completion and instantaneous distribution of results to the group, resulting in satisfaction with participation.

### **3.3.2.1 *Description of the steps of nominal group technique***

The NGT involves the following steps as described by Van Heerden (UWM 2006:online; van Heerden n.d.) and applied in this study:

#### **STEP 1: Preparation**

##### **Design preparation**

- Questions that explain the objective of the study and that should acquire the desired information were prepared.
- The questions were presented to two persons, who were not part of the participant pool, as part of an exploratory interview to determine if the questions were understandable and would collect the data needed for this study. These two persons made no recommendations for change to the questions, therefore no adjustments were made to the questions.
- The questions were included on the consent form that was presented to each participant.
- The desired voting method for nominal group is voting by ranking and was used in this study as well.
- Reminder phone calls were made to the facilitator to ensure and confirm the facilitator's availability on the booked dates and times of the different groups. With these calls the roles of the facilitator and the record keeper were discussed, so as to ensure that both parties understood their roles.

### **Room preparation**

- The location decided on was an available training room in Universitas hospital theatre. This room was decided on since the groups were held on a Saturdays, as there are no routine lists booked on Saturdays and more participants would be available for the group. Another reason for using this venue was to ensure that all the participants would be near the theatre, if an emergency procedure had to be done.
- The room's door could be closed so there was no noise disturbance; it was large enough to seat all the participants comfortably in a U-shape, with enough space for the facilitator and the record keeper and the equipment required for the nominal group.
- The following supplies were taken to the training room situated in the OR complex of Universitas hospital:
  - A flip chart with the question written on it and space to write the answers
  - Markers to write on the flip chart
  - Pens and paper for each of the participants.

### **Meeting preparation**

A welcome statement was prepared that informed the participants of:

- The purpose of the group.
- Informed the participants that when they participate that they give consent to participation and use of information gathered, but that they have the right to withdraw at any time.
- Description was given of the facilitator and the record-keepers' roles.
- The ground rules for participation in the nominal group were explained to the participants.
- The way in which the information will be used, was explained to the participants.

### **STEP 2: Silent idea generation**

- The participants were presented with one question at a time and encouraged to write down their thoughts in short phrases in silence on their own, on the paper that was provided to them.
- All the participants were given enough time to write down all their thoughts; no discussion between the participants during this time was allowed.
- The questions were presented to the participants both verbally and in writing. This was done by writing each question on a separate flip board page.

### **STEP 3: Recording of ideas**

- During the recording of ideas phase, the 'Round robin' feedback method was used. With this method, each participant was given the opportunity to give one idea per round.
- The thoughts of each participant were recorded on the designated flip chart page, below the stated question.
- All statements were recorded verbatim, after the facilitator and the recorder ensured that everyone was clear on what the participant wanted to relay with the statement. Questions were asked to reach clarification.
- If participants ran out of written-down ideas, they indicated this by indicating that they had to be passed.
- This process continued until all thoughts were recorded.
- The participant was made aware of the fact that they could hitchhike on another participant's idea. This meant that if a participant, during the round-robin feedback session, thought of an idea that has not been recorded yet, they were allowed to write it down and offer the idea when it is their turn.

### **STEP 4: Discussion of ideas**

- Each thought was discussed, individually, to ensure clarity of the thought before starting the voting process.

### **STEP 5: Preliminary voting**

- Each participant had to choose six statements that were 'most important' to them.
- The participant had to rank their chosen statements from one to six on the paper that was provided to them.
- They ranked these statements in order of most important thought to least important thought. Scoring the most important statement with a 6 (six) and the least important statement with a 1 (one).
- The top six votes were indicated.
- The votes with their ranking were recorded on a clean page.
- Table 3.1 below provides an example of the format of determining the ranking of the statements.



**TABLE 3.1: EXAMPLE OF RANKING METHOD**

(Adapted by the researcher from UWM 2006:online)

Idea #	Participant votes				Total
1	1			5	6
2	5		5		10
3	4	5		4	13
4					0
5		3	4	1	9
6	2	4	3	2	11
7					0
8		2			2
9	3	1	2	3	9
10			1		1

**STEP 6: Discussion of preliminary voting**

- Voting patterns were examined and placed in ranking order of high to low.
- Participants could discuss the remaining ideas and their ranking.
- Changes could be made but at this point there were no changes made.

**STEP 7: Final voting**

- This is the final step.
- The same voting technique as used in step 5 was used.
- This final voting determines the 5 most important ideas on each question (van Heerden n.d.; UWM 2006:online).

### 3.4 TARGET POPULATION

The target population refers to persons who share in the same predetermined criteria for inclusion or exclusion, the sample criteria defines this population and would determine the participant's relevance for the research (Botma *et al.* 2010:200).

In this study, the target population was divided into two groups:

- The first group consisted of third-year B.Soc.Sc (nursing) students of the School of Nursing, UFS who were placed in the OR as part of their clinical rotation, but do not have any prior working or placement exposure to the OR. This was to ensure that the students participating in the study did not have any prior exposure to the OR that could influence the outcome of the results.
- The second group consisted of OR nursing personnel that are permanently employed in the OR's where the B.Soc.Sc (nursing) students, who are participants in this study, were placed for the completion of their clinical practice.

#### 3.4.1 Unit of analysis

The unit of analysis was B.Soc.Sc (nursing) students of the School of Nursing, UFS in their third academic year that have been placed in the OR as part of their clinical placement and nursing personnel that are permanently employed in the OR's where the B.Soc.Sc (nursing) students of the School of Nursing, UFS were placed for completion of their clinical practice. For participation in the Nominal Group sessions, the participants had to comply with the inclusion criteria to be eligible to partake.

##### 3.4.1.1 Unit of analysis

The reason for qualitative sampling is to develop a rich, holistic understanding of the phenomenon of interest. The guiding principles for attaining this is appropriateness and adequacy (Botma *et al.* 2010:199).

For this qualitative inquiry, purposeful selection of the participants was applied (Botma *et al.* 2010:199). Sampling in this study was purposive, as the participants who were chosen to create an 'appropriate' sample, were those who would best represent the research population and are acquainted with the research topic (Bowen 2008:140).

As for adequacy, this is determined by the reach of data sufficiency and saturation (Botma *et al.* 2010:200). Bowen (2008:137) states that data saturation is reached when the researcher finds that no 'new' data is being added.

Purposive sampling was applied in this study as the researcher needed participants that were able to objectively contribute to the phenomenon of interest (Botma *et al.* 2010:200).

#### **3.4.1.2 Unit of analysis in this study**

The sample for this study consisted of the following two groups:

- Group one had eight B.Soc.Sc (nursing) students of the SoN, UFS;
- Group two had five permanently employed personnel that are working in the OR's where the B.Soc.Sc (nursing) students had completed their clinical placement.

In Group two there was one person that was unable to attend the discussion on the scheduled date due to personal reasons.

The nominal group discussions were conducted in English, as the participants were multi-lingual and the consensus of the groups was to use the universal language. The students that attended the discussion were all able to express themselves in English.

#### **3.4.1.3 Sampling criteria**

The unit of analysis that the researcher will focus on is the study participants, who for this study were student nurses and OR personnel that comply with the inclusion criteria. The inclusion criteria are that that the B.Soc.Sc (nursing) students of the School of Nursing, UFS are in the in their third academic year and that the personnel are permanently employed in the OR's where the B.Soc.Sc (nursing) students of the School of Nursing, UFS are placed for the completion of their clinical practica. The participants had given consent to participate in the discussions of the NGT.

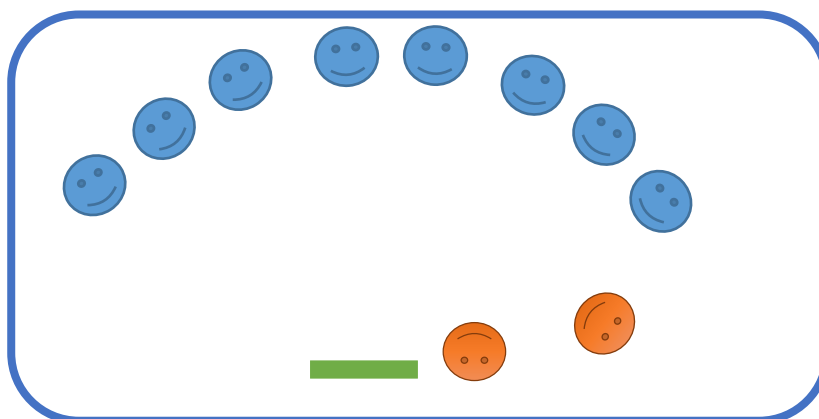
### 3.5 DATA COLLECTION

The data collection was for a qualitative exploratory study, where little is known about a topic and the participants' concepts or feeling regarding the topic is investigated (Lewis & Ritchie 2003:125).

For this study, the data collection took place on Saturdays, as this is the day of the week that was most convenient, as the OR has no booked theatre list and it freed up the participants.

#### 3.5.1 Access to the setting

The venue for the NGT was a training room situated in the OR complex of Universitas hospital. This venue was selected as the participants were on duty and therefore did not need to come in 'specially' for the session, and if any emergencies should arise during the session they would be quickly reachable (as the nature of the OR routine can be very unpredictable).



The participants were placed in a semi-circle facing the facilitator and the flip chart, as well as each other. Students are indicated in blue and the Facilitator and Researcher in orange.

**FIGURE 3.1: VENUE SEATING ARRANGEMENT NGT GROUPS**

#### 3.5.2 Data collection process

The data was collected by means of NGT sessions. The dates were set to suit the participants as well as the OR department. The group discussions were done English for both groups as it is the instruction language and all the participants were comfortable with the language. The sessions were between 45 and 90 minutes. The NGT followed the steps that were mentioned in the theoretical aspects of the technique (*cf* 3.3.2).

The participants were given an opportunity to offer a statement from their list; it often happened that participants mentioned that ideas that had already been listed were on their list and this occurrence were evident in both groups.

To ensure that the statements that were recorded reflected what the participant wanted to portray, the facilitator would clarify this by probing the participant to clarify the statement and to ensure that the participants' statements were reflected according to how they intended it. Any similarity to already mentioned statement was pointed out and the participant was asked in a non-threatening way if they agreed and if they did not, the statement was listed in the way the participant stated it; in all the instances the participants agreed with the observation of the facilitator.

When participants would describe their statements, which they wanted to place on the list at length, the facilitator would attempt to collapse the statement by identifying the core of the statement. This is referred to as paraphrasing and is when a statement of a participant is restated in a clearer or at times in a simpler way (Dictionary.com 2005). After paraphrasing, the facilitator discussed the paraphrased statement with the group to ensure that the statement was correctly interpreted and so that the group could decide if they agreed with the statement, or if it was explained in the clearest way, before the facilitator listed it.

### **3.6 TRUSTWORTHINESS OR RIGOUR**

Different authors have different opinions when it comes to rigour in qualitative research (Botma *et al.* 2010:230).

Morse, Barrett, Mayan, Olson and Spiers (2002:15) state that trustworthiness is the parallel term for rigour in a qualitative model and that trustworthiness is attained by ensuring the study's credibility, transferability, dependability and confirmability. Lewis and Ritchie (2003:270-271) state that with discussing reliability and validity, it was found that many authors would refer to the confirmability or trustworthiness of findings, or the consistency or the dependability of the evidence, but that these different views ran along the same vein. The start of this vein brings it all back to the broadest of concepts; reliability means 'sustainable' and validity means 'well grounded', which assists in defining the strength of the collected data.

### **3.6.1 Qualitative reliability/dependability**

Botma *et al.* (2010:231) refer to qualitative reliability as an approach that indicates consistence; as stated by Lewis *et al.* (2003:270), reliability is concerned with the replicability of the researcher's findings.

In this study, all efforts were made by the researcher to document data accurately and as comprehensively as possible to ensure that the findings are dependable. The nominal group process has been well described (UWM 2006:online; van Heerden n.d.) and has established steps which were directly applied to this study to assist the researcher, because these steps provided the researcher with a review path (cf. 3.3.2.1). The process aided the researcher in the recording and later documentation of the data collected in Chapter 4.

### **3.6.2 Qualitative validity**

According to Botma *et al.* (2010:231) qualitative validity means to check the accuracy of the findings by employing certain strategies; the findings must be trusted by the reader. Bruce *et al.* (2011:309) states that validity refers to the results being appropriate and useful. Qualitative literature has been moving towards terms that are more appropriately related to correctness or precession of the qualitative evidence, as validity has traditionally been referred to in these terms (Lewis & Ritchie 2003:273).

