Strategies to enhance teaching and learning in the Primary Health Care qualification for professional nurses in South Africa

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DECLARATION

I, Elsabe Bornman, PhD candidate 12660531 solemnly declare that the following study is my own work regarding the study with title: *Strategies to enhance teaching and learning in the Primary Health Care qualification for professional nurses in South*. No plagiarism or intention to steal was committed of my knowing, whenever literature was needed to support or strengthen my argument. I have completely referred to the author's whose work I have used. Full credit was provided to the authors as cited in the bibliography and in the text.

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ABSTRACT

The need for clinically skilled and competent nurses in the primary health care nursing (PHCN) services in South Africa cannot be overemphasised. It is well known that Primary Health Care (PHC) services are the community's first contact with health care services. Several problems have been identified with the quality of the service and the skills of PHC nurses (Rispel & Barron 2012:620; Gosangaye & Mayeye, 2013:110).

The teaching and learning of PHC nurses are therefore important to ensure quality services to the community. Key challenges that were identified in nursing education in general are the critical shortage of nurses, inadequate funding, and the lack of skills and competency of nurses in general (Department of health (DoH), 2008:11). Stellenberg *et al*. (2018:29) stated that the contributing factors to adverse events leading to litigation of nurses are, amongst others, a lack of training and knowledge and failure to apply institutional guidelines. There remain concerns about the inadequate clinical skills exhibited by nurses qualified in clinical nursing science, assessment, diagnosis, treatment and care (CNSTC) in PHC clinics in South Africa.

This research aimed to identify strategies for enhancing the teaching and learning of clinical skills in the CNSTC programme. The ultimate goal was to provide strategies that would improve the teaching and learning of clinical skills to provide clinically competent nurses who are able to render excellent and safe patient care that coincides with the planned transformation of the South African health system. A qualitative design was followed with exploratory, interpretive, descriptive and contextual strategies and took place in consecutive phases. In phase one the principles of an Appreciative Inquiry (AI) were applied in interviews to determine the approaches of clinical teaching and learning that are currently applied in higher education institutions in South Africa. A purposive sample of nursing educational institutions and nursing educators were used. Interviews were conducted with educators (*n*=9) involved in the teaching of clinical skills in the CNSTC programme and CNSTC newly qualified nurses (*n*=26) which were selected via snowball sampling. Six themes and eight sub-themes were identified. In the second phase an integrated literature review (ILR) was done, based on the themes from phase one. The results from phase one and two were then synthesised and six strategies were identified as well as possible gaps in the teaching and learning approaches. During phase three of the research the Delphi technique was applied in order to validate the identified strategies and assess the feasibility and applicability of the strategies. Experts in CNSTC (round one *n*=18, round two *n*=11) were selected through purposive sampling and requested to rank the strategies in order of importance. The resulted order is firstly, clinical accompaniment and supervision in practice and simulation with, secondly, authentic (real) patients for assessment by students under supervision of educators or facilitators

in an environment where students can build self-confidence. The third strategy identified was the holistic, comprehensive management of patients, not only treating a disease. The fourth strategy emphasised the importance of specialised simulation and other equipment for practice and demonstration before students enter clinical practice. The fifth strategy was the importance of making contextual policies and guidelines available and known to students and the final strategy was the use of digital learning material to support student's learning.

The research was evaluated and limitations were discussed. Finally concluding statements were formulated highlighting the contribution of the research towards nursing education and clinical practice and suggestions for subsequent research were made.

Key words: clinical nursing education, primary health care nursing, clinical skills, teaching and learning strategies.

OPSOMMING

Die behoefte vir klinies-vaardige en bekwame verpleegkundiges in primêre gesondheidsorg verpleegkunde (PGSV) in Suid-Afrika kan nie genoeg beklemtoon word nie. Dit is welbekend dat Primêre Gesondheidsorg (PSG) die eerste kontak van die gemeenskap met gesondheidsorg dienste is en dat verskeie probleme met die kwaliteit van die diens en vaardighede van PGS verpleegkundiges geïdentifiseer is (Rispel & Barron 2012:620; Gosangaye & Mayeye, 2013:110).

Die onderrigleer van PGSV is derhalwe belangrik ten einde kwaliteit dienste aan die gemeenskap te verseker. Die kritiese tekort aan verpleegkundiges, onvoldoende befondsing, en die gebrek aan vaardighede en bevoegdheid van verpleegkundiges in die algemeen is sleuteluitdagings wat geïdentifiseer is (DoH, 2008:11). Stellenberg *et al*. (2018:29) stel dat die faktore wat bydra tot die negatiewe insidente wat aanleiding gee tot litigasie, onder meer die gebrek aan opleiding en kennis is, asook die versuim om institusionele riglyne toe te pas. Daar heers steeds kommer oor die onvoldoende kliniese vaardighede wat deur PGS-gekwalifiseerde verpleegpersoneel in PGS-klinieke in Suid-Afrika ten toon gestel word.

Die navorsing het gepoog om strategieë te identifiseer vir die verbetering van die onderrigleer van gevorderde verpleegpraktisyns in die PGSV-program om uiteindelik klinies-vaardige verpleegkundiges wat bevoeg is om uitnemende en veilige pasiëntsorg te lewer wat strook met die beplande transformasie van die Suid-Afrikaanse gesondheidstelsel. ’n Kwalitatiewe ontwerp is gevolg met verkennende, beskrywende, en kontekstuele strategieë. Die navorsing het in opeenvolgende fases plaasgevind. In fase een is die beginsels van ’n waarderende ondersoek in onderhoude aangewend om die strategieë van kliniese onderrig en -leer, wat tans in hoëronderwysinstellings toegepas word, te bepaal. Verpleegopleidingsinstansies is deur middel van ’n doelgerigte steekproef geïdentifiseer. Onderhoude is gevoer met lektore (*n*=9) wat betrokke is in die onderrig van kliniese vaardighede in Kliniese Verpleegkunde, Diagnose, Behandeling en Sorgprogram (CNSTC-program) en professionele verpleegkundiges (*n*=26) wat pas geregistreer het in die kwalifikasie wat deur middel van sneeubal steekproefmetode geïdentifiseer is. In die tweede fase van die navorsing is ’n geïntegreerde literatuuroorsig gedoen, gebaseer op die temas wat in fase een geïdentifiseer is. Die resultate van fase een en twee is gesintetiseer en ses strategieë is geïdentifiseer asook moontlike gapings in die onderrigleer benaderings. Tydens fase drie van die navorsing is die Delphi tegniek gevolg ten einde die geïdentifiseerde strategieë te valideer en die toepaslikheid daarvan te beoordeel. Kundiges in CNSTC (eerste rondte *n*=18, tweede rondte *n*=11) is geselekteer deur doelgerigte steekproef en is ook versoek om die strategieë in volgorde van belangrikheid aan te dui. Die strategieë was in volgorde van belangrikheid, eerstens, kliniese begeleiding en toesig in praktyk en simulasie met, tweedens, die

beskikbaarheid van outentieke (regte) pasiënte vir assessering deur studente onder toesig van lektore en fasiliteerders in ’n omgewing waar studente selfvertroue kan bou. Die derde strategie beklemtoon ’n holistiese benadering tot hantering en behandeling van pasiënte. Die vierde geïdentifiseerde strategie is toegang tot gespesialiseerde (simulasie-) strategie is die belangrikheid van kontekstuele beleide en riglyne wat beskikbaar gestel word aan studente, en die laaste strategie die gebruik van digitale leermateriaal.

Die navorsing is daarna geëvalueer en beperkings is bespreek. Ten slotte is aanbevelings vir verpleegopleiding en kliniese praktyke, asook voorstelle vir toekomstige navorsing gemaak.

Sleutelwoorde: kliniese verpleegopleiding, primêre gesondheidsorg verpleegkunde, kliniese vaardighede, onderrig- en leerstrategieë.

ABBREVIATIONS

AI	Appreciative Inquiry
AIDS	Acquired Immune Deficiency Syndrome
ANA	American Nursing Association
ANC	African National Congress
ANP	Advanced Nurse Practitioner
APRN	Advanced Practice Registered Nurse
ART	Anti-retroviral Therapy
ARV	Anti-retroviral Program
CASP	Critical Appraisal Skills programme
CHW	Community Health Worker
CNS	Clinical Nurse Specialist
CNSTC	Clinical Nursing Science, Health Assessment, Diagnosis, Treatment and Care
COPC	Community Oriented Primary Care Model
DHS	District Health System
DOH	Department of Health
DVD	Digital Video Disc
EDL	Essential Drug List
EPI	Extended Programme for Immunisation
EPPI	Evidence for Policy and Practice Information
FUNDISA	Forum of University Nursing Deans of South Africa
HEI	Higher Education Institution
HIV	Human Immune Virus
HREC	Health Research Ethics Committee
HRH	Human Resources of Health
IMCI	Integrated Management of Childhood Illnesses
JBI	Joanna Briggs Institute
NACNS	National Association of Clinical Nurse Specialists
NEI	Nursing Education Institution
NHI	National Health Insurance
NHP	National Health Plan

NIMART	Nurse Initiated Management of Anti-retroviral Therapy
OSCE	Objective Structured Clinical Examination
PHC	Primary Health Care
PHCN	Primary Health Care Nursing
PMTCT	Prevention of Mother-to-Child Transmission
RQ	Research Question
SANC	South African Nursing Council
TB	Tuberculosis
UK	United Kingdom
USA	United States of America
WBOT	Ward Based Outreach Programme
WHO	World Health Organisation

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CHAPTER 1: OVERVIEW AND BACKGROUND TO THE RESEARCH

Chapter 1 provides an overview of the research. This overview comprises of an introduction and background, a problem statement followed by the research aims and objectives, the researcher's theoretical assumptions. The research design and methodology are diagrammatically described and followed by the ethical considerations of the research and strategies to enhance trustworthiness.

1.1 INTRODUCTION

This research endeavored to describe the current practice of teaching and learning of the clinical skills of professional nurses registered for an advanced clinical nursing qualification namely Clinical Nursing Science, Health Assessment, Treatment and Care (CNSTC) in South Africa (South African Nursing Council (SANC), 1985a; SANC, 1985b). The aims of this research were to identify strategies to enhance the teaching and learning of clinical skills to students registered for this qualification. This qualification prepares a professional nurse for the comprehensive service delivery of primary health care (PHC), which is the basis of the National Health Insurance (NHI) Plan. Professional nurses registered with this qualification at SANC, are known as PHC Nurses. According to Dookie and Sing (2012:1471), each community has unique social and economic challenges that influence the delivery and the need for specific PHC services to successfully improve the health status of the community. Several authors refer to the necessity of effectively educated and skilled nurses to ensure the successful implementation of the NHI plan (Department of Health [DoH], 2008:11; Cullinan, 2006:8; Naledi *et al.*, 2011:24; Rispel & Barron, 2012:620).

1.2 BACKGROUND TO THIS RESEARCH

1.2.1 Primary health care

PHC services are seen as the first contact to health care in communities. Dennill and Rendall-Mkosi (2012:5) describe the main objective of PHC as the improvement of the health status of the population which should be based on sound scientific research and delivered in socially acceptable methods. In 1978, the WHO described PHC as an acknowledgement of the role of health care providers from diverse disciplines, within the philosophy and framework of PHC that is guided by the principles of access, equity, essentiality, appropriate technology, multi-sectoral collaboration and community participation and empowerment" (WHO, 1978). This definition was established in 1978 during the Alma-Ata "Health for All by 2000" conference by the World Health Organization (WHO, 1978:11). The eight (8) basic components or elements of any PHC programme as described by Dennill and Rendall-Mkosi (2012:5) are the promotion of adequate

nutrition; health education on current health matters and preventative actions, mother and child care which includes family planning and identification and care of high risk groups; immunisations for infectious diseases; supplying of essential drugs, treatment of chronic diseases and injuries, communicable disease management; and safe water and basic sanitation supplies. These core components are based on the pretext that PHC is the entry point of care to the health care system where the patient is either managed on an ongoing basis or referred to a secondary service. All members of the community should have access to these integrated services which is part of the community and a dynamic programme that has the end goal of improving the health status of the community. Success in the implementation of PHC depends on political commitment and the delivery of promotive, preventative, curative and rehabilitative services that are accessible, available, affordable and acceptable with equity, effectiveness and efficiency as the core methods of delivery (WHO, 1978:11). Each community has unique social and economic challenges that influence the delivery and the need for specific PHC services and the programme has to be adjusted to meet the needs of the community to be successful in improving the health status of the community (Dookie & Sing, 2012:1471). These authors emphasise the need of adequately trained health professionals with advanced skills to deliver an effective PHC programme.

1.2.2 The development of the South African health care system

The first documented implementation of PHC in South Africa was as early as 1944 when the then Department of Public Health started with a community oriented primary care (COPC) model in rural Natal. This was known as the Pholela experiment but after 1948 a combination of politics, medical and racial events caused this model to wither and disappear (Philips, 2014:1872; Sibiya, 2013:29). Before 1994 the health care systems were influenced by segregation and Apartheid with different systems in place for different races and communities. Different tiers of health care existed as fourteen separate health departments provided for different groups of the population (black, white, coloured, Indian and homelands) and fragmentation of resources, authority and services resulted in separation of public facilities for whites and blacks (Jobson, 2015:4).

From 1980 the health system consisted of a dual service based on insurance with structured barriers influencing access and services (Phillips, 2014:1872). The segregation in public health services, advancement in technology and commercialisation, caused a growth in the private health sector and the increased use of public hospitals resulted in increased medical costs for public health services. Medical insurance became exclusive to those with the necessary funding in exclusion of a great number of the South African population. Currently of the South African population of more or less 52 million people only 8,2 million people have a form of medical insurance, which means that 44 million people are dependent on public health services.

After the 1994 elections, the first democratic government of South Africa started with a National Health Plan (NHP) that was envisaged by the African National Congress (ANC) to address the injustices of the past and provide comprehensive health care to all South Africans. The NHP promoted a single structure responsible for health care services enhancing the new government's aims of social justice and equity (Coovadia *et al*., 2009:817; DoH, 2002:11). The NHP was developed on the following principles (ANC, 1994:19-25):

- The *right* of every citizen to achieve *optimal health* and be treated with respect;
- The NHP would be based on the *PHC philosophy*, which encompasses a comprehensive service specifically for rural and vulnerable communities;
- The *community* will partake in all aspects of the development and implementation of the services through the framework of a district health system (DHS);
- An *inter-sectorial* approach will be followed allowing other governmental sectors for example education, water affairs, sanitation and local municipalities, to collaborate;
- The *government* would be responsible for a single, assessable and equitable service;
- The structure would be from a central to provincial to district/community levels;
- Funding for the NHP would be from *general tax revenue*;
- Existing personnel would be *substantially trained, reoriented, redistributed* and new personnel would be trained to support the transformation of health services;
- A *comprehensive health information* system would be developed for data collection and analysis to support planning and management of the health services.

The National Health Act (Act 61 of 2003) was promulgated in 2004 and describes the current health system where various departments were incorporated into a national health system with a common goal for the promotion and improvement of health of the country. The three levels of the health system consist of the national, provincial and district levels. The national level is concerned with policy development, identifying of aims and objectives and the set of norms and standards for health care delivery. At the provincial level the National Health Act (Act 61 of 2003) makes provision for the support and management of hospitals, giving specialised health care as well as the districts providing health care. It is expected, according to the National Health Act (Act 61 of 2003), that the head of the provincial DoH will consult with communities and district councils to ensure that community health care needs are met.

At the third level are the district health services (DHS) responsible for PHC delivery, the core of the health services. The districts are established according to municipal boundaries and supported by the provincial government. The municipal health services include water and sanitation as well as health care services such as community health centres and clinics. Van Rensburg and Engelbrecht (2012:144) describe the district-based PHC system as "the district being the vehicle through which PHC services are offered to a specific population, in a specific area through a variety of health care structures". According to this system PHC is therefore the first point of entry to the community to health care and the core of the system.

With the development of DHS's it became essential to up-scale PHC delivery and subsequently several health programmes were initiated. Policies and health plans were developed, focusing on human immunodeficiency virus and Acquired immune deficiency syndrome (HIV/AIDS) and Tuberculosis (TB), based on the principles of PHC and implemented in health care delivery (DoH, 2004:18). This resulted in changing the health care delivery from a curative and hospital-centred delivery of health care to a nurse-driven, PHC approach (Hatting *et al.,* 2012:11). During 2010 the government announced a ten point plan aiming to improve the national health profile (DoH, 2010). The DoH strategic plan for 2009 that was published in 2010, and led to a discussion document on the "re-engineering of PHC in South Africa and was signed by the Minister of Health and other sector ministers. The aim of this initiative was to develop PHC as part of the NHP and meeting the priority needs of the population, improve the DHS, reduce major causes of ill health and serve communities where they live. One of the policies developed during this time was the anti-retroviral (ARV) guidelines that were instated for a nurse initiated treatment of patients with HIV on PHC level. These professional nurses were to be specifically trained to initiate the treatment, relieve the burden from doctors and decentralising HIV treatment (NIMART) to PHC clinics (DoH, 2010). The re-engineering of PHC focuses on preventative and promotive health, based on community involvement and starting with ward based outreach teams (WBOT's). These teams would consist of a PHC nurse, community health workers (CHW's), health promotors and environmental health practitioners (Rispel & Barron, 2012:621).

Notwithstanding the mentioned changes, the realisation of the PHC had several gaps in service delivery that was identified as early as 2008 by Phaswana-Mafuya *et al*. (2008:621). The assessment of the health system in 2008 indicated that health outcomes were poor and that PHC services were inadequate and of substandard quality (Naledi *et al*., 2011:16). The health system had the challenge of a quadruple burden of disease, referring to chronic disease including HIV and TB, poverty, violence and injuries and mother and child mortality as related by the Medical Research Council (MRC) (2012:14).

Dookie and Singh (2012:1471) argued that renewed political and policy commitments were needed with strong leadership to face the challenge of an effective PHC service. Matsoso and

Strachan (2011:55) also identify several challenges that contribute to the poor service delivery in PHC, such as the lack of competently trained health care professionals, problems with equal access to services, limited opportunities for education and training of health care professionals and health research, and the standard of the working environment of health care professionals. These authors argue that the PHC approach weighs heavily on the competency of professional nurses qualified in CNSTC or PHCN and that the training of these nurses must be adequate to comply with the health system needs of the country and the delivery of a comprehensive PHC service.

1.2.3 The National Health Insurance Plan

The strategies proposed during 2004 by the DoH (2004:18) to improve human resources for health (HRH) by training health professionals to ensure quality professional care and clinical excellence, coincided with the implementation of the NHI plan as proposed by the Minister of Health. The NHI plan is based on the Brazilian Family Health Programme. This programme is described by Guanis and Macinko (2009:1128) as a programme that provides the community with a "broad range of primary care services through health teams that include a physician, a nurse and CHW's". The essential services will be delivered in the community where health workers will visit families at home and then refer patients to professionals at the clinics. In the green paper released by the DoH (2011) the key elements of the NHI plan are described as follows:

- All South African citizens will be compulsory members with mandatory contributions by employed citizens.
- A comprehensive health care package including prevention of disease, promotion of health, treatment and rehabilitation at all levels.
- Includes school health services.
- Sub groups with greater needs will be prioritised.
- All citizens will be encouraged to use PHC facilities.
- Access to district services with specialised nursing and medical teams will be available to all.

The promise of health services that meet the core standards of quality, management and performance was made (DoH, 2011b:6). The NHI plan will be phased in over fourteen years with full implementation in 2024. In order for the South African government to meet the proposed levels of service, the re-engineering of PHC was introduced and implemented from 2010. This re-engineering was introduced as preparation for the implementation of the NHI plan. This includes "multi-disciplinary teams of clinically competent professionals in which doctors and nurses play a

critical role". In the PHC re-engineering model the nurse qualified in CNSTC is part of the specialised team to assess and treat complex clinical cases referred by the PHC outreach team (Naledi *et al.,* 2011:24). Several authors refer to the necessity of effectively educated and skilled nurses (Cullinan, 2006:8) to ensure the successful implementation of the NHI plan (DoH, 2008:11; Naledi *et al.*, 2011:24; Rispel & Barron, 2012:620). Most recently at the Presidential Health Summit (19-20 October 2018, Gauteng) the NHI plan was unanimously approved.

1.2.4 Nursing education

In addition to the greater health system's needs within South Africa, the changing needs of the nursing profession led to the development of a Nursing Strategy for South Africa in 2008 (DoH, 2008:11). This strategy was adopted as the basis to strengthen nursing as a profession and is based on the principles of the Human Resources for Health Planning Framework as mandated by the National Health Act (Act 61 of 2003). Six focus areas were identified as education and training, practice, resources, social positioning, regulation and leadership. Key challenges identified in nursing education were the critical shortage of nurses, inadequate funding and the lack of skills and competency of nurses in general (DoH, 2008:11). Breier *et al*. (2009:65, 121) support the mentioned key challenges by adding that South Africa is not producing a sufficient number of comprehensively trained professional nurses necessary to work in the public sector with subsequent concerns regarding the quality of nursing education. In the South African Nursing Strategy, the decline in the status and image of nursing coincided with increased reports in the media of poor quality of care and negligence of nurses in general (Pienaar, 2008:3; Van der Merwe, 2012:5). The increased number of persons involved in professional misconduct cases (37 in 2003 to 843 in 2008) added to the mentioned reality of nursing in South Africa (SANC, 2013c). Rispel and Barron (2012:622) reflected that the education of nurses with specific relevance to health service needs is not always possible due to available budgets and poor links to the HRH policy. The ineffective retention of adequately educated nurses is also reflected by these authors who found that nurses with advanced qualifications tend to leave rural areas in lieu of better socio-economic and personal development.

1.2.5 The qualification: CNSTC

An advanced qualification is defined by the SANC as a qualification in the area of specialisation, in-depth knowledge and expertise (SANC, 2011). This definition implies that a person with the qualification of CNSTC working in the PHC clinics as first contact to patients in a comprehensive PHC programme, has advanced skills and knowledge. This qualification was introduced in order to provide a first line of health service providers to the South African public where doctors were not available, as formulated by the National Department of Health policy (DoH, 2001:23). The SANC prescribes that professional nurses can obtain the qualification in CNSTC by completing

an academic year of at least 200 days which include 960 hours in clinical practice (SANC,1985b). After completion of CNSTC qualification these advanced nurses are expected to be nurses that are competent, accessible and skilled to manage patients in community-orientated care and provide a comprehensive service including prevention of diseases, promotion of health, curative and rehabilitative care. After obtaining the CNSTC qualification, the professional nurse can then be referred to as an advanced nurse practitioner (ANP) in PHC. SANC defines an ANP, as a person who focuses on primary care, health assessment, diagnosis and treatment (SANC, 2013d).

Regulation R48 (SANC, 1985a) enables the registration of professional nurses for the qualification in CNSTC. In essence this means that a professional nurse, after completion of basic training, can register for this qualification at an accredited nursing education institution. Currently there are 17 colleges and eight universities in South Africa that offer this qualification. These colleges and universities all follow the same curriculum and after completion students acquire the same qualification. According to the regulation the main objectives of this course are as follows:

- To understand the pathophysiology, etiology, epidemiology, diagnosis and management (including pharmacology) of the most important diseases in all age groups and in all contexts, including emergencies and disasters, found within the Republic of South Africa

- To comprehend the psycho-social, cultural and legal implications of acute and chronic diseases for the individual, families and communities.

- Possess the necessary clinical, interpersonal, psycho-motor and specific managerial skills to enable the nurse to manage patients and to keep the necessary records and statistics (SANC, 1985b).

In practice this CNSTC qualified nurse must be able to manage health throughout the lifespan of all patients, from birth to old age, including chronic health problems such as asthma, hypertension, diabetes, tuberculosis, HIV and AIDS (Hatting *et al*., 2012:291-349). The mentioned disease burden in South Africa demands comprehensively trained ANP's practicing independently and safely, which again places high demands on the education needs of these ANP's. The burden of understaffing, patient load and resource shortages in the governmental health service challenge the ANP's to be innovative and have critical thinking skills. Breier *et al*. (2009:65, 121) confirm that there is a need to improve the clinical skills and education of nurses to meet the need of the different spheres of clinical practice. ANP's should be adequately prepared to adapt to a constantly changing practice as the DoH revise policies and treatment protocols and adjustment does not always include the resources. Gosangaye and Mayeye (2013:110) found that

professional nurses' and ANP's training and skills were inadequate and needed improvement for quality service delivery in PHC.

When comparing South African ANP's with international ANP's it seems that international ANP's are designated to practice in specific fields, such as anaesthetics, paediatrics, adult health or family health, depending on the knowledge, skills and specialised competencies as well as the legal implications of each country (Barton, 2006:374; Offredy, 2000:274; Swenson, 2006:5). ANP's in America, if they are suitably certified and if the state, the practice and law allow full practice, may diagnose and treat patients. In some states ANP's are allowed to practice according to their licensure where in others practice are restricted (Swenson, 2006:5). In Australia ANP's are independent practitioners or consultants, specialising in a particular disease or patient groups (Offredy, 2000:280). In the United Kingdom and the Republic of Ireland, ADP's manage patients independently and consult with nurses on clinical and research based care (Barton, 2006:374 and Wickham, 2003:32).

In contrast, the South African ANP's in PHC, scope of practice is unique to the country's health needs and the disease burden. According to the competencies published by SANC (2014:1-7) the ANP qualified with CNSTC, has a broader scope of practice than the international ANP's based on the prevention of disease, promotion of health and implementation of treatments plans, including direct care and prescribing of medicines. These ANP's are expected to practice independently providing appropriate care in a PHC service (SANC, 2014:4-5).

1.2.6 Teaching and learning in CNSTC

When perusing some of the higher educational institutions that provide training in CNSTC it seems that some universities present the qualification of CNSTC as an honours degree, others as a postgraduate diploma and others as a post basic diploma. The time span for this qualifications differs from one to two years to 18 months. After completion these professional nurses register for the same qualification with SANC (Nelson Mandela Metropolitan University, 2016; University of the Free State, 2016; University of Johannesburg, 2016 and University of Limpopo, 2016). The approaches to teaching and learning differ at these institutions and it will therefore be beneficial to this research to identify those strategies that can enhance the teaching and learning skills and knowledge of CNSTC professional nurses.

1.3 PROBLEM STATEMENT

The South African public health system transformed over the past 19 years from a curative- towards a PHC approach. Despite major interventions within the PHC programme, health care delivery systems remain overburdened. Reviewing the statement of the South African Government (Breier *et al*., 2009:65, 121) that nursing education in general is not optimal and that

clinical nursing education needs to be revised to meet the societal and changing health system needs, it seems imperative that the skills of CNSTC qualified nurses should be improved. Although the CNSTC was initiated to address the societal needs, there remains concern about the inadequate clinical skills exhibited by CNSTC qualified nurses in PHC clinics in South Africa. Research done on the portrayal of nursing in South African newspapers found that nurses were portrayed as "completely incompetent" as well as alleged incidents if negligence and unprofessional behaviour (Mkhize, 2016:2; Oosthuizen, 2012:53).

Bartz and Dean-Baar (2003:221) furthermore argued the necessity for the nature of nursing teaching and learning to change in order to address the increasing emphasis on community-based, consumer-provider, independent health care and the need for sophisticated and effective health delivery systems. Changes to clinical nursing teaching and learning have been mentioned by different authors (Breier *et al*., 2009:121; DoH, 2008:7) as a necessity to enhance the skills and image of professional nurses in South Africa. These changes can be addressed when the current methods of clinical nursing teaching and learning are analyzed and transformed with the intention to provide society with knowledgeable and competent clinical specialist nurses that are able to fulfill the requirements of the NHI plan (DoH, 2011:67). An initial literature search indicated that there is a lack of research on teaching and learning of clinical skills to professional nurses. This research aims to formulate strategies for the improvement of the clinical teaching and learning of advanced nurse practitioners in the PHCN programme, in order to ultimately provide clinically competent nurses who are able to render excellent and safe patient care, that coincide with the planned transformation of the South African health system.

1.4 RESEARCH QUESTIONS

To address the abovementioned problem statement, the following research questions (RQ's) were formulated:

RQ 1: What are the approaches of teaching and learning of clinical skills currently applied in the training of PHCN at nursing educational institutions in South Africa?

RQ 2: What is the evidence from national and international literature regarding effective teaching and learning of clinical skills for advanced nurse practitioners?

RQ 3: What are the gaps identified in the current teaching and learning approaches applied in the clinical skills training of CNSTC?

RQ 4: What strategies can be identified and formulated to enhance the teaching and learning of clinical skills within CNSTC to ensure clinical competence of advanced nurse practitioners in South Africa?

1.5 AIMS AND OBJECTIVES

The overall aim of this study was to identify gaps and strategies for the enhancement of teaching and learning of clinical skills of advanced nurse practitioners in the CNSTC programme in South Africa in order to fulfil the requirements of the NHI plan. The objectives of this research were as follows:

- To describe the teaching and learning approaches that are currently applied in the training of clinical skills of CNSTC at nursing educational institutions in South Africa (RQ1);
- To describe effective teaching and learning of clinical skills for advanced nurse practitioners, from national and international research (RQ2);
- To identify the gaps in the current teaching and learning approaches applied in the clinical training of CNSTC (RQ3);
- To identify strategies to facilitate and address the gaps in the teaching and learning of clinical skills within CNSTC to ensure clinical competence of advanced nurse practitioners in South Africa (RQ4).

1.6 PARADIGMATIC PERSPECTIVE

The paradigmatic perspectives are the researchers' beliefs and viewpoint from where the research was conducted and consists of the meta-theoretical, theoretical and methodological statements, describes what we see, how we see it and how we understand what we see (Babbie & Mouton, 2001:20).

1.6.1 Meta-theoretical assumptions

Subsequently the view of the researcher on man, environment and nursing within the context of this research are outlined to the reader.

1.6.1.1 Man

For the purpose of this research man refers to the professional nurse as a student in CNSTC and the educator who both are unique with his or her own characteristics. Educators are in the unique position of being able to form and mould students towards a skilled practitioner and consequently provide society with compassionate and competently skilled nursing professionals. Professional nurses, qualified in CNSTC, have a duty in practice to be adequately trained with the expected skills to provide comprehensive, much needed service. Nurses trained in CNSTC should be able to adapt to constantly changing and transitioning health care services and keep up to date on

current issues. In addition to this, students have the responsibility to complete their studies to the best of their ability and to achieve a qualification in the allotted time (Mabuda *et al.*, 2008:19).

1.6.1.2 Environment

The environment is the context in which man lives, works and develops. The environment in this research refers to the different settings where clinical teaching and learning take place, for example hospitals, clinics, and classroom or simulation laboratories. The educational environment as an institution can either be a college or university that are accredited by the SANC to provide advanced practitioner education to professional nurses in CNSTC. In this research only universities were included.

1.6.1.3 Nursing

For the purpose of this research, nursing is a science, underwritten by a body of knowledge and clinical professionals, who in many years' time have developed a unique and special art of caring for people in diverse contexts. The activities of nursing include the maintaining of health through prevention, the curing of illness by restoring health and the compassionate caring for individuals, families and communities throughout the whole life-course. The spiritual, physical, psychological, social and intellectual needs of the patient are encompassed in the definition of nursing by the American Nursing Association (ANA) stating "Nursing is the protection, promotion and optimization of health and abilities, prevention of illness and injury, alleviation of suffering through the diagnosis and treatment of human response and advocacy in the care of individuals, families, communities and populations" (ANA, 2003:6). Professional nurses that completed their basic training can register for a specialisation qualification with a specific focus. In this research the focus is on nursing as care rendered by a person who focuses on primary care, health assessment, diagnosis and treatment (SANC, 2013d).

1.6.2 Theoretical assumptions

Theoretical assumptions describe the position of the researcher from a specific viewpoint that is central to the research (Botma *et al*., 2010:187). The theoretical assumptions are statements that can be tested and that provide knowledge and a framework in the research. It includes the researcher's philosophical approach, the central theoretical argument, a conceptual framework as well as the clarification of concepts.

1.6.2.1 Philosophical approach

The researcher declares that this research is conducted from the pragmatic and constructivist approaches as the most applicable philosophical approaches to be used in the enhancement of clinical skills.

- **Pragmatic approach**

Creswell (2008:12) argues that knowledge arises from different approaches towards solving a problem and that the problem is more important than the method. From this statement Creswell arrives at the philosophy of pragmatism, which is a philosophy best applied when different methods are needed, as it is not committed to only one method of research. Pragmatists "*see the world as a unity, truth as what works at the time, the intended consequences of the research, the context of research as social and others*". According to Hannes and Lockwood (2011:1634) the philosophy of pragmatism aligns research to practical and applicable reports of findings.

The overall focus of this research is the enhancement of clinical skills, through training, where clinical skills are applied in a practical context. The ANP is expected to assess the patient, make a diagnosis and manage the patient according to the findings from the assessment which may include clinical tests and a physical examination. The management of the patient is done according to the findings of the assessment. The clinical skills that the student needs to acquire and the method through which these skills are acquired are the main focus of this research. The pragmatic approach is applicable here as the practical skills and the direct consequences of using these skills have a direct effect on the patients and therefore the student's environment. The pragmatic approach is closely connected to the constructivist approach as both approaches are applicable to social research where education and the acquisition of skills are researched (Neubert & Reich, 2006:165).

- **Constructivism**

The second philosophical approach is that of constructivism. This philosophy refers to a student in the CNSTC programme (in this study the Clinical Nursing Science, Health Assessment, Treatment and Care) that actively construes knowledge and skills by connecting it with meaning and interacting with the environment (existing reality) (Windschitl, 2002:140). The increased exposure in practice stimulates the professional nurse's need towards self-development which is enhanced by the demand from society for clinical competence. This serves as impetus towards self-improvement and the completion of an advanced practitioner qualification in PHCN. There are specific prerequisites for PHCN which implies that the student should have pre-existing knowledge that will be co-constructed in the clinical teaching and learning process in PHCN. The existing reality in this research is that the professional nurse has been educated and competent

in the basic nursing skills as prescribed by the South African Nursing Council (SANC). Students in advanced nurse practice build onto the knowledge and skills from their basic training and experiences in the environment of advanced practice. In this research this reality is utilized in order to advance the existing knowledge and skills in the best way.

The affinity of both constructivism and pragmatism is that these constructs view benefits from the pragmatic view as it may reduce the cognitive and subjective reductions associated with pragmatism and reinforce the theory of knowing as it builds on previous knowledge and forms a new reality (Neubert & Reich, 2006:191). Professional nurses develop clinical skills during their undergraduate training and when furthering their studies to an ANP, these clinical skills are built upon and enhanced to a level of specialisation.

1.6.2.2 Central theoretical statement

Within the South African context, with limited resources and a shortage of nurses, and the added expectations from CNSTC trained nurses that will be implemented with the NHI plan, it is essential to advance the teaching and learning of clinical skills of CNSTC (DoH, 2011:67). Comparing current strategies described from the first phase of the research with knowledge of and insight into the current national and international literature of strategies to enhance clinical teaching and learning can assist the researcher to identify strategies to enhance the teaching and learning of clinical skills within CNSTC. This process will also enable the researcher to identify the gaps in the current teaching and learning education programmes of CNSTC. The appropriate strategies may ensure a future vision of clinical competence of professional nurses and advance the clinical practice competence of professional nurses that are PHCN qualified within the South African context.

1.6.3 Clarification of concepts

Concepts may have different meanings in different contexts; therefore, the researcher defines the concepts used in this research in an endeavour to avoid misunderstandings and clarify their meaning to the reader.

