GUIDELINES FOR PEDAGOGICAL PRACTICES TO ENSURE RESEARCH PREPAREDNESS OF UNDERGRADUATE NURSING STUDENTS: A CASE STUDY OF INSTITUTIONAL PERSPECTIVES AND PRACTICES

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Declaration

This is to certify that the work is entirely my own and not of any other person, unless explicitly acknowledged (including citation of published and unpublished sources). The work has not previously been submitted in any form to the Durban University of Technology or to any other institution for assessment or for any other purpose.

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Abstract

Background

Rigorous, reliable and credible research has proven to be the success of policy and decision - making amongst world leaders and policy- makers in the provision of healthcare. In science, research is known to be a diligent and systematic inquiry into nature and society and both these exist to validate and refine the existing body of knowledge and generate new knowledge. Progress in meeting students' educational needs with available resources requires institutional commitment to ensuring greater associations between teaching and research activity. Reputations for teaching and research are also becoming interwoven as globally, universities position themselves competitively and define their particular and distinctive approaches to knowledge transfer and knowledge acquisition. Since teaching and research are widely regarded as the two core activities of academics, it is vital to understand that the relationship between them should be enhanced by policy and pedagogical practices under respective institutional circumstances.

Aim

The aim of this study was to explore the perspectives, practices, and experiences of lecturers involved in research teaching, facilitation and supervision of research projects and proposals in the undergraduate (UG) nursing programme. Ultimately, the aim was to develop a set of guidelines, based on the findings of the study, that may assist to inform and advise all parties of the multiple dimensions and constraints of research methods and pedagogy. It is envisaged that this would be offered in a constructive and meaningful way.

Methodology

This study utilised a qualitative, exploratory, descriptive design to collect data and to understand and explore pedagogical practices as well as institutional perspectives and practices of teaching and supervising of the research module in

the relevant nursing programmes. This method of inquiry assisted the researcher to gain insight and in - depth understanding of the phenomena of the study. The findings of the study, in the form of the themes that emerged, aided in the development of guidelines for pedagogical practices that would serve to ensure research preparedness of UG Nursing students and to enrich the knowledge capacity of postgraduate (PG) students in nursing research.

Findings

The findings of this study revealed a gap in the facilitation and teaching of research in UG Nursing education. While there has been a shift towards a research and inquiry-based learning environment across the global higher-education sector, international and local institutions are trying very hard to increase UG students' exposure to research and inquiry, both inside and outside of the classroom, through various individual, departmental or institutional initiatives. However, the success of these initiatives is still highly dependent upon individual academics' perceptions of the teaching and research relationship and the development of their own academic identity. The participants indicated that there was a lack of structured guidelines to inform the relevant stakeholders on the delivery of the research module in UG Nursing. The findings also revealed that the timeframes for teaching and facilitation of the research module were insufficient. The researcher developed a set of guidelines that would serve to inform and guide lecturers and facilitators of research education in UG Nursing to ensure optimum retention of knowledge capacity of research in PG Nursing and aid post–graduate students to embark on research studies with greater ease.

Key words: Pedagogical practices; research; nursing; undergraduate; postgraduate; lecturer; supervisor; curriculum.

Dedication

I dedicate this study firstly to the memory of my late Dad and my late Husband whose faith in me remains the wind beneath my wings to date. I also dedicate this study to my adorable children Krisanne and Dashaelen and granddaughter, Kassidy who have been most patient and supportive of me.

Thank you to my amazing awesome family who cheered me on and understood my “alone” time. Thank you for never ceasing to love and care for me through it all.

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Glossary of terms

Undergraduate research – Song (2021: 407 – 411); describes research as the creation of "*new knowledge and/or the use of existing knowledge in a new and creative way so as to generate new concepts, methodologies and understandings"*. In stating this; Song (2021: 407 – 411) further purports that this could include the *"synthesis and analysis of previous research to the extent that it leads to new and creative outcomes"*.

Lecturer - In terms of this study, lecturer refers to the registered nurse with an additional qualification in Nursing Education responsible for educating GNS in level one of the four-year comprehensive course. In outcomes-based education, the educator is not merely the presenter of knowledge, but rather a facilitator of the learning process in the student (Van der Horst and McDonald, 2009:236).