The validity of this study will be based on the researcher's deep understanding of the phenomenon due to her time spent in the field; she will attempt to clarify her bias by creating opportunities to self-reflect. The literature study will attempt to triangulate the data sources and thereby create a thick description of the phenomenon being investigated (Botma *et al.* 2010:231-232).

### **3.6.3 Trustworthiness**

Trustworthiness is an alternative concept to validity and reliability. As already mentioned, Morse *et al.* (2002:15) considers that trustworthiness to be the parallel term for rigour in a qualitative model. The rigour of this qualitative research study will be ensured by the study having truth-valued, applicable, consistent, neutral and authentic data and findings.

This study will invite the reader into the phenomenon being researched, by enabling the reader to develop an intensified understanding of the issues being depicted (Botma *et al.* 2010:232-234).

### **3.7 DATA ANALYSIS**

Ritchie and Lewis (2005:199-200) state that the analysis of the data is a challenging and exciting stage of the qualitative research process, as it needs a mix of creativity and systematic searching, to 'generate findings' from the statements collected (Ritchie & Lewis 2005:199-200).

With a Nominal Group process, the gathering and analysis of data take place simultaneously as the participants develop ideas and theories regarding the phenomenon that are being studied. During the collection of the data, the researcher started to develop an initial understanding of the meaning of the data, due to the researcher being involved in the collection of the data by facilitating the process (Botma *et al.* 2010:226).

The researcher captured all the data collected in a computer programme; here the participants' ideas were transcribed verbatim. From this point onwards the researcher interpreted the analysed text, by reading through the statements to find similarities or identifying finer nuances of the meaning of the data and identified categories/themes (Botma *et al.* 2010:226, Van Breda 2005:4,5,11).

Every effort was made not to just summarise the data, but the report must show a deeper understanding; this was done by providing a rich description of the meaning behind the phenomenon. To ensure that the report has the necessary structure, the categories were used during the compiling of the report (Botma *et al.* 2010:226-227).

### **3.8 ETHICAL CONSIDERATIONS**

The intent of the study is to increase the body of knowledge, with the hope of improving the OR preparation of future students, and in no way to impose on the rights of the participants.

### **3.8.1 Expertise or competence of researcher**

This qualitative study was the most fitting choice for the researcher and the facilitator as they both had experience in this form of data collection. The researcher was present at the NGT and only participated when clarification was needed.

### **3.8.2 Approval**

Approval to execute this research was obtained from the Health Sciences Research Ethics Committee, ECUFS NR 202/2015, and permission from the Dean of the Faculty of Health Sciences, Head of the SoN, the Vice-Rector of Research, as well as Management of the hospital where the participating students were placed (Appendix C&D).

### **3.8.3 Informed consent**

Before the group discussions started, the participants were given an informed consent letter (Appendix A&B) that also gave them an overview of the study, the purpose of the study and an explanation of what were required from them. This overview was provided to them in English and Afrikaans.

All participants were informed that their participation is voluntary and the sessions confidential. There was no form of monetary compensation for the participants in this study. There was a snack given to the participants on completion of the session, to show the researcher's appreciation for their participation; the participants were not aware of this snack beforehand.

### **3.8.4 Respect for people**

This study did not in any way impose or affect any of the participants' human rights. They were made aware that they had the right to stop participating at any point of the session. Deciding not to participate in study or leaving the study would not result in any form of penalty and any form of discrimination toward those who declined participation.



### **3.8.5 Right to privacy**

The identities of the participants were only known to each other. All contributions were put on the flip chart without connecting it to the identity of any of the participants in written form. They were allowed to address each other by name during the session and were assured that any feedback will remain confidential. The name and contact details of the researcher were made available to all the participants.

### **3.8.6 Coercion**

No participant was coerced into partaking in this study.

### **3.8.7 Confidentiality**

As this is a group, anonymity could not be ensured completely as it is an open discussion session. It is the opinion of the researcher that the topic for discussion is not sensitive and opinions collected cannot negatively affect the participants. The nominal group participants were informed of this fact but were also reassured that in the report none of the participants' names would be used and this will then ensure that none of the opinions will be connected to any particular participant. The researcher therefore ensured that all data and the identity of participants were treated with confidentiality as far as possible.

### **3.8.8 Dissemination of results**

All of the participants of a session were able to see the full list of statements with the final ranking of the statements. The participants were allowed to reach an agreement on the final ranking of the item whereafter the NGT session were completed. Any further dissemination of the results will be done during the submission for publication.

## **3.9 SCOPE OF THE STUDY**

This study was done in the field of Health Professions Education and lies in the domain of academic programme development, as the view was to explore the effectiveness of the student nurse's preparation for OR rotation and to improve the value thereof. The study is interdisciplinary as it reaches across Health Professions Education and Nursing.

### 3.10 VALUE AND SIGNIFICANCE OF THE STUDY

The value of this research study will be to determine what should be in a preparation programme for students enrolled in the Baccalaureate of Science in Nursing Programme in the SoN, Faculty of Health Sciences, UFS and the best way to present it, to equip them with sufficient knowledge and skills to be competent partakers in the practical rotation.

No recent studies were done in this specific area of preparation of nursing students for their rotation in OR. International literature on this topic is limited, but there is literature indicating that including theory and practical preparation of student's pre-rotation to the OR has a significant impact on their ability to recruit and retain nursing students in the OR. This topic, in the South-African context, has yet to be fully explored for the possibilities and benefits of relieving the shortage of registered operating room nurses.

The proposed study can provide insight into the impact that a preparation programme could have on the student's clinical learning potential; this could also have significantly positive impact on the student's operation room rotation experience, and hopefully will result in an increase in the number of postgraduate nursing students choosing operation room nursing as their career path.

### 3.11 CONCLUSION

Chapter 3 provides an overview of the research design and the research technique applied in this study, with a description of the procedures that were followed. The following chapter, Chapter 4, entitled "**Findings of the Nominal Group Discussions**", will summarise and tabulate the findings of these group discussions.

## CHAPTER 4

### FINDINGS OF THE NOMINAL GROUP DISCUSSIONS

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*"There is no knowledge that is not power"*

**Ralph Waldo Emerson**

#### 4.1 INTRODUCTION

This chapter reports on the results of the nominal group interviews that were held with the personnel working in the OR Department of Universitas Hospital and with third-year nursing university students that had just completed their first clinical placement.

There were two groups that attended the scheduled sessions; the one group comprised nursing students that had just completed their first clinical placement in the operating room. The second group comprised members of the nursing personnel working in the same operating room where the students were placed, for example; scrub-, floor- and anaesthetic nurses were all represented in the second group.

Both groups were multilingual, but all were comfortable with English – therefore, the sessions were done in English, with on-the-spot translation of any Afrikaans spoken by any of the participants. All statements were recorded in English and are indicated in the tables (cf. 4.1, 4.2, 4.3, 4.4). The researcher undertook nominal groups so as to achieve the listed objectives.

Results of the sessions will be tabulated chronologically; group one first and then the other group; first the first question and then the second. The final section of the chapter relates to the themes and categories of the findings.

## 4.2 PROCESS OF ANALYSIS

During the nominal group sessions, all statements were recorded on a flip chart by the facilitator and, as soon as possible, recorded verbatim in a computer programme by the researcher. Both groups met at the same venue and had the same the facilitator that read with them the consent to participation in the nominal group hand-outs and gave them a brief layout of the sessions' events, ensuring that all understood the process and indicated their consent.

The facilitator asked the group if they felt that the preparation of the student nurses was adequate to ensure that they are in any way able to be productive and contributing members of the OR team, on arrival. Both groups, the students and the OR personnel, unanimously stated that this was not the case. After this response, the facilitator proceeded with the NGT by asking the first question:

"What should an operating room preparation programme consist of? "

The facilitator explained the question to ensure that there was no uncertainty; the student group was asked to think of what they had seen during their placement in the operating room and what would they have wanted to know or learned to do before placement; while the group with the personnel was asked to think of what they would want students to be able to do when placed in the OR. All the statements generated were added to the statement list.

With the completion of the first question, the same format was followed with the second question:

"What would be the optimal way to present the programme?"

On completion of the NGT-sessions, the raw data – gathered from the written statements on the flipcharts – were tabulated on computer according to the groups to simplify the reading thereof. The data of the NGT sessions were analysed by the researcher herself according to Van Breda's (2005:4-12) steps for the analysis of NGT-interviews (*cf.* 3.3.2.1).

The second step in the analysis process (Van Breda 2005:5) is to prioritize the statement of each group individually according to that group's rating (*cf.* Tables 4.2-4.5).

Van Breda's (2005:5-7) step 3 and 4 suggests that the statements given by the participants on what they felt is needed in a preparation programme, be grouped so that statements that 'say much the same thing' are be grouped together; this was done by the facilitator during the group session. By doing it in the group, the facilitator ensured that the participants were satisfied that the final statement reflected their viewpoint.

The participants prioritized the statements that were recorded during the NGT sessions by each nominating their six most important statements and scoring them. Scoring was done by each participant allocating a score to their chosen important statements, by giving the most important statement a six and the one they regarded the least important a one.

### **4.3 NOMINAL GROUP DISCUSSIONS: FIRST QUESTION**

Two groups participated in the study, the first group comprised student nurses that just completed their first placement in the OR and the second group comprised personnel who were permanently employed in the OR where the students were placed. All participants according to their group share in the same predetermined criteria for inclusion to the study. The participants of both groups had different age, ethnicity and gender representation.

Each of the two participating groups' statements will be elaborated on in the following sections. The Table below (Table 4.1) indicates the number of participants in each group:

**TABLE 4.1: NUMBER OF PARTICIPANTS ACCORDING TO GROUP**  
(Compiled by the researcher, Breedts 2016)

<b>GROUP 1</b>	<b>GROUP 2</b>
N=8	N=5

#### **4.3.1 Group one first question**

With the question, "What should an operating room preparation programme consist of?", the goal was to determine what the student nurses felt they needed from their preparation programme to improve their participation and ultimately their learning, during their placement in the OR.

**TABLE 4.2: QUESTION ONE'S STATEMENTS FROM GROUP ONE**  
**(Compiled by the researcher, Breedts 2016)**

NUMBER	STATEMENT	VOTES RECEIVED	TOTAL	FINAL RANKING
1	Placement to one discipline a week To be orientated and instructed in one discipline at a time	0	0	
2	Basic procedural routine to be explained so they know what to do when	0	0	
3	Learned how to use and complete intraoperative documentation and theatre registers	6,6,6,6,5,4,4	37	1
4	How to correctly open sterile packs	4,3,3,2,2,1,1,1	17	5
5	How to use the suction unit	4,3,3,1	11	6
6	How to use the diathermy machine	6,5,3,2,1	17	4
7	How the theatre beds functions	3,1	4	
8	How and where the theatre lights turned on and how to operate the Ear, Nose and Throat headlight	0	0	
9	On counting of swabs and instruments: want to be able to differentiate between different swab and instrument – the names and how each looks like	5,5,5,3,2,2,2	24	2
10	Receiving patients in theatre	6,5,5,2	18	3

The final, top six most importantly ranked statement according to the votes by group one were:

1. Learned how to use and complete intraoperative documentation and theatre registers
2. On counting of swabs and instruments: want to be able to differentiate between different swabs and instrument – the names and how each looks like
3. Receiving patients in theatre
4. How to use the diathermy machine
5. How to correctly open sterile packs
6. How to use the suction unit.

The seventh statement that received votes: How the theatre beds function.

The following three statements did not receive votes during the voting process.

Statement one	Placement to one discipline a week - To be orientated and instructed in one discipline at a time
Statement two	Basic procedural routine to be explained so they know what to do when
Statement eight	How and where the theatre lights turned on and how to operate the Ear, Nose and Throat headlight.

#### **4.3.2 Group two first question**

The second group consisted of participants that were permanently employed nursing personnel of the OR where the students in group one worked. This group's response to the question: "What should an operating room preparation programme consist of", produced the statements tabulated in Table 4.3. The participants of this group were also multilingual, and therefore the group discussion and recording of statements also took place in English.