Clinical Nursing Science, Health Assessment, Treatment and Care (CNSTC)

This qualification refers to the Regulation R48 as amended (SANC,1985b) and the professional nurses (nurses that are registered with the SANC with basic qualifications in General nursing and Midwifery as minimum qualifications) that complete this qualification register as a CNSTC nurse. In general these nurses are called PHC nurses. These advanced nurse practitioners (ANP's) provide services in PHC clinics or may have independent practices. The scope of practice of these nurses includes managing of health throughout the lifespan of all patients, from development to

old age, including chronic health problems such as asthma, hypertension, diabetes, tuberculosis, HIV and AIDS (Hatting *et al*., 2012:291-349).

Clinical nursing education

The advanced nurse practitioner in CNSTC must be adequately educated. Clinical nursing education is the teaching and learning that takes place in- and outside the classroom and in hospitals and clinics as well as the simulation laboratory. It includes demonstration of specific clinical skills that students should perform under supervision of a PHCN-qualified educator or professional nurse in practice or in simulation. PHCN education is linked and underwritten by theory, which encompasses the different health problems of the patient throughout the lifespan and links to the experiences from practice. In the South African context CNSTC education should also include uniquely South African challenges such as culture, language and specific health and environmental conditions (Hatting *et al*., 2012:291-349; Mash *et al*., 2010:13).

Clinical teaching and learning

Clinical teaching is the instruction to and supervision of students regarding their skills, patient care and health service delivery (DoHET, 2010:4). This instruction and supervision take place in accredited institutions as per SANC regulations. Croxon and Maginnis (2009:236) define clinical teaching and learning as constructive learning with adequate opportunity for students to develop confidence and competence in clinical skills, focussing on the student's needs. It comprises the educator designing teaching and learning activities that involve the educator and students in a purposeful process of inquiring into different views on phenomena, comparing contrasting and exploring views (Gravett, 2004:28). Procedures and skills are demonstrated to students where after students get the opportunity to practice these skills under supervision until competency is reached.

1.6.4 Methodological statements

This research is based on the methodological statements of the Botes model which has been developed for nursing research (Botes, 1995:6). Botes proposed a functional approach that perceives research not only for the sake of knowledge and understanding but to improve the quality of nursing practice and contribute to the science of nursing. The Botes model interconnects three levels of activities that are interrelated and represents a functional methodological approach.

The *first level* represents the ontological activities related to nursing practice and focuses on the nurse's practical experiences and challenging work environment when interacting with patients in the promoting, maintaining and restoring of health. On this level nursing problems are identified and information questioned in order to come to viable solutions (Botes, 1995:6). For the purpose

of this research this level is represented by the CNSTC students in clinical practice and the professional nurses and educators that support and teach students in clinical practice. This level also represents the challenging diverse context in which these nurses practice daily.

On the *second level* nursing research is the research process where the science of research and epistemology takes place, where statements are tested (Botes, 1995:1). The research methodology directs the epistemology. The methodologies used in this research was the use of Appreciative Inquiry principles in interviews and the Delphi technique as it forms part of the practice of nursing. Comparing results from interviews via an integrated literature review informed and confirmed results.

The *third level* represents what the researcher perceives and believes in, supported by the philosophical worldview of the researcher. The meta-theoretical perspective of the researcher was discussed previously (see par 1.5.2.1). This perspective and philosophy constantly influence levels one and two of the research.

1.7 RESEARCH DESIGN

A qualitative design was followed, as it ensured an explorative, descriptive interpretive and contextual perspective of the gaps in the approaches to the teaching and learning of clinical skills and the identification of strategies to enhance the teaching and learning of clinical skills (Creswell, 2007:88; Maree & Van der Westhuizen, 2008:39). The researcher concluded with scientifically supported and valid strategies to enhance the clinical teaching and learning in CNSTC education.

1.7.1 Qualitative research

Denzin and Lincoln (2018:16) describe qualitative research as three interconnected activities, theory, method and analysis, as seen from the perspective of the researcher that comes from within a specific personal context. Whereas the theory represents the framework of reference of the researcher and the way the researcher approaches the world or community from which questions are specified and examined (epistemology and methodology). This statement coincides with Creswell and Poth (2018:7-8) that describe qualitative research as the use of theory to inform research problems, addressing the meaning individuals or groups ascribe to a social or human problem using qualitative approaches to inquire and natural settings to collect data. The analysis of data are both inductive and deductive and the report includes what the participants voiced, how the researcher reflected and a relevant description and interpretation of the problem.

The characteristics of qualitative research are described by various authors and the application of the applicable characteristics and how it coincides with this research are reflected in the table below:

Table 1-1: Characteristics of qualitative research applied to this research

Characteristic	Authors	Application to this research
Context of the research in a real, natural setting.	Polit and Beck (2017:464); Denzin and Lincoln (2018:16); Niewenhuis (2012:50).	Interviews were conducted at NEI's and workplaces of professional nurses. CNSTC trained nurses, educators and experts in CNSTC were participants.
The researcher is the main data collector and analyser.	Creswell and Poth (2018:45).	The researcher collected and analysed all the data for this research.
Research is adaptable and may adjust with new information.	Polit and Beck (2017:463).	Interviews were scheduled according to availability of participants and time available.
Various data collection strategies used.	Polit and Beck (2017:463); Creswell and Poth (2018:45).	Appreciative inquiry, integrated literature review and Delphi technique were all synthesised in final conclusions.
Related to the participants perspectives about the issue.	Creswell and Poth (2018:44).	Focused on the personal opinions, knowledge and experiences of participants during interaction with the researcher.

1.7.2 Descriptive and interpretive strategies

Descriptive and interpretive strategies imply the interactive nature of the research process (Burns & Grove, 2011:72) as the researcher will be interacting with educators and professional nurses, when they describe their experiences of what is best in the clinical teaching and learning process within the context of the education of PHCN. The report from the researcher on the data implies the interpretation of what the researcher translated as reality, seen through the assumptions of

the researcher from a pragmatic and constructivist view. Pragmatism refers to the consequences and results of behaviours (clinical skills) that gives meaning to realty and truth (Shaw *et al*., 2010:510). In addition constructivism is the building on existing knowledge and skills while incorporating new learning experiences (Lim *et al.,* 2015:29). In the context of this research educators built on the existing knowledge of students who already had a basic qualification, with new information and knowledge. The interpretation of the data collected by the researcher supported by valid a literature control, can be drawn back to the initial research problem statement and central theoretical statement.

1.7.3 Contextual research

The researcher was sensitive to the context in which the research took place as qualitative research is contextual and refers to the experiences of the participants' reality. The context of this research was the educational institution as well as the clinical facilities where the students practice and learn, that is, their real-life situations (Nieuwenhuis, 2008:79). The South African context where nurses qualified with CNSTC practice, has specific features that might be only applicable to South Africa context, therefor this research will concentrate on the South African health system and higher education system, where these nurses practice and train. The context in which PHC services are rendered are complex and challenging as it is in constant transitioning. South Africa's burden of disease and shortage of trained professionals contribute to the challenges these nurses experience (Hlosana-Lunyawo & Yako, 2013:5).

1.8 RESEARCH METHODS

The methods of research in this study realised in three consecutive phases (Figure1-1). The methods followed in each phase is summarised in Table 1-2, followed by an in depth discussion of each method in the subsequent chapters.

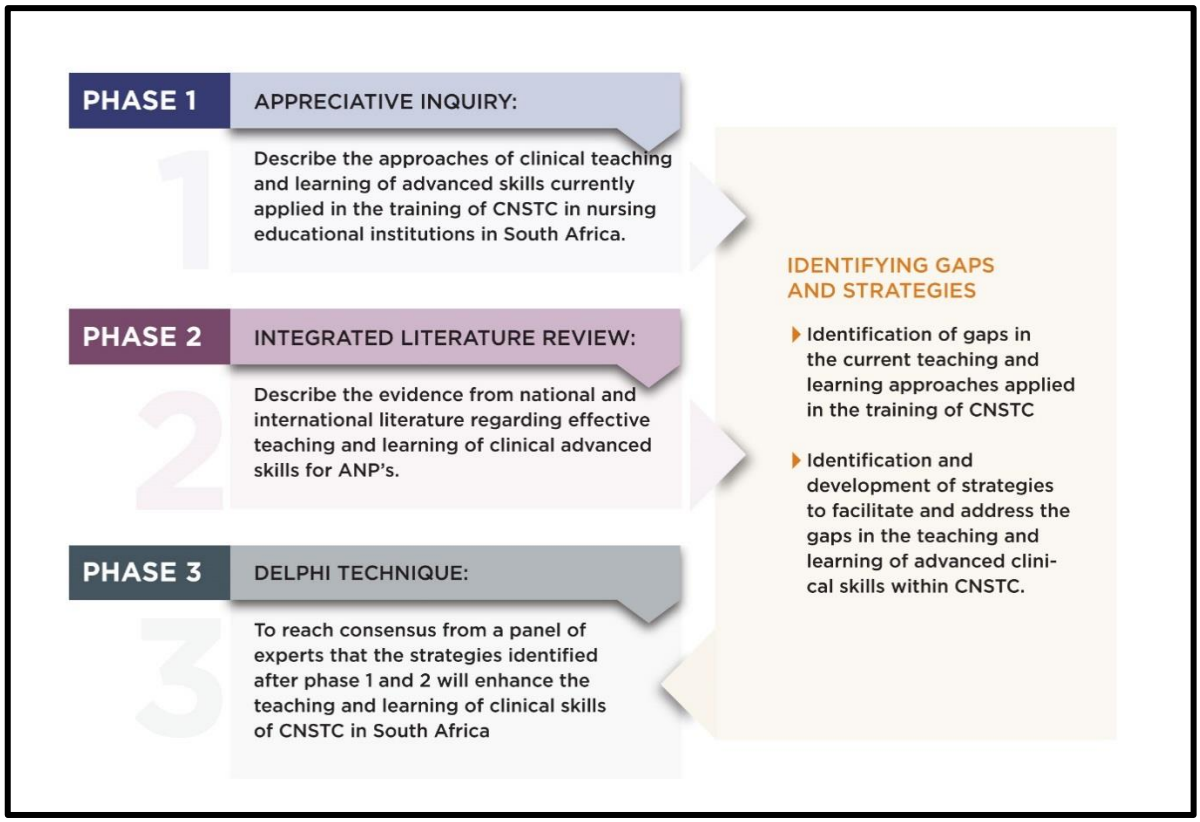

Figure 1-1: A flow diagram of the research process

PHASE ONE: In phase one the research the principles of an appreciative inquiry (AI) were applied to reach objective one: To describe the teaching and learning approaches that are currently applied in the training of clinical skills of CNSTC at nursing educational institutions in South Africa An AI refers to a group of processes that enquires into, identifies and develops the best of "what is" in organisations in order to create a better future (Preskill & Catsambas, 2006:1). Richer *et al.* (2010:171) state that AI is a philosophy and a transformational process that can create opportunities for change in health care and improve the health care environment.

The process of AI is described in a cycle of four steps starting with the discovery step were the focus is on identifying and uncovering the current situation with positive focused questions. The aim was to create an open dialogue with positive responses to questions. In this research the focus was on current approaches in clinical teaching and learning of CNSTC programmes at nursing educational institutions in South Africa. In the second step participants could envision desires of endless possibilities with images of what the future might be. During this step the same participants were asked to build on what they identified in step one and envision what the future might be and what is potentially possible (Cooperrider *et al.,* 2008:136). During the second step, educators of CNSTC were requested to describe what they envision could be the best or better and efficient strategies of teaching and learning. In addition, CNSTC qualified professional nurses

were requested to identify, according to their experience of the CNSTC education and the context of their place of practice, the most efficient approaches of teaching and learning appropriate clinical skills and to envision the possibilities to enhance their practice. The third step constituted a way to implement that was identified and dreamed in steps one and two. In this research the participants were then requested to recommend the most efficient approaches for teaching and learning clinical skills for CNTSC, given what is currently implemented and with the possibilities identified in step two. Step four was the beginning of a process of change and transformation (Gaddis & Williams, 2008:8). The possible application of identified strategies were discussed. The method of data collection used the principles of AI in one-on-one, semi-structured interviews with nursing educators at NEI's presenting the CNSTC programme. This was done at higher education institutions (HEIs), of which only universities responded and participated, according to the SANC registry of accredited NEI's. Qualified CNSTC nurses were interviewed at a time and place of their convenience. Data analysis took place after transcribing of the audio taped interviews by way of thematic analysis after prolonged engagement by the researcher. A co-coder validated the themes by means of a consensus discussion with the researcher.

PHASE TWO: During the second phase of the research an integrated literature review was conducted in order to address Research objective two: To determine the evidence of effective teaching and learning of clinical skills for advanced nurse practitioners, from national and international research. The integrated literature review for this research was conducted according to the guidelines of Whittemore and Knafl (2005:546-553).

Step 1: Identification of theme*:* During this stage the concepts of interest were identified. This step was informed by the data collected during phase one of this research. The themes identified were as concepts for the searches. Inclusion and exclusion criteria were identified. Inclusion criteria included primary research, systematic reviews and discussion articles from peer-reviewed English journals excluding studies not applied to advanced nursing practice.

Step 2: Literature search: This stage referred to the literature search of available literature relevant to the themes identified. Searches were rigorous and search terms clearly stated as to prevent any unnecessary data.

Step 3: Data evaluation: After extracting the literature a decision was made to evaluate the quality of the data and this depended on the type of data that was reviewed. Finally all articles that was reviewed as well as the inclusion or exclusion of search methods. Examples of data evaluation are definitions of concepts, sample size, measuring variables and the methods of data analysis that was used. According to De Souza *et al*. (2010:104) a data collection tick list or tool may be used. Different tools were used to critically appraise the data (see chapter 3).

Step 4: Data analysis: Categories were identified as well as related themes and after conceptualising, primary sources were reviewed to verify conceptualisation.

Step 5: Presentation: This is a synthesis of the analysis. During this step the data from phase one and the results of the literature searches were compared and clustered to identify new themes as well as confirmation of results from phase one. From this evidence, strategies and gaps were identified in the teaching and learning of clinical skills in the CNSTC programme.

In order to address research objective three the results from Phase one (AI) and Phase two (integrated literature review) were combined, analysed and synthesised. The data from the interviews (phase one) were analysed inductively and themes were identified. The two datasets from phase one and two were analysed using a constant comparative method as described by Creswell and Poth (2018:316) and Miles and Huberman (1994). The researcher constantly reflected on impressions, relationships and connections while collecting and analysing the data. The researcher constantly searched for similarities, differences, categories, themes, concepts and ideas. The method of strategy development is described as the process of what is currently done and what should be done and the process of development, implementation and evaluation to reach the ultimate outcomes (Hadighi *et al.,* 2013:38). Gaps in current teaching and learning strategies and strategies for the effective teaching and learning of clinical skills within CNSTC were identified. These gaps and strategies were used to form the basis of the next phase of the research (phase three) when experts were invited to evaluate the identified strategies.

PHASE THREE: The Delphi technique was applied in order to address objective four **"**To identify strategies to address the gaps in the teaching and learning of clinical skills within CNSTC to ensure clinical competence of advanced nurse practitioners in South Africa" (RQ4).

1.8.1 Method of data collection

The Delphi technique is described as a process that facilitates research by drawing from the knowledge and experiences of experts to systematically reach consensus on a research question or problem (Cole *et al.,* 2013: 512; Hannes *et al*., 2015:3).

Step1: Selecting expert reviewers: The researcher identified a group of individuals who had the knowledge and experiences relevant to the research question. The expertise of these individuals were clearly defined (Trevelyan *et al.,* 2015:423). Experts in clinical nursing education, CNSTC and teaching and learning from different higher educational institutions were approached to participate in this phase of the research. The experts were identified through authorship of articles, prescribed handbooks and the members of faculties of Nursing of South African Universities. These experts were contacted via email message including information of the research, and a letter of consent (Addendum I).

Step 2: Constructing a list of strategies: Using the argument Delphi approach, the researcher draws on the knowledge and experiences of experts using an iterative process with several consensus rounds. In this approach the group interaction was anonymous. This method started with the first round posing open-ended questions (Hannes *et al*., 2015:3). The identified strategies from phase one and two were electronically send to willing consented participants requesting their opinions on the validity and applicability of these strategies in the context of teaching and learning CNSTC programmes in South Africa. They were also asked if they would recommend any changes to the strategies to enhance the effectivity and feasibility. As background the aims of the research were included as well as key concept definitions (Jorm, 2016:892). Participants were anonymous to each other as only the researcher knew who were selected.

Step 3: Data analysis of first round: The analysis of the first round was descriptive in nature as the responses were in open text with statements from participants. These statements were grouped into similar themes and then synthesized into the clearest descriptions without leaving out applicable comments from participants (Polit & Beck, 2012:719).

Step 4: Second Delphi round: During this round the information obtained during the first round was given back to be judged by experts partaking in this phase of the research. During the first round experts were requested to provide their opinions on the validity and applicability of the identified strategies for teaching and learning CNSTC in South Africa. During the second round a synthesis of these strategies was sent to participants and they were requested to indicate the statements they agree upon and comment on those they disagree upon. This validated the individual statements and confirm the information given during round one. Participants were also requested to rank the strategies according to importance.

Step 5: Data analysis second Delphi round: The analysis of this round was done on the final strategies incorporating the comments experts made. These findings were then incorporated into the identified strategies from phases one and two of the research to help answer the main research question.

Table 1-2: Summary of the research methodology

PHASE	DESCRIPTION	METHOD	POPULATION AND SAMPLING	DATA COLLECTION	DATA ANALYSIS	RIGOUR
1	**Research objective 1:** To determine the strategies of clinical teaching and learning that are currently applied in the training of PHCN at nursing educational institutions in South Africa.	**Appreciative Inquiry principles** *Discover, dream, design, destiny*. (Cooperrider *et al*., 2008:34).	Population was all South African NEIs (*n*=25), only 5 universities participated Educators presenting the clinical teaching and learning in NEI's (*n*=9)(sampled purposively) as well as the qualified PHCN professional (*n*=26) nurses that completed this qualification (snowball sampling). Voluntary participation.	Semi-structured individual interviews (Creswell & Poth, 2018:44).	Data were analysed by thematic coding as described by Creswell (2009:198). The researcher listened to the interviews, made notes categorising it into themes.	Strategies to enhance trustworthiness (Polit & Beck, 2008:358). Co-coded by an expert. The researcher reflected and had prolonged engagement with transcribed interviews.
2	**Research objective 2:** To determine the evidence of effective teaching and learning of clinical skills for advanced nurse practitioners, from national and international research.	**Integrated literature review** (Whittemore & Knafl, 2005:546).	Literature searched, data evaluated. Population (*n*=25) was all available national and international literature. Quantitative (*n*=7, qualitative (*n*=8), mixed methods *(n*=2), reviews (*n*=8).	Identified categories, constant comparison, grouping and categorizing. Used EPPI reviewer software (EPPI, 2008).	Presentation as synthesis of analysis.	Promotor and co-promotor verified the trustworthiness of the process. Used EPPI reviewer software (EPPI, 2008).
	Research objective 3: To identify the gaps in the current teaching and learning strategies applied in the clinical training of CNSTC.	The results from Phase one (AI) and Phase two (integrated literature review) were combined, analysed and synthesised.		Data from Phase one and two	Identified and described gaps in current teaching and learning of CNSTC.	
3	**Research objective 4**	**Delphi technique**	Selected an expert panel based on expertise and	**First round:**	**Second round:**	Validation of identified

PHASE	DESCRIPTION	METHOD	POPULATION AND SAMPLING	DATA COLLECTION	DATA ANALYSIS	RIGOUR
	To identify and formulate strategies that will facilitate and address the shortcomings of clinical skills teaching and learning within CNSTC, toward ensuring clinical competence of advanced nurse practitioners in South Africa.	(Hannes *et al.*, 2015:3).	experience (*N*=18) (*n*=11).	Described and grouped list of strategies.	Analysis of final strategies.	strategies by experts.

1.9 QUALITY OF THE RESEARCH

In qualitative research the quality of research is ensured through trustworthiness as identified by Lincoln and Guba (*in* Polit & Beck, 2012:539), namely truth value, applicability, consistency and neutrality. These strategies imply the measure of truthfulness of the research. Four aspects are identified: Truth-value, credibility, applicability and confirmability. The measures applied in this research are described in the following table:

Table 1-3: Quality assurance of this research

Criteria	Authors	Application
Truth value (The truthfulness of the research)	Creswell (2007:203); Maree (2012:80); Botma *et al.* (2010: 233); Grove *et al*., (2013:56).	• Detailed description of the research processes, underwritten by literature and finding of data. • Contextual research; the aim was not to generalise the results. • Interview schedule: the same questions asked to all participants following the AI process. • The researcher personally engaged with participants over a prolonged time. • Rigorous notes, sound recordings were made as to verify the responses. • Experts assisted the researcher to enhance the value and standards of this research. • The validity of strategies developed was enhanced by the Delphi technique as experts provided meaningful input on the final strategies.
Credibility (The credibility for the research findings)	Creswell (2007:203); Maree (2012:80); Botma *et al.* (2010: 233).	• Congruence maintained between the theoretical assumptions, aims and methodology. • Acknowledged of the uniqueness of participants' own viewpoints and experiences. • Researcher was very knowledgeable of the context. • Step-by-step description of the research process underwritten by literature and verbatim transcriptions of the empirical processes. • Repeated contact between the researcher and participants formed a trust relationship. • Triangulation of research methods whereby more than one method of data collection was conducted and could be compared and validated by experts. • Verbatim quoting of participants supported the data.
Transferability (The measure in which the	Creswell (2007:203);	• The context of this research was within the South African PHC, results were not generalised

Criteria	Authors	Application
research can be transferred to another context)	Maree (2012:80); Botma *et al.* (2010: 233).	internationally but aspect may have transferability to other PHC health education contexts. • A detailed description of the methodology and realisation of the research provides an audit trail.
Confirmability (The confirming that results are not based on the subjectivity of the researcher but the responses of participants)	Creswell (2007:203) Maree (2012:80); Botma *et al.* (2010: 233).	• The assumptions of the researcher were declared at the onset of the research. • An independent researcher was consulted for co-coding during analysis of data in phase one. • Experts were consulted during phase four for validation of the identified strategies.

The quality of the research coincides with the ethical considerations which were paramount to this research.

1.10 ETHICAL CONSIDERATIONS

The researcher adhered to the following ethical considerations.

1.10.1 Code of ethics of the North-West University

The researcher is a member of staff at the North-West University and as a PhD candidate adhered to the University's code of ethics as stipulated by the Senate these include honesty, accountability professional courtesy and good stewardship (NWU, 2016:3). The process of obtained ethical clearance consisted of the following:

The scientific committee of the research entity affiliated with the School of Nursing Science, INSINQ, consisting of a number of experts in nursing education and research, reviewed the proposed research and after consensus on the value and contribution of the research, as well as the scientifically and ethical aspects, gave approval for submission to the ethical committee of the Faculty of Health Science, the Health Research Ethics Committee (HREC). HREC is a registered ethics committee according to the Regulations relating to research with human participants (R.719. 2014). After HREC gave ethical clearance, permission was requested from the NEI's and professional nurses participating in the research (see Addendum C and D).

1.10.2 The role of the researcher

The role of the researcher began with the conceptualisation of this research. After obtaining of permission from the scientific research committee of the research unit and HREC North-West University, permission to conduct research from the NEI's willing to partake in the research

were requested (Addendum A). The researcher is also an educator at a NEI, but did not have direct contact with CNSTC students. The researcher does not teach any modules to these students. This may have posed a conflict of interest during collecting data from the educators, but the researcher stayed aware of this conflict at all times. It was critical that the researcher also did the interviews at the NWU herself, as with the other NEI's. It not only promotes scientific rigour (standardisation of the interview process), but the researcher is the most knowledgeable on the context of the research, and needed to immerse herself into the research and the context throughout the study. The researcher had a good relationship with the interviewees and stressed the fact that their truthful input would be appreciated. Although it may be advisable to bring a mediator to sit in with the interviews, this may also increase the power differential as there will be two people with the one person being interviewed. However, the interviewees did have the option to ask for a mediator to sit in, but did not do so. The interviewees were invited to talk to the promoters or the ethics office if they felt discomfort regarding the interviews. During all phases of the research the researcher undertook to:

- Give appropriate acknowledgement to everyone that contributed or assisted in anyway with the research as not to plagiarise;
- Conduct the research methodologically and skilled as proposed;
- Treat all resources, human and literature with respect, honesty and integrity;
- Communicate results of the research in an appropriate manner as to reach the aims of the research and contribute to the body of knowledge of Nursing Science with accurate and truthful data.

1.10.3 Other ethical aspects

According to Botma *et al*. (2010:4), the ethical considerations of research should be an integral part of the research process from the planning of the research up to the publishing of results. Ethics starts and ends with the researcher. The following norms and standards were included to ensure ethical integrity of the research (DoH, 2015:15-16).

1.10.3.1 Relevance and value

As described in the background of this proposal the relevance and value are important for the implementation of the NHI plan as proposed and the contribution to PHCN of skilled and knowledgeable PHC nurses would improve the South African health care delivery.

1.10.3.2 Scientific integrity

This research was conducted by a researcher knowledgeable of the context where the research took place as well as the subject researched. The promotor and co-promotor are knowledgeable researchers and supported the scientific integrity of this research.

1.10.4 Ethical aspects in phase one: Appreciative Inquiry

1.10.4.1 Recruitment and selection

The SANC has a contact list of the heads of departments of all accredited NEI's publicly available on its website. NEI's was requested to reply via email within two weeks confirming or declining participation. Following the permission of NEI's to participate each NEI was requested to identify a person at the NEI who will be able to act as mediator (who has access to alumni in the PHC programme) between the researcher and participants. The mediator was requested, by the researcher, to approach the educators and students and ask permission if the researcher may contact them to participate in the research. The mediator then provided the researcher with the contact details of the educators and students who agreed. The identified students and educators were contacted by the researcher via an email message (at least 2 weeks prior to the research) that provided information (Addendum B1 & B2, D, E). The email message contained information explaining the background and aims of the research as well as what was expected from the participants, and potential risks and benefits. Contact details of the researcher, potential conflict of interest and availability and dissemination of results after completion of the research was also included (Addendum E).

After permission has been granted by the NEI's and professional nurses a date, time and place that suits each participant, were confirmed. Creswell (2008:11) stated that there are special considerations the researcher should take into account when doing educational research that should be added to the regular ethical practices. This amounts to the honouring of the specific site where the research is taking place such as an academic institution with certain schedules. The researcher should ensure that there is minimal disruption in the normal educational programme and that permission is granted by the different levels of the organisation. The research should also not add to the administration or educators' tasks and therefore interfere with teaching time.

1.10.4.2 Informed consent

The educators and professional nurses that availed themselves for participation after receiving a permission letter were then requested to sign an informed consent from that has been

approved by the HREC of the North-West University. The informed consent forms were emailed to the participants by the researcher, two weeks before the interviews took place, giving them ample time to think about participating and opportunity to ask questions if needed. Participants signed a hard copy of the informed consent, before they participated in the research (see Addendum B1 & B2). It is a form of guarantee to the participants that the researcher will protect their rights and that they understand the nature and aims of the research and their right to withdraw at any time. Consent must be written as well as verbal. Therefore, before commencing with the interviews, the researcher confirmed that the participants are informed about the research as described in the information email leaflet. Participants were then requested to give verbal confirmation and then written consent to participate in the research. The signed informed consent forms were collected by the mediator at the venues, before the interviews commenced. The following ethical aspects were considered:

1.10.4.3 The right to privacy and respect

All participants must be afforded the right to privacy from the onset of the research. At no stage any information that may identify participants in any way must be divulged. The researcher therefore ensured that the place where the interviews took place were private and participants feel safe and comfortable. From the onset participants were awarded a number and field notes and audio recordings were only identified by a number (Moule & Hek, 2011:40). The opinions and information from participants were respected and honoured by the researcher. The mediator, co-coder and transcriber signed confidentiality agreements (Addendum F, G & H) wherein they agree to keep all information confidential.

1.10.4.4 The right to protection and truthfulness

It is essential to conduct the research non-maleficent. Data collection took place when and where it was convenient for the participants with no physical, emotional or psychological harm. The interview schedule only included questions required by the aims of the research that would not offend participants. This research aims to benefit the nursing community and the clinical nursing educators. Harm to participants, in any way, was anticipated and prevented by the researcher. By conducting an AI the information gathered from participants concentrate on the positive aspects and allow participants to dream and design what they think will be best (Cooperider *et al*., 2008:34).

1.10.4.5 The right to freedom of choice and withdrawal

Even if participants have given written, informed consent before commencement of the research, the participants should not feel pressurised in any way to participate. Participants

were permitted to withdraw at any time without fear of any consequences. This was communicated to participants before and during data collection.

1.10.4.6 Access to information and communication

All information was clarified by the researcher, including the nature, aims and implications of the research. This was done with honesty, openness, accuracy and a positive attitude, treating participants equally and fairly. Information regarding the research aims, methodology and dissemination of results were given to participants at the onset of the interviews, adding to information given in the permission letter and informed consent form. On completion of the research participants will receive an information leaflet via the NEI on the results of the research.

1.10.4.7 Rights of the community and the research community

The researcher adhered to the standards of research and committed to honest, unbiased and neutral research. The restraints of the research will be made known and no unethical manipulation of the research data was done. Procedures and methods were scientific and conclusions and statements justified by reputable sources without plagiarism.

1.10.4.8 Level of risk

This research is regarded as medium risk as it involves face-to face contact with participants through interviews that were audio taped, thus limiting the anonymity. The nature of this research methodology, in the first phase, AI, is of such that the positive factors are concentrated on, and this contributed to less discomfort of participants. Educators and PHC professional were requested to indicate a time and place that suit them and have the least effect on their work schedule.

1.10.4.9 Risk-benefit analysis

The risks identified during this phase of the research were as follows:

- **Physical, psychological and social harm**

Participants might have felt uncomfortable during the interviews and they might have felt exposed by identifying aspects of the teaching and learning of PHCN at the institution where they are teaching or have been a student. This was addressed through the process of AI as this concentrates on the positive factors as well as ensuring that participant information is not divulged.

- **Legal, economic, dignity and community harm**

The risk of harm in any legal-, economic-, dignity- and community aspect were not foreseen in this research.

1.10.4.10 Confidentiality and anonymity

The names of participants were replaced by a code on the transcriptions to ensure anonymity. Even though the interviews were taped and transcribed the transcriber was expected to adhere to a contract of confidentiality and that no identifying information was given. The transcriber signed a confidentiality agreement as well (Addendum F). The nature of this research methodology, AI, is of such that the positive factors are concentrated on, and this may contribute to less discomfort of participants.

1.10.5 Ethical aspects in phase two: Integrated literature review

The themes identified in phase one were used as concepts for the searches and stated in clear statements. Inclusion and exclusion criteria were identified, and results of searches were clearly outlined. Inclusion criteria included primary research, systematic reviews and discussion articles from peer-reviewed English journals excluding studies not applied to advanced nursing practice. Abstracts were assessed according to the identified themes from phase one.

The rationale for the integrated literature review and specific search strategy are discussed in the methodology (see chapter 3). Threats to validity of an integrated literature review can be stated as a limited or narrow set of definitions of concept may confine the application. This threat can be addressed by a broader more comprehensive definition that may result in more conclusions. With a broader set of definitions and a review of methodologies of selected studies, the validity of conclusions are ensured (Whittemore & Knafl, 2005:546-553).

1.10.6 Ethical aspects in phase three: Delphi technique

Permission to conduct research with experts from different NEI's involved with clinical nursing education, PHCN as well as higher education teaching and learning were obtained. Firstly the NEI was approached for permission to invite the identified experts for participation in Phase three of the research. After permission was granted, the experts were contacted via email and requested to participate (Addendum I). The email contained information explaining the background and aims of the research as well as what were expected from the participants, and potential risks and benefits. Contact details of the researcher, potential conflict of interest and availability and dissemination of results after completion of the research were included.

Experts were requested to give their informed consent to participate in the research. (Addendum J).

1.10.6.1 Recruitment and selection

Experts in clinical nursing education, PHCN and teaching and learning from different higher educational institutions were approached to participate in this phase of the research. Participants should at least have a minimum of two to five (5) years' experience of clinical nursing education in PHCN programmes. These experts may be from the same group of educators who participated in phase one. They were identified through authorship of articles, prescribed handbooks and the members of faculties of Nursing of South African Universities and Universities of Technology.

1.10.6.2 Informed consent

The experts that availed themselves for participation after receiving information (Addendum J) and invitation letters were then requested to sign an informed consent form that has been approved by the HREC of the North-West University. The informed consent forms (Addendum J) were emailed to the participants before the first round started, giving them ample time to think about participating and opportunity to ask questions if needed. Participants signed an informed consent, before they participated in the research. It is a form of guarantee to the participants that the researcher will protect their rights and that they understand the nature and aims of the research and their right to withdraw at any time. Therefore, the researcher confirmed that the participants were informed about and understand the research as described in the information email leaflet. Participants were then requested to give conformation and then written consent to participate in the research.

1.10.6.3 Right privacy and respect

All participants must be afforded the right to privacy from the onset of the research. At no stage any information that may identify participants in any way must be divulged. The researcher therefor ensured that the interaction was anonymous by not including the details of the participants in the second and following rounds of the Delphi technique (Moule & Hek, 2011:40). The opinions and information from participants were respected and honoured by the researcher.

1.10.6.4 The right to protection and truthfulness

It is essential to conduct the research non-maleficent. The Delphi technique took place via email and participants did not have to meet in person (Jorm, 2016:892). Participants could

therefor respond whenever it was convenient to them. This research aimed to benefit the nursing community and the clinical nursing educators. Harm to participants, in any way, must be anticipated and prevented by the researcher. The names or information of any of the participants were kept confidential and not shared with any third party.

1.10.6.5 he right to freedom of choice and withdrawal

Even if participants have given written, informed consent before commencement of the research the participants should not feel pressurised in any way to participate. Participants were permitted to withdraw at any time up to a point where individual data could still be identified. This was communicated to participants before and during data collection.

1.10.6.6 Access to information and communication

All information were clarified by the researcher to the participants, including the nature, aims and implications of the research. This was done with honesty, openness, accuracy and a positive attitude, treating participants equally and fairly. Information regarding the research aims, methodology and dissemination of results were given to participants at the onset of the research, adding to information given in the permission letter and informed consent form. On completion of the research participants will receive an information leaflet via the NEI on the results of the research.

1.10.6.7 Rights of the community and the research community

The researcher adhered to the standards of research and was committed to honest, unbiased and neutral research. The restraints of the research should be made known and no unethical manipulation of the research data was be done. Procedures and methods were scientific and conclusions and statements justified by reputable sources and no plagiarism were engaged.

1.10.6.8 Level of risk

This research is regarded as medium risk as it involves initial personal identifiers as the researcher contacted the experts via email and therefore have their personal details in doing so. The researcher ensured that this information stays confidential by not revealing any personal details of the experts in the research report or any other documents. Experts only received synthesized descriptions after the first round with no identifiable information as to who the other experts were.

1.10.6.9 Confidentiality and anonymity

The names of the participants were replaced by a code on the data to ensure anonymity. After the last round of the Delphi technique all personal details of participants were removed before the opinions and comments of participants were printed. The electronic copies will be saved and stored on a password protected computer until the end of the research project and until final publication of the results. The hard-copies will be locked in the researcher's office for seven (7) years before being destroyed.

1.10.6.10 Risk-benefit analysis

The risks identified during this phase of the research were that the experts might have felt inadequate or threatened. These risks were addressed by the precaution of keeping the personal details of participants confidential and only reveal synthesized descriptions to all experts. The indirect benefit of their contribution will be the benefit to the profession and PHCN practice and patient care.