Pedagogical practices - Pedagogy, most commonly understood as the approach to teaching, is the theory and practice of learning, and how this process influences, and is influenced by, the social, political and psychological development of learners. Pedagogy, taken as an academic discipline, is the study of how knowledge and skills are imparted in an educational context, and it considers the interactions that take place during learning. Both the theory and practice of pedagogy vary greatly, as they reflect different social, political, and cultural contexts (Shah 2021: 355 – 357).

Facilitation - Facilitation is a process of drawing together all categories of learning approaches, namely, teacher-centred, student-centred demonstrations and practical work to help the student to achieve the required outcome or outcomes. Jagtap (2016: 3903 – 3904); describes facilitation as an active learning methodology that may include a range of activities in the classroom that include; "*reading, making mind maps and group presentation and engage the student whole time"* and further states that these "*active learning methodologies*" are very

effective to find out students creativity and talent. The teacher becomes apart from other important figures; that of inquirer, counsellor, information provider and guide in assisting students to learn (Jagtap 2016: 3903 – 3905). In this study, the facilitator of research is one who supervisors and coaches the student to achieve his/her research outcomes.

List of acronyms

COVID-19	Coronavirus Disease 2019
DHET	Department of Higher Education and Training
EBP	Evidence-based practice
ICN	International Council for Nurses
IREC	Institutional Research Ethics Committee
KZN	KwaZulu – Natal
NEI	Nursing Education Institution
NGT	Nominal Group technique
PG	Post – graduate
SANC	South African Nursing Council
UG	Undergraduate
WHO	World Health Organisation

CHAPTER 1

ORIENTATION TO STUDY

1.1 INTRODUCTION AND BACKGROUND TO THE STUDY

The concerted efforts of the national and international communities, civil societies and private sectors have over decades helped to foster hope and opportunity for people around the world through a commitment to research and research findings. This often sees leaders, scholars and experts come together in an effort to address the issues of the social, financial and economic well-being of the world at large (Meherali, Paul and Profetto - McGrath 2017: 634). Without rigorous, reliable, consistent and credible research findings, the success of policy and decision-making amongst the world leaders would be non-existent or improbable. Suffice to say, research has had a strong and vital influence on policy-making and guideline setting in all facets of governmental approach and, notably so, in the provision of healthcare.

In science, research is known to be a diligent systematic inquiry into either nature and society or both that assists to validate and refine existing knowledge and generating new knowledge (Burns and Grove 2016:14). Although, historically there was a perception of research being conducted by people with chemistry, biology, biochemistry and other genetic degrees in laboratories at major Higher Education and Training Institutions, recent decades have proven otherwise. Nieswiadomy and Bailey (2018:01) defend that nurse educators and scholars have embraced the integration of evidence-based practice (EBP) into the nursing education curriculum in numerous ways. They realised that nursing and research can be combined and that optimal nursing care is dependent on the latest research findings.

Whilst teaching research as a subject matter may emphasise the diffusion of established knowledge, research learning may focus on the creation of new knowledge. The quality of undergraduate (UG) research knowledge and experience continues to be a critical factor in the retention and timely completion of postgraduate (PG) research (Malcolm 2014: 290). In this study, Undergraduate and Postgraduate will be referred to as UG and PG respectively. Although, the components necessary for research competencies amongst UG nurses include an understanding of the basic concepts, processes of research methods and a review of the literature in this area; research teaching and learning at an UG level may not necessarily ensure adequate student preparedness for the attainment of PG research competencies (Malcolm 2014: 289 – 295). The current Coronavirus Disease 2019 (COVID-19) pandemic has further disrupted the higher education sector with serious academic repercussions. Academic teaching and learning have seen a remodelling of its practices, adjustments to its curricula and modification to its assessment strategies. These contributing factors have further compelled the researcher in this study, to argue that exploring pedagogical practices of research methods, through the lens of research lecturers, supervisors and facilitators may be a timeous and yet powerful way to reinvent or reinvigorate the UG Nursing research curriculum especially in the remodelled educational landscape as a result of the pandemic.