**TABLE 4.3: QUESTION ONE'S STATEMENTS FROM GROUP 2**  
**(Compiled by the researcher, Breed 2016)**

STATEMENT NUMBER	STATEMENT	VOTES RECEIVED	TOTAL	FINAL RANKING
1	Preparation of a sterile trolley	4,3,2	9	6
2	Identification of sterile and non-sterile areas within the operating room	6,5	11	5
3	Preparing theatre bed before each patient	6,5,2	13	3
4	Collecting of the refrigerated drugs and preparing drips for assisting with anaesthesia	1,1	2	10
5	Poring of solution into sterile containers	4,2	6	8
6	Student to know how to introduce themselves – name, what type and year student, what they want to learn	6,6,6	18	1
7	How to use operating room doors – how and when too open and close	5	5	9
8	Preparing theatre before each patient	5,4,4,3	16	2
9	Knowing how the tourniquet works – use, hazards, application time limits, how it looks like	0	0	
10	Use of the suction unit	0	0	
11	Application of diathermy plate	4,3,1	8	7
12	Use and hazards of the bear hugger	0	0	
13	Receiving a patient in theatre – consent and what questions to ask	5,3,2,2	12	4
14	Care on wound drains in theatre – noting of excessive bleeding or dislodgement	0	0	
15	Patient privacy in theatre – no over exposure, cover patients	3,1,1	5	9



With this question, the goal was to determine what the permanently employed nursing personnel, who are on a regular basis concerned with newly placed OR student nurses, felt should be included into the student nurses' preparation programme as to better equip the students. This would result in the student being able to be an active participating member of the OR team.

The final, top six most importantly ranked statements according to the votes by group one were:

1. Student to know how to introduce themselves – name, what type and year student, what they want to learn
2. Preparing theatre before each patient
3. Preparing theatre bed before each patient
4. Receiving a patient in theatre – consent and what questions to ask
5. Identification of sterile and non-sterile areas within the operating room
6. Preparation of a sterile trolley.

The next most important statements indicated was:

7. Application of diathermy plate with 8 vote points
8. Pouring of solution into sterile containers with 6 vote points
9. Patient privacy in theatre  
How to use operating room doors with both having 5 vote points
10. Collecting of the refrigerated drugs and preparing drips for assisting with anaesthesia with 2 vote points

No vote points were allocated to the remaining 4 statements.

#### **4.4 NOMINAL GROUP DISCUSSIONS: SECOND QUESTION**

The second question: "What would be the most optimal way to present the programme?", was presented to the groups. Both groups were asked to list methods best suited for presenting such a preparation programme. Both groups listed only 5 and in the group consensus was reached on the listing according to group (Table 4.4 & Table 4.5).

**TABLE 4.4: QUESTION TWO'S STATEMENTS FROM GROUP 1**  
(Compiled by the researcher, Breedt 2016)

STATEMENT NUMBER	STATEMENT
1	Demonstrations and practice in simulation
2	Videos pre- and post-clinical placement
3	Lectures by means of power point – for visual learning
4	Practice session to be done with small groups to ensure that all students have a chance to practice
5	The preparation programme to be attended before first clinical placement – first placements are before current preparation programme

**TABLE 4.5: QUESTION TWO'S STATEMENTS FROM GROUP 2**  
(Compiled by the researcher, Breedt 2016)

STATEMENT NUMBER	STATEMENT
1	Simulation presentation/demo with an outcome (like in a OSCE)
2	A formal lecture with pictures and then a booklet to recheck information
3	A formal lecture and then to test them while on a rotation through a theatre
4	A formal lecture with a test to see if they know and can reach their outcomes
5	In simulation where they must perform the outcomes to familiarise themselves with their tasks

## 4.5 COMBINED FINDINGS

The combined findings of the two questions posed to the groups in the nominal group discussion, first the first question: 'What should an operating room preparation programme consist of?' and then the second question: 'What would be the most optimal way to present the programme?'.

### 4.5.1 Combined findings of the top six priorities on question one

The top six statements of the groups were categorised according to the similarity of the statements.

When combining the top six statements of the two groups, regarding what the participants considered is needed to improve the student nurses' preparation programme, the six main categories were identified as being documentation, swab and instrument control, maintaining of sterility, equipment, orientation and theatre preparation, all the statements are listed on the following page (Table 4.6).

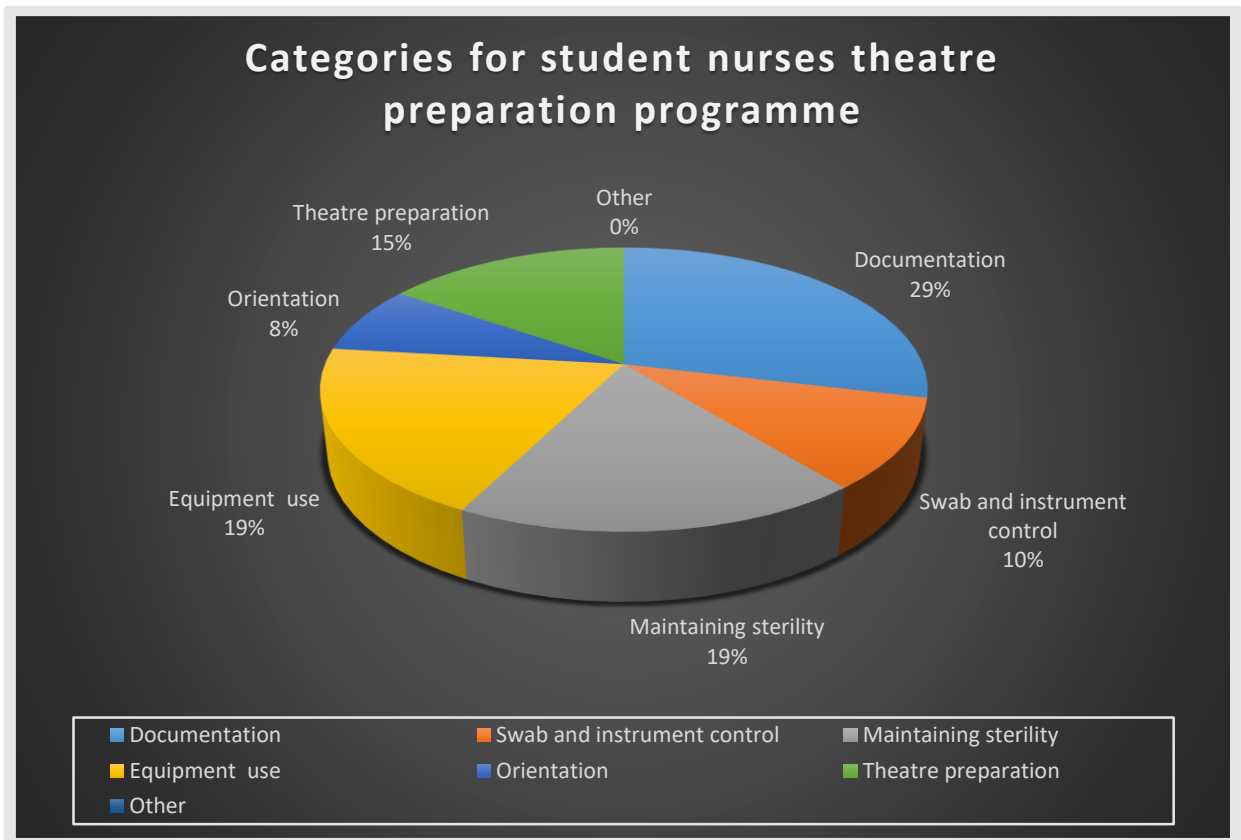
**TABLE 4.6: COMBINED FINDINGS FOR THE TOP SIX STATEMENTS: QUESTION ONE**  
**(Continuing next page)**  
**(Compiled by the researcher, Breedts 2016)**

CATEGORY	STATEMENT	GROUP	VOTES OF STATEMENT		FINIAL RANKING
Documentation	Learned how to use and complete intraoperative documentation and theatre registers	1	37		1
	Receiving patients in theatre	1	18	Combined votes = 30	2
	Receiving a patient in theatre – consent and what questions to ask	2	12		
Swab and instrument control	On counting of swabs and instruments: want to be able to differentiate between different swab and instrument – the names and how each looks like	1	24		3
Maintaining of sterility	How to correctly open sterile packs	1	17		5a
	Identification of sterile and non-sterile areas within the operating room	2	11		8a
	Poring of solution into sterile containers	2	6		10
	Preparation of a sterile trolley	2	9		9
Equipment use	How to use the suction unit	1	11	Combined votes = 11	8b
	Use of the suction unit	2	0		
	How to use the diathermy machine	1	17		5b
	Application of diathermy plate	2	8		9
	Knowing how the tourniquet works – use, hazards, application time limits, how it looks like	2	0		14a
	How and where the theatre lights turned on and how to operate the Ear, Nose and Throat headlight	1	0		14b
	How the theatre beds functions	1	4		12
	How to use operating room doors – how and when too open and close	2	5		11a
	Use and hazards of the bear hugger	2	0		12

**TABLE 4.6: COMBINED FINDINGS FOR THE TOP SIX STATEMENTS: QUESTION ONE**  
**(Continuing from previous page)**  
**(Compiled by the researcher, Breedt 2016)**

<b>Orientation</b>	Student to know how to introduce themselves – name, what type and year student, what they want to learn	2	18	<b>4</b>
	Placement to one discipline a week To be orientated and instructed in one discipline at a time	1	0	14c
<b>Theatre preparation</b>	Preparing theatre before each patient	2	16	<b>6</b>
	Preparing theatre bed before each patient	2	13	7
	Collecting of the refrigerated drugs and preparing drips for assisting with anaesthesia	2	2	13
	Basic procedural routine to be explained so they know what to do when	1	0	14d
	Patient privacy in theatre – no over exposure, cover patients	2	5	11b
<b>Other</b>	Care on wound drains in theatre – noting of excessive bleeding or dislodgement	2	0	14e

As presented in Figure 4.6. on the next page, documentation (29%) was the top priority with maintaining sterility and equipment use following (both 19%). Theatre preparation, swab and instrument control received fewer votes from the participants. When looking at the top five categories, the categories that the students could be trained in before placement, constitute 92% of the total votes. The remaining 8% was allocated to orientation, which falls under the responsibility of the operating room administration. This shows that most votes were allocated to the categories where the participants felt the student nurses should receive more/better preparation in.



**FIGURE 4.1: RANKED POSITIONS OF COMBINED STATEMENTS SHOWN AS A PERCENTAGE**  
 (Compiled by the researcher, Breedts 2016)

#### 4.5.2 Combined findings of question two

The number of statements given by both groups were five per group. The statements were ranked according to group consensus. In the table below (Table 4.7) the statements are allocated a point according to the rank given by the groups; for example, if ranked first (nr. 1) the point allocated was five, and if ranked fifth (nr. 5) the point allocated was one.

**TABLE 4.7: COMBINED FINDINGS OF QUESTION TWO**  
**(Compiled by the researcher, Breedts 2016)**

	STATEMENT	GROUP	GROUP RANKING	POINT ALLOCATED	COMBINED POINT	COMBINED RANKING
Simulation and demonstration	Demonstrations and practice in simulation	1	1	5	11	1a
	Simulation presentation/demo with an outcome (like in a OSCE)	2	1	5		
	In simulation where they must perform the outcomes to familiarise themselves with their tasks	2	5	1		
Visual learning	Videos pre- and post-clinical placement	1	2	4	11	1b
	Lectures by means of power point – for visual learning	1	3	3		
	A formal lecture with pictures and then a booklet to recheck information	2	2	4		
Practical group	Practice session to be done with small groups to ensure that all students have a change to practice	1	4	2	2	3
Pre-placement Preparation	The preparation programme to be attended before first clinical placement – first placements are before current preparation programme	1	5	1	1	4
Formal lecture with written test	A formal lecture and then to test them while on a rotation through a theatre	2	3	3	5	2
	A formal lecture with a test to see if they know and can reach their outcomes	2	4	2		

As can be seen in Table 4.7, the participants gave preference to learn in a way that incorporated the practical sessions (simulation and practical sessions); what was learned (demonstration); and visual forms of learning (videos, PowerPoints, pictures, etc.).

## 4.6 SUMMARY

The statements made by the participants of this study provided the researcher with insight into what the preparation needs of the student nurses, placed in the OR, are to be a productive, contributing team members. These insights were deducted from the viewpoints of the student nurses, post first placement, as well as from the viewpoint of the nursing personnel, working in the OR where the student nurses are placed. Both groups felt that the current preparation is not adequate.

The analysis indicated that there is in many of the statements of the different groups overlap in terms of the categories they were placed in. The categories identified are: documentation, swab and instrument control, maintaining sterility, equipment use, orientation and theatre preparation.

It can be seen that both the students and the permanent personnel want to ensure not only patient safety, but also maintain and even improve nursing practitioner safe practice.

## 4.7 CONCLUSION

In this chapter, the data collected by means of nominal group technique were presented. The statements to the questions asked were grouped according to categories. The statements and categories show that the participants agreed that the current preparation of student nurses could be improved.

In Chapter 5, ***Discussion of the categories and statements of the participants regarding the preparation of the student nurses prior to first placement***, the researcher will discuss the findings of the nominal group discussions together with relevant and current literature, with the view of making recommendations for improvement for the student nurses' preparation programme at the School of Nursing at the UFS.