1.11 STRUCTURE OF THE THESIS

The researcher will address the above questions and objectives in chapters that are planned as follows:

Chapter 1: Overview and background of the research.

Chapter 2: Current approaches in the teaching and learning of clinical skills in South Africa.

Chapter 3: Teaching and learning of clinical skills: An integrated literature review.

Chapter 4: Identification and validation of strategies.

Chapter 5: Conclusions, evaluation and recommendations.

1.12 SUMMARY

South Africa's health and disease burden necessitates PHC as PHC will be the foundation of the NHI plan. There is a demand for more ANPs with CNSTC that can be the frontline contact within PHC. Regrettably, there are voiced concerns from anecdotal evidence regarding the current teaching and learning practices and insufficient clinical skills of ANPs with CNSTC. Through an in-depth exploration and description the current teaching and learning approaches of ANP's in CNSTC by CNSTC educators at South African NEI's, and best available national and international literature, the researcher can gain a better understanding of the current teaching and learning approaches and the gaps within these teaching and learning practices. This can enable the researcher to identify strategies with CNSTC experts through the Delphi

technique to enhance the teaching and learning of clinical skill to students in CNSTC programmes.

This chapter gave a general view of the structure of the research. The background and aims of the research were discussed. The qualitative methodology as design is discussed. The chapter concluded with ethical considerations and a summary of the structure of the research according to the chapter division. In chapter two phase one of the research, the design and – methodology will be described. The description of phase one, the data collection, - analysis and conclusions will be included in this chapter.

CHAPTER 2: CURRENT APPROACHES IN THE TEACHING AND LEARNING OF CLINICAL SKILLS IN SOUTH AFRICA

2.1 INTRODUCTION

Chapter 1 provided an introduction to and overview of this research. Chapter 2 presents a detailed description of the realisation of the first phase of the research, which was based on the principles of an appreciative inquiry (AI). The research design and method, population and sampling method, data collection and analysis, and findings are also presented. This chapter concludes with a discussion of the results of the interviews, presented as themes and sub-themes.

2.2 RESEARCH METHOD

The realisation of the AI interviews, are discussed in this chapter. Figure 2.1 presents a flow diagram of the AI interviews within the consecutive research phases.

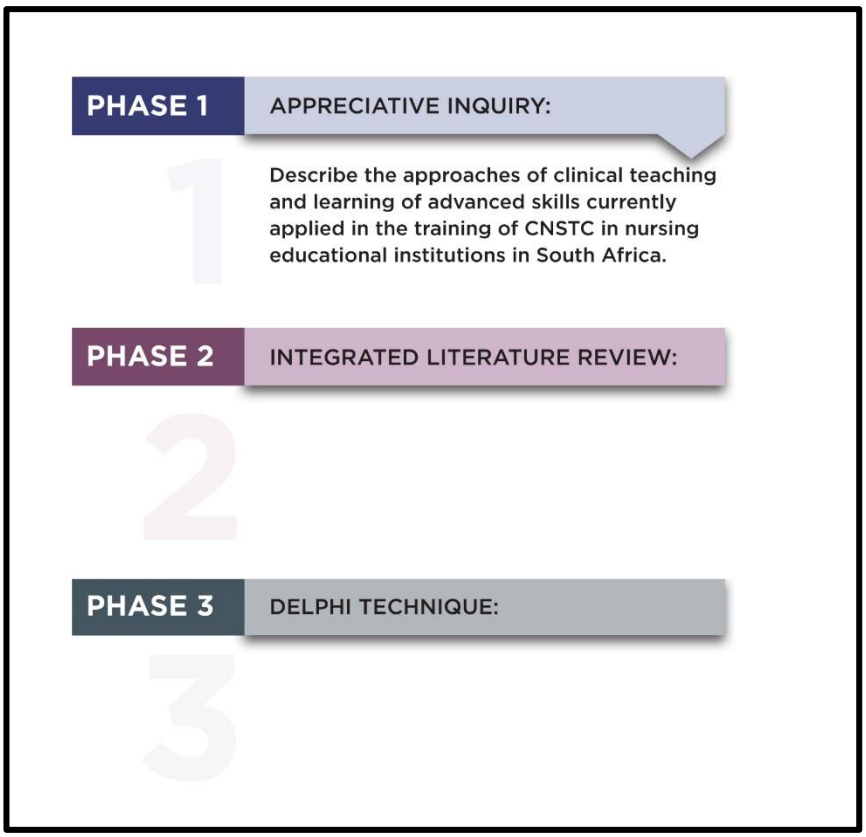

Figure 2-1: A flow diagram of the research process with the focus on phase one

2.3 PHASE ONE: APPRECIATIVE INQUIRY

The principles of an AI process were used to address research objective 1, which is "**to determine which clinical teaching and learning strategies are currently applied in the training of PHCNs at nursing educational institutions in South Africa"**.

An AI refers to a group of processes that inquirers into, identifies, and develops the best of "what is" – that is, what organisations already have in place and available to them – with what to implement for the benefit of improving the organisation and therefore create a better future (Preskill & Catsambas, 2006:1). According to Richer *et al.* (2010:171), AI is a philosophy and process with the potential to transform health care and improve the health care environment. This philosophy is constructivist-based, which coincides with the philosophical paradigm the researcher has described in chapter 1. In support of AI, Hung (2017:1) and Byl *et al*. (2016:294) describe the process as a positivity and strengths-based methodology that is conducive to safe, threat-free environments in which participants can openly share and discuss innovative thoughts and ideas. However, Grieten *et al*. (2018:101) warn against overemphasising *positivity* and underemphasising *inquiry* within the AI process as doing so might result in shortcomings being ignored. That being said, during data collection for this research, all the participants discussed the challenges that the programme presented during the interviews, which are included in the report on the data analysis of the AI and used to inform the recommendations of this study. The cyclic sequence of the AI is presented in Figure 2-2.

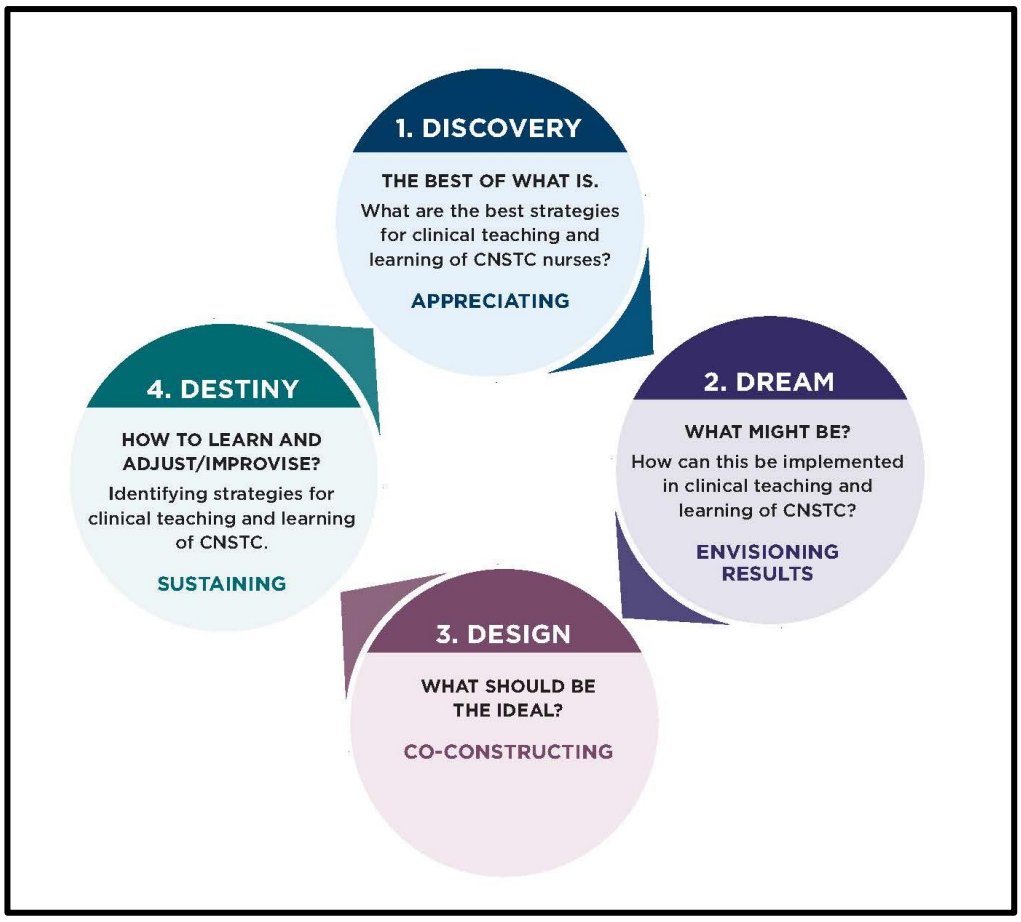

Figure 2-2: The sequence of the processes in an AI (Cooperrider *et al*., 2008:34) applied to this research

The process of realisation of the steps in this cycle are described in the following paragraphs.

Step 1: Discover

The first step of the AI focused on identifying the current status of clinical skills teaching and learning by using positive-focused questions. The aim was to establish an open dialogue platform with positive responses to questions. This research focused in particular on current strategies used in clinical teaching and learning of PHCNs at nursing educational institutions in South Africa accredited with the SANC. This provided a framework from which strategies could be identified to enhance the clinical teaching and learning of PHCN students, and served as the impetus of the discourse.

Step 2: Dream

Identifying the "what is" was followed by a discussion of "what might be" in the next step, in which participants could envision desires of endless possibilities of what the future might entail.

During this step, the same participants were asked to build on what they identified in step 1 and envision such possibilities for the future of PHCN teaching and learning (Cooperrider *et al.,* 2008:136).

Step 3: Design

After identifying the strengths (step 1) and possibilities (step 2), the next step was to investigate methods to achieve said possibilities or dreams and thereby make them a reality.

Step 4: Destiny

Here, the focus was on "what will be", which marked the beginning of a transformation process (Gaddis & Williams, 2008:8) that involved the creation and sharing of knowledge and receptiveness to learning (Mishra & Bhatnagar, 2012:543).

2.4 POPULATION AND SAMPLING

The target population of this research was educators presenting clinical teaching and learning at NEIs (*n*=5) and professional, qualified in CNSTC (*n*=26). This population was able to inform the research with their knowledge and experiences of teaching and learning PHCN clinical skills and its application in practice. The demographic profile of the participants are depicted in table 2-1.

2.4.1 Purposive sampling

The process of selecting a population that will inform the research (Burns & Grove, 2011:84) was done purposively, where purposive sampling entails selecting populations based on an applicable research characteristic for the study. Participants were selected from a group of people to which the researcher had access to and with whom a relationship could be developed with a view to gather rich data (Creswell & Poth, 2018:148). This group of people was specifically selected because they could best inform the research problem based on the researcher's inclusion criteria (Botma *et al*., 2010:126) and judgement. Purposive sampling was used to select the NEIs and potential participants in the target population.

For this research, the inclusion criteria for NEIs were:

(i) The number of students registered for CNSTC per academic year:

Those institutions with the greatest student intake per year would provide a greater representation of the population and therefore, more accurate findings (Maree, 2012:178). The numbers of students enrolled for a specific qualification with the SANC

are published on the SANC website, which is accessible to the public. From these lists one NEI in each province was selected.

(ii) Accreditation of the institution with the SANC:

All higher education institutions in South Africa offering training of nurses for a registered qualification must be accredited with the SANC to ensure adherence to the regulations for training as per legislation (SANC, 1985b).

Institutions that presented the qualification according to the information on the SANC website were included. NEIs of which the ethical committees gave permission for the research to be conducted.

Inclusion criteria for educators:

(i) Educators teaching in the CNSTC programme;

(ii) Potential participants who agreed to be contacted by the researcher and willing to have the interview digitally recorded;

(iii) CNSTC educators with 2-4 years of teaching experience, as they would be able to provide information about their experiences of teaching and learning in the CNSTC programme.

Inclusion criteria for professional nurses:

(i) ANPs who completed the course within the previous 24 months, for their fresh perspectives of the CNSTC programme;

(ii) Potential participants who agreed to be contacted by the researcher and willing to have the interview digitally recorded.

The second group of participants, the professional nurses qualified in CNSTC, were selected using snowball or network sampling.

2.4.2 Snowball sampling

Snowball sampling or network sampling is defined as the process of identifying an interconnected group that is able to provide information about other groups with the same interests of value to the research purpose (Maree, 2012:177; Creswell & Poth, 2018:126; Polit & Beck, 2017:745). Snowball sampling was used to reach as many participants as possible

and to find prospective participants who were former students of the NEIs and who, through their connections with the educators and mediators, would participate in the research (Creswell, 2010:155).

The researcher e-mailed a letter to NEIs adhering to the inclusion criteria requesting permission to conduct this research (Addendum A), accompanied by proof of ethical clearance by the Health Research Ethics Committee of the Faculty of Health Sciences of the North-West University. The SANC has a contact list with the heads of departments of all accredited NEIs publicly available on its website. NEIs were asked to reply via e-mail within two weeks in which they would confirm or decline participation. Following their permission to participate, each NEI was requested to identify a person at the NEI who would be able to act as a mediator (who has access to alumni in the PHC programme) between the researcher and participants. The researcher requested that the mediator approach the educators and students and ask their permission to be contacted for participation in the research. The mediator gave the researcher the contact details of the educators and students who agreed to participate, who were contacted via an e-mail message that provided information, explained the nature of the study, and requested their participation (Addendum B1, B2, D, E). The informed consent forms were e-mailed to the participants before the interviews took place, thereby giving them ample time to think about participating and to ask any questions they might have about the process. Participants signed a hard copy of the informed consent form before the interviews commenced. The researcher's contact details were available in the event that any potential participant had questions about any aspect of the research. The sample size was determined by voluntary participation as well as data saturation. Data saturation refers to the repetition of themes or data resulting from new data no longer providing significant new or additional information (Niewenhuis *in* Maree, 2012:79; Fusch & Ness, 2015:1408). The institutions and participants who met the inclusion criteria were finally invited to participate.

2.4.3 Data collection

Data were collected over a two month period. The first group from which data were collected was educators at NEIs responsible for CNSTC training (*n*=7). Educators were interviewed on campus at prearranged venues and times irrespective of full time or part-time programmes. The second group of participants were the qualified CNSTC practitioners working in clinical settings (*n*=26). These interviews took place either on campus as prearranged or at their workplaces during appropriate times. The principles of the AI, as indicated in Figure 2.2 (Cooperider *et al*., 2008:34), were applied to collect data during this phase. Individual, semi-structured interviews were conducted with nursing educators from participating NEIs and newly qualified CNSTC nurses (Whitney & Stavors, 2003:34). One educator was not available

for a face-to-face meeting, so the interview was conducted telephonically. The interviews were interactive and educators were interviewed following the sequence and questions of the AI process as described in Addendum C. The researcher, being a trained professional nurse and knowledgeable on the context and the programme, in addition to having gained interviewing skills during her master's degree, personally conducted the interviews. The times, dates and venues of the respective interviews were communicated to participants in writing in advance and again closer to the time of the interview for confirmation (Greeff, 2012:350). The interviewer was skilled in interviewing as well as knowledgeable in the participants' frames of reference, backgrounds, and cultures (Greeff *in* De Vos, 2013:343).

The participants were interviewed on an individual basis, as the researcher wished to report on the ideas, dreams and suggestions of each individual. According to Teevale and Kaholokula (2018:7), using AI as a methodology for interviews and appreciating assets and factors that work can help identify solutions to problems within the community being researched. The locations were selected after obtaining permission to conduct interviews from the NEIs. Next, a suitable space for the interviews were identified in consideration of the workplace and availability of the participants. The educators' interviews took place at the NEIs in conference rooms or offices chosen by the participants. The professional nurses' interviews took place at various venues also in accordance with the times and places most convenient for them. The educators and professional nurses were interviewed separately and on an individual basis in different locations so as to not disrupt their daily routines and work times. After ensuring that each participant was comfortable, the interview would begin with a short introduction and welcoming, and ensure that informed consent was in place. The participant would then be reminded of the ethical aspects of the research and the confidentiality of the data. Each participant was reminded that their participation and honesty in their responses were important. Participant permission was obtained before recording each interview for transcription.

The researcher's role was to establish a climate of respect and use interpersonal skills to facilitate the interview. These skills included respect, empathy, sincere interest in the participants' dialogue, an attitude devoid of condescendence or judgement, with active listening (Greeff *in* De Vos, 2013:343). During the AI interview process the researcher had clarified any uncertainties the participants had. The duration of each interview was approximately one hour. At the end of each interview each participant was thanked and assured of anonymity, confidentiality, and of the appropriate dissemination of the research results. The interview schedule is discussed in the results section.

2.4.4 Data analysis

According to Creswell (2008:237) there is no “best” way to analyse qualitative data. The analysis of data should be done according to the data collection method and the type of data collected. The data analysis process started during data collection as the researcher made provision for the eventuality that the interviews would at any time introduce new data which would then also inform and necessitate incorporating, clarifying, and confirming previous data during subsequent interviews. The researcher interpreted the data through immersion, which involved listening to the interview audio recordings, reading, and rereading the transcripts, thereby becoming intimately familiar with the content (Grove *et al*., 2013:280-281).

The data was prepared for analysis by ensuring that the interview audio recordings were clearly audible before giving them to an independent transcriptionist to be transcribed, who was reminded of the confidentiality agreement that she signed for the ethics procedure. After transcription, the researcher again listened to the recordings and compared them with their respective transcripts to ensure accuracy. After each interview was conducted, the researcher made observation notes about the participants and the interview. When reading the interview transcripts, the researcher would go back to these notes for reference to make further observations. The researcher subsequently processed the data from the interviews and notes by categorising it into themes (segments) for a more accurate focus, thereby giving the data meaning. A code was then assigned to each theme according to a thematic data analysis as described by Creswell (2009:189). The initial coding was broad, but as analysis progressed, initial codes were fused with others. This process of grouping and comparing similarities according to themes is described as a constant comparison process. Concepts that emerged from the data were then grouped together under encompassing themes and sub-themes. During this process, the researcher would constantly compare the data groups with emerging themes (Creswell & Poth, 2018:314). After having completed the coding, an expert (in data analysis and from a nursing background) was requested to do co-coding, thus ensuring that the analysis was valid and trustworthy (Polit & Beck, 2017:531). Co-coding was done by giving the co-coder the transcripts for coding, the interview schedule and the background and objectives to the research. The researcher and co-coder then compared both sets of coded data to ensure that the coding was comprehensive and that there was consensus on the identified themes. The data collected in this phase informed the next phase of the study, as the themes identified during analysis were used to inform the integrated literature review.

2.5 RESULTS

2.5.1 Background and demographics of the CNSTC training

A total of 13 universities, from the list available from the SANC of accredited sites for CNSTC, were e-mailed, and whose addresses were obtained from their individual websites. Three of the 13 universities replied that they no longer presented the programme, four never responded with any messages and did not reply to any follow-up telephonic communication. Six universities replied, granting permission to conduct the research. Interviews were conducted with five of these NEIs, one telephonically, with nursing educators as well as professional nurses. The fifth NEI had only one educator available for interviewing at the time of the interview as the second educator was on study leave. Data saturation was reached after the interviews at the third NEI after which two more NEI's were included to confirm data saturation. For this reason the sixth NEI was not included. Data saturation occurred once no new data emerged and information was repeated (Polit & Beck, 2008:357).

Table 2.1 provides a summary of the demographic profiles and backgrounds of participating NEI PHCN programmes. Universities are identified as Uni1 to Uni5, and participants by respective numbers.

Table 2-1: Demographic profile of participating NEIs

		Uni1	**Uni2**	**Uni3**	**Uni4**	**Uni5**
1	Number of students per annual intake	80	80	60	60	50
2	Number of full-time educators presenting the CNSTC programme	2	2	2	2	2
3	Full-time/part-time programmes	Part-time	Part-time	Full-time	Part-time	Full-time
4	Time students spend on campus for practical tuition	3 weeks per year	2 weeks per year	3 days a week for a year	2 weeks per year	2 weeks orienta-tion, then 3 days a week for a year
5	Educator/preceptor to student in practice ratio	1:12	1:15	1:10	1:20	1:10
6	Assessment	OSCE portfolio	OSCE portfolio	OSCE portfolio	Presen-tation of patient cases, portfolio	Presen-tation of patient cases, portfolio

		Uni1	Uni2	Uni3	Uni4	Uni5
7	Number of accredited clinics used for training	14	1	8	6	2
8	Number of educators interviewed (*n*=9)	2	2	2	2	1
9	Number of students interviewed (*n*=26)	5	7	8	4	2

2.5.2 Demographic profile analysis

The demographic profiles of the NEIs included in this research were representative of the profiles of NEIs who present the CNSTC programme.

- ***Number of students per annual intake***

This is the average number of students who enrol for the CNSTC programme at the NEIs on a yearly basis (Uni1-5). This number is usually specified by the SANC when the NEI applies for accreditation of a specific programme. The numbers range from 50 to 80 students per NEI. It appears that more students are enrolled at NEIs presenting the programme on a part-time basis, and in instances where students were able to continue working for their employers while studying.

- ***Number of educators presenting the CNSTC programme***

This number constitutes the permanent staff members at each NEI solely involved with clinical teaching and learning of students in the CNSTC programme. At all the NEIs interviewed, two educators were involved in presenting the programme at each institution. Additionally, all the NEIs had a number of facilitators, mentors, or professional nurses who supported students during clinical practice. They were not employed full-time by the NEIs but on an ad hoc hourly basis when students were placed in practice. Staff members from other subject groups or disciplines presented those modules in the programme that fell within the fields and scopes of their own practices as per the curriculum requirements, for example pharmacology, presented by a pharmacologist.

- ***Part-time or full-time programmes***

In part-time programmes, students come to campus for a prescribed period and then return to their places of employment to complete their practical hours and portfolios. The theoretical

contact sessions are either presented after-hours on Saturdays or during the evenings on weekdays. This allows students to keep their employment while advancing in their careers.

Some students are sponsored by their employers for a year's study leave. These students attend classes and clinical practice on a full-time basis. Though this is the case for some students, other students have to resign to study full-time, only to re-apply for their jobs after completing their studies.

- ***Time spent on and off campus***

Each of the NEIs who participated in the research presents a one-year diploma with one intake per year, where students start the academic year with a period of two to three weeks on campus. During that time, students are exposed to the components of theory and clinical practice in addition to refreshing any existing knowledge and skills they may have. In some cases, students return in the second semester for another week (Uni1), but for most of the NEIs this initial on-campus contact is the only formal face-to-face time available for clinical teaching and learning. Students spend some time on campus for theory sessions which are presented on contact or via white board (electronic direct sessions). These theory classes include additional modules such as pharmacology and research.

- ***Educator to student ratio in clinical practice***

This ratio constitutes the number of educators to students when clinical teaching and learning takes place in clinical practice or simulation. The ratio differed between NEIs, ranging from facilitator to student ratios of 1:8 to 1:15. These contact times took place during the first academic weeks on campus. Full-time students spent time on clinical practice during the week. Although most of this time is spent on simulation, at times students also attend clinical practices with the educators.

- ***Assessment***

During the year, students have to complete and submit a clinical portfolio as evidence of the number of hours spent in clinical practice, in which they also need to indicate the specific prescribed competencies they have obtained (Uni1-3). The final summative assessment strategy for students after completing the programme is an objective structured clinical evaluation (OSCE) with 6 to 25 stations, where students are assessed on their clinical skills and knowledge. Three of the NEIs use OSCEs for formal summative assessment at the end of training. Two of the NEIs require students to do presentations on patient cases in which they explain the process of patient consultation and management as implemented in practice.

Patients are selected beforehand by educators and may present with any ailment or chronic condition.

- ***Accredited clinics***

Whenever a NEI applies to the SANC for permission to present a programme, their clinical facilities are visited and assessed by the SANC before being accredited as clinical training facilities for the specific programmes. Some NEIs only use accredited clinics for initial exposure to practice during the weeks spent on campus (Uni2, 4, 5), while others expect the students to spend the entire year of study and all applicable clinical hours at accredited clinics (Uni1, 3). Only three of the five NEIs place students at SANC-accredited facilities for the full duration of the programme. The others allow their students to complete the hours and portfolios at their places of employment (which may not necessarily be SANC-accredited facilities) under supervision of either a registered CNSTC nurse or a medical doctor.

In the following section, the interview results are presented in accordance with the different steps of the AI process.

2.5.3 AI interview results

According to Moody *et al*. (2007:323), one of the features of an AI is that the past and the present should be appreciated and the best of *what is* must be brought forward to enhance the future. During the first step, appreciation was given to what is positive and enhancing for teaching and learning of PHCNs. References to specific participants are referred to as “Uni 1:2” meaning it was the first university and the second educator or Professional nurse as indicated.

2.5.3.1 Step 1: Discover

The first step of the AI focused on identifying the current situation through positive-focused questions. Participating educators were asked to describe the strategies that they *currently used* in the teaching and learning of clinical skills of PHCN students which, in their experience, were *the most efficient* in presenting the best outcomes for students and practice. The second group of participants were qualified PHCN practitioners working in clinical settings. These professional nurses were asked to *reflect on* their own training and to indicate which parts of their previous clinical training were *most efficient* and best implemented in practice to generate positive outcomes for their patients.

2.5.1.1.1 Educators

Educators were asked to describe how they were presenting the programme considering their current resources, time, and student numbers. The educators responded as follows:

"Students watch a DVD, then skills are demonstrated and then they practise it in a skills laboratory before they go back to practice" (Uni1:1).

"Smaller groups that were exposed in the simulation lab to different conditions, I demonstrate first and then the students practise before they go to the hospital to see patients" (Uni2:1).

"Students watch a DVD, then they get a live demonstration and then they practise in the skills laboratory until they are competent, only then do they go to clinical practice" (Uni3:2).

"Skills are demonstrated in the simulation laboratory and then they go back to their workplaces to practise" (Uni4:1).

"The one-on-one with complete feedback and supervision from the educators work best" (Uni5:1).

It is interesting to note that one university (4:1) sends their students to practise clinical skills in the workplace, and not in the simulation laboratory until they are competent. Two of the NEIs (Uni1, 3) developed their own DVDs on which all the skills that students were expected to complete and master by the end of the programme, were demonstrated. This DVD was given to all the students during registration and used during contact sessions on campus. The rationale for developing their own DVDs was that "*it is better to use our own methods as it is developed for the South African context and how we want our students to do things"* (Uni3:1).

The use of advanced simulation models to enable students to experience different heart and lung sounds and practise physical examination of systems was also popular at NEIs who had access to these models (Uni1-3).

> *"Students are allowed to listen to the different sounds and then the lecturer discuss the conditions of it" (Uni2:1).*

2.5.1.1.2 CNSTC nurses

The CNSTC nurses responded as follows:

"The DVD helped the most, I could watch it over and over" (Uni1:3).

"Educators demonstrated to us, then we demonstrated back that worked best to remember how" (Uni2:4).

"Having someone in practice to demonstrate" (Uni3:1).

"Mentors in practice that show you how and help if you do not know what to do" (Uni4:1).

The importance of supporting students in practice and of demonstrations were emphasised in the responses of professional nurses.

2.5.3.2 Step 2: Dream

After identifying the "*what is*", the next step was to consider "*what might be*". Participants could envision desires of endless possibilities with images of what the future might hold. During this step, the same participants were asked to build on what they identified in step 1 and envision what possibilities the future might entail (Cooperrider *et al.,* 2008:136). During this step, educators at the NEIs were requested to describe what they envisioned to be the best and the most efficient strategies of teaching and learning. In addition, PHCNs were requested to describe education according to their experiences of the CNSTC and to envision the best and the most efficient strategies with which to acquire clinical skills that would enhance their practice within the context of their place of practice.

2.5.1.1.3 Educators

The educators were asked to dream big: "Describe what you envision will be the best, or better and more efficient, strategies of teaching and learning of clinical skills for PHC students. In other words, if you had all the resources at hand, how would you go about it?" The educators had similar responses: Four of the NEIs described having smaller groups of students with more educators or facilitators to give one-on-one demonstrations along with supervision in practice with constant feedback as one of the most efficient strategies (Uni1, 2, 3, 5). Another suggested improved strategy was extending the programme to at least 18 months to allow more time for repetition and consolidation of skills (Uni1, 2, 3, 4, 5).

Other responses included:

"The ideal is to teach the skills in a proper simulation laboratory, have them practise it, before they go to real patients. In other words, they must be competent before they go to practice" (Uni4:1).

"Modules on the interpretations of laboratory results, ECG and X-rays as well as EMS training should be included" Uni1:2).

"Short courses or refresher courses on dispensing, anatomy, physiology and pathophysiology should be prerequisites" (Uni1:1).

"Other multi-professional team members should be available to present some of the content and support in clinical practice" (Uni3:1, 5:1).

"Longer placement in different practical settings with support from trained ANPs" (Uni5:1).

"Students should have their own equipment bags" (Uni1:1).

“At least two years in clinics as experience before they do the programme” (Uni4:1).

2.5.1.1.4 CNSTC nurses

The CNSTC nurses were asked: “Describe what you envision should be the most efficient strategies of teaching and learning of appropriate clinical skills to enhance your current practice”. These professional nurses emphasised the need for more time to practise under direct supervision in practice and simulation. Another aspect mentioned was the theoretical load of “other modules”, referring to ancillary modules, that were included in the programme other than those directly related to PHC. Professional nurses stated that these modules took up too much time that they would rather spend on PHC modules.

“More time to practise in simulation laboratory with facilitators in smaller groups” (Uni2:4).

“More direct supervision from educators and medical doctors in clinical practice” (Uni3:2).

“Full-time course without responsibility to work as well but still get salary” (Uni 2:4).

“Leave out other modules and spend more time on PHC” (Uni2:4).

“Support from Department of Health for longer study leave” (Uni3:4).

“The modules on management and research and other assignments, should be taken out because you need to develop a clinical skill which you neglect because of the stress of these other modules” (Uni4:3).

2.5.3.3 Step 3: Design

Once the strengths (step 1) and possibilities (step 2) were identified, ways of improving and achieving what has been dreamed were investigated. At this stage the participants were requested to recommend the most efficient strategies for teaching and learning of clinical skills for CNSTC, given what is currently implemented while keeping in mind the possibilities that were identified in step 2.

2.5.1.1.5 Educators

All educators indicated that the educator to student ratio is difficult to manage. The suggestion was that at least five facilitators for at most every 20 to 30 enrolled students should be the norm. It was also suggested that facilitators of students be in practice at all times to ensure competency (Uni1- 5).

“Definitely smaller numbers of students per educator because one to 50 students is not nearly enough” (Uni4:1).

In some instances more time was recommended for completion of the clinical component of the programme to give more attention to clinical skills – at least 18 to 24 months (Uni1, 2, 3, 5).

"I think the two years or a year and a half will provide a much stronger PHC practitioner as students will have the time to reflect and make it part of them" (Uni5:1).

A South African based clinical DVD issued to students for easy access and referral is essential in giving students sufficient time to observe procedures at their own pace (Uni2, 3, 5). The programme content should also be regularly updated to compliment the context of the South African PHC services and the NHI (Uni1, 4). Some educators recommended that a medical clinician provide back-up and support (Uni1:2, Uni2:1, 2. Uni4:1, Uni5:1).

2.5.1.1.6 CNSTC nurses

The nurses suggested that educators with experience and knowledge in clinical practice accompany students more (Uni1:3, 4; Uni2:3- 6; Uni4:3, 4). They also preferred having the programme extended to at least 18 months, or two years full-time (Uni1:3; Uni2:3, 4, 5; Uni4:3, 4).

"It can be a full-time course where you can be attending maybe every day not in weekends because the weekend is very short" (Uni1:3).

"If you can spend at least four weeks with the doctor in the clinic and see more challenging patients it will be better" (Uni3:4).

"The presenter must be an experienced PHC professional, because they talk from experience and they know what it's like in the clinics" (Uni2:4).

2.5.3.4 Step 4: Destiny

Here the focus was on "what will be". This marked the beginning of a process of change and transformation (Gaddis & Williams, 2008:8). In this final step of the AI cycle, participants assisted in identifying strategies that should be used to enhance teaching and learning of clinical skills for CNTSC within the South African context. These strategies are explored further during phase two and phase three of this research.

2.5.1.1.7 Educators

The programme should focus on the holistic management of the patient and not only the disease (Uni1, 5). Developing critical thinking skills in assessment, diagnoses and treatment, and interpreting findings, must be emphasised and enhanced (Uni2-5). The assessment of authentic patients is most important to enhance skills (Uni1-5). Proper teaching aids such as

advanced manikins, developing a South African-specific DVD, and developing proper guidelines on the part of the DoH are essential for enhancing teaching and learning (Uni1-5).

"It doesn't help to teach them one system or disease at a time, they then forget the person behind the disease … you can't give nutritional education to someone who doesn't have money to buy food" (Uni5:1).

"There is big, big advantages for simulation as we cannot be everywhere. So I teach them the right way and they practice and I see if they do it correctly before they go to practice" (Uni3:1).

"… the holistic patient must be managed. If the patient presents with a headache but in the end you discover that the patient is HIV positive or diabetic. If you cannot see the holistic picture you will not be able to make the correct diagnosis" (Uni2:1).

2.5.1.1.8 CNSTC nurses

CNSTC nurses suggested that educators be more visible in clinical practice throughout the programme and not only at the beginning (Uni1-4). They also indicated that the programme be extended to 18 months or two years with longer periods for clinical placement in different settings (Uni1, 2, 4). The professional nurses stressed the importance of other team members from the multi-professional team becoming involved in the clinical practice (Uni1, 2, 4).

"Four weeks on campus, per year. I think that will be better. Because yes we do learn in the practical but sometime you come out unsure of some of the things you learned in the practical" (Uni2:5).

"I would like to spend more time with the educator in practice, or a doctor to help me" (Uni2:4).

"The videos would make a big difference, but not the ones from overseas" (Uni2:5).

"You look at the DVD (provided) the previous day so when you go to class the same DVD is played so then you practice on the manikins and go through the whole procedure again, it works perfectly" (Uni3:5).

During the interviews both the educators and CNSTC nurse indicated a number of challenges that they experienced, that may have a significant influence on this research. These additional themes are therefore discussed.

2.5.4 Additional themes emanated from the interviews

While the methodology of AI does focus on positive responses during interviews, the educators and professional nurses also identified challenges that directly impacted the teaching and learning strategies used, which are noteworthy of mentioning. The researcher included those challenges during the interview coding, as they will inform the final recommendations in this study.

All of the educators who were interviewed pointed out that the students' basic clinical skills, such as using a stethoscope among other things, were inadequate and that they had to reteach the students some of those basic skills (Uni1-5). Students who enrolled for the CNSTC training programme should have completed an undergraduate nursing qualification in which they were supposed to have learnt the basic skills.

"There was the injections and they don't know where on the buttocks they must give the injections and where in the arm. I don't know where they have trained but they take the cuff and they put it upside down and they pull up the drugs in the syringe full air! They do not know how to listen to the heart with a stethoscope!" (Uni4:1).

"... you have to work a lot with them at the beginning. Recap of anatomy and physiology and pharmacological principles ... They do not know how and I give a whole lecture on the use of a stethoscope, what is it, how to use it, to turn the head and use both sides to listen …" (Uni3:1).

2.5.5 Basic theoretical background

All the educators who were interviewed indicated that the students' knowledge on anatomy, physiology and the pathophysiology of disease and illness, had to be refreshed. One NEI had a prerequisite test on these subjects in order for prospective students to revisit this information as background before they could be admitted for the programme (Uni2:1).

"The way that we do the systems' theory, we also do the physiology before we teach them the physical examination. They don't know this at all (Uni2:1).

2.5.6 Knowledge of protocols

All the educators used existing protocols from the DoH, of which they assumed the students would have been knowledgeable since it forms part of the undergraduate curriculum. However, it was found that most of the students had no previous knowledge of these protocols and did not use them in clinical practice (Uni1, 2,-5).

"…they say they have IMCI (Intermitted management of childhood illnesses) training, but when you use it in class they do not know what you are talking about, so we do that also at the beginning" (Uni1:1, 2).

2.5.7 Financial constraints

NEIs are expected to have an annual intake of students for PHCN, but financial constraints prevent the appointment of clinical facilitators, preceptors and simulation apparatus. This impairs the ability of educators to use applicable strategies to ensure proper clinical teaching and learning.

"We are keeping being told budget, budget, budget, therefore I don't have that advanced dolls and cannot teach students proper sounds …" (Uni4:1).

“We must have an intake of at least 60 per year, but we are only 2. There’s no money for more people, so how do you do it?” (Uni2:1).

The interview data were further analysed through an in-depth coding process to identify themes and sub-themes.

2.6 FURTHER ANALYSIS OF THE INTERVIEW RESULTS

Following the data analysis described in paragraph 2.2.3, this section presents the themes and sub-themes emanated through thematic analysis and confirmed after consensus was reached with a co-coder.

Table 2-2: Themes and sub-themes from individual interviews

THEMES AND SUB-THEMES	CATEGORY 1: EDUCATORS	CATEGORY 2: PHC NURSES
THEME 1: Clinical accompaniment and supervision		
Sub-theme 1.1: Teaching and learning on campus	• Ideal ratio educator: student 1:5-8 • Type of accompaniment: individually or groups • Skills training: Demonstrate-repeat-evaluate	• Accompaniment of students by educators or facilitators for whole study period not only two weeks orientation on campus.
THEME 2: Digital learning support material		
Sub-theme 2.1: Contextual DVD's	• Contextual South African DVD's needed.	• Videos/DVD's to support learning after classes
THEME 3: Specialised (simulation) equipment		
Sub-theme 3.1: Simulation	• High fidelity manikins for practicing skills • Repetition of basic skills during on-campus training • Demonstrations in simulation • Time to practice skills	• Patient simulation before managing patients • More time to practice in simulation laboratory under supervision
Sub-theme 3.2: Clinical practice	• Students need own equipment bag • More resources in practice	• Availability of equipment during clinical practice
THEME 4: Authentic (real) patients for assessment		
Sub-theme 4.1 During contact on campus	• To have time to assess real patients under supervision of educator in practice	• Use of authentic patients during assessments
Sub-theme 4.2: During clinical practice	• Support from mentors/facilitators and professional trained nurses in practice with real patient management.	• Use of authentic patients during assessments
THEME 5: Contextual policies and guidelines		
Sub-theme 5.1: DoH protocols	• DoH guidelines available to be used during training (previous knowledge)	• Encourage the use of DoH guidelines and protocols used in clinics.
THEME 6: Holistic (comprehensive) management of patients		
Sub-theme 2.1: Patient management	• Treat patients holistically and not just disease and symptoms	• Include Pharmacology treatment with cases.

Six themes were identified during the analysis of the interview contents. Firstly, clinical accompaniment and supervision in practice and simulation with, secondly, the use of digital learning material and thirdly access to specialised (simulation) equipment for practice and demonstration before going to clinical practice. The availability of authentic (real) patients for assessment by students under supervision of educators or facilitators in an environment where students can build self-confidence, was the fourth theme identified. The fifth theme was the importance of contextual policies and guidelines being made available to students, and the last theme emphasised the holistic (comprehensive) management of patients. These themes and sub-themes are discussed in more detail in the following section.

2.6.1 Theme 1: Clinical accompaniment and supervision

Sub-theme 1.1: Teaching and learning on campus

Clinical support through accompaniment and supervision, especially at the beginning of the programme, is one of the essential strategies identified by both educators and CNSTC nurses. One-on-one teaching and learning, but also group supervision, is essential during on-campus training, as this is where students learn specific skills through a demonstrate-repeat-evaluate processes. The CNSTC nurses also mentioned that students should be accompanied for the whole study period, and not only during the two-week orientation on campus. This is supported by various authors (Arving *et al*., 2014:278; McKella & Graham, 2017:92; Luhanga *et al*., 2010: 2).

Sub-theme 1.2: Teaching and learning in clinical practice

The accompaniment of students in practical settings by a mentor or facilitator is crucial to effective training of PHC students. The educators mentioned that they needed more qualified mentors/ facilitators/preceptors to accompany the students in the different practical settings. The current preceptor to student ratio is 1:8-15, but a ratio of 1:5-8 is more ideal. The type of accompaniment can range between individuals and groups.

Luhanga *et al*. (2010:11) discuss the effectiveness of a one-on-one relationship between preceptors and students, and conclude that this can be the ideal for supporting faculty and practice. The importance of supervision and preceptoring in practice are supported by various other authors (Bos *et al*., 2015:7; McKellar & Graham, 2017:92). Preceptors/facilitators need specialised training in facilitating PHCN students, as they accompany students during direct patient care and should have a positive effect on student outcomes (Johnston & Mohide, 2009:340; Warren & Deham, 2010:5). The PHCNs suggested that students need

accompaniment by educators or PHCNs not only during the two-week practical orientation, but during the whole of their practical study period.

2.6.2 Theme 2: Use of digital learning material (DVD)

Two of the NEIs developed their own DVDs which students received at registration, but the other three NEIs did not. Most of the participants identified the need for visual assistance when studying at home, which could be used to refer back to what they had learnt in class. Bloomfield *et al*. (2010:113) found that nursing students in general were better-prepared for clinical examinations if they had access to digital material on clinical skills. McAllister *et al*., (2013:567) supported the positive influence that visual material had on the learning of clinical skills as students could learn at their own time.

2.6.3 Theme 3: Use of specialised manikins and simulation

The value of using specialised manikins in simulation laboratories cannot be overemphasised. This is supported by the feedback from both the educators and the PHCNs. Quality simulation enables students to practise at their own pace and time until they are competent without endangering patients (Beauchesne, 2011:28). The PHCNs specifically recommended that students practise in simulations before managing real patients. This implies the use of basic equipment including but not limited to proper stethoscopes, ophthalmoscopes, and glucose meters, which should be relatively available for use by the students. In addition, as mentioned in theme 3.2, students should be equipped with their own equipment and equipment bags. Some of the NEIs who participated in this research had an abundance of advanced equipment for use by students while others only had the very basics.

2.6.4 Theme 4: The use of authentic patients for assessment

Although the PHCNs recommended that students spend adequate time practising their skills in a simulation lab, they should be assessed when working with authentic patients. According to the PHCNs, students prefer the assessment of authentic or “real” patients to test their competency under supervision of the educator. A one-on-one teaching approach (as identified previously) should be ideal for this activity. Diaz-Agea *et al*. (2017:405) used authentic patients during student debriefing and found a more enhanced and effective student learning experience.

2.6.5 heme 5: Contextual policies and guidelines

Both educators and professional nurses recommended the availability and use of South African policies, protocols, and guidelines. Though the DoH (2010) has a variety of protocols available for the treatment of patients at PHC level, the educators found students' knowledge about these measures and their availability before starting the CNSTC programme to be lacking. This is a crucial shortcoming, against which Bail *et al*. (2009:1457) emphasise the importance of contextual policies for ensuring high standards in patient care and protecting patients from risks.

2.6.6 Theme 6: Holistic management of patients

The educators suggested that students need to learn how to assess and treat patients holistically. The aim of PHC is to enhance the population's health and to have comprehensive services in doing so (Dennill & Rendall-Mkosi, 2012:5). Therefore, it is essential to teach CNSTC students the skills of comprehensively and holistically managing patients. This means that these professional nurses with CNSTC must have communication, clinical, and critical thinking skills to successfully deliver the service of PHC.

2.7 SUMMARY

This chapter addressed the first objective of this research, which was to explore and describe the teaching and learning strategies of clinical skills currently applied in the training of PHCNs at NEIs in South Africa (RQ1). The principles of the AI process was described because it was applied in this study. In the first section of this chapter, the educators' and PHCNs' answers from the interviews using the principles of AI, were presented for each AI phase, namely discover, dream, design, and destiny. The results from the interviews revealed that educators and PHCNs experience challenges in the training of PHCN students, but that they also have very strong ideas and suggestions of what strategies should be used in teaching and learning in the PHC programme.

The second section of this chapter presented and discussed the themes and sub-themes identified through a constant comparison analysis method. Further exploration of the importance and applicability in the South African context of these themes are presented in chapter 4. In the next chapter, chapter 3, the literature was researched to further explore teaching and learning of clinical skills in CNSTC.

CHAPTER 3: TEACHING AND LEARNING OF CLINICAL SKILLS: AN INTEGRATED LITERATURE REVIEW

3.1 INTRODUCTION

The integrated literature review is the second phase of this research. In this chapter the rational and process of an integrative literature review regarding research objective 2, are described. The population and the sampling are described as well as the search strategy, the data collection, data-extraction and critical appraisal of the data. The data analysis is described in the synthesis after appraisal. In the second half of this chapter the teaching and learning gaps from phase one (chapter two) and two (chapter three) data are identified.

In order to address research objective 2: To determine the evidence of effective teaching and learning of clinical skills for advanced nurse practitioners, from national and international research, an integrated literature review was conducted (See figure 3.1).

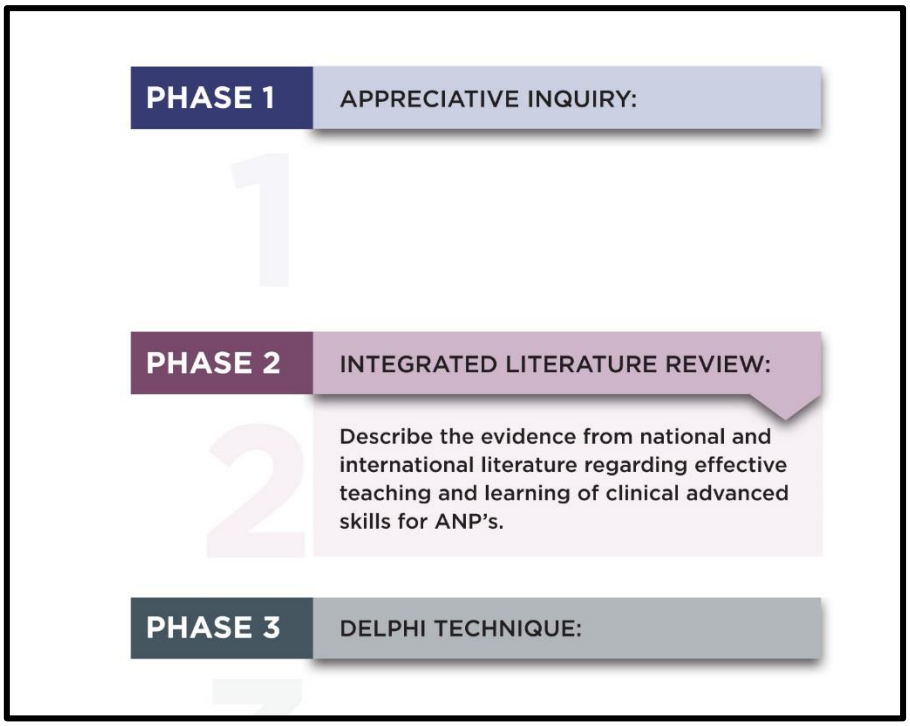

Figure 3-1: A flow diagram of the research process indicating phase two

3.2 RESEARCH METHOD: INTEGRATED LITERATURE REVIEW

Whittemore and Knafl (2005:546) define an integrated literature review as a review where theoretical, empirical as well as conceptual literature are viewed as important and thus

included the process. This type of review may provide a new base of knowledge and inform practice. Although a literature review may be time consuming and requires skills in selecting, retrieving, organising and analysing the literature, it is valuable for the confirmation of research findings (Coughlan *et al.,* 2013:31). According to De Souza *et al.* (2010:105) an integrative literature review is a unique method to synthesize research that informs practice, based on scientific knowledge. Integrative reviews are the broadest type of research review methods allowing for the simultaneous inclusion of experimental and non-experimental research (qualitative and quantitative) as well as expert reviews in order to fully understand a phenomenon of concern. The rationale for conducting an integrative review and not a systematic review during this phase is explained by Whittemore and Knafl (2005:547) in that systematic reviews "do not include the depth and breadth of nursing research as they do overemphasize the randomized clinical trial and hierarchies of evidence". In addition Torraco (2005:357) emphasises that the purpose of an integrated literature review is to create new meaning and extended synthesis of the concepts reviewed. The purpose of this integrative literature review is to analyse the strategies of effective teaching and learning of clinical skills for ANPs as presented in published theoretical and empirical work based on the results of phase one of this research as discussed in chapter two.

3.3 REALISATION OF THE INTEGRATED LITERATURE REVIEW

The integrated literature review for this research was conducted according to the guidelines of Whittemore and Knafl (2005:546-553). The process entailed the following:

3.3.1 Problem identification stage

During this stage the concepts of interest were identified. This step was informed by the data collected during phase one of this research. Inclusion and exclusion criteria were identified. Inclusion criteria included primary research, systematic reviews and discussion articles from peer-reviewed English academic journals excluding research not applied to advanced nursing practice. The methodology described in the research publications were either qualitative, quantitative, mixed methods or reviews. Abstracts were selected based on the relevance to the themes identified in phase one, namely clinical accompaniment and supervision, digital learning support, specialised equipment, authentic patients, policies and guidelines and holistic patient management. Literature reporting on undergraduate nursing programmes were excluded.

3.3.2 Literature search stage

This stage refers to the literature search of available literature relevant to the research question: To determine the evidence of effective teaching and learning of clinical skills for advanced nurse practitioners, from national and international research. The literature search process was clearly documented including the search terms, the databases used, additional search strategies, and the inclusion and exclusion criteria for determining relevant primary sources. The researcher did the searches with the assistance of an expert researcher in this field who also checked the selection process.

3.3.2.1 Databases and motivation

EBSCOhost (as provided by the NWU library website) enabled the researcher access to various databases that were used for a comprehensive literature search. These include:

Academic Search Premier covers more than 8,000 journals, 85% of which are peer-reviewed and over 55% are full text, and full text for nearly 3,900 peer-reviewed titles of a variety of disciplines.

AHERO is an open access archive of texts that focus on the study, practice and governance of higher education in Africa. The collection includes research reports, journal articles, conference papers, book chapters, working papers, booklets, and policy documents. All the resources have been submitted by the authors and are reproduced with their permission.

CINAHL with Full Text is the world's most comprehensive source of full text for nursing and allied health journals providing full text for nearly 600 journals indexed in CINAHL. This authoritative file contains full text for many of the most used journals in the CINAHL index - with no embargo. Full text coverage dates back to 1981.

Wiley's Cochrane Library is a collection of databases that contain high-quality independent evidence to inform healthcare decision making.

ERIC is an index for all education topics that indexes journal articles in 1 000 education-related journals. The ERIC indexes and ERIC Documents are educational material not published elsewhere such as curriculum guides, various research reports, and conference papers.

Google Scholar provides broad searches for scholarly literature. It provides access to peer-reviewed papers, theses, books, abstracts, and articles from academic publishers, professional societies preprint, repositories, universities, and other scholarly organisations.

JSTOR offers a high-quality interdisciplinary archive to support scholarship and teaching. It includes archives of over 1 000 leading academic journals across the humanities, social sciences and sciences as well as selected monographs and other materials valuable for academic work.

MEDLINE provides authoritative medical information on medicine, nursing, dentistry, veterinary medicine, the health care system, pre-clinical sciences, and much more. Created by the National Library of Medicine, MEDLINE uses MeSH (Medical Subject Headings) indexing with tree hierarchy subheadings and explosion capabilities to search citations from over 4 800 current biomedical journals**.**

NEXUS provides information on approximately 150 000 South African current and completed research projects including theses and dissertations.

Nursing@Ovid is a sophisticated new online portal offering streamlined access to premium nursing and allied health full-text resources.

SAGE publishes more than 500 journals in Business, Humanities, Social Sciences and Science, Technology, and Medicine. SAGE Journals Online is the delivery platform that provides online access to the full text of individual SAGE journals.

ScienceDirect is a full text scientific database offering articles/chapters from more than 2 500 peer-reviewed journals and more than 11 000 books.

Scopus is the world's largest abstract and citation database of peer-reviewed literature and quality web sources.

PubMed Central is the United States National Institutes of Health (NIH) free digital archive of biomedical and life sciences journal literature. This database were used in addition to EBCOhost.

Web of Science consists of seven databases containing information gathered from thousands of scholarly journals, books, book series, reports, conferences, and more.

Before starting with the literature search the researcher had to determine the terms referring to advanced nursing practice internationally. Cronenwett (2012:247) described the role of clinical nurse practitioner, advanced nurse practitioner and nurse practitioner in the United States of America (USA), with different scopes of practice, legality, titling and programmes of training. According to this author, nurse practitioners were initially trained to fill gaps where there were shortages of physicians. In later developments nurse specialists were trained in

specific fields of nursing with at least a baccalaureate degree and/ or a master's degree. In the USA the clinical practice and experiences are regarded as the most valuable in any particular field which includes hospital patients, outpatients, primary, tertiary and community care. The difference in training of advance practice nurses depends on the context of practice. An Australian survey revealed that the title and terms of reference for advance practice nursing seems to be confusing and ambiguous in international literature. The Australian advanced practice nurse must have a Master's Degree or PhD level of education and they have a differentiated clinical role in specific domains (Gardner *et al*., 2016:68). The PHC services in New Zealand describe the practice of nurse practitioners as very similar to the PHC nurses in South Africa (Carryer & Adams, 2017:529). The PHC nurses are the first contact in the health care system and must be able to assess patients, diagnose and prescribe as well as refer to the next level of practitioner. In lieu of these terms of references found in literature the researcher used the search terms for "advance practice nurse", "nurse specialist", "clinical nurse practitioner" and "nurse practitioner" as inclusion criteria, as this search is about teaching and learning strategies of clinical skills, in advanced programmes. In combination with these terms the following were used as well: "AND Teaching" OR "education" OR "instruction" OR "training" OR "learning", "Clinical" or "practic*", "Skills" or "expert*" or "abilit*" or "competenc*".

The software programme, Evidence for Policy and Practice Information reviewer (EPPI-reviewer version 4) was used to remove duplicates. This was followed by a title and abstract search and finally full-texts were accessed keeping in mind the eligibility criteria: These criteria included:

- Addressing all or at least one of the themes from phase one;
- Full text articles being available in English;
- Expert opinions based on scientific evidence;
- Presenting peer-reviewed methodologies (grey literature was excluded from the study); and
- Obtaining a score of 70% during the critical appraisal using critical appraisal skills program (CASP) and Johns Hopkins research evidence appraisal tools. The score of 70% after appraisal were decided upon according to an above average rating of the literature according to the appraisal tools used.

- Relevant abstracts of non-research articles of expert opinions, case studies or literature reviews.

- Being published between January 2009 and January 2018. The published dates were decided upon after an initial search from 2010 did not include any national literature. Grey literature is defined by Williams-Whitt *et al*. (2016:417) as literature produced by practitioners or organisations outside the academic publication stream and was therefore excluded. References from reference lists of full-text articles and articles indicated to have relevance, were considered for inclusion as well.

An initial total of 11344 results were obtained during the search. Table 3.1 shows the results as per database and search terms.

Table 3-1: Summary of the results and search process

Search terms used in combination with "Specialist nurse" OR "Advanced nurse practitioner" AND	**Search result**			
	EbscoHost	**Pubmed**	**Scopus**	**Web of Science**
"Teaching" OR "education" OR "instruction" OR "training" OR "learning"	1843	1127	866	303
"Clinical" or "practic*"	966	1189	1869	435
"Skills" or "expert*" or "abilit*" or "competenc*"	558	291	556	214

After the removal of duplicates by the software, 6936 in number, the researcher sifted the remaining 4408 titles, scrutinising each for relevance to the research. This resulted in the removal 1490 titles, than were not directly related to the research (e.g. undergraduate teaching). The abstracts of the remaining titles were then evaluated and another 2862 were removed, leaving 56 titles for full text assessment. After the full text assessment of the 56 titles the following were removed: two (2) articles as it was not available in English, two (2) articles that were irretrievable, two (2) articles of which the context was not applicable, one (1) article with a lack of relevant content, and 1 article with a lack of outcomes. The remaining 48 full text articles formed the final list. An additional eight (8) full text articles were then added identified from the references of the remaining 48 articles. This total of 56 articles were then critically appraised. See figure 3.2 for a flow diagram of the data collection.

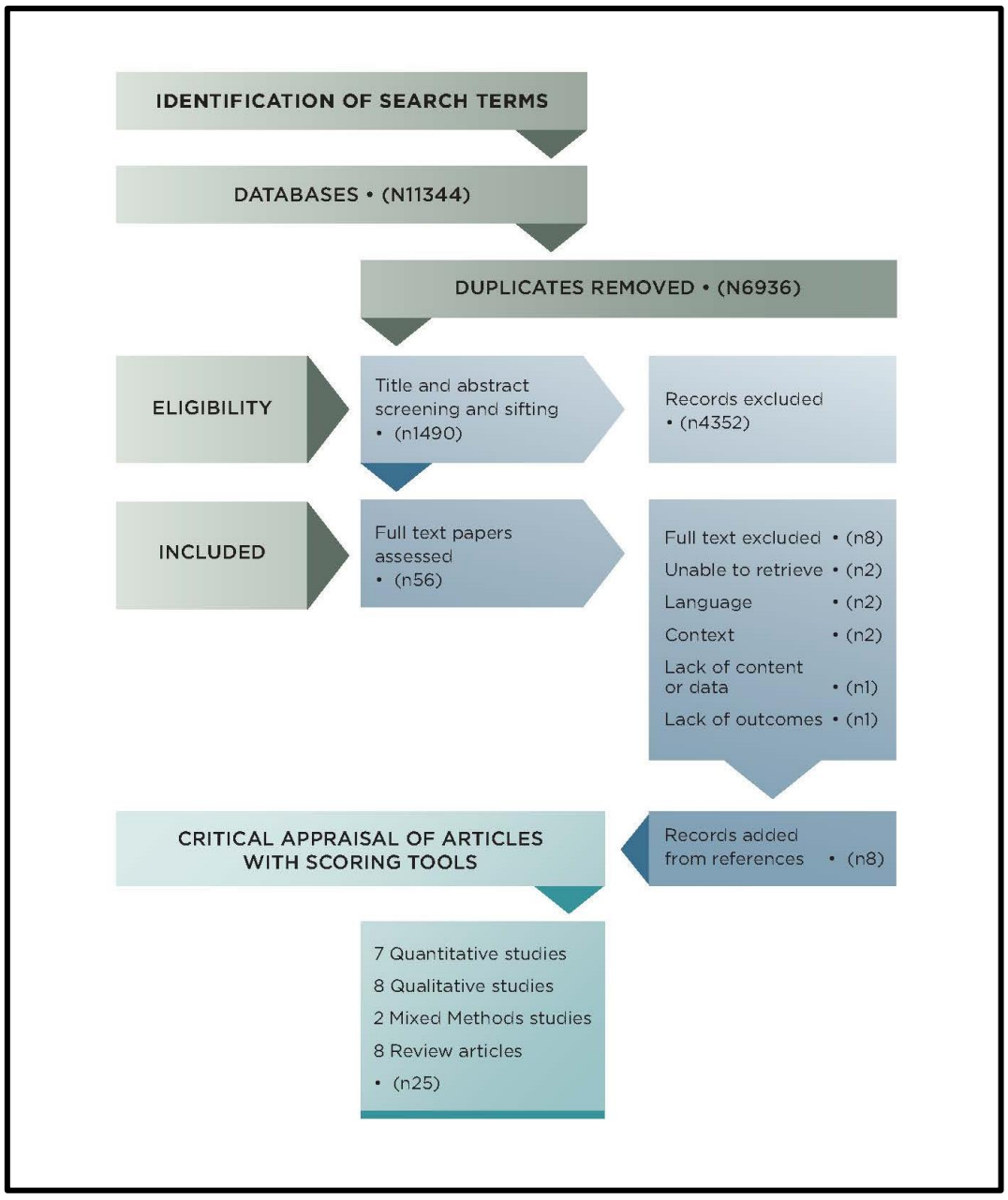

Figure 3-2: Summary of the literature review process

3.3.3 Data evaluation stage

After extracting the literature a decision was made to evaluate the quality of the data and this depends on the type of data that is reviewed. This included the final sample (*n*=56) that was reviewed. Examples of data evaluation are definitions of concepts, sample size, measuring variables and the methods of data analysis that was used. According to De Souza *et al*. (2010:104) a data collection tick list or tool may be used. In an integrative review with a diverse sampling frame inclusive of empirical and theoretical sources, the authenticity, methodological quality, informational value and representativeness of available primary sources will be

appropriate to evaluate the quality of research (Whittemore & Knafl, 2005:550). Therefore a critical appraisal was conducted by incorporating the Johns Hopkins Research Evidence Appraisal Tool (ANA, 2015:1) (Addendum K) and the Critical Appraisal Skills Programme (CASP) tool for qualitative studies (Addendum L) as adapted by Blignaut (2018:23). The CASP Tool for critical appraisal of qualitative studies was also used, as the Johns Hopkins Research Evidence Appraisal Tool alone was found to not address all important issues related to qualitative research. For the appraisal of non-research articles of expert opinions, case studies or literature reviews, the Johns Hopkins non-research evidence appraisal tool (Addendum M) was used.

The Johns Hopkins Research Evidence Appraisal Tool is aimed at evaluating the quality of evidence of a study (ANA, 2015:1). All **quantitative** studies (*n*=7) were assessed using the following items from this tool:

1. Does the researcher identify what is known and not known about the problem and how the study will address any gaps in knowledge?
2. Was the purpose of the study clearly presented?
3. Was the literature review current (most sources within last five years or classic)?
4. Was the sample size sufficient based on the study design and rationale?
5. If there is a control group:
    - Were the characteristics and/or demographics similar in both the control and intervention groups?
    - If multiple settings were used, were the settings similar?
    - Were all groups equally treated except for the intervention group(s)?
6. Are data collection methods described clearly?
7. Were the instruments reliable (Cronbach's α [alpha] > 0.70)?
8. Was instrument validity discussed?
9. If surveys/questionnaires were used, was the response rate > 25%?
10. Were the results presented clearly?

11. If tables were presented, was the narrative consistent with the table content?

12. Were study limitations identified and addressed?

13. Were conclusions based on results?

The CASP Tool for Qualitative Studies was used for **qualitative** study (*n*=8) appraisal together with relevant items from the Johns Hopkins Research Evidence Appraisal Tool, adding items to better assess the quality of these studies:

1. Was there a clear statement of the aims of the research?

2. Was the qualitative methodology appropriate?

3. Was the research design appropriate to address the aims of the research?

4. Was the recruitment strategy appropriate to the aims of the research?

5. Was the data collected in a way that addressed the research issue?

6. Was the relationship between the researcher and the participants adequately considered?

7. Have ethical issues been taken into consideration?

8. Was the data analysis sufficiently rigorous?

9. Was there a clear statement of findings?

10. Was the contribution of the research explained?

Mixed methods studies (*n*=2) were anticipated to be evaluated by the same items as listed above, and two mixed methods studies were included in the final study sample. For these articles both Johns Hopkins and CASP tools were used.

For the appraisal of **non-research articles** (*n*=8) of expert opinions, case studies or literature reviews, the Johns Hopkins non-research evidence appraisal tool was used answering the following questions:

1. Was evidence based on the opinion of an individual?

2. Is the individual an expert on the topic?

3. Is the author's opinion based on scientific evidence?

4. Is the author's opinion clearly stated?

5. Are potential biases acknowledged?

6. Are pertinent conclusions and recommendations stated?

7. Were conclusions based on evidence presented?

8. Is there a possibility that the results will improve patient care?

A percentage for each article was obtained by calculating a score out of the relevant questions. For the quantitative studies, a score was calculated out of 13 and for qualitative studies the total count was 10. For mixed methods both scores were used. A checklist was prepared to provide an overview of items appraised in each study, also presenting the calculation for determining the critical appraisal score and the final percentage achieved by each study.

Criteria for article selection: Articles with a specific focus on clinical skills teaching and learning for APN's were included. The teaching and learning of clinical skills in other health professions were also included, as the strategies described may be of value for the nursing profession. Articles not relevant to clinical skills teaching and learning, or on training outside the health professions scenario were excluded. Articles that do not include one or more of the search words were excluded. By utilising the EPPI-reviewer version 4 software the researcher was able to import the references into the software and remove duplications. Near identical titles could then be compared and so further duplicates could be removed. The next process involved a sifting of the abstracts to ensure relevance. Full text articles where than extracted. The last step involved accessing and analysing full text articles according to eligibility criteria as mentioned before. All articles reviewed were then summarized in columns to start data analysis (Table 3.2).

3.3.4 Data analysis stage

From the summaries, themes were identified and after conceptualising, primary sources were reviewed to verify. A constant comparative method (Creswell & Poth, 2018:316) was used as overarching data analysis approach. Extracted data, summarized in a table were compared item by item and similar data were categorized and grouped together. These categories were then compared further in an analysis and synthesis process, which included data reduction, data display, data comparison, conclusion drawing and verification (Whittemore & Knafl, 2005:550). A concept matrix was compiled in which the researcher listed the key concepts of ANP teaching and learning skills training along the one axis of the matrix and the articles in which they were addressed along the other axis. Entries in the cells of the matrix shows more

frequently used concepts and their sources in the literature (Torraco, 2005:361). In order to ensure objectivity and reducing the risk of bias, the researcher discussed the process with the promoter and co-promoter during the analysis process. The promoter and co-promoter were able to verify the trustworthiness of the process followed.

Table 3-2: Summary of article analysis

Quantitative studies (*n*=7)							
Authors	**Date**	**Title**	**Setting**	**Sample and data sources**	**Strengths regarding the research**	**Limitations mentioned regarding the research**	**Main findings**
Dickenson, B.L., Lackey, W., Sheakley, M., Miller, L., Jevert, S. & Shattuck, B. *Advanced physiology education,* 42:118-122.	2018	Involving real patient in the design and implementation of care-based learning to engage learners	Oakland, USA: The Western Michigan University Homer Stryker MD School of Medicine.	85 students completed a survey which was analysed using RedCAP web-based survey application. Students were showed a video of an interview with a patient with acute alcoholic liver failure. Students could submit questions to the patient that were asked at the end of the interview.	Number of students: 85. Study provides a framework for future use.	None mentioned.	The involvement of real patients in clinical teaching and learning provide unique and authentic learning experiences to students. Positive: The activity increased engagement in class, depth of discussion in and between groups, helped students to apply basic science, better understand the disease processes and stressed the importance of complex patient care. This was seen as an authentic learning experience,

Quantitative studies (*n*=7)							
Authors	**Date**	**Title**	**Setting**	**Sample and data sources**	**Strengths regarding the research**	**Limitations mentioned regarding the research**	**Main findings**
							elicited empathy. The patient also had a positive experience. Challenge: The process of engaging real patients is labour intensive and may take up time and effort from faculty.
Kinsley, M.R., Fulton, J.S. & Friesth, B.M. *Journal of professional nursing,* 31(3):208-214.	2015	Perceived importance of teaching characteristics in clinical nurse specialist preceptors	Indianapo-lis, USA: Participants recruited by the National Association of clinical nurse specialists.	Explored the importance of clinical teaching of preceptors. n=278 preceptors and n= 78 students answered a web-based questionnaire	Questionnaire was developed soundly on previous studies and research. RedCAP software was used and ratings of students and preceptors were compared. Response was high. Characteristics were validated using a Delphi	Only tested in one speciality and relied on participants self-reporting.	Clinical competence /judgement was identified as the most important characteristic of preceptors. Expertise, leadership skills, collaboration skills, consultation skills. Professional attributes, ethical conduct and professional citizenship were

Quantitative studies (*n*=7)							
Authors	**Date**	**Title**	**Setting**	**Sample and data sources**	**Strengths regarding the research**	**Limitations mentioned regarding the research**	**Main findings**
					survey for reliability as well.		included as characteristics.
Lin, E.C., Chen, S., Chao, S. & Chen, Y. 2013. *Nurse education today*, 33:677-683.	2012	Using standardised patient with immediate feedback and group discussion to teach interpersonal and communication skills to advanced practice nursing students.	Taiwan: University ANP graduate programme.	RCT using a two group design with feedback and discussion 26 students participated. 2 hour instructional class afterwards assessing the 15 minute interviews with standardized patients before and after the class. The control group had only conventional instruction.	Significant behavioural improvement of students in interviewing and counselling of patients	No control group with standardised patient was used. Information exchanges between groups took place. Rivalry between control and study group may have affected post-test outcomes. Generalising results must be limited to female students with moderate work experience.	Use of standardized patients to improve students' ability for interviewing and communication with immediate feedback is effective.
Maunye, T.J., Meyer, S.M. & Van Velden, C.E.	2009	An assessment of teaching strategies used	Pretoria, South Africa:	Explored the use of teaching strategies that	Questionnaires were completed by n=25 lecturers	Survey only done at one college which	The availability of resources limit the use of different

Quantitative studies (*n*=7)							
Authors	**Date**	**Title**	**Setting**	**Sample and data sources**	**Strengths regarding the research**	**Limitations mentioned regarding the research**	**Main findings**
Curationis, 32(3):30-37.		by lecturers at a nursing college in Mpumalanga	Nursing College lecturers.	facilitated personal development of nursing students.	consisting of an 11 item survey instrument. Reliability ensured by pilot study.	makes generalisation difficult. Small population used applicable to educators only.	teaching strategies. Staff development is very important for ultimate teaching and learning that is beneficial to students, patients and staff.
Miedany, Y.E., Gaafary, M.E., Yussef, S., Almedany, A. & Palmer, D. *Current rheumatology reviews,* 12:195-201.	2016	Using simulation in clinical education: Psoriasis area and severity index (PASI) score assessment	London, UK: King's College.	33 Student health students completed a pre-simulation activity confidence questionnaire and a competence level questionnaire. Students were then instructed using mannequins. After a debriefing session students completed a student self-satisfaction and self confidence in learning	Methodology described adequately with a good background for the study.	Small study on a small group and only one aspect (PASI) was tested.	Model regarded as feasible and beneficial for clinical education

Quantitative studies (*n*=7)							
Authors	**Date**	**Title**	**Setting**	**Sample and data sources**	**Strengths regarding the research**	**Limitations mentioned regarding the research**	**Main findings**
				instrument. Analysis was done with SPSS and statistical significant.			
Tiffen, J., Corbridge, S., Shen, B.C. & Robinson, P. *Clinical simulation in nursing,* 7:91-97.	2011	Patient simulator for teaching heart and lung assessment skills to advanced practice nursing students	Chicago, USA: University of Illinois.	Randomised control design research; 14 students in experimental (E) group: regular teaching and learning + 1 hour intermediate fidelity simulator experience. 14 students in control (C) group: regular teaching and learning, no simulator experience. Pre-test post-test: confidence survey on physical assessment skills; Post-test on knowledge;	Standardised settings Randomised control design Hotelling s test used for multivariate analysis of each question.	Additional faculty instruction in the sim lab with E group may have enhanced learning. Small homogeneous sample. Knowledge test had low reliability due to small number of items.	Students in simulation group (E) had greater knowledge than control group. No significant difference in confidence between E and C. E group experienced simulation as worthwhile. Patient simulation positively effects learning outcomes in APN education.