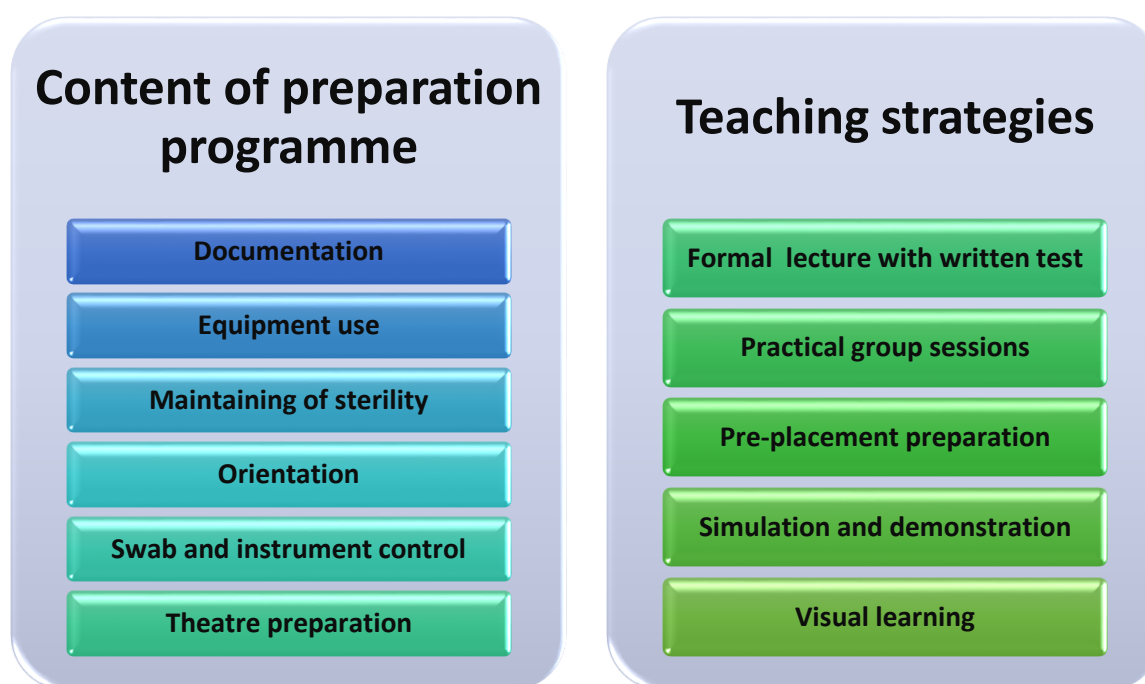
## CHAPTER 5

### DISCUSSION OF THE CATEGORIES AND STATEMENTS OF THE PARTICIPANTS REGARDING THE PREPARATION OF THE STUDENT NURSES PRIOR TO FIRST PLACEMENT

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#### 5.1 INTRODUCTION

In view of the content analysis that was done in Chapter 4, six categories were identified. In this chapter, each of these categories will be discussed with a view to finding similarities and deviations from the existing literature as discussed in Chapter 2, a summary of the categories identified from the statements for the proposed content for a preparation programme (left column) and the proposed teaching strategies (right column) are given in Figure 5.1. More than one teaching strategy could be used to deliver the content indicated in the left column of the figure and could be used in a preparation programme.



**FIGURE 5.1: CONTENT OF A PREPARATION PROGRAMME AND TEACHING STRATEGIES THAT COULD BE USED TO DELIVER THE CONTENT. CATEGORIES ARE DERIVED FROM THE NOMINAL GROUP DISCUSSIONS**  
(Compiled by the researcher, Breedts 2016)



The level of preparation of the student nurses' pre-placement (*cf.* 2.5.3) could have a direct impact on the students' learning in the OR and their impression of the OR. These factors could have a direct influence on the decision to pursue OR nursing as a potential career path, which is important to ensure that there will be an acceptable number of nurses to populate the next generation of perioperative nurses (*cf.* 2.4.3).

The discussion will describe the needs identified for an improved preparation programme, as proposed by the students and OR personnel in view of their experiences in the OR, which were documented during the nominal groups. This will be done to make recommendations for the betterment of future nursing students that would be placed in the OR.

## **5.2 CATEGORY COMPARISON WITH THE LITERATURE**

Each of the identified categories will be considered and addressed individually, and compared with current literature. The categories are discussed alphabetically, to prevent any prominence being placed on any one category.

### **5.2.1 Categories related to question one of the NGT**

The identified categories for the first question regarding the contents of a preparation programme (*cf.* 4.5.1), are: documentation, equipment use, maintaining of sterility, orientation, swab and instrument control and theatre preparation.

#### **5.2.1.1 Documentation**

All the statements that related to documentation (*cf.* 4.5.1) are derived from functions of the perioperative nurse that will be incomplete or compromised (patient and nurses' safety). If the documentation is incomplete or incorrectly completed by the hospital department, from where the patient came, or the OR personnel. This is one of the aspects of OR nursing functions that the student nurses are very much concerned with. The student nurses are very often placed at the patient receiving area or recovery room of the OR. Sometimes the student nurses are expected to complete the intra-operative documents during the surgical procedure.

Documentation in the OR is medico-legally very important and it is of vital importance that all staff working in the OR are able to complete intra-operative documentation correctly. These documents are there to safeguard the patients as well as legally protect the nurses, because clear and complete documentation strengthens the nursing care evidence (Sondergaard, Lorentzen, Sorensen & Frederiksen 2016:abstract, Kohn, Corrigan & Donaldson 2000:171).

It was stated, by the participants of the study, that the student nurses needed to know how to complete the intraoperative (*cf.* 4.3.1) documentation correctly as well as the OR register as soon as possible after they started with the placement in the OR. Competence with OR documentation is a skill that takes some time to accomplish.

The personnel in the OR know the legal implication of the incorrect or incomplete documentation and informed consent. This can not only have a direct impact on the safety and well-being of the patient, but also on their professional career. For this reason, the personnel indicated that they wanted the student nurses to be able to be reasonably skilled in the completion of intra-operative documentation and the receiving of the patient (*cf.* 4.3.2) as there is not always adequate time to teach the student nurses' during procedures. This usually results in the personnel constantly keeping an eye on the student nurses' work and correct documentation. The OR personnel participating in the nominal groups felt that documentation was one of the main areas where student involvement increased their stress and work load.

Since documentation had many legal and patient safety implications, the student nurses would often receive feedback from the personnel, regarding their documentation attempt. Student nurses often experienced this feedback as negative. The legal aspects of only receiving a patient pre-operatively; ensuring that the written informed consent is legally correct; that allergies and pre-existing medical conditions are noted; and that the correct procedure as well as site of procedure are indicated correctly can be over-whelming to the student.

The mentioned medico-legal aspects found in the pre-operative documentation could have negative repercussions for the patient's safety during the execution of the patient's procedure. The same medico-legal risks of incorrect completed or completion of intra- and post-operative documentation remain a potential minefield for the inexperienced student nurse in the OR; this could make the student nurse feel unsure and exposed to potential medico-legal risks.

The thought that if they did not 'ask all the right questions' or missed any important information that it could potentially negatively impact the patient safety and/or health intra-operatively or directly post-operatively and get them into trouble could be daunting to most students.

#### **5.2.1.2 *Equipment***

Equipment is the overarching term that envelops numerous statements made by the participants (*cf.* 4.5.1). All the participants believed there was a need for student nurses to be able to operate some of the basic equipment in the OR. An inability to correctly operate equipment in the OR often results in extended anaesthesia or operation time. The inability to operate basic OR equipment could lead to potential misuse or damage to the equipment, which may result in a malfunction and/or harm to the patient.

Advances in technology have improved the quality of surgical procedures as well as the survival rate of patients, but at the same time the same technology has the potential for error due to equipment failure or malfunction. When equipment in the OR fails, the results can be catastrophic (Degan 2015:online).

In Degan's study (2015:online), a review of 28 published studies on operating room mistakes, indicated an average of 2.4 errors occurs during each procedure, and technology or equipment problems accounted for 23.5% of these errors and were cited in approximately 15% of malpractice claims.

From a student nurse's perspective, the student may be asked to connect, switch on or even change the setting of some of the equipment in use during a procedure. If the student nurses were unsure of what equipment is being referred to or how to make the adjustments, the student nurses felt they could be perceived as being "dumb or stupid" or just not "interested" in following or participating in the procedure. The student nurses in the study felt that these perceptions were not true.

#### **5.2.1.3 *Maintaining of Sterility***

Meara and Reive (2013:1) state that the goal of aseptic technique is to protect the patient by minimising postoperative infections. This is done by creating conditions and following procedures that prevent microbial contamination to the sterile operative field, sterile equipment and/or the operative site.

To maintain and ensure sterility during surgery is one of the most important aspects of patient safety. For this reason, it was not surprising that the participants of the nominal group listed it as one of the areas that the student nurse should be well acquainted with (*cf.* 4.5.1). Currently, the students' programme includes a theoretical lecture, demonstrations and practical training and assessment for basic aseptic principles. The aspects covered include handwashing, gloving and management of the sterile tray. But the training in the aseptic principles does not ensure that the student is competent in complying with the sterility principles that are applicable to the OR in the clinical setting. During the nominal group interviews, all the participants stated that the student nurses are not competent in OR sterility principles on arrival and during their first few days in the OR placement. This increases not only the anxiety levels of the personnel, but also that of the student nurse.

The fact that the student nurses are "unaware" of intra-operative sterile principles, results in the student nurses being unsure what is expected of them. The fear of doing something wrong causes the student nurse to become anxious and often they will withdraw and do not participate, resulting in the personnel getting irritated with their perceived non-interested demeanour.

The personnel's feeling is that they constantly should "keep an eye" on the students. In an academic hospital, there are students from different professions e.g. medical and nursing students rotating simultaneously through the OR. The OR personnel must be alert to make sure that no contamination occurs, because sometimes the students are not even aware that they are contaminating a sterile field. This adds pressure on the OR personnel and they often become more agitated with all the students in the OR.

#### **5.2.1.4 *Orientation***

During the first student nominal group the student nurses requested one week per discipline placement, which should include discipline-related orientation and instructions. This will be difficult to implement because the OR has many disciplines (General Surgery, Orthopaedic surgery, Urology, Plastic surgery, Cardiothoracic surgery, Neurosurgery, Ear, Nose and Throat, Gynaecology and many more) and the students are only placed in the OR in their third year for a total of 80 hours. The clinical placement hours the student nurses should complete is the decision of SANC and cannot be changed by the School of Nursing, UFS or the hospital where the student nurses are placed.

An interesting statement that was made by nominal group two, is that they wanted all students to introduce themselves by stating their name, what type of student and year of study they are. The students should state what they need to learn in the particular OR that they were placed. Students should also indicate what discipline they should learn from and the specific staff member that should give the training. The OR personnel are often unsure who the students are, for example medical or post basic OR specialising registered nurses or undergraduate nursing students. The different discipline and academic level of the students being placed in the OR require accompaniment by personnel from different disciplines and rank representation within the OR. Students in general should understand that the OR attire makes it difficult for the personnel in the OR to determine from which discipline and academic level a new group of students in the OR are a part of.

#### **5.2.1.5 *Swab and instrument control***

One of the outcomes that the student nurses were unsure about was swab and instrument control (UFS SoN 2016). The students felt that there were so many different swabs and instruments and they were often not sure what the instruments are called and that makes them anxious if they have to do a swab or instrument count with the registered nurse in charge of the operation.

The students fully understand the importance of, and their responsibility regarding intra-operative swab and instrument control and it is for this reason that they feel anxious. The general feeling was that if they misunderstand what is being counted, that that could result in a miscount of some swabs or instruments, and could have negative impact on the personnel and the patient.

#### **5.2.1.6 *Theatre preparation***

The preparation of the OR was mentioned by both the groups. Group one mentioned that they did not know what the personnel wanted them to do or how to do it. Group two believed that most student nurses do not want to participate in the routine work of the floor nurse (the term floor nurse is used in South Africa and circulating nurse in other countries such as United States of America and United Kingdom) within the OR.

The OR personnel felt that the students' only goal was to complete their outcomes and observe the surgical procedure. The perceptions of the OR personnel were that it seemed that the student nurses think that preparation of the OR, especially between cases and after the lists (which also entails cleaning), was the work of a cleaner.

The researcher's interpretation of the situation is that the student nurses come to the OR with the perception to do what the RN does. However, the student nurse should be made aware of her duties and responsibilities in the OR as student as part of the preparation. Students should be made aware of the fact that to become an excellent RN, you should be able to be an excellent nurse.