Quantitative studies (*n*=7)							
Authors	**Date**	**Title**	**Setting**	**Sample and data sources**	**Strengths regarding the research**	**Limitations mentioned regarding the research**	**Main findings**
Yuan, H.B., Williams, B. A., Fag, J.B. & Qian, H.Y. *Nurse education today*, 32:294-298.	2012	A systematic review of selected evidence on improving knowledge and skills through high-fidelity simulation	Macao, China: School of Health Sciences Macao.	Empirical studies on simulation experience. Analysis done by SPSS 17.0	Assessed according to JBI (Johanna Brooks Institute) levels of evidence with two reviewers. Quality controlled trails were assessed by Jadad scale.	Duration of simulation between 30 minutes to four weeks, validation of performance checklists not done in most, some low methodology quality and small sample sizes.	Evidence that high fidelity simulation do enhance scores in knowledge and skill exams

Qualitative studies (*n*=8)							
Authors	**Date**	**Title**	**Setting**	**Sample and data sources**	**Strengths**	**Limitations mentioned**	**Main findings**
Applegarth, J., Dwyer, T., Moxham, L. & Happell, B. *Journal of clinical nursing*, 22:1738-1747.	2012	Identifying and acquiring the contextual skills and knowledge for nursing practice in assisted	Australia: Central Queens-land University.	15 in-depth interviews with registered nurses working with assisted reproductive technology (ART).	Saturation was achieved	Sample size working in ART only.	Clinical specific protocols and procedures were a key knowledge requirement. Contextual knowledge and

Qualitative studies (*n*=8)							
Authors	**Date**	**Title**	**Setting**	**Sample and data sources**	**Strengths**	**Limitations mentioned**	**Main findings**
		reproductive technology: a grounded theory study.		Constant comparative data analysis.			skills had three main categories: required skills and knowledge, and factors influencing acquisition.
Arving, C., Wadenstein, B. & Johansson, B. *Journal of cancer education*, 29:278-283.	2014	Registered nurses' thoughts on blended learning in a postgraduate course in cancer care - Content analysis of web surveys and focus group interview.	Sweden: Uppsala University.	Open ended questions in a web based questionnaire and a focus group interview were done.	Different groups participated and provided valuable information.	Small number of participants. Web based questionnaire not tested for reliability or validated.	Blended learning used in postgraduate courses is beneficial for students and educationist.
Barratt, J. *Nursing education in practice,* 10:170-175.	2010	A focus group study of the use of video-recorded simulated objective structured clinical examinations in nurse practitioner education	London, UK: South Bank University.	Video recordings of OSCE procedures were made and shown to groups of students. Focus groups with two groups of students to explore the effect of the use of videos. Thematic	Explored a valuable asset to clinical education.	Limited to non-probability sample and therefor may not be representative. Member checking was not done.	Visual learning and online convenience availability can be successfully used to support ANP's educational development.

Qualitative studies (*n*=8)							
Authors	**Date**	**Title**	**Setting**	**Sample and data sources**	**Strengths**	**Limitations mentioned**	**Main findings**
				content analysis was used.			
Fritzgerald, L., Wong, P., Hannon, J., Tokerud, M.S & Lyons, J. *Nurse education today*, 33:1230-1236.	2013	Curriculum learning designs: Teaching health assessment skills for advanced nursing practitioners through sustainable flexible learning	Australia: La Trobe University.	Action research data collected from 27 academics, 21 clinical specialist, 7 hospital managers and 36 students. Focus groups, written journal reflections, interviews and web surveys were used for data collection.	The different categories of participant ensured a broader view and richer results. Different methods and instruments of data gathering for triangulation	Student representation may be too small as number of responses were low (*n*=36). However a diversity of evaluation provided by other participants.	Flexible learning of health assessment is complex as only online or only face to face education is nor the answer and should therefore be developed.
Jokiniemi, K., Haatainen, K. & Pietila, A-M. *International journal of nursing practice*, 21:986-903.	2015	From challenges to advanced practice registered nursing role development: Qualitative interview study.	Finland: University of Eastern Finland, Kuopio.	11 ANP took part in thematic individual interviews. Data was analysed using qualitative content analysis.	The factors influencing and facilitating APN were identified. The inclusion of clinical training and spending time on direct patient care were identified as facilitating factors as well as challenges.	Small number of participants although data saturation was reached. Data collections only included ANP interviews no other information to support the findings.	Developmental needs of ANPs, core competencies and educational requirements.

Qualitative studies (*n*=8)							
Authors	**Date**	**Title**	**Setting**	**Sample and data sources**	**Strengths**	**Limitations mentioned**	**Main findings**
Kowitlawakul, Y., Chow, Y.L., Salam, Z.H.A & Ignacio, J. *Nurse education today*. 35:894-899.	2015	Exploring the use of standardized patients or simulation-based learning and preparing advance practice nurses.	Singapore, Malaysia: National University of Singapore.	Seven (7) APNs were interviewed after their final examination in focus groups using semi-structured open-ended questions.	The use of SP was observed and described	The complex case scenarios and the nature of the setting might have influenced the student's reactions during the research.	The usefulness of SP in history taking and communication were emphasised. Patients acted like real patients but did not provide related signs and symptoms which had clinical limitations.
Ohlen, J., Berg, L., Bramberg, E.B., Engstrom, A., Millberg, L.G., Hoglund, I., Jacobsson, C., Lepp, M., Linden, E., Linstrom, I., Petzall, K., Soderberg, S. & Wijk, H. *Advanced in health science education,* 17:471-487.	2012	Students' learning as the focus for shared involvement between universities and practice: a didactic model for postgraduate degree projects.	Sweden: University of Gothen-berg.	Participatory action research and theory generating design founded on empirically practical try-outs. Constant comparative analysis was applied. 488 students, 80 faculty members and 60 clinicians participated. Field notes, continuous critical reflections in workshops as	Model development over a time period from 2007-2010. Five (5) Universities and different setting were utilized which made it possible to generalise the model.	Not discussed.	Supporting students' fulfilment of learning outcomes and improving the development of clinical quality with contributions to knowledge-based practice.

Qualitative studies (*n*=8)							
Authors	**Date**	**Title**	**Setting**	**Sample and data sources**	**Strengths**	**Limitations mentioned**	**Main findings**
				well as students' descriptive comments on expectations.			
Shearer, D. & Adams, J. *Nursing standard*, 26(21):25-41.	2012	Evaluating an advanced nursing practice course: student perceptions.	UK: Anglia Ruskin University, Peterbo-rough.	10 ANP students were interviewed and a thematic content analysis were done.	Research process was described comprehensively.	Small scale research at one university which makes generalisation difficult.	Appropriate support and course contents are necessary to increase confidence and autonomy. Networking is important for support and advancement.

Mixed method studies (*n*=2)							
Authors	**Date**	**Title**	**Setting**	**Sample and data sources**	**Strengths**	**Limitations**	**Main findings**
Doerksen, K. *Journal of professional nursing,* 26(3):141-151.	2010	What are the professional development and mentorship needs of advanced practice nurses?	Canada: Clinical nurse specialist, Winnipeg, Manitoba.	Mixed methods design with a survey followed by focus groups. Results from the survey provided the template for the interview	The use of a mixed method accentuated the results.	Small sample size and one site setting of participants.	The research domain was identified as the need for development and mentorship programme in

Mixed method studies (*n*=2)							
Authors	**Date**	**Title**	**Setting**	**Sample and data sources**	**Strengths**	**Limitations**	**Main findings**
				guide for the focus groups. 14 students took part in surveys and focus groups. Focus groups were thematically analysed.			clinical practice and research.
Tee, S.R., Jowett, R.M. & Bechelet-Carter, C. *Nurse education in practice*, 9:377-382.	2009	Evaluation study to ascertain the impact of the clinical academic coaching role for enhancing student learning experiences within a clinical master's education programme.	UK: University of Southampton. Hampshire.	35 Students in ANP completed questionnaires: 10 interviews (5 students and 5 coaches). Data analysis SPSS database and thematic analysis.	Clinical academic coaching was identified as important and needed more role clarification.	Limited in scale in only one setting.	Clinical academic coaching is important and should be researched further. Some problems identified with academics that feel uncomfortable and students that may become dependable. Therefore role clarification should be researched.

Review studies (*n*=8)							
Authors	**Date**	**Title**	**Setting**	**Scientific evidence**	**Strengths**		**Main findings**
Altmiller, G. *Clinical nurse specialist*, 28-31.	2011	Quality and safety education for nurses competencies and the clinical nurse specialist role.	Philadelphia, USA: La Sala University.	Applicability of nurse's knowledge, skills and attitudes into competencies in ANP.	Patient well-being, expert care and risk behaviour are influenced by ANP nurses. Education and consultation important. Recognising the patient as the leading partner in care with teamwork and collaboration with other disciplines.		Patient centred care, teamwork and collaboration, evidence based practice, quality improvement, safety, informatics.
Arslanian-Engoren, C., Sullivan, B. & Struble,L. *Clinical nurse specialist*, 253-259.	2011	Revisioning a clinical nurse specialist curriculum in three (3) speciality tracks.	Ann Arbor, USA: University of Michigan	Discussion of the revision process made in clinical nurse specialist (CNS) acute adult health, gerontology, and psychiatric-mental health curriculums.	2 ANP's from each track revised the curriculum using the National association of clinical nurse specialist (NACNS) and Advanced practice registered nurse (APRN)		Stand-alone courses in pathophysio-logy, pharmacology and physical assessment, use of faculty as clinical preceptors.

Review studies (*n*=8)							
Authors	**Date**	**Title**	**Setting**	**Scientific evidence**	**Strengths**		**Main findings**
					consensus model to obtain consensus from stakeholders.		
Beauchesne, M.A. and Douglas, B. *Newborn & infant nursing reviews*, 11(1):28-34.	2011	Simulation: Enhancing paediatric, advanced practice nursing education.	Boston, USA: Northeastern University.	A description of the creation of a high fidelity simulation learning experience for ANP.			The innovations used to advance clinical competence are described. The critical role of debriefing and guided reflection are emphasised.
Duvall, J.J. *Journal for nurses in staff development,* 25(1):25-27.	2009	From novice to beginner.	Alabama, USA: Tennessee Tech University.	Literature review to improve internship of ANP.			One-on-one preceptoring, clear measurable clinical objectives are beneficial to determine learning needs.
Foster, J. & Flanders, S. *Journal of issues in nursing,* 13(19):1091-1105.	2014	Challenges in clinical nurse specialist education and practice.	Texas, USA: Texas Women's University.	Challenges during the education process of CNS and implementation	Issues highlighted and solutions provided to mitigate difficulties.		Clinical nurse specialist, need more faculty for training, 1-2 ration of preceptor to student,

Review studies (*n*=8)							
Authors	**Date**	**Title**	**Setting**	**Scientific evidence**	**Strengths**		**Main findings**
				in practice highlighted.			simulation classrooms, information technology, specific role clarity and competencies are essential
Hill, L.A. & Sawatsky, J.V. *Journal of professional nursing*, 27(3):161-167.	2011	Transitioning into the nurse practitioner role through mentorship.	Canada: University of Manitoba.	Discussion of the stressors of novice ANP's and the benefits of mentorship in clinical practice.	Scientific evidence discussing literature evidence of mentorship.		Creating a supportive environment, offering constructive feedback, taking advantage of teachable moments, allowing the novice the time necessary with patients are strategies that can be used by a mentor to enhance the transition period of novice ANP's.
Morgan, C., Barry, C. & Barnes, K.	2012	Master's programs in advanced	Liverpool: John Moores University.	Review of the impact of limited resources,	Explore the evidence of role definition,		Literature used to innovate and develop

Review studies (*n*=8)							
Authors	**Date**	**Title**	**Setting**	**Scientific evidence**	**Strengths**		**Main findings**
Advances in medical education and practice, 3:129-137.		nursing practice: new strategies to enhance course design for subspecialty training in neonatology and paediatrics.		faculty recruitment, and the relationship with medical profession in establishing the curriculum.	supervision, identity among other health professionals.		strategies to create individual programs to meet the needs of highly specialised advanced nursing practitioners.
Smyth, O. & McCabe, C. *International emergency nursing*, 31:72-74.	2017	Think and think again! Clinical decision making by advanced nurse practitioners in the emergency department.	Ireland: Trinity College Dublin.	Reflection on the processes of thought during clinical decision making process used by an ANP during a consultation in the emergency department.	Done on the basis of a case example.		Assessment, prescribing referring and discharging of patients by ANP have a need of using care pathways and algorithms to avoid bias and complacency in patient assessment. Rigor and error avoidance are also enhanced in the nurse/patient consultation and decision making process.

The summary in table 3.2 were used to compile a concept matrix (table 3.3) in which the researcher listed the themes of ANP skills teaching and learning from phase one, along the one axis of the matrix and the articles in which they were addressed along the other axis. Additional themes identified in the literature are listed below table 3.3.

3.3.5 Presentation stage

During the presentation stage, the data from phase one (AI interviews) and the results of the literature searches are compared and clustered to confirm the themes from phase one. The synthesis provides the evidence of effective teaching and learning of clinical skills for advanced nurse practitioners, from national and international research. From this evidence, strategies will be identified that may address the gaps in the current teaching and learning of clinical skills to CNSTC.

Table 3-3: Concept matrix compiled from phase one and two of the integrated literature review.

Themes from phase one	Articles from phase one																						
	Applegrath *et al*	Arslanain-Engoren *et al*	Arving *et al*	Atimiller, G.	Barratt, J.	Beauchesne, M.A.	Dickenson *et al*	Doerksen, K.	Duvall, J.	Forster & Flanders	Fritzgerald *et al*	Hill & Sawatzky	Jokiniemi *et al*	Kinsely *et al*	Kowitlawakul *et al*	Lin *et al*	Maunye *et al*	Miedany *et al*	Morgan et al	Ohlen *et al*	Shearer & Adams	Smyth & McCabe	Tee *et al*	Tiffen *et al*	Yuan *et al*
Holistic patient management				√																					
Simulation/ specialized equipment						√												√	√					√	√
Clinical accom-paniment		√						√	√	√	√	√	√	√			√		√	√	√		√		
Authentic patients				√			√								√	√									
Contextual Policies, guidelines	√										√											√			
Visual material			√		√						√								√						

In Phase two the analysis of the literature resulted in additional themes that were not identified in phase one. These themes are presented below as they may be valuable in adding information to the overall research question.

Additional themes identified from selected articles:

Blended learning: Online and clinical contact with in-classroom didactics. Students could have some lessons online at their own time and only had limited in-class didactic sessions. Clinical practice were facilitated (Arving *et al.*, 2014:278; Barrat, 2010:171 and Fritzgerald *et al.,* 2013:1230).

Standardised patients: Standardised patients were used in either case studies or teaching and learning of communication and consulting techniques. Patients were briefed beforehand and responded verbally according to the case scenario (Kowitlawakul *et al.*, 2015:894 and Lin *et al*., 2013:677).

After reviewing the final list of articles and synthesising the results, the combined data are discussed to address Research objective 3.

3.4 IDENTIFYING TEACHING AND LEARNING GAPS AND STRATEGIES

In order to address Research objective 3: **To identify the gaps in the current teaching and learning approaches applied in the clinical training of CNSTC,** the results from Phase one (AI) and Phase two (integrated literature review) were combined, analysed and synthesised. The data from the interviews (phase one) were analysed inductively and themes were identified. The two datasets from phase one and two were analysed using a constant comparative method as described by Creswell and Poth (2018:316) and Miles and Huberman (1994:223). The researcher constantly reflected on impressions, relationships and connections while collecting and analysing the data. The researcher constantly searched for similarities, differences, categories, themes, concepts and ideas. The method of strategy development is described as the process of what is currently done and what should be done and the process of development, implementation and evaluation to reach the ultimate outcomes (Hadighi *et al.,* 2013:38). Gaps in current teaching and learning approaches and strategies for the effective teaching and learning of clinical skills within CNSTC were identified.

These strategies, identified in phase one and two will be an accumulation of what should be done in clinical education of CNSTC and where these strategies should be applied. The strategies were formulated according to the process, content and context method as described by De Wit and Meyer (2004:5). The process refers to the *how, who* and *when* that will be derived from phase one and 2 of this research. In order to combine the two phases in a comprehensive summary of

each theme identified in phase one, a discussion of each theme and how it correlates with themes from phase two are discussed. The first theme identified focused on the accompaniment and supervision of students during clinical training.

3.4.1 Clinical accompaniment and supervision

The importance of clinical supervision or support of some kind to ANP students is one of the most listed in literature. Improving the patient assessment skills of ANP students is vital for diagnosing and managing of patients, therefore support to students during clinical practice is essential (Shearer & Adams, 2012:36; Fritzgerald *et al*., 2012:1231). How the curriculum is set with didactic courses on advanced clinical assessment followed by integration of theory into practice are dependant of the context and speciality and are influenced by available placements and resources.

Different terms were used, for the professional that accompanied students: preceptors, (Doerksen, 2010:141; Duvall, 2009:27; Forster and Flanders, 2014:1091; Kinsley *et al*., 2015:212; Morgan *et al*., 2012:130); mentors (Hill & Sawatzky, 2011:161; Jokiniemi *et al.,* 2015:899); and facilitators (Fritzgerald *et al*., 2012:1235). Arslanian-Engoren (2011:253) and Maunye *et al*. (2009:33) include the expert roles and structured in-service training provided by professionals in practice as part of accompaniment and supervision. A preceptor is described by Ulrich (2012:1) as a teacher, coach, facilitator, influencer, leader, mentor, role model, protector, evaluator, socialization agent and protector that support and develop the competencies of another individual. A preceptor is knowledgeable and clinically competent and forms part of the teaching and learning team that support the ANP students in clinical practice. Ohlen *et al*. (2012:481) recommend that preceptors must have a higher academic qualification relevant to the APN competence to complement the clinical practice experience.

Duval (2009:26) as well as Forster and Flanders (2014:1094) stated that the importance of preceptors in a one-on-one relationship to students are ideal for optimal clinical outcomes. Fritzgerald *et al*. (2012:1230) state that the support of preceptors to ANP students, in clinical practice provides opportunity for teaching and assessing clinical skill in an authentic workplace setting. Jokimieni *et al.* (2015:901) and Duvall (2009:26) support this and add that the core competencies, scopes and educational requirements must be determined and communicated to the clinical practice settings. Definite clinical objectives and evaluating processes must be included. In the South African context the term preceptor is used for a professional nurse with the acquired clinical experience and qualification that supervises that student in the development of clinical skills (Deggels *et al*., 2013:106). Registered professional nurses with CNSTC qualification accompany students in clinical practice either as mentors or as preceptors employed by the NEI.

During the interviews in Phase one it was evident that both professional nurses and educators valued the accompaniment of trained professionals but that financial constraints prevented the optimal numbers of preceptors and mentors in practice (paragraph 2.6). This can be identified as a gap in the teaching and learning of CNSTC.

The second theme identified was the use of digital learning support material, which links to the clinical skills acquisition of students.

3.4.2 Digital learning support material

According to Morgan *et al.* (2012:135) and Arving *et al.* (2014: 278) using a single teaching and learning strategy for ANP students may not meet the diverse needs of post graduate students. A combination of simulation and case studies through contact and distant learning with the help of visual and virtual connections seem to be the most popular approach. This type of blended learning (face-to-face and distance) allows learning at the student's own pace and makes repetition of difficult learning material possible (Morgan *et al*., 2012:135). Students do have face to face contact but are allowed to connect via technology to lectures in addition to accessing videos of real life situations and case studies. Frizgerald *et al.* (2012:1235) support this in recommendations for the teaching and learning of clinical practice by stating that a variety of audio and video digital learning support material should be provided to students together with opportunities for online communication with educators. An example is the study done by Barratt (2010:170) who used video streaming for objective structured clinical examination (OSCE). This author found that this approach had the advantages of less faculty and resources needed during OSCE's and relieving student anxiety with the added benefit of time to rectify mistakes. Students could record their own assessment and look at the footage afterwards. They could also compare their performance with digital support material.

The third theme identified focused on the use of specialised equipment such as those used in simulation training.

3.4.3 Specialised (simulation) equipment

According to Beauchesne (2011:28) simulation has been used in the clinical training of medical and nursing staff for a number of years. When teaching students physical assessment and psychomotor skills the use of low-fidelity simulation is almost a given in most NEI's. However in recent time manikins were developed that provide sophisticated training possibilities such as programming of specific conditions with a plethora of symptoms and reactions. Although costly, high fidelity simulation provides a safe environment for students to enhance their clinical skills. Morgan *et al*. (2012:129) emphasise that the limited resources and relationships with other

medical professions impact on the clinical teaching of students, therefor the advances in technology can improve the programs when using highly specialised technology. Problems with limited clinical experiences and placements may also be addressed by using simulation (Yuan, 2012:294). The use of simulation and case histories allow flexibility for students and faculty. Simulation can also be used as a pre- and post-test method (Miedany, 2016:195). Students write a pre-test and are then exposed to a simulated activity which includes diagnosing and treating a specific condition where after students write a post-test to measure the learning that took place. Miedany (2016:197) found that this method boosts student's confidence, accelerate procedures and ensure patient safety as students are firstly allowed to practice in simulation before they manage authentic patients. This is reiterated by Tiffen *et al*. (2011:91) stating that simulation lowers anxiety and pressure on students and has a positive effect on student confidence, knowledge and satisfaction. Gaps identified in phase one regarding the use of simulation and high fidelity simulation are the costs of advanced manikins, time available to spent in simulation laboratories and access to simulation laboratories (paragraph 2.5.1).

The fourth theme, using authentic patients, links to the clinical training of students.

3.4.4 Authentic (real) patients for assessment

Dickenson *et al.* (2018:118) and Lin *et al*. (2013:676) state that the involvement of real patients when teaching students patient assessment, interpersonal and clinical reasoning skills are essential. Real patients provide authentic learning experiences to students. Altmiller (2011:28) reiterates the importance of the recognition of the patient as a full partner of care and that the patient's values, needs and preferences should always be considered during management. The utilisation of standardized patients when teaching students communication and history taking provides immediate feedback opportunities to students from patients and faculty after assessment. However some students experienced the lack of clinical signs and symptoms negatively as they could not connect the theory of the disease to the verbal account of the standardized patient (Kowitlawakul *et al*., 2015:894; Lin *et al*., 2013:677). Kowitlawakul *et al*. (2015:894) state that the use of standardized patients may fill the gap experienced when using high fidelity simulation only. In phase one no NEI mentioned the use of standardised patients as students did their acquired practical hours at their workplace or accredited clinics with real patients. The gap identified were the lack of direct supervision when working with authentic patients as well as the lack of exposure to simulation before managing authentic patients (paragraph 2.5.2).

The fifth theme identified was contextual policies and guidelines. This links to the context in which students practice as professionals.

3.4.5 Contextual policies and guidelines

Smyth and McCabe (2017:74) concludes that the use of algorithms and care pathways avoid complacency and bias when assessing and treating patients. Standardised guidelines are effective if the health care professional is capable and knowledgeable on how to apply and conduct these guidelines. Fritzgerald *et al*. (2012:1230) recommends the teaching and learning in real time contextual settings with specific guidelines and expectations of both students and educators as essential for the teaching of assessment skills for advance nursing practitioners. Applegarth *et al*. (2012:1738) agree that contextual teaching and learning are requirements for knowledge especially if supported by clinical specific policies, procedures and protocols. In the South African context the use of algorithms for various conditions are recommended in public health services. The use of the Essential Drug List (EDL), Intermitted childhood illnesses (IMCI), Nurse initiated management of anti-retroviral therapy (NIMART), Prevention of mother-to-child transmission of HIV (PMTCT) are examples of prescribed guidelines that professional nurses use in practice when managing patients (DoH, 2015). During 2017 the "Symptom-based integrated approach to the adults in primary care" were published by the DoH for the management of patients with TB, HIV, asthma, chronic obstructive pulmonary disease, Diabetes, mental health conditions, epilepsy, musculoskeletal disorders and women's health in public institutions (DoH, 2017). The gap identified in phase one regarding these guidelines is that NEI's assumed that students had previous knowledge of these guidelines, however students indicated that they did not (paragraph 2.6).

The last theme identified is the holistic management of patients which links to the use of integrated guidelines.

3.4.6 Holistic (comprehensive) management of patients

Zweigenthal *et al.* (2009:30-33) describes holistic treatment of patients as an approach to all dimensions related to health and wellbeing as the different dimensions influence the functioning of the other dimensions of health. These dimensions include physical-, social-, emotional-, intellectual-, spiritual-, occupational- and environmental health. The relation is best described by way of an example: if a patient suffers from a chronic illness (*physical)*, he/she might withdraw from meaningful interactions with other people in his community, family or workplace. A debilitating disease may have a negative *emotional* influence and vice versa. The mental activities of a patient with a chronic illness may be incumbent as the illness may interfere with the ability to learn, discover or progress in life, therefor influencing the *intellectual* health. In different cultures there are different *spiritual* beliefs and illness or lack thereof are often regarded as a specific understanding or spiritual meaning. *Occupational* health refers to a person's ability to be

productive and progress in employment with meaning and purpose and a physical or emotional illness may deter this. The *environment* in which patients live and function are not only the physical environment but also refer to the social, economic and political environment in which a patient functions. It is therefore imperative that the ANP be knowledgeable on the holistic treatment of patients keeping in mind the different dimensions of health.

Several authors found that the roles of an APN included holistic management of patients. Although these nurses were expected to treat patients on what previously were considered as a medical level, they manage patients from a nursing viewpoint that include community-, patient- and family centred care (Carryer & Adams, 2017:525; Carryer & Yarwood, 2014:169; Casey *et al*., 2017:35; Grant *et al*., 2017:51; Judge-Ellis & Wilson, 2017:584). Parker and Hill (2017:196) reviewed advance practice in Canada, USA, Australia, Hong Kong and China and the educational preparation of ANP's. They emphasized the need of holistic patient treatment, although the levels and programmes differed in these countries, depending on the speciality and context of practice. When the South African context is examined the scope of competencies prescribed by the SANC for a PHC ANP (SANC, 2014:5-6) include a holistic assessment, diagnosis and management of all age groups. Similar to what the literature describes, the patient should be considered as part of a family and community when treatment is evaluated and communicated as well as followed up. This include possible referral to other health professionals depending on the condition of the patient and if it is an acute, chronic or emergency illness. In the literature review Altmillller (2011:28) states that the ANP's care of patients are realised through clinical expertise, education, consultation and leadership. The gap identified in the holistic treatment of patients is commented on in phase one - due to time constraints in the clinical practice, students focus on the disease and not the patient as a holistic person, part of a family and community (paragraph 2.5).

These gaps and strategies will be used to form the basis of the next phase of the research (phase 3) when experts will be invited to evaluate the identified strategies.

3.5 SUMMARY

The second objective of this research, to determine the evidence of effective teaching and learning of clinical skills for advanced nurse practitioners, from national and international research, was discussed in this chapter. An integrated literature review was conducted. The method was discussed including the search strategy and results. The literature identified were critically appraised and presented in a summary. The chapter was concluded with the identifying of teaching and learning gaps and strategies to enhance teaching and learning.

CHAPTER 4: IDENTIFICATION AND VALIDATION OF STRATEGIES

4.1 INTRODUCTION

Chapter 3 identified gaps in and strategies for enhancing effective clinical skills teaching and learning for advanced nurse practitioners with PHCN. This chapter discusses the fourth and final objective, namely to identify strategies that will facilitate and address the shortcomings of clinical skills teaching and learning within PHCN, toward ensuring clinical competence of advanced nurse practitioners in South Africa (RQ4) (see figure 4.1 below). The argumentative Delphi technique was used to reach consensus with participating experts and is described hereafter.

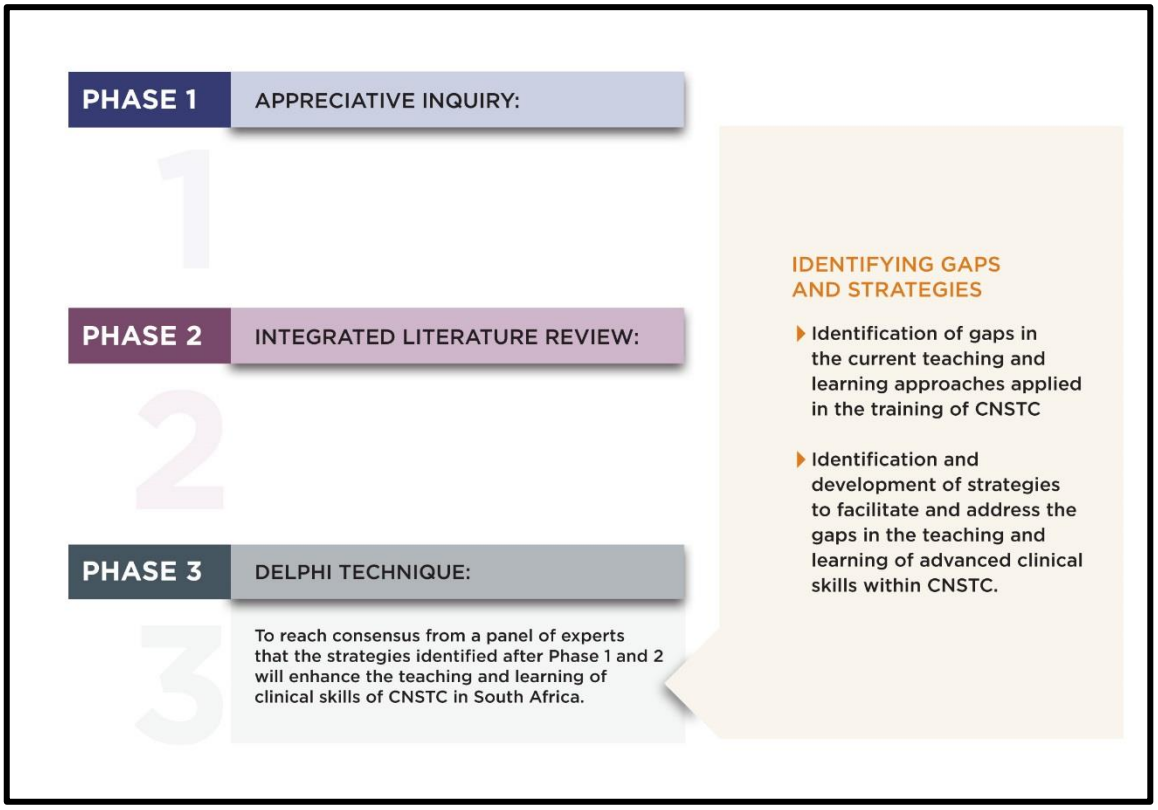

Figure 4-1: A flow diagram of the research process with the focus on phase three

4.1.1 Argumentative Delphi technique

The Delphi technique is an organised process that facilitates research by drawing from the knowledge and experiences of experts to reach consensus on a research question or problem (Cole *et al*., 2013:512; Hannes *et al*., 2015:3). Hannes *et al*. (2015:3) describe the argumentative Delphi technique as an approach for exploring arguments for or against statements. The advantages of this technique are that experts use their own knowledge and experiences to

evaluate and improve concepts. The iterative process ensures consensus and thereby validates the concepts although the experts are geographically separated. This process uses collective expertise on specific concepts by exploring, assessing and evaluating these concepts by selected experts. As this process is anonymous, experts are free to form opinions and participate in the process in their own time as it suits them (Botma *et al.,* 2010:254; Hannes *et al*., 2015:3). The researcher used the Delphi technique firstly to determine whether South African-based experts in PHC teaching and learning agreed with the strategies identified in phase one and two of this research; and secondly, whether they would change, elaborate or add to the suggested strategies for clinical skills teaching and learning in PHCN. Refer to figure 1 for a graphic depiction of the three phases that realised from the Delphi technique. The different Delphi rounds implemented in the study are illustrated in Figure 4.2 and described thereafter.

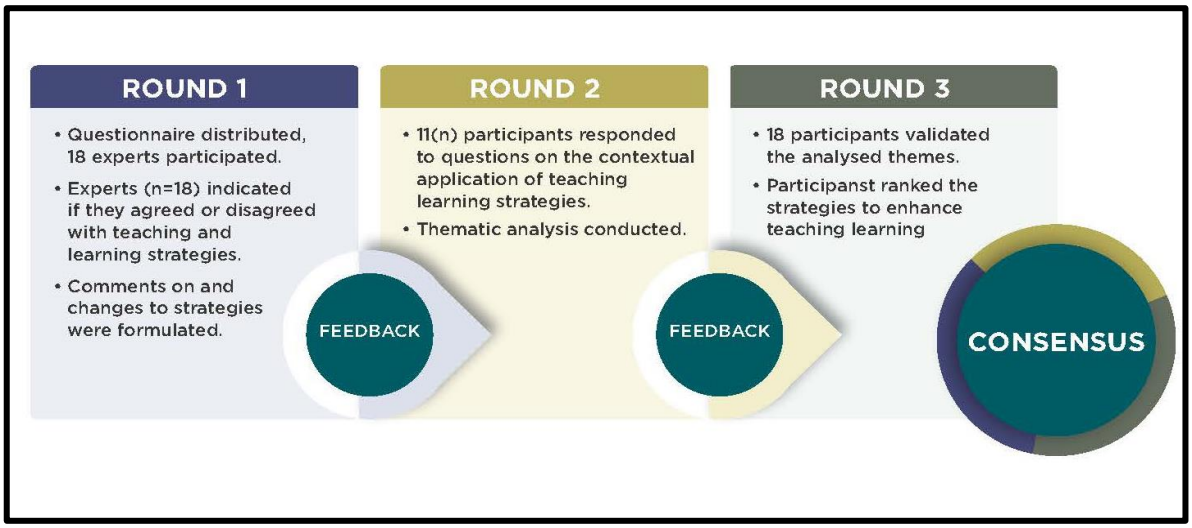

Figure 4-2: The flow of the Delphi process as applied in this research

4.2 DELPHI TECHNIQUE FIRST ROUND

The first Delphi round started with the preparation of the questionnaire and identification of the experts.

4.2.1 Phase one: Selection of the experts and preparation of the questionnaire

The first step of the Delphi process was to identify a group of individuals with the knowledge and experiences relevant to the research question. The expertise of these individuals is clearly defined (Trevelyan *et al*., 2015:423). Experts in clinical nursing education, PHCN, and teaching and learning from different HEIs were recruited to participate. Participants were required to have

experience in clinical nursing education in PHCN programmes. Some of these experts were from the same cohort of educators who participated in phase one. They were identified through article authorships, prescribed text books, and nursing faculties at South African universities. These experts were invited by the researcher via an e-mail in which they were informed of the research with an executive summary, a copy of the research ethics certificate, and a letter of informed consent (Addendum I and J) to participate. The link to the questionnaire was also included in the e-mail. The participants had to indicate their consent to participate on the questionnaire before continuing with the questionnaire. The participating experts were initially given two weeks to complete the questionnaire.

The aims of the research and the key concept definitions (Jorm, 2016:892) were described to the participants as background to the questionnaire. The strategies identified in phase one and two were stated the first part of the questionnaire followed by a short explanation and a request for the participants' opinions on the validity and applicability of these teaching and learning strategies of the CNSTC programmes. The participants were requested to indicate whether they agreed or disagreed with the identified strategies and recommend any strategy adjustments that would enhance strategy effectiveness and feasibility. In the second part of the questionnaire, participants were asked to indicate how they would apply these strategies in their own contexts of teaching and learning of CNSTC.

4.2.2 Phase two: Execution

The information about the research was sent to participants via an e-mail; participants did not meet in person. Participants remained anonymous – only the researcher knew who were requested to participate (Addendums I and J). The software of Survey Analytics /Question Pro™ (see Addendum N) was used to design the questionnaire and a link to the questionnaire was forwarded to the participants. This e-mail was sent to 18 educators who fit the inclusion criteria from different NEIs. After two weeks, six educators completed the questionnaire. A follow-up e-mail was sent again to all the participants. Another two weeks later, five participants completed the questionnaire, at which point the data saturation point of open-ended questions had been reached (n=11), thereby concluding the first round. Due to the anonymity of the questionnaire the researcher did not know which educators took part.