### **5.2.2 Categories related to question two of the NGT**

The second question regarding the optimal way to present a preparation programme (cf 4.5.2) produced the following categories: formal lecture with written test, practical group session, pre-placement preparation, simulation, demonstration and visual learning.

#### **5.2.2.1 *Formal Lecture with Written Test***

Group two mentioned this learning strategy and prioritised it high on their nominal group rating. Group one did not even list this learning strategy. The researcher believes the reason for this is that the nursing students know that they have many formal lectures and written tests, which is implemented into their current orientation/preparation programme, and the student nurses realised that it did not optimally prepare them for the practical application of the transferred knowledge. The students are being exposed to newer teaching strategies such as simulation which the older OR personnel were never exposed to and is outside their frame of reference.

#### **5.2.2.2 *Practical Group Session***

Group one felt that practical group sessions and especially simulation could assist them in learning and to practising what they must apply in practice. They expressed feelings of fear when they have to execute tasks if they only received explanations of what and how to perform a task. This fear stems mostly out of their fear of doing something wrong or, either getting into trouble or causing harm to the patient.

The students also stated that with the proposed group session, that they would prefer to be grouped in smaller groups so that they can be able to observe the demonstration better and that all the group members may have an opportunity to practise in the allocated time available.

The researcher agrees with the participants regarding the group practical sessions, as this will facilitate learning (*cf.* 2.5.2.1). Students tend to support each other and those who struggle usually are more willing to ask for assistance within the group. If the groups are smaller, the lecturer will be able to observe all the members of the groups more closely to identify problems or the group members that are struggling and to assist them where needed.

### **5.2.2.3 *Pre-placement preparation***

Many student nurses mentioned that they do have preparation/orientation sessions, but that some of them were placed before the schedules session took place. It is a problem as these student nurses are then not at all or in any way prepared for their placement. All student nurses should receive equal preparation prior to placement. The student nurses that attended the orientation/preparation programme after being placed are disadvantaged.

Secondly, the researcher believes students that might have attended the preparation programme early in the academic year, but placed later in the year, were also disadvantaged. Students do not contextualise the content of such a programme and the time lap between the programme and the placement has an influence on the retention of content and skills demonstrated to them. A comprehensive and well-prepared preparation programme would benefit the student's perceptions of the OR as well as have a positive impact on their learning while being placed (*cf.* 2.5.2.1).

### **5.2.2.4 *Simulation and Demonstration***

The category simulation and demonstrations with visual learning was the category that was rated the highest in the combined section by both groups (*cf.* table 4.7). The participants indicated that simulation is one of the more effective ways to transfer knowledge for clinical practice. Students are exposed to simulation sessions in their training and acknowledge the value of simulation as teaching strategy. Experiential learning as described by Kolb and Kolb (2005:194,197) is the way students learn with simulation. Experiential learning theory describes the concrete experience (simulation), reflective observation (debriefing), abstract conceptualisation (debriefing and own reflection) and active experimentation (deliberate practice or repeat simulation) and can be applied to simulation training.

The researcher shares the view of the participant as she is experienced in this field and has often seen that when a procedure or action is relayed verbally to an OR novice, they struggle to execute the task. This often results in irritation from the RN or surgeon requesting the procedure and causes anxiety on the part of the novice student nurse in the OR. If a student gets the chance to observe and practice actions, they often fare much better. Simulation could therefore fill a gap in the preparation of nurses for OR placement.

#### **5.2.2.5 Visual Learning**

The participants were all positive about visual learning. They presented examples such as video, PowerPoint presentation, pictures and booklets. Most students preferred to be visually stimulated to learn as they grew up in a technologically rich environment. These technology-dependent learners often need to learn from visual teaching aids to gather new knowledge, to process the new information and transference of what they had learned in a practical fashion.

The researcher is of the opinion that technology in learning should be embraced by all healthcare-related educators (including nursing), to ensure that the student is prepared optimally, to develop the students to their full potential and to ensure transference of knowledge and skills to the clinical setting in the OR. It is also the educator's responsibility to prepare the technologically disadvantaged student for the rapidly evolving technological healthcare environment.

### **5.3 RECOMMENDATIONS FOR PREPARATION OF NURSING STUDENTS FOR OPERATING ROOM EXPOSURE**

From the literature and the results of the nominal group interviews, the following recommendations can be made regarding the aspects that could assist in the preparation of nursing students for operating room exposure.

#### **5.3.1 Premises**

The student nurses need to be prepared prior to entering the OR environment, but at the same time need to be familiarised with this environment. Therefore, the recommendation is that the student nurse's preparation programme be executed in simulation as teaching strategy, as simulation-based training forms the basis of most of the successful international preparation programmes (*cf.* 2.5.2.1.) An authentic OR environment can be recreated with simulation and



the student can learn in a safe and non-threatening environment. The student nurses will be able to practice without the fear of injuring patients or making mistakes that would get them in 'trouble'. Authentic OR equipment should be used in the simulated environment to expose the students to the equipment. For lectures or PowerPoint presentations, a small lecture facility would be suitable; this venue does not have to be very big as the students will be attending the preparation programme in the clinical placement groups. These groups usually do not consist of more than 10 student nurses.

A positive initial OR experience could motivate more students to consider Operating Theatre Nursing as a career and a preparation programme could contribute to more students entering this career path.

### **5.3.2 Points of departure for preparing students for OR exposure**

Student nurses' expectation of their initial placement must be directed to align it to the reality of what their function and role during their first placement will be. Student nurses function mainly in the role of the floor nurse during their placement in the OR. If the student nurse understands the role, functions, duties and importance of the floor nurse, they will understand the need for them to learn the skills of the floor nurse and to participate in the floor nurse's duties. To be an excellent perioperative RN, one must first be an excellent floor nurse, as every member of the intra-operative team's function is important for the smooth running and successful completion of a surgical operation list, while continuously ensuring the safety of the patient.

During the orientation of the student nurse, the following must be highlighted:

- They must be reminded that when entering the OR for their clinical placement, to **introduce themselves** to the personnel. This should be done to ensure that the personnel are aware from what discipline the students are and what the learning outcomes are that they need to reach. This will ensure that the personnel know who to pair the student with so that time for learning can be optimised and outcomes can be reached.
- The student nurses must be reminded that they must participate in the **preparation of the OR** before the commencement of the day's list, as well as between cases on the list and on completion of the list. This is part of the floor nurse's duties that they must participate in, as this all contribute to the safety of the patient and the smooth running of the list. This will also be an indicator for the OR personnel that the student nurses want to be a part of the team and not just an observer.

- Emphasis must be placed on the fact that the student nurses must **control equipment** and this must be done under the direct supervision/together with the floor nurse of the OR, as the number and variety of instruments used in the different ORs are too many for the students to memorise in the short period for preparation prior to OR placement or during their short placement period in the OR.

### 5.3.3 Role players in preparing the students for OR exposure

For the preparation programme, the following role players are involved:

- A **lecturer** to present the preparation programme.
- The lecturers of the **School of Nursing**, UFS – there must be good communication between the preparation programme presenter and the School of Nursing lecturers to ensure that there is alignment with the learning outcomes and what is being taught to the students in the preparation programme.
- The **clinical facilitator** of the hospital OR where the student nurses are being placed – communication channels between the resident clinical facilitator and the preparation programme lecturer must be open. The clinical facilitator will be able to relay to the preparation programme lecturer where there are needs arising from the student nurses. This will place the preparation programme lecturer in the position to either adjust the programme or to organise support for the student nurse in need.
- The **student nurses**.

### 5.3.4 Recommendations for a preparation programme

The preparation programme should include the following outcomes:

- The student nurses must first complete the preparation programme before their placement in the OR in small groups congruent with the OR placement.
- The programme must assist the student nurses in becoming competent in the completion of all forms of documentation that relates to activities and procedures encountered within the OR. This will protect the student nurses (as well as the patients and personnel) from medico-legal risk if they can identify mistakes or problems on the documentation or prevent them from completing the documents incorrectly.
- The student nurse must be knowledgeable regarding the principles of sterility and how to apply the principles of sterility to maintain sterility with the opening of sterile equipment while preparing to start a procedure or during each procedure.

- On completion of the programme, the student nurse should be made familiar with some of the more frequently used swabs, what they look like and the name of each, to ensure that the control of swabs is done correctly. More emphasis must be placed on the swabs, because when the student is comfortable to identify and differentiate between the different swabs (e.g. abdominal swabs, raytex swabs, dissecting swabs), learning of some of the instruments will progress naturally.
- The student nurse must be made familiar with some of the basic and most frequently used equipment in the OR and can operate the basic equipment, such as the suction unit, tourniquet and diathermy machine. This would improve the student nurse's participation in the team during the rush time to start a procedure as well as during the procedure.

The endorsements the participants made for the teaching strategy to be used for a preparation programme, is in line with current learning strategies implemented in the SoN (simulation and demonstrations, practical group and visual learning) where competency is a requirement for reaching the outcomes. More emphasis need to be placed on experiential learning to ensure that the student nurses are adequately prepared for the transference of knowledge and skills to the practical OR environment.

## 5.4 CONCLUSION

In this chapter, the categories of the nominal group session were discussed and elaborated on, as to ascertain what the needs of all involved were regarding the student nurses' preparation prior to OR placement. Both the view of the student nurse as well as that of the personnel involved with the student nurse's learning in the OR, were examined. The preferred method of knowledge transfer, to ensure production of practical competencies, were also discussed and where possible all data were linked with related literature.

In the chapter to follow, "Chapter 6 ***Conclusions, recommendations and limitations of the study***", the study will be summated and final conclusions will be drawn.

## **CHAPTER 6**

### **OVERVIEW, REFLECTION, RECOMMENDATIONS AND LIMITATIONS OF THE STUDY**

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#### **6.1 INTRODUCTION**

The purpose of this chapter is to offer a brief overview of the study and to present remarks and some concluding opinions on the final findings. This study was undertaken by the researcher with a view to identifying the preparation needs of the student nurses of the School of Nursing of the University of the Free State before their first placement in the OR. The data were collected by means of nominal group discussions and was undertaken with both students and personnel working in the OR's where the students are being placed.

By identifying what the participants perceived as lacking in the student nurse's preparation prior to their placement in the OR, recommendations could be made for the improvement of the student nurses' preparation programme. Furthermore, the researcher inquired from the participants what they felt would be the best way to ensure that a preparation programme guarantee that the student nurses are competent in basic OR skills. By improving the student nurses' preparation programme the student nurse's experience of the OR may be more positive and learning could improve, which finally may motivate the student nurse, when a postgraduate, to consider the OR as a career path.

Generic findings of this study could be applied to other disciplines of the nursing professions as well as to other medical fields.

This chapter starts with an overview of the study, followed by the researcher's reflection on the study, recommendations and limitations of the study, the contribution the knowledge and recommendations for the future and a final remark.

## 6.2 OVERVIEW OF THE STUDY

The study starts off with an introductory chapter, Chapter one, that orientates the reader regarding the background and rationale for this study. The importance of this research was introduced with the problem of the general RN shortages and the fact that few postgraduates choose the OR as a career path (*cf.* 1.2). The body of the study was developed around the research questions presented in Chapter one.

The study was executed with the view to answering the **research questions**: "*What should an OR preparation programme consist of?*" and "*What is the most optimal way to present the programme?*".

The subsequent objectives were pursued: *To determine, from the nursing student nurses as well as the personnel of the OR, where the nursing student nurses were placed, what should be included in an OR preparation programme, as well as what modes of delivery would be the most effective for such an OR preparation programme.*

In response to the research questions, the following **categories for the content of a preparation programme** were identified: documentation, swab and instrument control, maintaining of sterility, equipment use, orientation, theatre preparation. And the following categories were identified for the most effective **methods of delivery** of such a preparation programme: simulation and demonstrations, visual learning, practical group sessions, pre-placement preparation and formal lecture and written tests.

This study was commenced in a qualitative context, by means of two **nominal group discussions**. The group's consensual participants represented the third-year student nurses, after their first OR placement and personnel working in the OR where the student nurses were placed.

Chapter two contained an outline of literature that give credibility to the value of research and how earlier studies informed this study.

In Chapter three, the theoretical foundations of the nominal group technique, which was used in this study, were discussed.

In Chapter four, a description of the results of the study for both nominal group discussions are given and the researcher categorised the combined statements. The categories were identified as **documentations** (*cf.* 5.2.1.1), **equipment** (*cf.* 5.2.1.2), **maintaining of sterility** (*cf.* 5.2.1.3), **orientation** (*cf.* 5.2.1.4), **swab and instrument control** (*cf.* 5.2.1.5) and **theatre preparation** (*cf.* 5.2.1.6)

Chapter five offers a discussion of the research findings and links the study to the literature.