4.2.3 Phase three: Data analysis and dissemination

The data in the first round is descriptive in nature, seeing that the responses from the participants were open text statements. The researcher read and reread all the data and identified similar statements and suggestions by making notes and summarising comments and suggestions made

by the participants (Creswell & Poth, 2018:187). Next, these statements were grouped under various correlating themes and synthesised into the clearest possible descriptions without leaving out applicable comments from participants (Polit & Beck, 2012:719). The results of this analysis are discussed below.

4.2.3.1 Data analysis: Demographics

All the participants were educators in the CNSTC programme (*n*=11) with a qualification in CNSTC. Two of the participants had been teaching in this programme for less than two years, three participants had been teaching in it for two to five years, and six participants had been teaching in this programme for more than five years. Three of the participants had less than two years of clinical experience in CNSTC before teaching in the programme, two had three to five years of clinical experience, and six had more than five years of clinical experience. This background of the participants provided for an input-based perspective on their clinical experiences that invited new ideas from the younger academics.

4.2.3.2 Data collected: Questionnaire section one

The first section of the questionnaire requested participants to indicate whether a strategy was valid or not (agreed or disagreed) and motivate their answers. A short description was given of each strategy so that participants could motivate their answers in the provided spaces. All the participants agreed that the six strategies were valid. The following strategies with their participant descriptions and motivations follow.

Strategy 1: Clinical accompaniment and supervision by trained professionals

Students should be accompanied and supervised on campus and in practice by a qualified professional on a one-on-one basis or with no more than five students to one facilitator. One participant motivated that "...*smaller groups of max 5 clinical lecturers is important as the clinical skill needed for PHC is on a high cognitive level [sic.]".* All participants indicated that accompanying the students in smaller groups by trained professionals is important, and that "*theory and practice integration is needed with the opportunity to correct mistakes – this is best when done in smaller groups".*

Strategy 2: Digital learning support material must be available

Students should be provided with various audio and video digital learning support materials like DVDs depicting clinical procedures and assessments of patients in the South African context. Participants reacted positively to this strategy, stating that *"students have a need to refer back to*

a visual demonstration of a technique practised during practical class", and *"students could learn and practice on their own and enhance their skills [sic.]".*

Strategy 3: Access to specialised (simulation and other) equipment

Students should have access to simulation and high-fidelity simulation like advanced manikins, and advanced equipment should be available during clinical training. Participants mentioned that simulation gives the lecturer "*the opportunity to identify students where remediation is necessary before entering the clinical environment".* The advantage of simulation was also described as a strategy to "… *exercise the students' clinical reasoning skills to come up with valid and applicable diagnos[e]s".* Simulation was described as a valuable strategy although it would *"never replace clinical field and real-life practice; therefore, students will still need to have clinical accompaniment from preceptors/lecturers in small groups".*

Strategy 4: Using authentic (real) patients for assessment

Students should be encouraged to assess and manage real patients in real time under supervision. Participants were strongly in favour of this strategy, stating that it is "*pivotal to do examinations on real patients as humans are the target population that students will serve after completion of studies".* This strategy was important seeing that real-life presentation of "*social determinants, language, emotions, clinical features etcetera cannot accurately be mimicked through simulation. It is a skill to be able to take the holistic picture, which is different for every patient, into consideration when assessing a patient [sic.]".*

Strategy 5: Exposure to contextual policies and guidelines

Students should be given more exposure to the use of South African contextual policies and guidelines provided by health care systems during clinical skills teaching and learning. The motivations for this strategy given by participants include that this would enhance the students' knowledge of *"current issues in their country"* and that *"various countries are faced with different burdens of disease, infrastructure and resource scarcities and staff shortages with regard to the multidisciplinary teams".* However, participants also mentioned that this strategy should not be the focus of patient assessments because "*the focus of teaching the student should be the thinking processes of assessment more than following algorithms".*

Strategy 6: Holistic (comprehensive) management of patients

Students should be taught to manage patients holistically as individual members of families and communities, and whole persons instead of as mere diseases. Participants observed that patients

with psychological/social problems could remain undetected in the absence of first-hand interaction, or when seeing patients in short consultation periods and they neglect to report or mention these problems. It was also stated that a holistic approach and management are imperative to *"…shift the focus of PHC again back to preventative and promotive health instead of just treating diseases".*

4.2.3.3 Data collected: Questionnaire section two

Educators were asked to describe what they thought needed to be done to make the strategies more feasible and effective within their own contexts, from which the responses were synthesised.

Strategy 1: Clinical accompaniment and supervision by trained professionals

Educators were adamant that management structures should appoint more accompanists and that it should be mandatory in clinical practice. Clinical accompaniment was emphasised for ensuring holistic patient management and time for immediate feedback: it "*provide[s] feedback and relevant information to stimulate critical feedback*". Experts also mentioned the financial challenges associated with more staff and less students.

Strategy 2: Digital learning support material must be available

The experts suggested a "*combination of digital teaching, contact sessions, and integrated clinical training and group sessions",* and also emphasised the importance of providing staff with adequate training so that they understand implementation and practice: "*have adequate, fully functional, digital equipment and for staff to have full understanding of the equipment [sic.]".*

Strategy 3: Access to specialised (simulation and other) equipment

Experts motivated the use of simulation laboratories and equipment as a strategy that gives students the opportunity to witness procedures, practice them, and receive immediate feedback. Challenges included the time that was allocated to students and the sharing of laboratories. Some rural universities did not have any simulation facilities – *"it would be nice to have a simulation lab for our department only. This will ensure that students have access at any time when the opportunity for learning comes up. Funding is the main need".* Again, the need for direct supervision and technical knowledge were emphasised – *"a preceptor should be appointed in the sim lab. She should be good in technical management of high fidelity manikins. Be able to set up the scenarios for practice and make sure the outcome is what the PHC lecturer is expected to make it a real practice experience [sic.]".*

Strategy 4: Utilise authentic (real) patients for assessment

Exposure to real patients in practical settings, not only for examination purposes but also during training, was identified as one of the most important strategies because it allowed students to experience patient management in *"real-life situations, physical examined, and managed appropriately [sic.]".* The strategies mentioned above could ensure that students become prepared for working with real patients – "*students must be well prepared by using all the above tools to make them as prepared as possible for the contact with real patients [sic.]".*

Strategy 5: Exposure to contextual policies and guidelines

Knowledge and understanding of contextual policies and guidelines not only generate strategies for educators for teaching and learning but also ensure that educators remain up to date in their areas of practice. However, in implementing these policies and guidelines, students should also have the knowledge and skills to know when to deviate. *"PHC students need to know contextual policies, applicable guidelines and practice however they should know sometimes they can deviate from it and need to motivate their decision with accurate record keeping. Clinical accompanist play an important role with guidance here and need to know guidelines themselves [sic.]".*

Strategy 6: Holistic (comprehensive) management of patients

The participants expressed strong views on this strategy. They argued that although comprehensive management and the way that PHC as a philosophy is taught is a valid strategy, real-life situations in clinical facilities involving manpower shortages, patient numbers, time, and equipment made a holistic management approach difficult. *"The need to address patients holistically is there, but what is possible is that we do not have the human power as in Europe or Australia where a specialists nurse only see 2 diabetic patients a day [sic]".*

Overall, the responses to the first round of Delphi were positive and supported the identified strategies, toward which participants made valuable comments. After data saturation had been reached and the comments synthesised, the second round of the Delphi technique was developed.

4.3 DELPHI TECHNIQUE SECOND ROUND

Keeney (2013:230) argues that there are no strict guidelines that limit the number of rounds in a Delphi technique, as the number of rounds depends on the time available and whether consensus is reached. During a second Delphi round, participants are customarily requested to agree or

disagree with statements synthesised from the first round, and the subsequent round focuses on those statements upon which consensus had not been reached. Seeing that all the participants agreed with the validity of the strategies and motivated their approval during the first round, the second round was used for obtaining consensus on the most effective strategies for clinical skills teaching and learning for CNSTC students. Participants were also requested to rank the strategies in order **of importance.**

4.3.1 Phase one: Selection of the experts and preparation of the questionnaire

During the second Delphi round, the same 18 expert participants from the first round were contacted via an e-mail and invited to participate. The invitation again included information from the research in the form of an executive summary, a copy of the ethics certificate, a letter of consent (see Addendums I and J), and the link to the questionnaire. The first question in the questionnaire was confirmation that the participants read the informed consent and information letter and gave voluntary consent to participate. The second question was based on a summary of the participant comments on each strategy from the previous round. Participants were asked to indicate whether they agreed or disagreed with the statements and to motivate their answers where they disagreed. The third question asked participants to rank the strategies in order of importance for enhancing the clinical skills teaching and learning of students in a CNSTC programme.

4.3.2 Phase two: Execution

During this round an e-mail was again sent to 18 educators from different NEIs. Initially only five educators completed the questionnaire. A follow-up e-mail was sent again to all participants. After another two weeks another three participants completed the questionnaire (n=8). The software of Survey Analytics /Question Pro™ was again used to develop the questionnaire which was given to participants (see Addendum O). The second round was concluded at this point because data saturation had been reached.

4.3.3 Phase three: Dissemination and data analysis

4.3.3.1 Questionnaire part one

Eight experts in total participated in this Delphi round. The first part of the questionnaire included a synthesis of the six identified strategies from the first round, including the participants' motivations for agreeing with the strategies and the suggestions made for its application in the participants' contexts. The results of this part of the questionnaire follow.

Strategy 1: Clinical accompaniment and supervision by trained professionals.

Experts regard quality supervision with dedicated facilitators/preceptors providing individual attention to students in smaller groups as a crucial strategy, but may be influenced by financial and time constraints.

Agree: 8

Disagree: 0

Strategy 2: Digital learning support material must be available

This strategy is seen as only one component of clinical teaching and learning, but an extremely useful one. Training staff and students to use technology underpins this strategy. Time and financial constraints are again challenges in this regard.

Agree: 8

Disagree: 0

Strategy 3: Access to specialised (simulation and other) equipment

This strategy is extremely useful, especially before students enter practice. The availability and accessibility of finances, staff and time are again challenges. The training of staff to use high-fidelity simulations is a prerequisite for this strategy.

Agree: 8

Disagree: 0

Strategy 4: Use authentic (real) patients for assessment

The practice and use of skills on real patients cannot be replaced or replicated and is seen as the best way to instruct students. This strategy is linked closely to the first strategy, seeing as direct supervision is essential for the management of real patients.

Agree: 8

Disagree: 0

Strategy 5: Exposure to contextual policies and guidelines

Though CNSTC is an advanced practice qualification therefore making policies and guidelines essential, it is not the only focus. Students and educators should be familiar with the policies and guidelines as they are prescribed for use in practice.

Agree: 8

Disagree: 0

Strategy 6: Holistic (comprehensive) patient management

Teaching students to treat patients holistically is part of the PHC outlook and philosophy. However, constraints in practice associated with overcrowding make it difficult to manage patients this way. Some experts stated that once the other strategies are in place and being implemented, students will have the competency to manage patients holistically.

Agree: 6

Disagree: 2

This is the only strategy with which two participants disagreed. However one participant mentioned that although holistic patient management is a valid strategy, the abovementioned statement of "*will have*" should be changed to "*may promote*" as" *I feel that 'will have' should first be proven".*

The second participant stated that the holistic approach is imperative and should be applied, reasoning that "*the student is not part of the workforce of the clinic nor the supervisor or clinical accompanist. A holistic approach provide opportunity to detect or uncover possible problems which was never detected or received attention before. It provides the student with opportunity to expand their clinical, social, psychology and cultural skills to mention a few [sic.]".* These two remarks by participants did not change the essence of the strategy and therefore the strategy was not amended.

4.3.3.2 Questionnaire part two

In the second part of the questionnaire, participants were asked to rank the strategies in order of importance, with one being most important and six least important. Refer to figure 4.2 for a graphic depiction of the ranks associated with the different strategies.

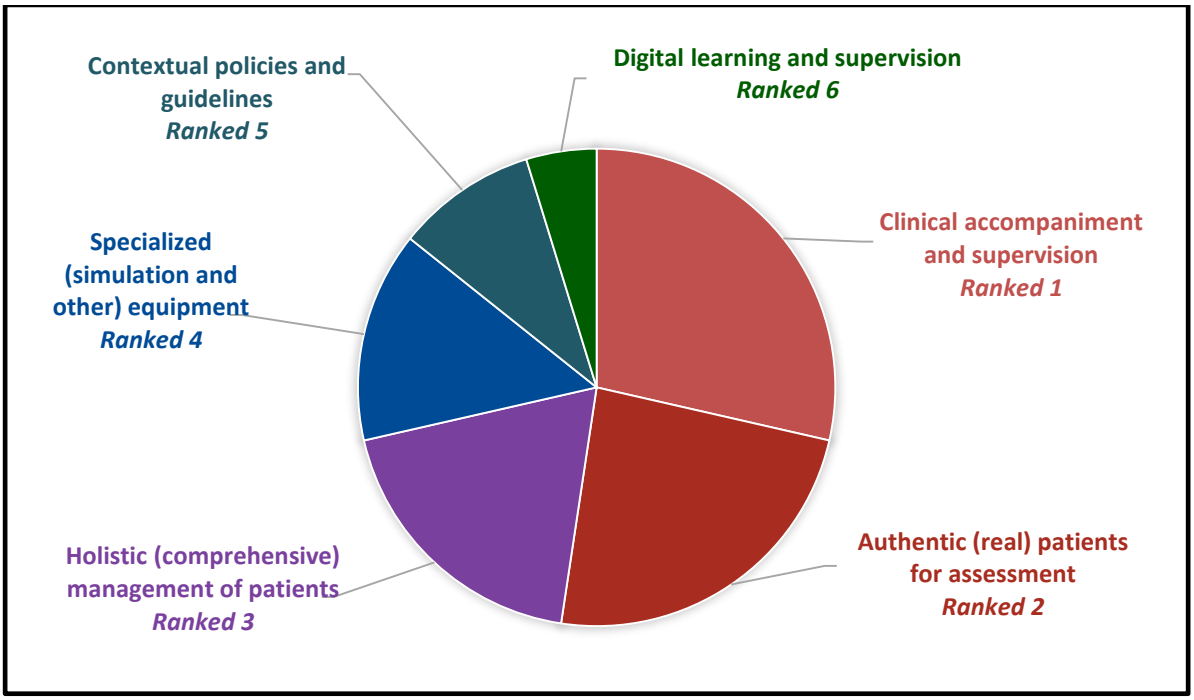

Figure 4-3: Graphic depiction of the ranking of the six strategies during the second round in the Delphi technique

4.4 DISCUSSION

Clinical accompaniment as a teaching and learning strategy was marked as the most important strategy by five out of eight participants and three participants ranked it second. This is significant as it is also supported by literature and found in phase two of this research. Billings and Hallstead (2016:298) recommend that students should receive immediate feedback on clinical competency when in practice and, as indicated during the first round, if the students have an accompanist or facilitator then the principle of demonstration, then practice, then feedback can be applied. The importance of accompaniment was also a recurring theme during the first phase of this research, in which educators and PHCNs indicated this strategy's importance.

The second important strategy as per the ranking by participants, is the *authentic or real patients for assessment.* One participant placed this strategy first and three participants ranked it second. It was ranked third by one and placed fourth by another participant. This strategy is also supported in the first Delphi round, in which comments and motivations by participants involved a strategy that would expose students to real-life situations. Billings and Hallstead (2016:288) argue that for

students to learn in the clinical setting, the educator should be competent and available to give encouragement and support. Botma and Bruce (*in* Bruce & Klopper, 2017:315) state that clinical teaching and learning with patients in the practical setting gives students the opportunity to have real-life encounters with patients, families and communities. This gives students the opportunity to apply theory and clinical skills in real practice and is an integral part of clinical teaching and learning.

The holistic management of patients was placed third and was the only strategy for which two participants disagreed with the synthesised statement. This is interesting because in the first Delphi round, none of the participants were positive about this strategy and stated that time constraints, staff availability and space did not allow holistic, comprehensive assessment and patient management. This is also the strategy that was ranked differently in all slots. One participant ranked it first, two ranked it second, third, fourth and fifth and one ranked it sixth. However the comments did mark it as an important strategy. Angelo (2007:436) supports family nursing that includes the patient, family and community, and is considered one of the most important attributes of advanced practice nurses because they are the first line of contact with health services.

The use of specialised simulation and equipment is placed fourth, as only one participant ranked it first, two participants ranked it third, fourth and fifth, and one ranked it sixth. This might be a result of the cost factor, as not all NEIs have the financial and infrastructural means for this strategy. However, the importance of this strategy is not lost. The development of skills and competencies gives students the advantage of developing confidence before going to practice and the opportunity to learn at their own pace (Botma & Bruce *in* Bruce & Klopper, 2017:326).

The use of policies and guidelines as a teaching and learning strategy were ranked the most important by only one participant, while the others mostly ranked it as fourth or sixth. This also correlate with the comments and motivations given during the first round, that policies and guidelines should be used as a teaching and learning strategy but that it not the most important for an advanced programme.

The most interesting ranking was *digital learning and supervision*, which ranked lowest with four participants and fifth by three, and only one participant ranking it third. This might a result of educators not being technically advanced or not having the necessary means at their NEIs. During the first Delphi round and first phase of this research, digital support was described as a positive and an especially important strategy. Financial and time constraints were however described as challenges to developing digital material. Barratt (2010:170) concluded that not only is the

possibility of visual learning convenient and available, but it may also be used to successfully support ANPs in their educational development.

The conclusion of this phase of the research was reached as the participants had consensus on the strategies and the ranking compared with the results from the first and second phases of this research and the first round of the Delphi technique.

4.5 SUMMARY

During this last phase of the research the argumentative Delphi technique was used to reach the final objective, namely to identify strategies that will address closing the gaps in and facilitating clinical skills teaching and learning within PHCN toward ensuring clinical competence of ANPs in South Africa. Nursing education experts from NEIs were involved, and two Delphi rounds were done to reach consensus on the strategies and to rank the strategies in order of importance. This chapter discussed the identification of participants in addition to the preparation, dissemination and data analysis of both Delphi rounds and the results. Chapter 5 describes the conclusions of this research along with recommendations, shortcomings and subsequent research.

CHAPTER 5: CONCLUSIONS, EVALUATION AND RECOMMENDATIONS

5.1 INTRODUCTION

Chapter 5 is the final chapter of this research report. This chapter aims to provide concluding statements on the research as well as an evaluation of the research. The limitations are discussed and recommendations formulated in response to the concluding statements of this research.

5.2 CONCLUDING STATEMENTS

Concluding statements are the researcher's final statements that describes the outcomes of the research and the researcher's final comments on the research. The Oxford Dictionary (2018) defines the concept "conclusion" as "something that you thought about carefully and decided that it is true".

Challenges identified in CNSTC training emerged from the different phases of the research. A theme that stood out was dedicated financial support to NEI's as well as students in the CNSTC programme.

5.2.1 Dedicated financial support

The qualification in CTSCN requires financial investment to improve student and health system outcomes. This qualification is essential to implement in PHC and NHI but requires financial and policy commitments. All the strategies for enhancing teaching and learning that were identified during this research necessitate some form of financial support from the NEIs. This will ensure the availability of facilitators within the correct ratios, high fidelity simulation facilities, and appropriate equipment for ensuring optimal teaching and learning. If employers are able to fund fulltime training of students, more focused and intense clinical training can be provided. The need for qualified CNSTC professionals increases incrementally annually, and, as confirmed by the participants, the absence of dedicated financial support will hamper the quality education of ANPs. Adequate financial support was recognised and discussed at all the NEIs, and educators expressed their hopes that this research would contribute to voicing this challenge.

Financial support will also make it possible to keep professionals qualified in PHCN up to date with new developments and their clinical skills updated. The current clinical grants that the NEIs receive are only earmarked for undergraduate training and it is recommended that similar funding be made available for PHCNs.

5.2.2 Lack of basic skills and knowledge

The outcomes of the CNSTC qualification are not always ideal because of a lack of basic skills and knowledge. During the first phase of this research, almost all educators indicated that students lacked the basic nursing skills that were assumed to be in place when they enrolled for the CNSTC qualification. The implication is that students did not achieve the desired outcomes during and upon completion of the CNSTC qualification and they struggled to adopt the advanced clinical skills that were required. To address this shortcoming it is recommended that NEIs presenting the undergraduate nursing programmes ensure that students' basic clinical skills are in place before obtaining the undergraduate qualification. Students who enrol for advanced clinical programmes need to receive a refresher course on basic nursing skills and anatomy, physiology, and pharmacology in preparation for the advanced programmes. Basic skills include the use of a stethoscope, correct interpretation of vital signs, urine and laboratory results, and patient assessment. The acquisition of technical skills such as competency in the use of digital technology is also advised. This will ensure that when students enrol for this programme they will have been adequately prepared and competent.

5.2.3 The availability of high fidelity simulation and equipment

Although the advantages of using high-fidelity simulation and equipment to prepare students for practice are well known, few of the NEIs in this study made use of this training approach. The availability of high-fidelity simulation and equipment was limited at most NEIs due to other departments also using them for training or a lack of finances and educator knowledge. Educators expressed a need for trained technicians who can assist in the use of technology and simulation apparatus. The cost of high-fidelity simulation is high and NEIs require financial support from management in this regard. It is essential for students to be confident and competent in the skills needed to assess patients and manage them comprehensively. High-fidelity simulation and equipment ensure that students gain the necessary skills before entering clinical practice and managing real patients. It also gives students the opportunity to adjust to advance clinical practice on their own time.

5.2.4 Extension of the CNSTC programme

The CNSTC qualification is a complex programme presented as a one-year diploma on a fulltime or part time basis. According to current regulations from the SANC (1985b) students need to complete 960 clinical hours during this training. However, the teaching and learning of CNSTC nurses demands intensive clinical training and development of skills and knowledge and therefore, one year of training does not provide adequate time in which to develop skilled clinicians. The CNSTC students are professionals who train mostly part time whilst keeping

fulltime employment. Lengthening the training to 18 months or two years will provide enough time to ensure high-quality professionals. The alternative might be to present the programme fulltime for a year with financial support from employers.

5.3 EVALUATION AND SUMMARY OF THE RESEARCH

The conceptualisation of this research started when the researcher as an educator in the CNSTC programme noticed that the basic and clinical nursing skills of qualified PHC nurses are lacking and that they struggle to adapt and successfully complete the advance programme. Various authors emphasise the need for clinically skilled and competent nurses in the PHC sector because this is the first contact line for patients (DoH, 2008:11; Rispel & Barron, 2011:24). The successful implementation of the NHI system depends greatly on the clinical skills of PHC nurses and therefore the training of these nurses is essential.

This research identified the teaching and learning strategies that enhance clinical skills acquisition of CNSTC students. The pragmatic philosophy and constructivist approach underwrite this research, seeing as the students have a direct influence on the here-and-now of the patient and the CNSTC programme builds on the existing knowledge and skill of the student before starting in the programme (Neubert & Reich, 2006:165,191).

The objective statements for this study that were successfully reached were:

1. To describe the teaching and learning approaches currently applied in the clinical skills training of CNSTC nurses at NEIs in South Africa (RQ1);

2. To describe the evidence of effective clinical skills teaching and learning for ANPs from national and international research (RQ2);

3. To identify the gaps in the current teaching and learning approaches applied in the clinical training of PHCN (RQ3);

4. To identify and formulate strategies to facilitate and address the gaps in the teaching and learning of clinical skills within CNSTC to ensure clinical competence of advanced nurse practitioners in South Africa (RQ4).

The research was conducted in three consecutive phases starting with phase one.

Phase one: An AI described the strategies and methods of clinical teaching and learning of advanced skills currently applied in the training of PHCNs in NEIs in South Africa. Individual, semi-structured interviews were conducted using AI principles at five universities who presented the CNSTC programme. Attaining permission from ethical committees at NEIs and gatekeepers to

access former students was a time-consuming and tedious process. Interviews were done with professional nurses who had completed the programme and are working in practice, and educators teaching in the programme. After the interviews had been transcribed, the results were coded and co-coded under applicable themes.

Phase two: An integrated literature review from national and international research was conducted to describe the evidence of effective clinical skills teaching and learning for ANPs. The purpose of the review was to identify the gaps in the current teaching and learning approaches applied in the clinical training of CNSTC.

The results from phase two were then synthesised with the results from phase one, confirming the six strategies for effective clinical skills teaching and learning and the gaps in the current teaching and learning in the clinical training of CNSTC. This phase of the research revealed that the titles, roles and scope of practice differed internationally resulting in a constant comparison during the literature research.

Phase three: Validation of identified strategies. The six strategies were then used in an argumentative Delphi technique to validate the strategies and their applicability and feasibility for the South African context. Participants of this phase were the identified experts in CNSTC education who were contacted via e-mail. Two rounds of interviews were conducted which addressed the final objective of the research, namely to describe strategies for addressing the gaps in and facilitating clinical skills teaching and learning within CNSTC to ensure clinical competence of ANPs in South Africa. The result show that experts had different opinions, although all of them supported the strategies. The findings are described in the recommendations to NEIs and professional practice.

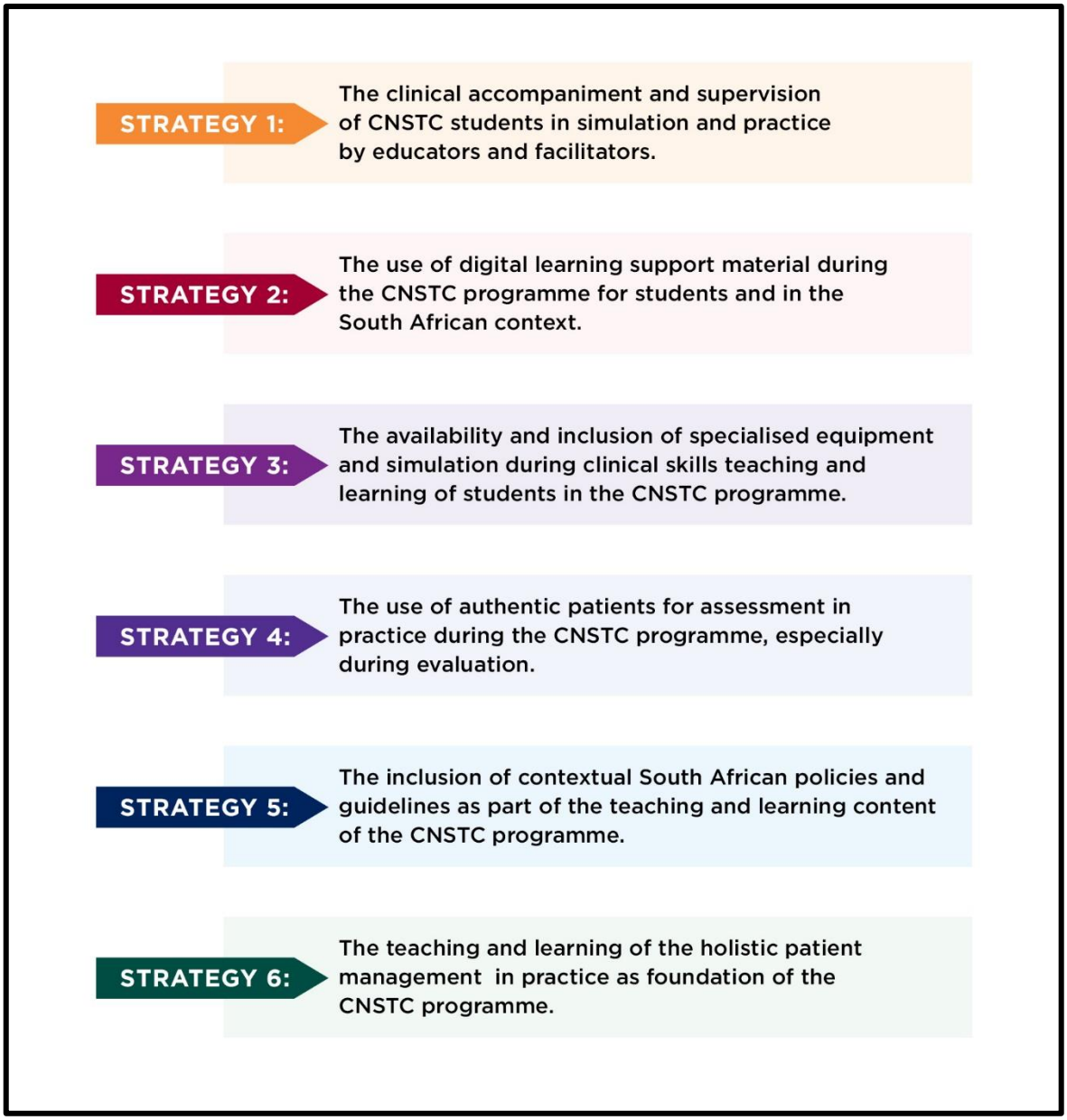

Figure 5-1: Identified strategies

5.4 FINAL STRATEGIES

This research was aimed at identifying strategies for enhancing clinical skills teaching and learning in an advanced programme in South Africa. This chapter summarises the research with concluding statements and describes its significance and contributions. The research was evaluated and a summary provided of each phase, followed by the researcher's reflections. The final conclusion of this research can be seen in diagram 5.2 below.

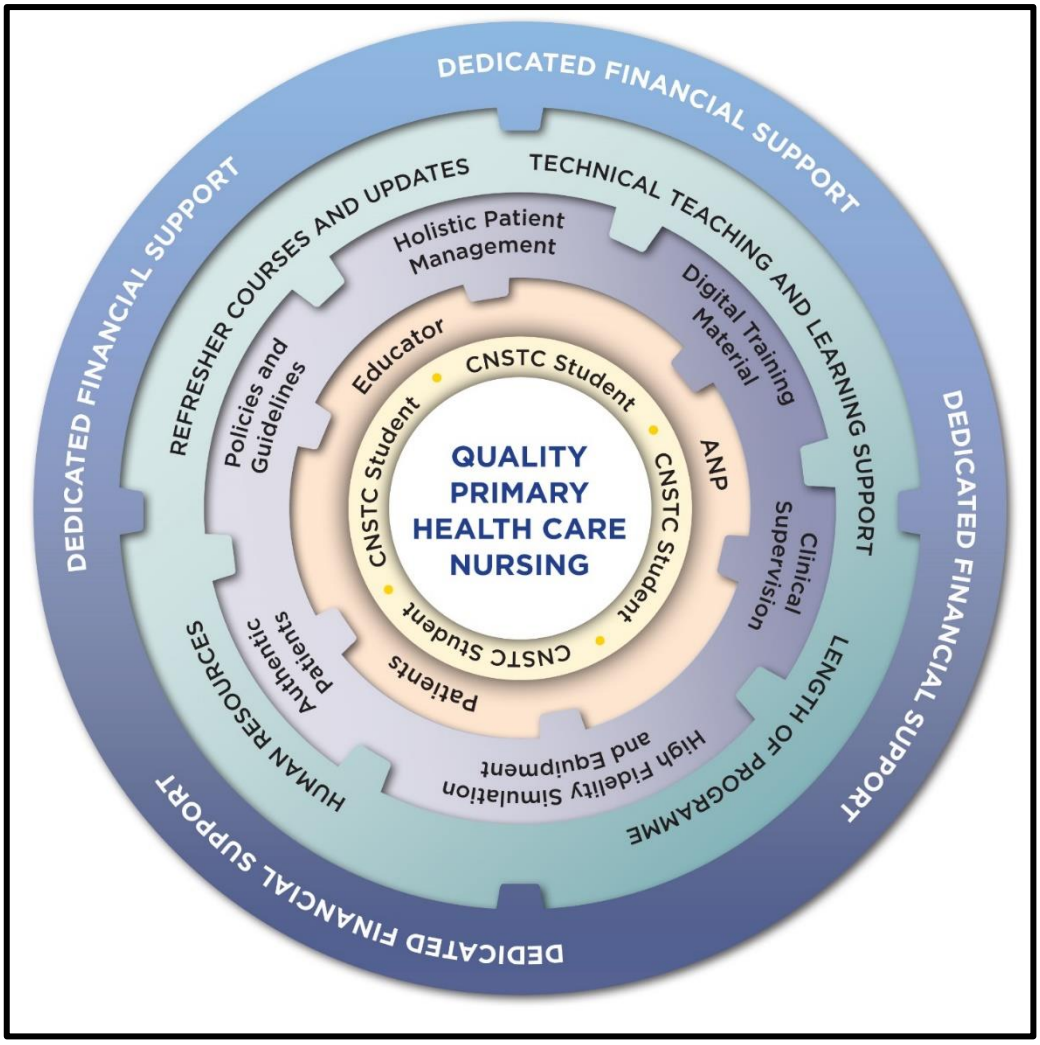

Figure 5-2: Strategies to enhance the teaching and learning of quality Primary Health Care nursing education

The quality of PHC service delivery to patients are directly linked to the education of professional nurses with CNSTC and therefor the educators in CNSTC and NEI's (Centre of Figure 5.1). In order for this to be successful, the strategies to enhance teaching and learning of clinical skills should be applied. In order to apply these strategies there have to be available resources by means of human resources, technical teaching and support- and an extension of the programme with regular updates. All of this is only possible with the financial support from DoH and NEI management.

With the intention to implement the NHI plan in South Africa, which is dependent on the knowledge and skills of CNSTC qualified nurses, it is imperative that the clinical skills and competencies of these nurses are of high standard. Dedicated financial support to NEI's and prospective students for much needed equipment, educators and study material will ensure competently trained

CNSTC nurses. To provide the educators and professional nurses with an environment where the CNSTC students can learn and practice skills, dedicated financial support (outlying purple circle) to NEI's and prospective students are critical. This financial support will enable them to address the challenges of human resources (not enough educators and dedicate professional nurses), time (extension of the programme), lack of basic skills (need for refresher courses and updates), and lack of technical support (to incorporate technology in teaching) (second green circle). With these challenges addressed, educators and professional nurses will be able to provide more effective clinical supervision and support to the students with authentic patient care by providing training in high fidelity simulation laboratories. Educators will be able to increase the development and use of digital training materials in their curriculums. An increased focus on policies and guidelines can be encouraged at the NEI's and the care facilities where these students are trained (third circle).

5.5 SIGNIFICANCE AND CONTRIBUTION OF THE RESEARCH

The last research question, namely how strategies for facilitating clinical skills teaching and learning within PHCN that will ensure clinical competence of ANPs in South Africa can be formulated, is answered with the following recommendations for NEIs and professional practice. Possibilities for subsequent research and contributions to the practice of nursing are also discussed.

This research made the following contributions:

- The use of the AI principles in the first phase of this research ensured a positive interview approach that formed the basis of this research. Participants were enthusiastic to take part and discuss their dreams and insights about clinical teaching and learning (see paragraph 2.2.1).

- This research established that NEIs presenting undergraduate nursing courses should ensure that students have the basic clinical skills when they complete undergraduate courses. Students that enrol for advanced clinical programmes need to receive a refresher course on basic skills in anatomy, physiology and pharmacology in preparation for the advanced course. Competence in technical skills in order to make use of high fidelity simulation and other equipment and computer science are also advised. This will ensure that by the time students enrol for this programme they will have been adequately prepared (see paragraph 2.2.4). This is also supported by the philosophical approach followed by the researcher that included constructivism and pragmatism. The embedded knowledge and skills of professional nurses before advancing to specialised qualifications are the building blocks for further development (constructivism). The constant updating of skills and knowledge to stay informed of new

developments and equipment of qualified CNSTC professionals coincide with a pragmatic viewpoint.