### 6.3 RESEARCHER'S REFLECTION ON THE STUDY

By asking the mentioned questions in the nominal group discussions, an attempt was made to determine what is needed for an effective preparation programme for student nurses, from the viewpoint of those who are directly affected by student nurses who are underprepared.

The researcher can identify with both the groups who participated in the research, given her own experiences as an unprepared student nurse being placed in the OR for the first time, being unsure of what one is expected to do or how to do it. The researcher had a repeat of these experience when she returned to the OR as a RN. Thereafter the researcher has seen numerous student nurses passing through the OR that she worked in, with the same look of bewilderment and uncertainty.

Even though a researcher tries not to, every researcher does bring a level of bias to the research. In most of the statements, the researcher's expectations were met, but certain statements were unexpected. The statement that was made by the personnel of the OR, that the students should greet and introduce themselves per the field and year of study, as well as what the student needed to learn, was unexpected.

However, the researcher understands that the personnel find it difficult, with the OR attire, to identify which students are, for example, medical or nursing as well as which study year they are in especially - in an academic training hospital. But most of the other statements pinned down what the researcher have experienced herself in the years she has been working in the OR.

#### **6.4 RECOMMENDATIONS ARISING FROM THE STUDY**

During the literature search, no study relating to a programme to prepare student nurses for their first placement in the OR, within a South African context was found. This study aims to provide new knowledge on this topic that could aid the implementation of a preparation programme for future student nurses having to be placed in the OR.

For this study to produce significant and valuable results, the researcher takes this opportunity to make the subsequent supplementary recommendations:

- The findings of the study could be developed into a programme that must be presented to the Programme Director at the School of Nursing, UFS and could guide implementation of such a programme.
- The study's results could be presented at national congresses and as an article in an accredited journal.
- A follow-up study needs to be conducted involving a bigger sample group, including students from other nursing schools, from other provinces.
- The developed programme could be presented at different nursing schools as well as different nursing qualification levels, where clinical placement of students in an OR is obligatory.
- The programme could be adjusted to be implemented in other healthcare education fields where clinical placement is an obligated part of the students' curriculum.

#### **6.5 LIMITATION OF THE STUDY**

The researcher recognises that the study had the following limitation:

- The study only had participants from the School of Nursing at the University of the Free State. More or different data may have been collected if the study had included student or training nurses of other institutions, such as Nursing Colleges (both government or private sector).
- The personnel of only one hospital participated, where most of the students are placed that participated in the study. More or different data may have been collected if the study had included personnel from other government or private hospitals, or even other provinces.

A comparison could have been made between the expectations of the stakeholders of the private and government sector, as well as the different nursing courses. The study is not generalizable, as the research was conducted only in the context of one university and for the one nursing course and may not be applicable to other institutions or countries as the needs or expectations may be different in other institutions or even countries.

The specific expectations may not be reproducible in another study with a different unit of analysis in an alternate context. However, the main categorical findings (documentation, swab and instrument control, maintaining of sterility and equipment use) are basic in nature and should correlate with the needs and expectations of other institutes.

## **6.6 CONTRIBUTION TO RESEARCH**

It is the opinion of the researcher that the study contributed to new knowledge, as no study pertaining to the effect of improved preparation programme on the student nurses' perception, experience and learning in the OR, in the South African context, was found by the researcher. Articles of preparation programmes were found implemented in New York and in the North of the United Kingdom (*cf.* 2.5.3), which had a positive impact on their nurses' perception and experiences and resulted in an increased percentage in retainability of their personnel pursuing a perioperative career.

The study provided first-hand research into the expectations of the stakeholders regarding the required content for a preparation programme for student nurses prior to first placement in the OR, within the context of the School of Nursing at the UFS and in the South African context. The stakeholders' opinion is that the development of an improved preparation programme would improve the student nurses' learning during placement and their overall perception of the discipline.

## **6.7 FINAL REMARKS/ CONCLUSIONS**

In conclusion, this study provided a platform whereby both the student nurses being placed in the OR for the first time as well as the personnel receiving these OR novices had the opportunity to state what in their opinion is needed in a preparation programme that would improve the student nurses' participation and learning.



By improving the current preparation/orientation programme, as also suggested by van der Merwe (2005:137) in her study, the student will be able to start participating and learning from day one and even enjoying the OR sooner - resulting in more student nurses opting for this discipline as a career path.

*"Success is where preparation and opportunity meet"*

**Bobby Unser**

## REFERENCES

- Anon. 2010. Operating room nurses rely on quick thinking, thorough approach. *Tribune Media Services*. [http://articles.chicagotribune.com/2010-05-03/classified/chi-operating-room-nurses-careers-050310\\_1\\_nurses-surgery-patient-aorn](http://articles.chicagotribune.com/2010-05-03/classified/chi-operating-room-nurses-careers-050310_1_nurses-surgery-patient-aorn) Date of access: 17 March 2015.
- Anon. 2016. On Nurse's View of the Operating Room. *ToughNickel*.  
<http://toughnickel.com/industries/OR-Nursing-What-it-Takes-to-be-an-OR-Nurse>  
Date of access: 24 October 2016.
- Atieno, O.P. & Muliro, M. 2009. An analysis of the Strengths and Limitation of Qualitative and Quantitative Research Paradigms. *Problems of education in the 21<sup>st</sup> century*: 13: 13-18.  
<http://oaji.net/articles/2014/457-1393665925.pdf> Date of access: 25 October 2016.
- Bailey, C. & Hawker, D. 2004. Poorly-paid nurses leave in droves. *IOL news*.  
<http://iolmobile.co.za/#!/article/poorly-paid-nurses-leave-in-droves-1.217535>  
Date of access: 18 March 2015.
- Ball, K., Doyle, D. & Oocumma, N.I. 2015. Nursing Shortages in the OR: Solutions for New Models of Education. *AORN Journal*: 101(1)  
[http://www.aornjournal.org/article/S0001-2092\(14\)01093-X/fulltext](http://www.aornjournal.org/article/S0001-2092(14)01093-X/fulltext)  
Date of access: 06 Feb 2015.
- Blegeberg, B., Blomberg, A. & Hedelin, B. 2008. Nurses Conception of the Professional Role of Operation Theatre and Psychiatric Nurses. *Nordic Journal of Nursing Research*: 20 June.  
<http://njn.sagepub.com/content/28/3/9.abstract> Date of access: 22 October 2016. (Abstract)
- Botma, Y., Greeff, M., Maulaudzi, F.M. & Wright, S.C.D. 2010. Research in Health Sciences. Cape Town: Pearson.
- Bowden, J. 2008. Why do nursing students who consider leaving stay on their courses? *Nurse Researcher*: 15(3):45-58.  
<http://journals.rcni.com/doi/pdfplus/10.7748/nr2008.04.15.3.45.c6456>  
Date of access: 21 March 2015. (Abstract).

Bowen, G.A. 2008. Naturalistic inquiry and the saturation concept: a research note. *Qualitative Research*: 8(1):137-152. <http://qrj.sagepub.com/content/8/1/137.full.pdf+html>  
Date of access: 06 Aug 2015.

Brinkman, M.A. 2013. A focused ethnography: Experiences of registered nurses transitioning to the operating room. Dissertation.  
<http://pqdtopen.proquest.com/doc/1420357372.html?FMT=ABS>  
Date of access: 25 March 2015. (Abstract).

Bruce, J.C., Klopper, H.C. & Mellish, J.M. 2011. Teaching and Learning the practice of Nursing. 5th ed. Cape Town: Heinemann.

Buerhaus, P.I., Auerbach, D.I. & Staiger, D.O. 2009. The Recent Surge in Nurse Employment: Causes and Implications. *Health Affairs*: 28(4):657-668.

Choy, L.T. 2014. The Strengths and Weaknesses of Research Methodology: Comparison and Complimentary between Qualitative and Quantitative Approaches. *Journal of Humanities and Social Sciences*: 19(4):99-104.  
<http://www.iosrjournals.org/iosr-jhss/papers/Vol19-issue4/Version-3/N0194399104.pdf>  
Date of access: 25 October 2016.

Cockrell, E.D. 2002. Prenursing Students' Perceptions of the Nursing Profession. Louisiana: Northwestern State University. (Thesis – Masters).

Cullinan, K. 2006. Health services in South Africa: A basic introduction. *Health-e News Service*:  
[http://www.health-e.org.za/wp-content/uploads/2013/04/Health\\_services\\_briefing\\_doc.pdf](http://www.health-e.org.za/wp-content/uploads/2013/04/Health_services_briefing_doc.pdf)  
Date of access: 18 March 2015.

De Vos, A.S., Strydom, H., Fouché, C.B. & Delport, C.S.L. 2011. Research at Grass Roots. 4<sup>th</sup> ed. Pretoria: Van Schaik.

Degan, T. 2015. Medical Equipment Malfunctions are a Significant Cause of Operating Room Errors. *Chemnick/ Moen/ Greenstreet*.

<http://cmglaw.com/Blog/2015/12/Medical-Equipment-Malfunctions-Are> Date of access: 9 November 2016.

Dent, J.A. & Harden, R.M. 2013. A practical guide for medical teachers. 4<sup>th</sup> ed. London: Elsevier.

Dictionary.com. 2005. Definition of paraphrase.

<http://www.dictionary.com/browse/paraphrase> Date of access: 1 November 2016.

Dieckmann, P., Molin Friis, S., Lippert, A. & Østergaard, D. 2009. The art and science of debriefing in simulation: Ideal and practice. *Medical Teacher*: 3(1):e287-e294.

Durano, R.A. 2014. Nursing shortages in Norway and England: Status quo, implications and policy interventions. Oslo: Oslo and Akershus University College. (Thesis – Master).

[https://oda.hio.no/jspui/bitstream/10642/2289/2/Durano\\_RhaultaAraceli.pdf](https://oda.hio.no/jspui/bitstream/10642/2289/2/Durano_RhaultaAraceli.pdf)

Date of Access: 22 October 2016.

Ebrahim, G.J. (ed). n.d. Qualitative Field Research (In Sinkiss, D., Edmond, K., Bose, A. & Troy S. (eds) Mother and Child Health: Research Methods. *Journal of Tropical Pediatrics*: Oxford Journals. p196-211).

Ehlers, V.J. 2003. Professional Nurses' Requests to Remove Their Names from the South African Nursing Council's Register. *Health SA Gesondheid*: 8 (2):63-69.

[https://www.researchgate.net/profile/Valerie\\_Ehlers/publication/47787497\\_Professional\\_nurses\\_requests\\_to\\_remove\\_their\\_names\\_from\\_the\\_South\\_African\\_nursing\\_councils\\_register\\_Part\\_1\\_introduction\\_and\\_literature\\_review/links/00b7d520bb1b45f540000000.pdf](https://www.researchgate.net/profile/Valerie_Ehlers/publication/47787497_Professional_nurses_requests_to_remove_their_names_from_the_South_African_nursing_councils_register_Part_1_introduction_and_literature_review/links/00b7d520bb1b45f540000000.pdf)

Date of Access: 17 October 2016.

Ehlers, V.J., Oosthuizen, M.J., Bezuidenhout, M.C., Monareng, L.V. & Jooste, K. 2003. Post-basic nursing students' perceptions of the emigration of nurses from the Republic of South Africa: research. *Health SA Gesondheid*: 8 (4).

[http://reference.sabinet.co.za/sa\\_epublication\\_article/health\\_v8\\_n4\\_a4](http://reference.sabinet.co.za/sa_epublication_article/health_v8_n4_a4).

Date of access: 18 March 2015.

Emanuel, V. & Pryce-Miller, M. 2013. Creating supportive environments for students. *Nursing Times*: 17(37):18-20.

Emmerson, R.W. n.d. goodreads. <https://www.goodreads.com/quotes>

Date of access: 28 December 2016.

eTA see RSA

Frank, J.R. & Danoff, D. 2007. The CanMEDS initiative: Implementing an outcomes-based framework of physician competencies. *Medical Teacher*. 29(7):642-647.

George, G., Quinlan, T., Reardon, C. & Aguilera, J.F. 2012. 'Where are we short and who are we short of? A review of the Human Resources for Health in South Africa', *Health SA Gesondheid*: 17(1):1-7.

Grainger, P. & Bolan, C. 2006. Perceptions of nursing as a career choice of students in the Baccalaureate nursing programme. *Nurse Education Today*, 26(1):38-44.

[http://www.nurseeducationtoday.com/article/S0260-6917\(05\)00111-5/abstract](http://www.nurseeducationtoday.com/article/S0260-6917(05)00111-5/abstract)

Date of access: 24 October 2016. (Abstract).