- Phase one of this research showed that exposure to real clinical situations and patients is essential and therefore, lengthening the current programme from 12 months to 18 months will make provision for more clinical exposure, thereby ensuring that students have ample time to develop the necessary skills. The need for students to be accompanied by educators in practice cannot be overemphasised as this is an essential strategy and support for students. This also provides a means for educators to keep up to date with practice conventions and trends (see paragraph 2.2.4)

- An important teaching strategy for clinical skills is direct supervision from trained professionals, especially at the beginning of clinical exposure, which was emphasised in this research by educators and students alike. Students need someone not only to demonstrate but to advise and support patient management. Smaller groups with a 1:5-8 educator to student ratio in practice or simulation laboratories give students opportunities to demonstrate their abilities and have enough time to practice and gain competence under more individualised supervision (see paragraph 2.2.4).

- The benefits of high-fidelity simulation and equipment were supported in this research at the NEIs who had access to it. With appropriate funding the availability of high-fidelity simulation manikins and equipment will provide students with valuable opportunities to practice their technical skills. This will ensure that students are competent and more confident about assessment procedures before being exposed to real patients, which can reduce the number of facilitators in practice in the final stages of the programme (see paragraph 2.2.4).

- The literature review done in this research contributed to the validity of the identified strategies from international and national publications (see paragraph 3.3.2.2). The differences between advanced programmes from international literature were also underlined in this literature review. The contribution of this literature review may help develop further discussions on the South African context and classifications of advanced qualifications.

- Continuous learning and development for all professional nurses in practice was outlined in this research. The attendance of refresher courses as part of their continuous professional development is imperative, because this would provide networking opportunities with educators and give educators the opportunity to keep up with latest trends and treatments. Networking with professional nurses and educators to maintain training standards in practice will ensure that the latest information from practice and education is shared. Short courses in the use of technology will empower qualified professionals to use new technologies and

support students in practice in this regard. This will also ensure that professional nurses become knowledgeable about the training methods used at NEIs and better prepared to support students in practice (see paragraph 2.3.5).

- The identified strategies to enhance teaching and learning contribute to the body of knowledge of the nursing profession in that they were supported by experts and ranked by way of importance. This provides educators with guidance for developing clinical programmes other than CNSTC in ways that will ensure effective clinical skills teaching and learning.

- Research-based recommendations were made to NEIs for improving clinical skills teaching and learning and subsequent research.

5.6 LIMITATIONS

As with any research conducted, there were certain limitations. The limitations of each phase are discussed in addition to how these limitations were either acknowledged and/or addressed.

Phase one

The availability of PHC professional nurses or educators made it difficult to include more participants. Professional nurses in practice had enormous workloads and could not easily avail themselves of the opportunity to take part in the interviews. The researcher contacted as many participants as possible on numerous occasions to recruit an adequate number of participants. Not all NEIs were included because of time and schedule constraints, though data saturation was reached despite these constraints. The researcher read the transcripts of interviews carefully before coding the feedback. As with qualitative research there is no guarantee that another person will identify the same themes, therefore the researcher held discussions with the promoters of this study and with the co-coder to ensure that the themes identified were valid and unbiased as far as possible.

Phase two

South African literature on nursing education in PHC that was contextual and relevant to the search criteria and identified strategies was limited. The dates for searches had to be rolled back nine years to find and included South African literature. International literature was scrutinised to determine the applicability to the context of this research.

Phase three

Expert participants took a long time to respond to requests to take part in the Delphi technique despite being sent reminder e-mails. Participation in this phase only took place after numerous requests.

5.7 RECOMMENDATIONS FOR SUBSEQUENT RESEARCH

Subsequent research that would support the findings of this research are as follows:

- The overall outcome of this research is significant and can be repeated at nursing colleges presenting the programme. Repeating phase one of this research might identify other applicable strategies.

- The application of the six identified strategies and their outcomes for the profession and service delivery should be further researched. Investigating the effect of skilled and knowledgeable CNSTC professionals on service delivery can provide a broader scope of data.

- The technical and digital expertise of educators in CNSTC programmes may serve as a motivation for experts in the Delphi rounds ranking this strategy the lowest.

5.8 REFLECTIONS OF THE RESEARCHER

According to the principles of qualitative research, researchers are allowed to reflect on the process and their awareness during data collection (Creswell & Poth, 2018:44). The researcher was involved in all the interviews and physically visited the NEIs to see their training facilities and available resources. The educators' passion in this field was inspiring, notwithstanding severe challenges experienced at all the NEIs concerning limited staff numbers and facilities due to financial constraints and a lack of support from the DoH. During the last phase of this research it was made known that the health system in the North West province collapsed due to financial misspending and staff shortages together with extensive striking of health care workers (March 2018). The Minister of Health, Dr Aron Motsoaledi, made a public announcement that nurses should no longer be trained at universities but only at public colleges (April 2018). This also coincided with the declared NHI policy for implementation. These statements are motivated by the fact that currently nursing colleges have very few resources and most are not registered as higher education facilities (Forum of university nursing deans of South Africa, (FUNDISA), 2018). Internationally PHC and nurse specialists or nurse practitioners are mostly PhD or master's degree qualified. In an international scoping review, Grant *et al*. (2017:51) found that in the USA PHC specialist nurses mostly worked at PHC centres offering different scopes of practice, either concentrating on specific diseases or holistic management. Depending on their scopes of practice

and qualifications, some nurses are also allowed to prescribe certain treatments. The international progress of PHCN and the development of practices for these nurses are evolving contrary to the assumption that this practice is not appreciated in South Africa. Given the shortage of medical doctors and the growing burden of disease in South Africa together with the growing population, the training of nurses in PHCN is imperative. Training nurses to have a wide range of clinical skills and knowledge to make informed decisions in health care should be prominent in health care policy, nursing education, and higher education.

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ADDENDUM A: LETTER TO THE NEI

School of Nursing Science
North-West University
Potchefstroom
June 2016

The Director
School of Nursing
[redacted]

Dear Professor [redacted]

Re: Permission to do research

I am Elsabe Bornman, a student at the North-West University (Potchefstroom campus) and currently busy with research towards my Ph.D in Nursing Education. The title of my research is: "**Strategies to enhance teaching and learning in the Primary Health Care qualification for professional nurses in South Africa."**

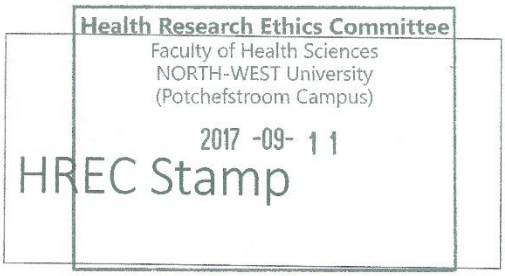
To assist me in gathering information I propose to have face to face individual interviews with educators of the Primary Health Care programme with 2-4 years' teaching experience. I have also included my research proposal for further reference.

All information obtained during the interviews will be kept strictly confidential. The research is also to be evaluated by the Health Research Ethics Committee of the North-West University (Potchefstroom campus).

It would be greatly appreciated if permission is granted to me in this regard.

_____
E Bornman
Student.

Addendum B - 1: Informed consent letter to the research participants (Educators)



PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM

TITLE OF THE RESEARCH PROJECT: Strategies to enhance teaching and learning in the Primary Health Care qualification for professional nurses in South Africa

REFERENCE NUMBER: NWU-00353-16-S1

RESEARCHER: Elsabe Bornman (student nr 12660531)

I am a Ph.D. (Nursing Education) student and a professional nurse.

ADDRESS:

INSINQ Research focus area

North- West University

Potchefstroom Campus

Private Bag X6001

2520

CONTACT NUMBER: 018 2991831

You are being invited to take part in a research project doing a research study on **"Strategies to enhance teaching and learning in the Primary Health Care qualification for professional**

nurses in South Africa" that forms part of my studies as a requirement for a Ph.D. (Nursing Education) degree. This research endeavors to examine the current practice of teaching and learning of clinical skills of professional nurses registered for an advanced clinical nursing qualification namely Clinical Nursing Science, Health Assessment, Treatment and Care in South Africa (SANC, 1985a & Regulation 48, 1985b). The result of this research aims to identify and develop strategies to enhance the teaching and learning of clinical skills to students registered for this qualification in primary health care.

Please take some time to read the information presented here, which will explain the details of this project. Please ask me any questions about any part of this project that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research entails and how you could be involved. Also, your participation is **entirely voluntary** and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part.

This study has been approved by the Health Research Ethics Committee of the Faculty of Health Sciences of the North-West University (NWU-00353-16-S1) and will be conducted according to the ethical guidelines and principles of the international Declaration of Helsinki and the ethical guidelines of the National Health Research Ethics Council. It might be necessary for the research ethics committee members or relevant authorities to inspect the research records.

1.1 What is this research study all about?

- The purpose of this research is to identify and develop strategies that will enhance the teaching and learning of clinical skills to students registered for PHCN.

1.2 Why have you been invited to participate?

- You have been invited to participate because you are a PHC educator who are a lecturer in PHC.
- You have also complied with the following inclusion criteria:
  You have been a lecturer in PHC for at least 3 years.

1.3 What will your responsibilities be?

- You will be expected to share your experiences of the teaching and learning of clinical skills in PHCN by describing the current strategies used and envisioning the best possibilities that can be applied in your context.
- You will be interviewed in a safe, comfortable room that you may choose, at a time that suits you best. The suggestion is that I provide lunch during your lunch time and we conduct the interview then. The interview will involve a process of Appreciative

inquiry were you will be asked to describe the best of the teaching and learning strategies of clinical skills. The interview will be audio taped for transcription afterwards. It is estimated that the interview will take approximately 1 hour of your time.

1.4 Will you benefit from taking part in this research?

- The indirect benefits are that you contribute to the enhancement of practice and patient care and paving the way for upcoming teaching and learning of PHCN outweighs the risks.
- No monetary rewards will be given in exchange for information obtained.

1.5 Are there risks involved in your taking part in this research?

- The risk in this study is that you might feel uncomfortable during the interviews and you may feel exposed by identifying aspects of the teaching and learning of PHCN at the institution where you may be teaching.
- Your identity will be protected throughout the study, and the process of AI concentrates on the positive factors and your personal information will not be divulged.
- The benefits outweigh the risks involved.

1.6 What will happen in the unlikely event of some form of discomfort occurring as a direct result of your taking part in this research study?

- Should you have the need for further discussions you may contact the researcher or her supervisors at any convenient time.

1.7 Who will have access to the data?

Anonymity is rarely possible with face to face interviews because of the presence of the researcher, but nonetheless the researcher will do everything in her power to ensure confidentiality by processing data anonymously. The following measures will put in place that will limit access to the data:

- You will be provided with a code name and the same code names will be used when discussing the data
- The transcriber will have access to the digital recordings of the interviews. She will sign a confidentiality agreement, and all copies of the recordings and transcriptions will be deleted from her computer after being sent to the researcher.

- The recordings will be destroyed after transcription. Electronic copies of the transcripts will be stored on a password protected computer. These copies will be destroyed after a period of 7 years, by deleting the copies from the computer. Hard copies of the transcripts will be stored in the INSINQ research office in a locked cupboard, for a period of 7 years, after which it will be destroyed through shredding
- The data will only be accessible to the researcher and transcriber, her supervisors and the co-coder. The results of the study will be made available to all participants in writing through meetings with participants. The researcher will also submit the report to North-West University.

1.8. Will you be paid to take part in this study and are there any costs involved?

No monetary rewards will be given in exchange for information obtained but refreshments will be provided during the interviews. There will not be any costs involved for you, if you do decide to take part.

1.9. Is there anything else that you should know or do?

- You can contact: Elsabe Bornman at 018 2991831 or Elsabe.Bornman@nwu.ac.za if you have any further queries or encounter any problems.
- You can contact the Health Research Ethics Committee via Mrs Carolien van Zyl at 018 299 1206; carolien.vanzyl@nwu.ac.za if you have any concerns or complaints that have not been adequately addressed by the researcher.
- You will receive a copy of this information and consent form for your own records.

Declaration by participant

By signing below, I ..... agree to take part in a research study entitled: **"Strategies to enhance teaching and learning in the Primary Health Care qualification for professional nurses in South Africa"** and I consent that the interview may be audio- recorded

I declare that:

- I have read this information and consent form and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions to both the person obtaining consent, as well as the researcher and all my questions have been adequately answered.

- I understand that taking part in this study is **voluntary** and I have not been pressurized to take part.
- I may choose to leave the study at any time and will not be penalized or prejudiced in any way.
- I may be asked to leave the study before it has finished, if the researcher feels it is in my best interests, or if I do not follow the study plan, as agreed to.

Signed at (*place*) ..... On (*date*) ..... 20....

....

Signature of participant Signature of witness

Declaration by person who obtained informed consent.

I (name) ..... declare that:

- I explained the information in this document to .....
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above.
- I did/did not use an interpreter.

Signed at (place) ..... on (date) ..... 20....

....

Signature of person obtaining consent Signature of witness

Declaration by researcher

I *(name)* ..... declare that:

- I explained the information in this document to .....
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I did/did not use an interpreter.

Signed at (*place*) ..... On (*date*) ..... 20....

....

Signature of researcher **Signature of witness**

Addendum B - 2: Informed consent letter to the research participant (Professional nurses)

PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM

TITLE OF THE RESEARCH PROJECT: Strategies to enhance teaching and learning in the Primary Health Care qualification for professional nurses in South Africa

REFERENCE NUMBER: NWU-....

RESEARCHER: Elsabe Bornman (student nr 12660531)

I am a Ph.D. (Nursing Education) student and a professional nurse.

ADDRESS:

INSINQ Research focus area

North- West University

Potchefstroom Campus

Private Bag X6001

2520

CONTACT NUMBER: 018 2991831

You are being invited to take part in a research project doing a research study on **"Strategies to enhance teaching and learning in the Primary Health Care qualification for professional**

nurses in South Africa" that forms part of my studies as a requirement for a Ph.D. (Nursing Education) degree. This research endeavors to examine the current practice of teaching and learning of clinical skills of professional nurses registered for an advanced clinical nursing qualification namely Clinical Nursing Science, Health Assessment, Treatment and Care in South Africa (SANC, 1985a & Regulation 48, 1985b). The result of this research aims to identify and develop strategies to enhance the teaching and learning of clinical skills to students registered for this qualification in primary health care.

Please take some time to read the information presented here, which will explain the details of this project. Please ask me any questions about any part of this project that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research entails and how you could be involved. Also, your participation is **entirely voluntary** and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part.

This study has been approved by the Health Research Ethics Committee of the Faculty of Health Sciences of the North-West University (NWU-00353-16-S1) and will be conducted according to the ethical guidelines and principles of the international Declaration of Helsinki and the ethical guidelines of the National Health Research Ethics Council. It might be necessary for the research ethics committee members or relevant authorities to inspect the research records.

1.1 What is this research study all about?

- The purpose of this research is to identify and develop strategies that will enhance the teaching and learning of clinical skills to students registered for PHCN.

1.2 Why have you been invited to participate?

- You have been invited to participate because you are a PHC educator who are a lecturer in PHC.
- You have also complied with the following inclusion criteria:
  You have been a lecturer in PHC for at least 3 years.

1.3 What will your responsibilities be?

- You will be expected to share your experiences of the teaching and learning of clinical skills in PHCN by describing the current strategies used and envisioning the best possibilities that can be applied in your context.
- You will be interviewed in a safe, comfortable room that you may choose, at a time that suits you best. The suggestion is that I provide lunch during your lunch time and we conduct the interview then. The interview will involve a process of Appreciative

inquiry were you will be asked to describe the best of the teaching and learning strategies of clinical skills. The interview will be audio taped for transcription afterwards. It is estimated that the interview will take approximately 1 hour of your time.

1.4 Will you benefit from taking part in this research?

- The indirect benefits are that you contribute to the enhancement of practice and patient care and paving the way for upcoming teaching and learning of PHCN outweighs the risks.
- No monetary rewards will be given in exchange for information obtained.

1.5 Are there risks involved in your taking part in this research?

- The risk in this study is that you might feel uncomfortable during the interviews and you may feel exposed by identifying aspects of the teaching and learning of PHCN at the institution where you may be teaching.
- Your identity will be protected throughout the study, and the process of AI concentrates on the positive factors and your personal information will not be divulged.
- The benefits outweigh the risks involved.

1.6 What will happen in the unlikely event of some form of discomfort occurring as a direct result of your taking part in this research study?

- Should you have the need for further discussions you may contact the researcher or her supervisors at any convenient time.

1.7 Who will have access to the data?

Anonymity is rarely possible with face to face interviews because of the presence of the researcher, but nonetheless the researcher will do everything in her power to ensure confidentiality by processing data anonymously. The following measures will put in place that will limit access to the data:

- You will be provided with a code name and the same code names will be used when discussing the data
- The transcriber will have access to the digital recordings of the interviews. She will sign a confidentiality agreement, and all copies of the recordings and transcriptions will be deleted from her computer after being sent to the researcher.

- The recordings will be destroyed after transcription. Electronic copies of the transcripts will be stored on a password protected computer. These copies will be destroyed after a period of 7 years, by deleting the copies from the computer. Hard copies of the transcripts will be stored in the INSINQ research office in a locked cupboard, for a period of 7 years, after which it will be destroyed through shredding
- The data will only be accessible to the researcher and transcriber, her supervisors and the co-coder. The results of the study will be made available to all participants in writing through meetings with participants. The researcher will also submit the report to North-West University.

1.8. Will you be paid to take part in this study and are there any costs involved?

No monetary rewards will be given in exchange for information obtained but refreshments will be provided during the interviews. There will not be any costs involved for you, if you do decide to take part.

1.9. Is there anything else that you should know or do?

- You can contact: Elsabe Bornman at 018 2991831 or Elsabe.Bornman@nwu.ac.za if you have any further queries or encounter any problems.
- You can contact the Health Research Ethics Committee via Mrs Carolien van Zyl at 018 299 1206; carolien.vanzyl@nwu.ac.za if you have any concerns or complaints that have not been adequately addressed by the researcher.
- You will receive a copy of this information and consent form for your own records.

Declaration by participant

By signing below, I ..... agree to take part in a research study entitled: **"Strategies to enhance teaching and learning in the Primary Health Care qualification for professional nurses in South Africa"** and I consent that the interview may be audio- recorded

I declare that:

- I have read this information and consent form and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions to both the person obtaining consent, as well as the researcher and all my questions have been adequately answered.

- I understand that taking part in this study is **voluntary** and I have not been pressurized to take part.
- I may choose to leave the study at any time and will not be penalized or prejudiced in any way.
- I may be asked to leave the study before it has finished, if the researcher feels it is in my best interests, or if I do not follow the study plan, as agreed to.

Signed at (*place*) ..... On (*date*) ..... 20....

....

Signature of participant Signature of witness

Declaration by person who obtained informed consent.

I (name) ..... declare that:

- I explained the information in this document to .....
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above.
- I did/did not use an interpreter.

Signed at (place) ..... on (date) ..... 20....

....

Signature of person obtaining consent Signature of witness

Declaration by researcher

I *(name)* ..... declare that:

- I explained the information in this document to .....
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I did/did not use an interpreter.

Signed at (*place*) ..... On (*date*) ..... 20....

....

Signature of researcher **Signature of witness**

ADDENDUM C

PHASE ONE: APPRECIATIVE INQUIRY INTERVIEW SCHEDULE:

Educators.

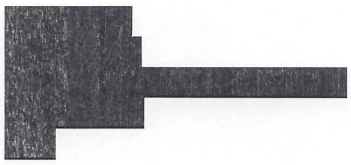
1. Discovery: Describe the current strategies that you are using in teaching and learning of clinical skills to PHC students that in your experience are the most efficient, with the best outcomes for students and practice.
2. Dream: Describe what you envision will be the best or better and efficient strategies of teaching and learning of clinical skills to PHC students.
3. Design: How would you apply this vision to your current teaching and learning strategy of PHCN?
4. Destiny: Giving your current circumstances how can the identified strategies be implemented in your teaching and learning of clinical skills for PHCN?

Qualified PHCN

1. Discovery: Which part of your previous clinical teaching and learning were most efficient and best implemented in practice with positive outcomes for the patients.
2. Dream: Describe what you envision that will be the most efficient strategies of teaching and learning appropriate clinical skills to enhance your current practice.
3. Design: How would you apply this vision to the teaching and learning strategies of PHCN?
4. Destiny: Given the current circumstances at the NEI where you qualified, how can the identified strategies be implemented in the teaching and learning of clinical skills for PHCN?

Addendum D: Letter to Educator

School of Nursing Science
North-West University
Potchefstroom
June 2016



Re: Permission to do research

I am Elsabe Bornman, a student at the North-West University (Potchefstroom campus) and currently busy with research towards my Ph.D in Nursing Education. The title of my research is: **"Strategies to enhance teaching and learning in the Primary Health Care qualification for professional nurses in South Africa."**

To assist me in gathering information I propose to have face to face individual interviews with nursing educators who are experts in primary health care teaching and learning of clinical skills. I have also included my research proposal for further reference.

The interviews will take up approximately 1 hour of your time and will take place at a time and place that is convenient to you. The interview will concentrate on the positive aspects of the PHC programme that you completed. All information obtained during the interviews will be kept strictly confidential. The proposed research was approved by the Health Research Ethics Committee of the North-West University, Potchefstroom campus (NWU-00353-16S1).

It would be greatly appreciated if you will agree to participate in this research.

X

E Bornman
Student.

Addendum E: Letter to Professional Nurse

School of Nursing Science
North-West University
Potchefstroom
June 2016

Dear Professional Nurse

Re: Permission to do research

I am Elsabe Bornman, a student at the North-West University (Potchefstroom campus) and currently busy with research towards my Ph.D in Nursing Education. The title of my research is: **"Strategies to enhance teaching and learning in the Primary Health Care qualification for professional nurses in South Africa."**

To assist me in gathering information I propose to have face to face individual interviews with Professional nurses who completed the Primary Health Care programme within the past 24 months. I have also included my research proposal for further reference.

The interviews will take up approximately 1 hour of your time and will take place at a time and place that is convenient to you. The interview will concentrate on the positive aspects of the PHC programme that you completed. All information obtained during the interviews will be kept strictly confidential. The proposed research was approved by the Health Research Ethics Committee of the North-West University, Potchefstroom campus (NWU-00353-16S1).

It would be greatly appreciated if you will agree to participate in this research.

Elsabe Bornman

Digitally signed by Elsabe Bornman
DN: cn=Elsabe Bornman, o=School of Nursing Science, ou=Faculty of Health Sciences, email=elsabe.bornman@nwu.ac.za, c=ZA
Date: 2017.08.24 08:31:32 +02'00'

E Bornman
Student.

Addendum F: Letter and confidentiality agreement to the co-coder

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT
POTCHEFSTROOM CAMPUS

Health Research Ethics Committee
Faculty of Health Sciences
NORTH-WEST University
(Potchefstroom Campus)
2017 -09- 11
HREC Stamp

REQUEST TO BE CO-CODER OF MY RESEARCH PROJECT AND CONFIDENTIALITY AGREEMENT

TITLE OF THE RESEARCH PROJECT: Strategies to enhance teaching and learning in the Primary Health Care qualification for professional nurses in South Africa"

REFERENCE NUMBER:

RESEARCHER: Elsabe Bornman (student no 12660531)

ADDRESS:

INSINQ Research focus area

North-West University

Potchefstroom Campus

Private Bag X6001

2520

CONTACT NUMBER: 018 299131

Dear Sir/Madam

I am **Elsabe Bornman** from the North-West University (Potchefstroom campus). I am doing research study on **"Strategies to enhance teaching and learning in the Primary Health Care qualification for professional nurses in South Africa"** as a requirement for the Ph.D

(Nursing Education) degree. I would like to invite you to act as independent co-coder in this study. To follow is information about the study so that you can make an informed decision.

AIM AND OBJECTIVE OF THE STUDY

The overall aim of this study is to identify and develop strategies for teaching and learning of clinical skills of advanced nurse practitioners in the PHCN programme in South Africa in order to fulfil the requirements of the NHI plan.

Audio-recorded data of face to face interviews will be transcribed. You will be expected to analyze the data according to the process of content analysis. You will be expected to follow the following steps during data analysis, namely:

- Ideas and topics must be listed to match the content.
- Organize topics together into columns and cluster similarities together.
- Spend extensive time reading and thinking about the data.
- Code the data. The process of coding involves identifying small topics of information in the text, and then assigning a label to the code. The first level of coding should be descriptive, using participants' phrases as the label for the code.
- Repeat this process with all transcriptions.
- Form themes from the codes, and then organize the themes into larger units of abstraction to make sense of the data.
- Analyze the data together with the researcher.

When you are finished with co-coding, you will be expected to arrange with the researcher for a meeting to reach consensus on the codes, themes, and subthemes that emerged from the data. The research will be conducted under the supervision of experts in Education and Nursing Research at the School of Nursing Science at North West University.

If you have any questions regarding participation in the study, you are welcome to ask me **(Elsabe Bornman)** or my supervisors **(Dr Gerda Reitsma and Prof Petra Bester)** any questions before you decide to give consent. You are also welcome to contact me at 018 2991831 or my supervisors at 018 2852381 .

Declaration by the co-coder

By signing below, I BELINDA SCROOBY agree to be the co-coder in a research study entitled

I declare that:

- I have read this information and consent form and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions to both the person obtaining consent, as well as the researcher and all my questions have been adequately answered.
- I undertake to keep all information relating to this research confidential.

Signed at (*place*) Potchefstroom on (*date*) 24/10/2016

Brady Green

Signature of co-coder **Signature of witness**

Signed at (*place*) Potchefstroom On (*date*) 24/10/20...

Bornman Tambo

Signature of researcher **Signature of witness**

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT

CONFIDENTIALITY UNDERTAKING

entered into between: Mrs E Bornman and the co-coder

I, the undersigned

Prof (Dr) Mr / Ms B. SCROOBY

Identity Number: 7309110023080

Address: School of Nursing Science, P/Bag X6001, Potchefstroom

hereby undertake in favor of the **NORTH-WEST UNIVERSITY**, a public higher education institution established in terms of the Higher Education Act No. 101 of 1997

Address: Office of the Institutional Registrar, Building C1, 53 Borcherd Street, Potchefstroom, 2520

(hereinafter the "NWU")

1 Interpretation and definitions

1.1 In this undertaking, unless inconsistent with, or otherwise indicated by the context:

1.1.1 "Confidential Information" shall include all information that is confidential in its nature or marked as confidential and shall include any existing and new information obtained by me after the Commencement Date, including but not be limited in its interpretation to, research data, information concerning research participants, all secret knowledge, technical information and specifications, manufacturing techniques, designs, diagrams, instruction manuals, blueprints, electronic artwork, samples, devices, demonstrations, formulae, know-how, intellectual property, information concerning materials, marketing and business information generally, financial information that may include remuneration detail, pay slips, information relating to human capital and employment contract, employment conditions, ledgers, income and expenditures and other materials of whatever description in which the NWU has an interest in being kept confidential; and

1.1.2 "Commencement Date" means the date of signature of this undertaking by myself.

1.2 The headings of clauses are intended for convenience only and shall not affect the interpretation of this undertaking.

2 Preamble

2.1 In performing certain duties requested by the NWU, I will have access to certain Confidential Information provided by the NWU in order to perform the said duties and I agree that it must be kept confidential.

2.2 The NWU has agreed to disclose certain of this Confidential Information and other information to me subject to me agreeing to the terms of confidentiality set out herein.

3 Title to the Confidential Information

I hereby acknowledge that all right, title and interest in and to the Confidential Information vests in the NWU and that I will have no claim of any nature in and to the Confidential Information.

4 Period of confidentiality

The provisions of this undertaking shall begin on the Commencement Date and remain in force indefinitely.

5 Non-disclosure and undertakings

I undertake:

5.1 to maintain the confidentiality of any Confidential Information to which I shall be allowed access by the NWU, whether before or after the Commencement Date of this undertaking. I will not divulge or

permit to be divulged to any person any aspect of such Confidential Information otherwise than may be allowed in terms of this undertaking;

5.2 to take all such steps as may be necessary to prevent the Confidential Information falling into the hands of an unauthorised third party;

5.3 not to make use of any of the Confidential Information in the development, manufacture, marketing and/or sale of any goods;

5.4 not to use any research data for publication purposes;

5.5 not to use or disclose or attempt to use or disclose the Confidential Information for any purpose other than performing research purposes only and includes questionnaires, interviews with participants, data gathering, data analysis and personal information of participants/research subjects;

5.6 not to use or attempt to use the Confidential Information in any manner which will cause or be likely to cause injury or loss to a research participant or the NWU; and

5.7 that all documentation furnished to me by the NWU pursuant to this undertaking will remain the property of the NWU and upon the request of the NWU will be returned to the NWU. I shall not make copies of any such documentation without the prior written consent of the NWU.

6 Exception

The above undertakings by myself shall not apply to Confidential Information which I am compelled to disclose in terms of a court order.

7 Jurisdiction

This undertaking shall be governed by South African law be subject to the jurisdiction of South African courts in respect of any dispute flowing from this undertaking.

8 Whole agreement

8.1 This document constitutes the whole of this undertaking to the exclusion of all else.

8.2 No amendment, alteration, addition, variation or consensual cancellation of this undertaking will be valid unless in writing and signed by me and the NWU.

Dated at Potchefstroom this 24th day of 20 16.

Witnesses:

1 .....

2 .....
(*Signatures of witnesses*)

.....
(*Signature*)

(Nursing Education) degree. I would like to invite you to act as independent mediator in this study. To follow is information about the study so that you can make an informed decision.

AIM AND OBJECTIVE OF THE STUDY

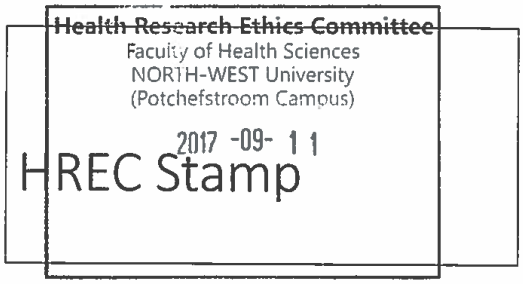
The overall aim of this study is to identify and develop strategies for teaching and learning of clinical skills of advanced nurse practitioners in the PHCN programme in South Africa in order to fulfil the requirements of the NHI plan.

You will be expected to mediate this research as an independent mediator when data for this research is collected at NWU Potchefstroom, where the researcher is an employee. You will be expected to monitor and supervise the data gathering process when conducted on the NWU Potchefstroom Campus. This is in order to ensure the confidentiality of participants and to address a possible conflict of interest of the researcher.
The data collection method that you will be taking part in will be an appreciative inquiry process regarding the teaching and learning of clinical skills of professional nurses in PHC.
The participants will be educators and professional nurses complying with the inclusion criteria of the research.

If you have any questions regarding participation in the study, you are welcome to ask me **(Elsabe Bornman)** or my supervisors (**Dr Gerda Reitsma and Prof Petra Bester**) any questions before you decide to give consent. You are also welcome to contact me at 018 2991831 or my supervisors at 018 2852381 or 018 2992095 .

Addendum G: Letter and confidentiality agreement to the mediator

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT
POTCHEFSTROOM CAMPUS



REQUEST TO BE A MEDIATOR OF MY RESEARCH PROJECT AND CONFIDENTIALITY AGREEMENT

TITLE OF THE RESEARCH PROJECT: Strategies to enhance teaching and learning in the Primary Health Care qualification for professional nurses in South Africa"

REFERENCE NUMBER:

RESEARCHER: Elsabe Bornman

ADDRESS:

INSINQ Research focus area

North-West University

Potchefstroom Campus

Private Bag X6001

2520

CONTACT NUMBER: 018 299131

Dear Sir/Madam

I am **Elsabe Bornman** from the North-West University (Potchefstroom campus). I am doing a research study on **"Strategies to enhance teaching and learning in the Primary Health Care qualification for professional nurses in South Africa"** as a requirement for the Ph.D

Addendum H: Letter and confidentiality agreement to the transcriber

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT
POTCHEFSTROOM CAMPUS

Health Research Ethics Committee
Faculty of Health Sciences
NORTH-WEST University
(Potchefstroom Campus)
2017 -09- 11
HREC Stamp

REQUEST TO BE A TRANSCRIBER OF MY RESEARCH PROJECT AND CONFIDENTIALITY AGREEMENT

TITLE OF THE RESEARCH PROJECT: Strategies to enhance teaching and learning in the Primary Health Care qualification for professional nurses in South Africa"

REFERENCE NUMBER: 12660531

RESEARCHER: Elsabe Bornman

ADDRESS:

INSINQ Research focus area

North-West University

Potchefstroom Campus

Private Bag X6001

2520

CONTACT NUMBER: 018 299131

Dear Sir/Madam

I am **Elsabe Bornman** from the North-West University (Potchefstroom campus). I am doing research study on **"Strategies to enhance teaching and learning in the Primary Health Care qualification for professional nurses in South Africa"** as a requirement for the Ph.D

qualification for professional nurses in South Africa" as a requirement for the Ph.D (Nursing Education) degree. I would like to invite you to act as transcriber in this study. To follow is information about the study so that you can make an informed decision.

1. **AIM AND OBJECTIVE OF THE STUDY**
   The overall aim of this study is to identify and develop strategies for teaching and learning of clinical skills of advanced nurse practitioners in the PHCN programme in South Africa in order to fulfil the requirements of the NHI plan.

You will be expected to transcribe the audio taped interviews for this research. The data collection method that you will be taking part in will be an appreciative inquiry regarding the teaching and learning of clinical skills of professional nurses in PHC.
The participants will be educators and professional nurses complying with the inclusion criteria of the research.

If you have any questions regarding participation in the study, you are welcome to ask me **(Elsabe Bornman)** or my supervisors **(Dr Gerda Reitsma and Prof Petra Bester)** any questions before you decide to give consent. You are also welcome to contact me at 018 2991831 or my supervisors at 018 29852381 or 018 2992095 .

Declaration by the transcriber

By signing below, I Lezyda Venter agree to be the transcriber in a research study entitled **"Strategies to enhance teaching and learning in the Primary Health Care qualification for professional nurses in South Africa"**

I declare that:

- I have read this information and consent form and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions to both the person obtaining consent, as well as the researcher and all my questions have been adequately answered.
- I undertake to keep all information relating to this research confidential.

Signed at (*place*) Potchefstroom on (*date*) 19 October 2016

....

Signature of co-coder Signature of witness

Signed at (*place*) ..... On (*date*) ..... 20...

Signature of researcher

Signature of witness

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT

CONFIDENTIALITY UNDERTAKING

entered into between: Mrs E Bornman and the transcriber

I, the undersigned

Prof / Dr / Mr /(Ms) LSJ Venter

Identity Number: 611212 0016 081

Address: School of Nursing Science, NWU

hereby undertake in favor of the **NORTH-WEST UNIVERSITY**, a public higher education institution established in terms of the Higher Education Act No. 101 of 1997

Address: Office of the Institutional Registrar, Building C1, 53 Borcherd Street, Potchefstroom, 2520

(hereinafter the "NWU")

1 Interpretation and definitions

1.1 In this undertaking, unless inconsistent with, or otherwise indicated by the context:

1.1.1 "Confidential Information" shall include all information that is confidential in its nature or marked as confidential and shall include any existing and new information obtained by me after the Commencement Date, including but not be limited in its interpretation to, research data, information concerning research participants, all secret knowledge, technical information and specifications, manufacturing techniques, designs, diagrams, instruction manuals, blueprints, electronic artwork, samples, devices, demonstrations, formulae, know-how, intellectual property, information concerning materials, marketing and business information generally, financial information that may include remuneration detail, pay slips, information relating to human capital and employment contract,

employment conditions, ledgers, income and expenditures and other materials of whatever description in which the NWU has an interest in being kept confidential; and

1.1.2 "Commencement Date" means the date of signature of this undertaking by myself.