Gregory, S., Bolling, D.R. & Langston, N.F. 2014. Partnerships and New Learning Models to Create the Future Perioperative Nursing Workforce. *AORN Journal*: 99(1):96-105.

Harvey, N. & Holmes C.A. 2012. Nominal group technique: An effective method for obtaining group consensus. *International Journal of Nursing Practice*. 18:188-194.

[https://www.researchgate.net/profile/Nichole\\_Harvey/publication/221902591\\_Nominal\\_group\\_technique\\_An\\_effective\\_method\\_for\\_obtaining\\_group\\_consensus/links/54d16af70cf28370d0e09477.pdf](https://www.researchgate.net/profile/Nichole_Harvey/publication/221902591_Nominal_group_technique_An_effective_method_for_obtaining_group_consensus/links/54d16af70cf28370d0e09477.pdf) Date of access: 28 October 2016.

Hiligsmann, M., van Durme, C., Geusens, P., Dirksen, C.D., van der Weijden, T., Reginster, J. & Boonen, A. 2013. Nominal group technique to select attributes for discrete choice experiments: an example for drug treatment choice in osteoporosis. *Dovepress*: 7:133-139.

<http://repository.ubn.ru.nl/bitstream/handle/2066/125715/125715.pdf?sequence=1>

Date of access: 28 October 2016.

Hope, A., Garside, A.H.J. & Prescott, S. 2011. Rethinking theory and practice: Pre-registration student nurses experiences of simulation teaching and learning in the acquisition of clinical skills in preparation for practice. *Nurse Education Today*, 31(7).

<http://www.sciencedirect.com/science/article/pii/S0260691710002637>

Date of access: 15 March 2015. (Abstract).

HPCSA (Health Professions Council of South Africa). 2004. Core competencies for undergraduate students in clinical associate, dentistry and medical teaching and learning programmes in South Africa. Pretoria: Undergraduate Education and Training Subcommittee of the Medical and Dental Professions Board in collaboration with training institutions and the South African Committee of Medical and Dental Deans.

Hubbs, L. s.a. Professional Perspectives: Perioperative Nursing – Orchestrating a Complex Arena of Care. *Nurses.com*.

<http://www.nurses.com/doc/professional-perspectives-perioperative-nursi-0001>

Date of access: 24 Oktober 2016.

Hughes, S.J. & Quinn, F.M. 2013. Quinn's Principles and Practice of Nurse Education. 6<sup>th</sup> ed. Hampshire: Cengage learning.

Issenberg, B.S., Ringsted, C., Østergaard, D. & Dieckmann, P. 2011. Setting a Research Agenda for Simulation-Based, *Sim Healthcare* 6:155–167.

Johnston, M. 2005. Nurse shortage delays urgent children's ops. *NZ Herald.co.nz*: 30 Mar.

[http://www.nzherald.co.nz/nz-nurses-](http://www.nzherald.co.nz/nz-nurses-organisation/news/article.cfm?o_id=416&objectid=10117745)

[organisation/news/article.cfm?o\\_id=416&objectid=10117745](http://www.nzherald.co.nz/nz-nurses-organisation/news/article.cfm?o_id=416&objectid=10117745) Date of access: 22 October 2016.

Kelly, P. & Tazbir, J. 2013. Essentials of Nursing Leadership & Management. 3<sup>rd</sup> ed. Hammond: Cengage Learning.

Kohn, L.T., Corrigan, J.M. & Donaldson, M.S. eds. 2000. To Err is Human. Washington,DC: National Academy Press.

Kolb, A. & Kolb, D. 2005. Learning Styles and Learning Spaces: Enhancing Experiential Learning in Higher Education. *Academy of Management Learning & Education*. 4(2):193-212.

Lewis, J. & Ritchie, J. 2003. Generalising from Qualitative Research. (In Ritchie, J. & Lewis, J., eds. *Qualitative Research Practice: A Guide for Social Science Students and Researchers*. London: Sage Publications. p.263-286.

[https://books.google.co.za/books?hl=en&lr=&id=hANdBAAAQBAJ&oi=fnd&pg=PA263&dq=Generalising+from+Qualitative+Research&ots=Qhg\\_Y8xcDk&sig=294KphQ15a2MkVWQ4fvvsnxA7i0#v=onepage&q=Generalising%20from%20Qualitative%20Research&f=false](https://books.google.co.za/books?hl=en&lr=&id=hANdBAAAQBAJ&oi=fnd&pg=PA263&dq=Generalising+from+Qualitative+Research&ots=Qhg_Y8xcDk&sig=294KphQ15a2MkVWQ4fvvsnxA7i0#v=onepage&q=Generalising%20from%20Qualitative%20Research&f=false)

Date of access: 15 March 2015.

Lues, L. & Lategan, L. 2006. *Re: Search*. Stellenbosch: African Sun Media.

Lyon, P.M.A. 2003. Making the most of learning in the operating OR: student strategies and curricular initiatives. *Medical Education*: 37(8):680-688.

<http://www.ncbi.nlm.nih.gov/pubmed/12895247> Date of access: 15 March 2015.

Lyon, P.M.A. 2004. A model of teaching and learning in the operating theatre. *Medical Education*, 38(12). [http://onlinelibrary.wiley.com/doi/10.1111/j.1365-](http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2929.2004.02020.x/abstract?deniedAccessCustomisedMessage=&userIsAuthenticated=false)

[2929.2004.02020.x/abstract?deniedAccessCustomisedMessage=&userIsAuthenticated=false](http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2929.2004.02020.x/abstract?deniedAccessCustomisedMessage=&userIsAuthenticated=false)

Date of accessed: 18 March 2015. (Abstract).

Meara, G. & Reive, R. 2013. Surgical Aseptic Technique and Sterile Field: Guideline for asepsis for invasive surgical procedures conducted in Community-based Health Care Settings. Alberta Health Services, Infection Prevention and Control, Standards and Projects.

<http://www.albertahealthservices.ca/assets/wf/eph/wf-eh-surgical-aseptic-technique-sterile-field.pdf> Date of access: 9 November 2016.

Messina, B.M., Ianniciello, J.M. & Escallier, L.A. 2011. Opening the doors to the OR: providing students with perioperative clinical experiences. *AORN Journal*, 94(2).

<http://www.sciencedirect.com/science/article/pii/S0001209211005187>

Date of access: 27 March 2015. (Abstract).

Meyer, R. 2014. Students Perception of the Operating Room as a Clinical Learning Environment. Cape Town: Stellenbosch University. (Dissertation – MPhil). Date of access: 30 March 2015.

Milkins, L., Moore, C. & Spiteri, J. 2014. Simulation based education. Professional entry student education and training. Gladesville: Health Education & Training Institute (HETI).

Morse, J.M., Barrett, M., Mayan, M., Olson, K. & Spiers, J. 2002. Verification Strategies for Establish Reliability and Validity in Qualitative Research. *International Journal of Qualitative methods*: 1(2):13-22. <http://garyrolfe.net/documents/validitytrustworthiness.pdf> Date of access: 3 July 2015.

Mullen, L. & Byrd, D. 2013. Using simulation training to improve perioperative patient safety. AORN Journal, 97(4) <http://www.sciencedirect.com/science/article/pii/S0001209213001452> Date of access: 27 March 2015. (Abstract).

Neilson, G.R. & Jones, M.C. 2012. What predicts the selection of nursing as a career choice in 5th and 6th year school students? *Nurse Education Today*: 32(5). [http://www.nurseeducationtoday.com/article/S0260-6917\(11\)00176-6/abstract](http://www.nurseeducationtoday.com/article/S0260-6917(11)00176-6/abstract) Date of access: 20 March 2015. (Abstract).

Neilson, G.R. & Lauder, W. 2008. What do high academic achieving school pupils really think about a career in nursing: Analysis of the narrative from paradigmatic case interviews? *Nurse Education Today*: 28(6). <http://www.sciencedirect.com/science/article/pii/S0260691711001766> Date of access: 20 March 2015.

Nieuwenhuis, J. 2014. Qualitative research designs and data gathering techniques. In Maree, K. (ed.) *First Steps in Research*. Pretoria: Van Schaik Publishers. p. 70-97.

O'Brien, F., Mooney, M. & Glacken, M. 2008. Impressions of nursing before exposure to the field. *Journal of Clinical Nursing*: 17:1843-1850 <http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2702.2007.02214.x/abstract> Date of access: 20 March 2015.



Prince, J.Y. 2007. Operating Room Nursing Science Learning Programmes in South Africa. PE: Nelson Mandela Metropolitan University. (Thesis – Masters)

Rithie, J. & Lewis, J. 2003. Qualitative Research Practice: a Guide for Social Science Students and Researchers. London SAGE Publications.

RSA DoH (Republic of South Africa. Department of Health and Human Services). 2006. Gaining Consensus among Stakeholders through the Nominal Group Technique. eTA Evaluation Briefs 7.

RSA DoH (Republic of South Africa. Department of Health). 2012/13–2016/17. *Strategic Plan for Nurse Education: Training and Practice*.  
[http://www.sanc.co.za/archive/archive2013/linked\\_files/strategic\\_plan\\_for\\_nurse\\_education\\_training\\_and\\_practice.pdf](http://www.sanc.co.za/archive/archive2013/linked_files/strategic_plan_for_nurse_education_training_and_practice.pdf). Date of access: 18 March 2015.

SANC (South African Nursing Council). n.d. Bachelor's Degree in Nursing and Midwifery Qualifications Framework  
<http://www.sanc.co.za/pdf/Qualifications/bachelor's%20degree%20in%20nursing%20and%20midwifery%202014-07-23.pdf> Date of access: 17 October 2016.

SANC (South African Nursing Council). 1978. Regulation Relating to the Scope of Practice of Persons Who are Registered or Enrolled under the Nursing Act 50,1978.  
<http://www.sanc.co.za/regulat/Reg-scp.htm> Date of access: 03 November 2015.

SANC (South African Nursing Council). 2005. Nursing Education and Training Standards  
<http://www.sanc.co.za/pdf/Nursing%20Education%20and%20Training%20Standards.pdf>  
 Date of access: 8 Sept. 2015.

SANC (South African Nursing Council). 2009. Circular 3/2009: implementation of the New Nursing Qualifications Registered on the National Qualifications Framework (NQF).  
<http://www.sanc.co.za/archive/archive2009/newsc903.htm> (SANC Circular 3/2009).  
 Date of Access: 21 October 2016.

SANC (South African Nursing Council). 2014. Statistics.

<http://www.sanc.co.za/stats/stat ts/Growth/Growth%202005-2014.pdf>

Date of access: 18 March 2015.

Sondergaard, S.F., Lorentzen, V., Sorensen, E.E. & Frederiksen. 2016. The documentation practice of perioperative nurses. A literature review. *Journal of Clinical Nursing*.

<http://onlinelibrary.wiley.com/doi/10.1111/jocn.13445/abstract>

Date of access: 8 November 2016 (Abstract).

Szent-Györgyi, A. n.d. Quote Investigator. <http://quoteinvestigator.com/2015/07/04/seen/>

Date of access: 8 November 2016.

The free dictionary. 2003. Definition of Operating Theatre Nurse.

<http://medical-dictionary.thefreedictionary.com/operating+room+nurse>

Date of access: 17 March 2015.

Timmons, S & Tanner, J. 2004. A disputed occupational boundary: operating theatre nurses and operating department practitioners. *Sociology of Health & Illness*: 26(5).

<http://onlinelibrary.wiley.com/doi/10.1111/j.0141-9889.2004.00409.x/ful> Date of access: 14

March 2015.

UFS SoN (University of the Free State, School of Nursing). 2016. B.Soc.Sc. Third year.

Clinical Outcomes. Bloemfontein: UFS. (Study guide NVRP 3714 & NVRP 3724).

Unser, B. 2016. BrainyQuote.

<https://www.brainyquote.com/quotes/keywords/preparation.html>

Date of access: 21 November 2016.

UWM (University of Wisconsin-Madison). 2006. Nominal Group Technique – Advancing

Recovery. <http://www.advancingrecovery.net/Content/ContentPage.aspx?NID=121> Date of

access: 16 September 2015.

Vaismoradi, M., Turunen, H. & Bondas, T. 2013. Content analysis and thematic analysis:

Implications for conducting a qualitative descriptive study. *Nursing & Health Sciences*:

15:398-405.

Van Breda, A.D. (2005). Steps to analysing multiple-group NGT data. *The Sosial Word Practitioner-Researcher*: 17(1):1-14.