1.2 The headings of clauses are intended for convenience only and shall not affect the interpretation of this undertaking.

2 Preamble

2.1 In performing certain duties requested by the NWU, I will have access to certain Confidential Information provided by the NWU in order to perform the said duties and I agree that it must be kept confidential.

2.2 The NWU has agreed to disclose certain of this Confidential Information and other information to me subject to me agreeing to the terms of confidentiality set out herein.

3 Title to the Confidential Information

I hereby acknowledge that all right, title and interest in and to the Confidential Information vests in the NWU and that I will have no claim of any nature in and to the Confidential Information.

4 Period of confidentiality

The provisions of this undertaking shall begin on the Commencement Date and remain in force indefinitely.

5 Non-disclosure and undertakings

I undertake:

5.1 to maintain the confidentiality of any Confidential Information to which I shall be allowed access by the NWU, whether before or after the Commencement Date of this undertaking. I will not divulge or permit to be divulged to any person any aspect of such Confidential Information otherwise than may be allowed in terms of this undertaking;

5.2 to take all such steps as may be necessary to prevent the Confidential Information falling into the hands of an unauthorised third party;

5.3 not to make use of any of the Confidential Information in the development, manufacture, marketing and/or sale of any goods;

5.4 not to use any research data for publication purposes;

5.5 not to use or disclose or attempt to use or disclose the Confidential Information for any purpose other than performing research purposes only and includes questionnaires, interviews with participants, data gathering, data analysis and personal information of participants/research subjects;

5.6 not to use or attempt to use the Confidential Information in any manner which will cause or be likely to cause injury or loss to a research participant or the NWU; and

5.7 that all documentation furnished to me by the NWU pursuant to this undertaking will remain the property of the NWU and upon the request of the NWU will be returned to the NWU. I shall not make copies of any such documentation without the prior written consent of the NWU.

6 Exception

The above undertakings by myself shall not apply to Confidential Information which I am compelled to disclose in terms of a court order.

7 Jurisdiction

This undertaking shall be governed by South African law be subject to the jurisdiction of South African courts in respect of any dispute flowing from this undertaking.

8 Whole agreement

8.1 This document constitutes the whole of this undertaking to the exclusion of all else.

8.2 No amendment, alteration, addition, variation or consensual cancellation of this undertaking will be valid unless in writing and signed by me and the NWU.

Dated at Potchefstroom this 24 October 2016

Witnesses:

1 .....

2 .....

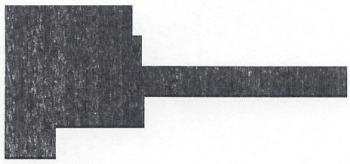
(Signatures of witnesses)

.....

(Signature)

Addendum I: Letter to Expert

School of Nursing Science
North-West University
Potchefstroom
June 2016



Re: Permission to do research

I am Elsabe Bornman, a student at the North-West University (Potchefstroom campus) and currently busy with research towards my Ph.D in Nursing Education. The title of my research is: **"Strategies to enhance teaching and learning in the Primary Health Care qualification for professional nurses in South Africa."**

To assist me in gathering information I propose to do an argumentative Delphi technique with nursing experts in teaching and learning of clinical skills in Primary Health Care programme. I have also included my research proposal for further reference.

All information obtained during the reviews will be kept strictly confidential. The research was approved by the Health Research Ethics Committee of the North-West University (Potchefstroom campus, **NWU-00353-16-S1**).

It would be greatly appreciated if you will agree to participate in this research.

X _____
E Bornman
Student.

Addendum J: Informed consent letter to the research participants (experts)

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT
POTCHEFSTROOM CAMPUS

PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM

TITLE OF THE RESEARCH PROJECT: Strategies to enhance teaching and learning in the Primary Health Care qualification for professional nurses in South Africa

REFERENCE NUMBER: NWU-00353-16-S1

RESEARCHER: Elsabe Bornman (student nr 12660531)

I am a Ph.D. (Nursing Education) student and a professional nurse.

ADDRESS:

INSINQ Research focus area

North- West University

Potchefstroom Campus

Private Bag X6001

2520

CONTACT NUMBER: 018 2991831

You are being invited to take part in a research project doing a research study on **"Strategies to enhance teaching and learning in the Primary Health Care qualification for professional**

nurses in South Africa" that forms part of my studies as a requirement for a Ph.D. (Nursing Education) degree. This research endeavors to examine the current practice of teaching and learning of clinical skills of professional nurses registered for an advanced clinical nursing qualification namely Clinical Nursing Science, Health Assessment, Diagnosis Treatment and Care in South Africa (SANC, 1985a & Regulation 48, 1985b). The result of this research aims to identify and develop strategies to enhance the teaching and learning of clinical skills to students registered for this qualification in primary health care.

Please take some time to read the information presented here, which will explain the details of this project. Please ask me any questions about any part of this project that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research entails and how you could be involved. Also, your participation is **entirely voluntary** and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part.

This study has been approved by the Health Research Ethics Committee of the Faculty of Health Sciences of the North-West University (NWU-00353-16-S1) and will be conducted according to the ethical guidelines and principles of the international Declaration of Helsinki and the ethical guidelines of the National Health Research Ethics Council. It might be necessary for the research ethics committee members or relevant authorities to inspect the research records.

1.1 What is this research study all about?

- The purpose of this research is to identify and develop strategies that will enhance the teaching and learning of clinical skills to students registered for PHCN.

1.2 Why have you been invited to participate?

- You have been invited to participate because you are a PHC educator who are an expert in PHC teaching and learning or clinical education.
- You at least have a minimum of 2 years' experience of clinical nursing education in PHCN programmes.
- You have also complied with the following inclusion criteria:
  You have been identified by your management as an expert in PHC.

1.3 What will your responsibilities be?

- You will be expected to give your opinion on the validity and applicability of the identified and developed strategies in the context of teaching and learning PHCN

programmes in South Africa. This will be during the first round of an argument Delphi approach.

- You will also be expected to recommend any changes to the strategies to enhance the effectivity and feasibility.
- Your comments will be grouped into similar themes and then synthesized into the clearest descriptions without leaving out applicable comments from the other participants. Only the synthesized comments will be send to all experts during the second round, requesting you to indicate the statements you agree upon and comment on those you disagree upon. This will validate the individual statements and confirm the information given during round one.
- Anonimity of participants will be ensured by only sending the synthesised statements and participants will not be able to identify other participants.

1.4 *Will you benefit from taking part in this research?*

- The direct benefit for participants will be that they will be involved to improve the strategies to enhance the teaching and learning of PHCN and the indirect benefit of their contribution will be the benefit to the profession and PHCN practice and patient care.
- The indirect benefits are that you contribute to the enhancement of practice and patient care and paving the way for upcoming teaching and learning of PHCN outweighs the risks.
- No monetary rewards will be given in exchange for information obtained.

1.5 *Are there risks involved in your taking part in this research?*

- The risks identified during this phase of the research are that the experts may feel inadequate or threatened. These risks are addressed by the precaution of keeping the personal details of participants confidential and only reveal synthesized descriptions to all experts
- The benefits outweigh the risks involved.

1.6 *What will happen in the unlikely event of some form of discomfort occurring as a direct result of your taking part in this research study?*

- Should you have the need for further discussions you may contact the researcher or her supervisors at any convenient time.

1.7 *Who will have access to the data?*

The following measures will put in place that will limit access to the data:

- The names of the participants will be replaced by a code on the data to ensure anonymity.
- After the last round of the Delphi technique all personal details of participants will be removed before the opinions and comments of participants will be printed. The electronic copies will be saved and stored on a password protected computer until the end of the research project and until final publication of the results. The hard-copies will be locked in the researcher's office for 4 years before being destroyed.

1.8. Will you be paid to take part in this study and are there any costs involved?

No monetary rewards will be given in exchange for information obtained but refreshments will be provided during the interviews. There will not be any costs involved for you, if you do decide to take part.

1.9. Is there anything else that you should know or do?

- You can contact: Elsabe Bornman at 018 2991717 if you have any further queries or encounter any problems.
- You can contact the Health Research Ethics Committee via Mrs Carolien van Zyl at 018 299 1206; carolien.vanzyl@nwu.ac.za if you have any concerns or complaints that have not been adequately addressed by the researcher.

Declaration by participant

By completing the questionnaire you agree to take part in a research study entitled:

"Strategies to enhance teaching and learning in the Primary Health Care qualification for professional nurses in South Africa".

You also declare that:

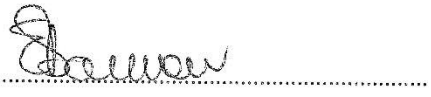
- You have read this information and consent form and it is written in a language with which you fluent and comfortable.
- You have had a chance to ask questions to the researcher and all your questions have been adequately answered.
- You understand that taking part in this study is **voluntary** and you have not been pressurized to take part.
- You may choose to leave the study at any time and will not be penalized or prejudiced in any way.

Declaration by researcher

I Elsabe Bornman declare that:

- I explained the information in this document to the participant that completed the questionnaire.
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above.
- I did not use an interpreter.

Signed at (*place*) Potchefstroom..... On (*date*) 24 May 2018



.....

Signature of researcher

.....

Signature of witness

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT

Private Bag X6001, Potchefstroom,
South Africa, 2520

Tel: (018) 299-4900
Faks: (018) 299-4910
Web: http://www.nwu.ac.za

Research Ethics Regulatory Committee
Tel: +27 18 299 4849
Email : Ethics@nwu.ac.za

ETHICS APPROVAL CERTIFICATE OF STUDY

Based on approval by **Health Research Ethics Committee (HREC)** on **11/09/2017**, the North-West University Research Ethics Regulatory Committee (NWU-RERC) hereby **approves** your study as indicated below. This implies that the NWU-RERC grants its permission that provided the special conditions specified below are met and pending any other authorisation that may be necessary, the study may be initiated, using the ethics number below.

Study title: Strategies to enhance teaching and learning in the Primary Health Care qualification for professional nurses in South Africa
Study Leader/Supervisor: Prof G Reitsma
Student: E Bornman-12660531
Ethics number:

N	W	U	-	0	0	3	5	3	-	1	6	-	A	1
Institution				Study Number						Year			Status	

Status: S = Submission; R = Re-Submission; P = Provisional Authorisation; A = Authorisation

Application Type: Single study
Commencement date: 11/09/2017 **Risk:** **Medium**

Approval of the study is initially provided for a year, after which continuation of the study is dependent on receipt of the annual (or as otherwise stipulated) monitoring report and the concomitant issuing of a letter of continuation.

General conditions:

While this ethics approval is subject to all declarations, undertakings and agreements incorporated and signed in the application form, please note the following:

- *The study leader (principle investigator) must report in the prescribed format to the NWU-RERC via HREC:*
  - *annually (or as otherwise requested) on the monitoring of the study, and upon completion of the study*
  - *without any delay in case of any adverse event or incident (or any matter that interrupts sound ethical principles) during the course of the study.*
- *Annually a number of studies may be randomly selected for an external audit.*
- *The approval applies strictly to the proposal as stipulated in the application form. Should any changes to the proposal be deemed necessary during the course of the study, the study leader must apply for approval of these amendments at the HREC, prior to implementation. Should there be any deviations from the study proposal without the necessary approval of such amendments, the ethics approval is immediately and automatically forfeited.*
- *The date of approval indicates the first date that the study may be started.*
- *In the interest of ethical responsibility the NWU-RERC and HREC retains the right to:*
  - *request access to any information or data at any time during the course or after completion of the study;*
  - *to ask further questions, seek additional information, require further modification or monitor the conduct of your research or the informed consent process.*
  - *withdraw or postpone approval if:*
    - *any unethical principles or practices of the study are revealed or suspected,*
    - *it becomes apparent that any relevant information was withheld from the HREC or that information has been false or misrepresented,*
    - *the required amendments, annual (or otherwise stipulated) report and reporting of adverse events or incidents was not done in a timely manner and accurately,*
    - *new institutional rules, national legislation or international conventions deem it necessary.*
- *HREC can be contacted for further information or any report templates via Ethics-HRECApply@nwu.ac.za or 018 299 1206.*

The RERC would like to remain at your service as scientist and researcher, and wishes you well with your study. Please do not hesitate to contact the RERC or HREC for any further enquiries or requests for assistance.

Yours sincerely,

Prof Refilwe Phaswana-Mafuya
Chair NWU Research Ethics Regulatory Committee (RERC)

ADDENDUM L: JOHNS HOPKINS CRITICAL APPRAISAL TOOL FOR RESEARCH STUDIES

Johns Hopkins Nursing Evidence-Based Practice
Appendix E: Research Evidence Appraisal Tool

Quality Appraisal of Research Studies			
• Does the researcher identify what is known and not known about the problem and how the study will address any gaps in knowledge?	☐Yes	☐No	
• Was the purpose of the study clearly presented?	☐Yes	☐No	
• Was the literature review current (most sources within last 5 years or classic)?	☐Yes	☐No	
• Was sample size sufficient based on study design and rationale?	☐Yes	☐No	
• If there is a control group:			
○ Were the characteristics and/or demographics similar in both the control and intervention groups?	☐Yes	☐No	☐NA
○ If multiple settings were used, were the settings similar?	☐Yes	☐No	☐NA
○ Were all groups equally treated except for the intervention group(s)?	☐Yes	☐No	☐NA
• Are data collection methods described clearly?	☐Yes	☐No	
• Were the instruments reliable (Cronbach's α [alpha] ≥ 0.70)?	☐Yes	☐No	☐NA
• Was instrument validity discussed?	☐Yes	☐No	☐NA
• If surveys/questionnaires were used, was the response rate ≥ 25%?	☐Yes	☐No	☐NA
• Were the results presented clearly?	☐Yes	☐No	
• If tables were presented, was the narrative consistent with the table content?	☐Yes	☐No	☐NA
• Were study limitations identified and addressed?	☐Yes	☐No	
• Were conclusions based on results?	☐Yes	☐No	

Quality Appraisal of Systematic Review with or without Meta-Analysis or Meta-Synthesis		
• Was the purpose of the systematic review clearly stated?	☐Yes	☐No
• Were reports comprehensive, with reproducible search strategy?	☐Yes	☐No
○ Key search terms stated	☐Yes	☐No
○ Multiple databases searched and identified	☐Yes	☐No
○ Inclusion and exclusion criteria stated	☐Yes	☐No
• Was there a flow diagram showing the number of studies eliminated at each level of review?	☐Yes	☐No
• Were details of included studies presented (design, sample, methods, results, outcomes, strengths and limitations)?	☐Yes	☐No
• Were methods for appraising the strength of evidence (level and quality) described?	☐Yes	☐No
• Were conclusions based on results?	☐Yes	☐No
○ Results were interpreted	☐Yes	☐No
○ Conclusions flowed logically from the interpretation and systematic review question	☐Yes	☐No
• Did the systematic review include both a section addressing limitations and how they were addressed?	☐Yes	☐No

QUALITY RATING BASED ON QUALITY APPRAISAL

A **High quality:** consistent, generalizable results; sufficient sample size for the study design; adequate control; definitive conclusions; consistent recommendations based on comprehensive literature review that includes thorough reference to scientific evidence

B **Good quality:** reasonably consistent results; sufficient sample size for the study design; some control, and fairly definitive conclusions; reasonably consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence

C **Low quality or major flaws:** little evidence with inconsistent results; insufficient sample size for the study design; conclusions cannot be drawn

ADDENDUM M: CASP TOOL FOR QUALITATIVE STUDIES

Screening Questions

1. Was there a clear statement of the aims of the research? ☐ Yes ☐ Can't tell ☐ No

HINT: Consider

- What was the goal of the research?
- Why it was thought important?
- Its relevance

---

2. Is a qualitative methodology appropriate? ☐ Yes ☐ Can't tell ☐ No

HINT: Consider

- If the research seeks to interpret or illuminate the actions and/or subjective experiences of research participants
- Is qualitative research the right methodology for addressing the research goal?

Is it worth continuing?

Detailed questions

3. Was the research design appropriate to address the aims of the research? ❑ Yes ❑ Can't tell ❑ No

HINT: Consider

- If the researcher has justified the research design (e.g. have they discussed how they decided which method to use)?

---

4. Was the recruitment strategy appropriate to the aims of the research? ❑ Yes ❑ Can't tell ❑ No

HINT:Consider

- If the researcher has explained how the participants were selected
- If they explained why the participants they selected were the most appropriate to provide access to the type of knowledge sought by the study
- If there are any discussions around recruitment (e.g. why some people chose not to take part)

5. Was the data collected in a way that addressed the research issue? ❑ Yes ❑ Can't tell ❑ No

HINT: Consider

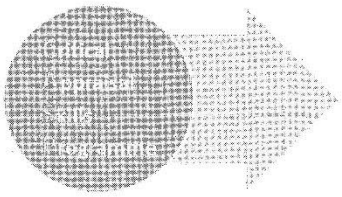
- If the setting for data collection was justified
- If it is clear how data were collected (e.g. focus group, semi-structured interview etc.)
- If the researcher has justified the methods chosen
- If the researcher has made the methods explicit (e.g. for interview method, is there an indication of how interviews were conducted, or did they use a topic guide)?
- If methods were modified during the study. If so, has the researcher explained how and why?
- If the form of data is clear (e.g. tape recordings, video material, notes etc)
- If the researcher has discussed saturation of data

---

6. Has the relationship between researcher and participants been adequately considered? ❑ Yes ❑ Can't tell ❑ No

HINT: Consider

- If the researcher critically examined their own role, potential bias and influence during
  (a) Formulation of the research questions
  (b) Data collection, including sample recruitment and choice of location
- How the researcher responded to events during the study and whether they considered the implications of any changes in the research design



10 questions to help you make sense of qualitative research

How to use this appraisal tool

Three broad issues need to be considered when appraising the report of a qualitative research:

- **Are the results of the review valid?**
- **What are the results?**
- **Will the results help locally?**

The 10 questions on the following pages are designed to help you think about these issues systematically. The first two questions are screening questions and can be answered quickly. If the answer to both is "yes", it is worth proceeding with the remaining questions.

There is some degree of overlap between the questions, you are asked to record a "yes", "no" or "can't tell" to most of the questions. A number of prompts are given after each question. These are designed to remind you why the question is important. Record your reasons for your answers in the spaces provided.

There will not be time in the small groups to answer them all in detail!

Screening Questions

1. Was there a clear statement of the aims of the research?

❑ Yes ❑ Can't tell ❑ No

HINT: Consider

- What was the goal of the research?
- Why it was thought important?
- Its relevance

---

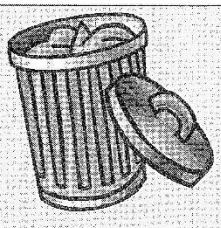
2. Is a qualitative methodology appropriate?

❑ Yes ❑ Can't tell ❑ No

HINT: Consider

- If the research seeks to interpret or illuminate the actions and/or subjective experiences of research participants
- Is qualitative research the right methodology for addressing the research goal?

Is it worth continuing?



Detailed questions

3. Was the research design appropriate to address the aims of the research? ☐ Yes ☐ Can't tell ☐ No

HINT: Consider

- If the researcher has justified the research design (e.g. have they discussed how they decided which method to use)?

---

4. Was the recruitment strategy appropriate to the aims of the research? ☐ Yes ☐ Can't tell ☐ No

HINT:Consider

- If the researcher has explained how the participants were selected
- If they explained why the participants they selected were the most appropriate to provide access to the type of knowledge sought by the study
- If there are any discussions around recruitment (e.g. why some people chose not to take part)

5. Was the data collected in a way that addressed the research issue? ☐ Yes ☐ Can't tell ☐ No

HINT: Consider

- If the setting for data collection was justified
- If it is clear how data were collected (e.g. focus group, semi-structured interview etc.)
- If the researcher has justified the methods chosen
- If the researcher has made the methods explicit (e.g. for interview method, is there an indication of how interviews were conducted, or did they use a topic guide)?
- If methods were modified during the study. If so, has the researcher explained how and why?
- If the form of data is clear (e.g. tape recordings, video material, notes etc)
- If the researcher has discussed saturation of data

---

6. Has the relationship between researcher and participants been adequately considered? ☐ Yes ☐ Can't tell ☐ No

HINT: Consider

- If the researcher critically examined their own role, potential bias and influence during
  (a) Formulation of the research questions
  (b) Data collection, including sample recruitment and choice of location
- How the researcher responded to events during the study and whether they considered the implications of any changes in the research design

7. Have ethical issues been taken into consideration? ❑ Yes ❑ Can't tell ❑ No

HINT: Consider

- If there are sufficient details of how the research was explained to participants for the reader to assess whether ethical standards were maintained
- If the researcher has discussed issues raised by the study (e.g. issues around informed consent or confidentiality or how they have handled the effects of the study on the participants during and after the study)
- If approval has been sought from the ethics committee

---

8. Was the data analysis sufficiently rigorous? ❑ Yes ❑ Can't tell ❑ No

HINT: Consider

- If there is an in-depth description of the analysis process
- If thematic analysis is used. If so, is it clear how the categories/themes were derived from the data?
- Whether the researcher explains how the data presented were selected from the original sample to demonstrate the analysis process
- If sufficient data are presented to support the findings
- To what extent contradictory data are taken into account
- Whether the researcher critically examined their own role, potential bias and influence during analysis and selection of data for presentation

7. Have ethical issues been taken into consideration? ☐ Yes ☐ Can't tell ☐ No

HINT: Consider

- If there are sufficient details of how the research was explained to participants for the reader to assess whether ethical standards were maintained
- If the researcher has discussed issues raised by the study (e.g. issues around informed consent or confidentiality or how they have handled the effects of the study on the participants during and after the study)
- If approval has been sought from the ethics committee

8. Was the data analysis sufficiently rigorous? ☐ Yes ☐ Can't tell ☐ No

HINT: Consider

- If there is an in-depth description of the analysis process
- If thematic analysis is used. If so, is it clear how the categories/themes were derived from the data?
- Whether the researcher explains how the data presented were selected from the original sample to demonstrate the analysis process
- If sufficient data are presented to support the findings
- To what extent contradictory data are taken into account
- Whether the researcher critically examined their own role, potential bias and influence during analysis and selection of data for presentation

ADDENDUM N

This research endeavored to identify strategies to enhance the teaching and learning of clinical skills to students registered for the qualification in primary health care. In the first two phases the current teaching and learning practices were identified through an appreciative inquiry process and an integrated literature review. Six strategies were identified as possible teaching and learning strategies. In this, the final phase, these six strategies are to be reviewed by experts in academia in order to establish consensus on the best teaching and learning strategies.

Please scrutinize the six strategies and their descriptions and answer the questions that follow.

1 **Clinical accompaniment and supervision.**

Accompaniment and supervision on campus and in practice by a qualified professional in a one-on-one ratio or no more than 5 students to one facilitator.

2. **Digital learning support material.**

A variety of audio and video digital learning support material should be provided to students. Examples of this are DVD's depicting clinical procedures, assessment of patients in the South African context.

3. **Specialised (simulation) equipment.**

Students should have access to the use of simulation and high fidelity simulation such as advanced manikins, and advanced equipment should be available during clinical training.

4. **Authentic (real) patients for assessment.**

Students should be encouraged to assess and manage authentic patients in a real time context under supervision.

5. **Contextual policies and guidelines.**

Students should be more exposed to the use of South African, contextual policies and guidelines provided by health care systems during teaching and learning of clinical skills.

6. **Holistic (comprehensive) management of patients.**

Students should be taught to manage patients holistically as an individual, member of a family and community as well as a whole person and not a disease.

Please indicate if you agree with each strategy and if you would add or change anything. Please motivate each.

1 **Clinical accompaniment and supervision**

2 **Digital learning support material.**

3 **Specialised (simulation) equipment.**

4 **Authentic (real) patients for assessment**

5 **Contextual policies and guidelines**

6 **Holistic (comprehensive) management of patients**

Please describe the applicability of these strategies in your context.

1 **Clinical accompaniment and supervision**

2 **Digital learning support material.**

3 **Specialised (simulation) equipment.**

4 **Authentic (real) patients for assessment**

5 **Contextual policies and guidelines**

6. **Holistic (comprehensive) management of patients**

Thank you for your time and expert input.

ADDENDUM O

Second Delphi round for consensus.

1. **Please indicate if you agree or disagree with the following statements. If disagree please motivate your answer.**

Strategy 1: Clinical accompaniment and supervision. Students should be accompanied and supervised on campus and in practice by a qualified professional on a one-on-one ratio or no more than 5 students to one facilitator.

Strategy 2: Digital learning support material. A variety of audio and video digital learning support material should be provided to students. Examples of this are DVD's depicting clinical procedures and assessment of patients in the South African context.

Strategy 3: Specialised (simulation) equipment. Students should have access to the use of simulation and high fidelity simulation such as advanced manikins, and advanced equipment should be available to students during clinical training.

Strategy 4: Authentic (real) patients for assessment. Students should be encouraged to assess and manage authentic patients in a real time context under supervision.

Strategy 5: Contextual policies and guidelines. Students should be more exposed to the use of more South African, contextual policies and guidelines provided by the South African health care systems, during teaching and learning of clinical skills.

Strategy 6: Holistic (comprehensive) management of patients. Students should be taught to manage patients holistically as an individual, member of a family and community as well as a whole person and not a disease.

These are the strategies identified by participating experts, during the first round as **valid, applicable and feasible,** given that finances, time and people, will be provided to make it possible.

2. **Please rank the strategies in order of importance.**

ADDENDUM P

UNI [redacted] EDUCATOR [redacted]

O- Interviewer

R – Respondent

O

Thank you for taking part in this interview. As I explained, my research is about the best teaching and learning strategies that can be used to teach nurses in the PHC programme clinical skills. As I said at the beginning, I make use of the principles of an appreciative inquiry. To start with I would like to know how you teach the present this course.

R

There is 16 weeks theory and practice integrated classes. The other subjects are distance. Except for pharmacology that is presented face to face. It is a full time course with some distance subjects.

O

So for the teaching of clinical skills, what works the best for you?

R

So you want you know how we present it and what works best?

O

What works best? Which teaching and learning strategies do you use to teach the students new skills?

R

Okay, we present it integrated as we cannot do it apart, they don't understand. So we use all the umm types, types of strategies, how you combine it in one. We do demonstrations. We have a video, we made a DVD which they can watch at home. We do groupwork, they practice on each other in the class. We have dolls in the skills lab, so for me the first four months the students stay in the skill lab although their practice is outside. For example in the practice outside, I will never let them do a papsmear on a patient if they did not do it in the skills lab and have been evaluated my me. They have enough time to practice in the skills lab. So what we do is we present the theory and practice in the class and they practice as a group. Then we give them scenario's from PAC that they must practice. Then umm the next week it must be evaluated like on physical examination of example the ear nose and throat

and the next week we evaluate on a peer. When the pass the peer evaluation they come to us for an evaluation.

O

Is this in the skills lab?

R

Yes. We are several people in the skill lab that facilitate groups 3-4 out of 60 students. Remember they do not come all at once sya about 30 on one day and 30 the next day. So then they practice with us and rotatebetween the skill lab and class depending on what system they are. So before they go to practice they are first evaluated in the skill lab. So then…

O

Sorry for interrupting, do they have a workbook were you sign these evaluations off?

R

Everything. They have an evaluating tool so they know exactly what to do and on what they will be evaluated. They choose what they want to do. The peers firstly do the evaluation as another learning opportunity and then they come to us. They must have a 70% pass rate, not 50% before they can go to practice before I can say they may go to practice to do an ear nose and throat examination on a patient. Okay

O

Umm and the 705 do you have critical points?

.

R

No there is no critical points but we do discuss that with the students. We give 70% because it is not yet on a patient. But when we evaluate on a real patient we can repeat any evaluation. Before the OSCHE we do a lot of scenarios in the skills lab because there are too many students because not all of them are evaluated in the practice.

O

What is the ration in practice between students and facilitators?

R

Okay so umm most of the time we are between 5 and 8 students per facilitator but in [redacted] there will be ten students. Facilitators move between students as they are placed in different areas. Sometimes they are less sometimes more.

O

So would you say this combinations of strategies are they ideal for you?

R

My ideal strategy for the numbers of students would be no more than 30 students per year, if you really want to deliver good students.

O

Then with how many facilitators?

R

At least 3 for 30 students.

O

So then how much contact will these students have with a facilitator if it is 10 students per facilitator?

R

Our students have currently 8 hours per week contact with a facilitator. I would like to keep it that way.

O

If you could dream and have anything you want to present this course what would you say?

R

Much, much more facilitators. Not for theory but for practice in the clinics, somebody that is trained and can help the students.

O

For example?

R

Old students, the same people that I trained that can go on. But in practice it is those who say they do not want to.

O

Because they must see patients?

R

We need more time for the students in practice. We do not have to be with them the whole time because students also learn when they have to go on their own. But you know every day that they go on their own they must come back with the patient's file and explain what they did. This is where they learn the most. When they tell me what they did and we can go back and discuss what they did and what they should do differently. Sometimes there are smaller areas that they missed, but the clinical staff signed the procedure off and then it is not correct. In my opinion student learn the most in this way.

O

So what you are saying is that student learn the best in practice, not in simulation?

R

No, there is great value in simulation but umm I cannot be everywhere. So I teach them the correct way from the beginning and I must see that they do it correctly. When the students start I have to do a lot of catch up as they do not know anything about Primary Health care level. In my opinion I cannot allow them to start seeing patients from the start. I start with re cap on anatomy and physiology and pharmacology principles. People don't know how to use an otoscope and what is a stethoscope. How it works and how to turn the head. I have got a whole lecture just on the uses of a stethoscope. That you must know it can turn and this is why you listen and what you must hear and if it is off you will not hear anything. And how to put it in your ears correctly, they don't even know that! It the small things that you have to teach them. I find a lot of value from the skills lab.

O

If you could have anything to help with the clinical teaching and learning of skills what would you add?

R

More hands

O

Umm and if you say more hands how many? What ration are you thinking about?

R

At least 6. 1 Person for 6 students. Students can support each other.

O

Umm. Are there anything else that you would add other than more hands?

R

Umm I would think more integrated manikins in the skills lab so that students can practice on their own.

O

What else would you add?

R

We added the BANK things as students must know how to use it. But they must also think out of the box, that is why I prefer to teach them from the beginning. We sometimes use the internet for videos but students cannot afford it.

O

What kind of videos do you use?

R

Only those on physical examinations. We sometimes use [redacted] DVD but there are also mistakes in

O

Is it a DVD they made themselves (locally)

R

Umm ja we use that one but I do not always agree with their methods.

O

Do you think you would like to make your own DVD?

R

Yes I would but there is not time or money to do it.

O

So to sum up: The best strategies that you would recommend for clinical teaching and learning is smaller groups of students per educator/facilitator

Manikins for the skills lab

A self-developed DVD

Do you think it is possible to attain this?

R

Yes with more money, you know finances, finances. We must produce a number of students each year and the university asks more as it about money also.

O

It there anything you would like to add?

R No

O

Thank you for your time, I really appreciate it.

ADDENDUM Q: Interview with a professional nurse.

UNI [redacted] PN [redacted]

O – Maintained

R – Respondent

O

Okay now this research of mine is about the best way for professional nurses to learn new skills or the best strategy and umm the method I used for research is called an Appreciative enquiry . In other words it we are going to concentrate on the good things and what is nice and what is working well it is not necessarily the negative stuff and it helps quite a bit as one approached it that way. So umm the first thing I want to ask you is if you now look at the practical things you did. What has really stood out for you was the best way to learn? Have you learned new things?

R

You know I only said I had learned nothing new because well what I have done now for the last twenty years, but as you now see nê there are if I go right back to the clinic when I do then because there so many patients. Some days you see up to sixty patients and in the clinic should then go to the clinic, you run through that patients. So [redacted] has learned you can examine under five minutes do what it always for me it was a long story of half an hour. I have got a lot of new information things that you noticed you do wrong. I hope nobody died, but at least I don't believe so, but I think however it is a lot of it is an enriched by the course. All I think what time wasting nê, all the Fundamentals because these are all things that we have done. I know you have to do it again but half of it was a repetition. I wish you really could just concentrate on your course of Primary Health Care. Because there is no time there is really no time to do the things as you want to do.

O

What in practice have you learned you umm umm what has worked well for you?

R

What I have learned now? JIS I don't know I think

O

See I understand you are doing two weeks at [redacted] and then you go back to your clinics and go practice. Now the two weeks in [redacted] does it works for you?

R

You know I almost think it's not enough.

O

What do you mean it is not enough?

R

It is a course I like Primary Health Care then I think you need at least four weeks.

O

Where?

R

In practice. I think definitely. Because in the mornings we saw patients that were terribly interesting because then you could now see how the patient looked, but mostly two or three then you go back and you examine the patient. And I feel the patients that we got there was not for me nê so challenging because it was one with an ear nose and throat and that type you see every day. So I think if you're over a longer period's like four weeks and they can put you at [redacted] with more challenging patients. Okay it's not all students that work in a Primary Health Care system like we work every day but I feel the patients we have seen, is not enough to give you that experience. So I would really think four weeks is better for the course for the year.

O

Okay. What else would you think could enhance your training?

R

I think if we had a video together with the practice because when [redacted] had done the examination in the first week and we come back when it is as if we had to ask her again to do it all over again because we forgot. So I think if you have a visual such as a video and you can sit at home and you can practise because if you go back, there are things that you forget then you think oh heaven how had she done it.

O

Are there skills that you learned that you did not know?

R

Definitely I have I never knew how to use a patella hammer it. It was just there. My stethoscope I use and I realize now I didn't even know when to listen with the bell and how to listen I just did it. Same as your blood pressure and um um with your examination of the neurological system. There always comes a patients to the clinic and complain of back ache or they complain of this and you say here's a packet of Brufen agg, so now you know it look for something deeper.

O

That is excellent So

R

Oh and my referrals are much more professional. I can now say exactly where the pain is not only in the patient's side.

O

That is very good. So the strategy that you would say workd the best for you is the practical contact with [redacted] that you would extend? Is there anything else that you would add?

R

No I don't think so. We go to the doctors sim la band they show uson the fancy mannikins how to listen and to palpate. We are priveledged to have [redacted] as she goes to a lot of trouble to tach us. She knows the subjct and ha sa lot of practical experience so she can tell you ho wit happened to her and how to manage the patient. All that was difficult was the ante natel and small things. We only had an afternoon and the sister was not helpful. We had to figure things out by ourselves. I would really liked to had more time to spend on the CTG machines as I do not know it well. So again more time would have helped.

O

Are there anything else you can think of?

R

No I think thats all.

ADDENDUM R: Language Editors Declaration

Language Editor's Declaration

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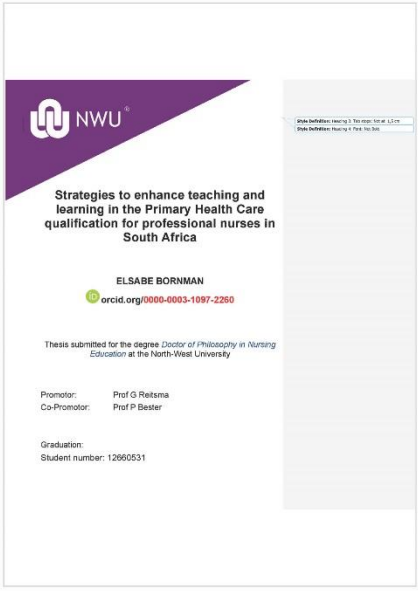

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Strategies to enhance teaching and learning in the Primary Health Care qualification for professional nurses in South Africa

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