[http://www.adrian.vanbreda.org/pubs/24\\_swpr\\_steps\\_to\\_analysing\\_multiple\\_group\\_ngt\\_data.pdf](http://www.adrian.vanbreda.org/pubs/24_swpr_steps_to_analysing_multiple_group_ngt_data.pdf) Date of Access: 4 November 2016.

Van der Merwe, P.L. 2005. Die Studentverpleegkundige se Belevens van die Operasiesaal. Bloemfontein: UFS. (theses – Magister).

Van Heerden, R. n.d. Nominal Group Technique. Bloemfontein: UFS. (Power Point Presentation).

### **PERSONAL COMMUNICATION**

Hattingh, M.G.M. 2015. Operating Room Experience [personal communication]. 15 May 2015. University of the Free State.

Van der Merwe, P.L. 2015. Operating Room Experiences of Nursing students and discussion of her Thesis [personal communication}. 4 September 2015. Universitas Hospital.

APPENDIX A:

INFORMED CONSENT  
FOR PARTICIPANTS  
OF THE STUDY

## **CONCENT FOR PARTICIPATION IN THE FOLLOWING STUDY:**

### **PREPARATION OF NURSING STUDENT FOR OPERATING ROOM EXPOSURE.**

#### **INTRODUCTION**

You are invited to join a research study that want to determine if the preparation of the B.Soc.Sc (Nursing) student for their operating room clinical placement is adequate and if needed how this preparation could be improved. The decision to join, or not to join, is up to you.

#### **WHAT IS INVOLVED IN THE STUDY?**

If you decide to participate you will be asked to take part in a Nominal Group Technique (NGT) session which should not take longer than 120 minutes. NGT is an organized small group discussion that will be used in this study to identify key ideas regarding topic of interest. Information is gathered by asking participants to list suggestions or ideas and then to partake in the prioritisation of the context of the list. This process will result in a set of prioritised ideas or recommendations that will be representative of the group as a whole.

This is the format that will be followed and approximate time you will be busy with the NGT:

#### **Introduction by the facilitator (10 mins)**

#### **Stage 1 – Individual responses (20 mins)**

- You will be presented with a question
- You will be given time to write down your thoughts
- Each of you will have a turn to state one thoughts at a time and this will continue till every participant has state all of the thoughts that was written down

#### **Stage 2 – Clarification and consolidation of responses (20 min)**

- You will be asked to number the responses that were listed so that we can decide if any are the same by editing the responses on the board
- We want to make sure that everyone has the same understanding of the responses

#### **Stage 3– Ranking responses (15 min)**

- You will now choose the 5 thoughts on the list which are 'more important' and you will rank them 1 to 5
- Rank these in in order of most important thought to least important thought

- By taking everyone's ranking order the top 5 will be determined

**The above will be repeated for the next question – this group session will have only 2 questions (55 min)**

The investigators may stop the study or remove you from the study if you do not conform to the set ground rules, this can be done without your consent. You can stop participating at any time. If you stop you will not lose any benefits.

### **BENEFITS TO TAKING PART IN THE STUDY?**

It is reasonable to expect the following benefits from this research:

B.Soc.Sc students in the future may benefit from the information we find in this study.

A well developed and appropriate preparation programme will improve the students learning while being placed in the operating room and we hope that if this programme can improve their experience while working in the operating room the student will want to return to the operating room full time after completion of his/her studies.

### **CONFIDENTIALITY**

To ensure you confidentiality no names will be linked to any of the thoughts or opinions listed.

### **INCENTIVES**

Please know that you will receive no form of payment for your participation in this study.

### **YOUR RIGHTS AS A RESEARCH PARTICIPANT?**

Participation in this study is voluntary. You have the right not to participate at all or to leave the study at any time. Deciding not to participate or choosing to leave the study will not result in any penalty, and it will not harm your relationship with the facilitators or me the researcher.

### **CONTACTS FOR QUESTIONS OR PROBLEMS?**

Mrs. Shimoné C. Breedt

Researcher

Email address: [shimone.breedt@gmail.com](mailto:shimone.breedt@gmail.com)

Cell phone: +27725525113

## APPENDIX B:

# INGELIGDE TOESTEMMING VAN DEELNEMERS AAN DIE STUDIE

## **TOESTEMMING TOT DEELNAME AAN DIE VOLGENDE STUDIE:**

### **VOORBEREIDING VAN DIE STUDENT VERPLEEGKUNDIGE VIR HUL OPERASIE SAAL BLOOTSTELLING**

#### **INLEIDING**

U word uitgenooi om deel te neem aan 'n navorsings studie wat will bepaal of die voorbereiding van die B.Soc.Sc (Verpleging) student vir hulle operasie saal kliniese plasing voldoende is en indien nodig hoe hierdie voorbereiding verbeter kan word. Die besluit om deel te neem of nie is joune alleenlik.

#### **WAT BEHELS DIE STUDIE?**

As u sou besluit om deel te neem sal daar van u verwag word om deel te neem aan 'n Nominale Groep Tegniek (NGT) sessie wat nie langer behoort te neem as 120 minute.

'n NGT is 'n georganiseerde klein groep bespreking wat gebruik gaan word om sleutel idees bymekaar te maak aangaande die onderwerp van belang. Informasie word bymekaar gemaak deur die deelnemers te vra om voorstelle of idees te lys en om dan deel te neem in die prioritisering van die inhoud van die lys. Dit sal dan tot gevolg he dat daar 'n stel geprioritiseerde idees of recommendasies is wat dan verteenwoordigend van die groep as 'n geheel sal wees.

Hierdie is 'n uiteensetting van die formaat wat gevolg sal word as ook die gemiddelde tyd wat dit sal neem:

#### **Bekendstelling van die fasiliseerder (10min)**

##### **Fase 1 – Individuele bydraes (20min)**

- Die vraag sal aan jou voorgehou word
- Jy sal tyd gegee word om jou gedagtes neer te skryf
- Elkeen van julle sal dan die geleentheid gegee word om een gedagte per slag te gee en dit sal herhaal totdat elke gedagte van elke deelnemer afgeneem is

##### **Fase 2 – Duidelik making en konsolidering van die bydras (20min)**

- Julle gaan dan gevra word om die bydraes te lys soda tons kan besluit of enige van hulle dalk dieselfde is deur die bydras te redigeer op die bord
- Hier gaan ons seker maak dat hulle verstaan wat bedoel word met elke bydra

##### **Fase 3 – Plasing van die bydras in Rang orde (15min)**

- Jy gaan die 5 belangrikste bydras op die lys kies
- Rangskik die 5 bydras in orde van belangrikheid van 1 tot 5
- Deur almal se rangorders in ag te neem, word daar bepaal wat die top 5 is



**Die bogenoemde proses sal herhaal word om die volgende vraag te beantwoord – die groep sesses sal slegs twee vrae hê (55min)**

Die ondersoeker mag ten enige tyd die studie stop of jou verwyder van die study as jy nie by die grondreels hou nie, dit kan gedoen word sonder om jou toestemming te kry. Jy mag ook ten enige tyd jou deelname stop sonder dat dit jou tot enige nadeel sal wees.

**VOORDELE VAN DEELNAME AAN DIE STUDIE**

Dit sal redelik wees om die volgende voordele van die navorsing te verwag:

Toekomstige B.Soc.Sc student sal kan voordeel trek van die inligting wat deur die studie verkry word.

'n Goed ontwikkelde and toepaslike voorbereidings program sal die studente se leer tydens hulle plasing in die operasie saal kan verbeter en ons hoop dat as die program hulle ervaring van die operasie saal terwyl hulle daar werk in so mate sal verbeter dat die studente sal wil terug keer na die operasie saal na die voltooiing van hulle studies.

**KONFIDENSIALITEIT**

Om konfidensialiteit te verseker sal geen name aan enige van die bydraes of opinies verbind word nie.

**VERGOEDING**

Neem asseblief kennis dat geen vergoeding van enige vorm ontvang sal word nie vir jou deelname aan die studie.

**YOU REGTE AS 'N NAVORSINGS DEELNEMER?**

Deelname aan die study is vrywillig. Dis jou reg om nie deel te neem nie of om ten eniger tyd te onttrek. Die besluit om nie deel te neem of om te onttrek van die study sal nie ly tot enige vorm van beboeting nie, sal nie skade aan die verhouding met die fasiliseerders of myself to gevolg hê nie.

**KONTAK MY MET ENIGE VERDERE VRA OF PROBLEME?**

Mev. Shimoné C. Breedts

Navorsers

E-pos adres: [shimone.breedts@gmail.com](mailto:shimone.breedts@gmail.com)

Selfoon: +27725525113

APPENDIX C:

HEALTH SCIENCES RESEARCH  
ETHICS COMMITTEE  
APPROVAL LETTER

IRB nr 00006240  
REC Reference nr 230408-011  
IORG0005187  
FWA00012784

20 April 2016

MRS SC BREEDT (DR MJ LABUSCHAGNE)  
DIVISION HEALTH SCIENCES EDUCATION  
FACULTY OF HEALTH SCIENCES  
UFS

Dear Mrs Breedt

**ECUFS NR 202/2015**

**MRS SC BREEDT (DR MJ LABUSCHAGNE)**

**BLOEMFONTEIN MEDICLINIC THEATRE (DIVISION HEALTH SCIENCES EDUCATION)**

**PROJECT TITLE: PREPARATION OF NURSING STUDENTS FOR OPERATING ROOM EXPOSURE**

1. You are hereby kindly informed that, at the meeting held on 19 April 2016, the Health Sciences Research Ethics Committee (HSREC) approved the above project after all conditions were met.
2. The Committee must be informed of any serious adverse event and/or termination of the study.
3. Any amendment, extension or other modifications to the protocol must be submitted to the HSREC for approval.
4. A progress report should be submitted within one year of approval and annually for long term studies.
5. A final report should be submitted at the completion of the study.
6. Kindly use the **ECUFS NR** as reference in correspondence to the HSREC Secretariat.
7. The HSREC functions in compliance with, but not limited to, the following documents and guidelines: The SA National Health Act. No. 61 of 2003; Ethics in Health Research: Principles, Structures and Processes (2015); SA GCP(2006); Declaration of Helsinki; The Belmont Report; The US Office of Human Research Protections 45 CFR 461 (for non-exempt research with human participants conducted or supported by the US Department of Health and Human Services- (HHS), 21 CFR 50, 21 CFR 56; CIOMS; ICH-GCP-E6 Sections 1-4; The International Conference on Harmonization and Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH Tripartite), Guidelines of the SA Medicines Control Council as well as Laws and Regulations with regard to the Control of Medicines, Constitution of the HSREC of the Faculty of Health Sciences.

Yours faithfully



DR SM LE GRANGE  
CHAIR: HEALTH SCIENCES RESEARCH ETHICS COMMITTEE

APPENDIX D:


PERMISSION TO CONDUCT  
RESEARCH AT  
UNIVERSITAS HOSPITAL

Dr P Chikobvu

On behalf of the acting Nursing Manager Me BE Molisapoli of UAH I write you this e-mail to inform you of the notice received from the Research study that will take place in Universitas Academic Hospital. The student will be Me SC Breedt doing a mini-dissertation to obtain a Masters Degree in Health Professions Education at the UFS. The title is "Preperation of nursing students for operating room exposure"

As Nursing Manager Me BE Molisapoli will support the Nursing Student obtaining her Masters degree and permission may be granted as the Ethics committee have approved the research all ready (Faculty of Health Sciences - ECUFS Nr202/2015)

Notice attached for your information/ approval granted



Acting Head of Nursing.

Me BE Molisapoli  
Acting Head of Nursing  
Tel 0514053417

Regards  
Linda Strydom (Acting secretariat for Head of Nursing)  
Room 1080 1st Floor  
Universitas Academic Hospital (Central)  
Bloemfontein

APPENDIX E:

DECLARATION  
FROM LANGUAGE EDITOR

17 January 2017

*Luna Bergh*

55 Jim Fouché Avenue  
Universitas, Bloemfontein

To whom it may concern

This is to certify that I language-edited Shimone Breedts' mini-dissertation manually, excluding references. She effected the changes herself. In this way both linguistic excellence and the candidate's ownership of her text were ensured.

Sincerely



Luna Bergh

D Litt et Phil

Language and writing specialist

APPENDIX F:

TURNITIN





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PREPARATION OF NURSING STUDENTS  
FOR OPERATING ROOM EXPOSURE

by  
**SHIMONE CHANTÉL BREEDT**

*Not submitted in fulfillment of  
any requirements for the degree  
Magister in Health Professions Education  
(MHEP)*

AS THE  
DIVISION OF HEALTH SCIENCES EDUCATION  
FACULTY OF HEALTH SCIENCES  
UNIVERSITY OF THE FREE STATE  
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