1.2 THE EVOLVING ROLE OF THE NURSE

The 21st century has seen a significant evolution in the role of the nurse. Nurses work in a variety of settings, such as hospitals, classrooms, community health departments, industries and private practices. Although each role carries different responsibilities, the primary goal of a professional nurse remains the same, that is to be the patient or the client's advocate and provide optimal care based on evidence obtained through research and bridging the gap between theory and practice (Athanasakis 2013: 16). The testing of competence and innovation of nurse education has evolved to meet an esteemed standard in their continuous

strive for excellence and professional advancement (Jooste 2018: 10). Thus, the evolving role of the nurse has seen a growth in the number of nurse educators, who have begun to envision nursing students as enablers of change in the clinical practice environment. These innovators advocated a pedagogical paradigm that placed nursing students into socially meaningful partnerships with practicing nurses as a means to promote the uptake of EBP and research in clinical practice settings. Nursing research is fundamental to the practice of professional nursing globally and the importance of its inclusion in the UG Nursing curriculum cannot be overemphasised. Understanding the core elements of the research process and methodology is however a crucial enabler for students to experience and understand the concept and importance of nursing research.

Research is no novice to the nursing field. Florence Nightingale was the first researcher in the Crimean War in the 1850s and Professor Charlotte Searle was the first nurse to obtain her Masters degree although her research was never documented (Kotze 2014: 8 – 12). Research methods have been on the table of discussion since 1970, according to Peachy and Baller (2015: 434). To remain connected and relevant to the ever-changing healthcare environment, the focus of nursing research modules and content was changed from a traditional format to one of evidence appraisal and synthesis. Using an approach that incorporated service-learning and collaborative learning resulted in nursing students being provided with an opportunity to apply concepts of scientific inquiry in the real world. They were able to ask questions and critically appraise the literature and other scholarly work to establish the evidence for topics of inquiry related to their practice (Nieswiadomy 2018: 06).

According to Peachy and Baller (2015: 434), the skills obtained from research may inform healthcare decision-making and allow nurses to become better advocates for patients and provide the best possible care. Whilst, the majority of nurses who provide patient care will be consumers of nursing research and implement EBP for

optimal nursing care, the information from the findings of nursing research has the potential to directly impact on the care provided to patients in all health care settings across the globe.

1.3 PROBLEM STATEMENT

Much of the higher education teaching on research methodologies focuses more on knowledge transfer while giving little or no attention to context and application of the acquired knowledge (Munabi, Buwembo, Joseph, Kawungezi, Bajuniwe and Mwaka 2016: 4). Students' research outputs count greatly to research related statuses of most institutions of higher education. Vahed and Singh (2017: 224 – 230); in their study found that keeping track of student research-related expectations and performance is a key quality control measure. The same study found that acquired research capabilities and skills such as problem-solving and analytical skills not only empowered students for PG studies but also enabled students to be better prepared for a knowledge-based economy, which is a national imperative in the higher education research agenda (Vahed and Singh 2017: 224 – 230). There is thus a need, for the participating institution to make individual learner and institutional adjustments to align the teaching of research methods with their vision and mission statements.

Literature reviews have yielded a vast body of scholarly knowledge on the students' and lecturers' experiences of UG research that have questioned the knowledge and the capacity of researchers to take on PG studies like a Masters degree. However, less evidence exists about experiences of engagement related to UG research development or in preparing lecturers to empower these students for PG studies. There has been a renewed interest in the debate about the quality and quantity of research outputs that influence the outputs of graduate students, more so within the nursing fraternity. It should be noted that UG students' research experiences are enriched by high-impact learning competencies and structured teaching opportunities and practices (Peachy and Baller 2015: 434).

Effective teaching and learning strategies and activities within a course in research methods may provide the opportunity to engage more students in UG research. It also serves to inform knowledge translation and the application of relevant knowledge to healthcare decision-making. Quality student research is highly admired within the academic environment as the day-to-day teaching and learning is reliant on this information. Whilst, the research module may influence student research outputs, Munabi *et al.* (2016: 4) have highlighted the importance of a research culture, supported by research mentors and other experts, previous and new research training, and the opportunities to engage in research in a low-threat environment. These were further considered by the same authors as being key indicators to helping the PG Nursing student successfully attain his or her research competencies.

Therefore, a greater understanding of research lecturers', supervisors' or coordinators' perspectives on student knowledge acquisition, will not only provide a baseline from which to work, but it will help identify pedagogical approaches in research teaching, learning, facilitation and supervision, for evaluation.

1.4 AIM OF STUDY

The aim of this study was to explore the perspectives, practices, and experiences of all lecturers involved in research teaching, facilitation and supervision of research projects and proposals in the nursing programme. Depending on the findings of this study, the aim was to develop a set of guidelines, that may assist to inform and advise all parties of the multiple dimensions and constraints of research methods and pedagogy. It is envisaged that this would be offered in a constructive and meaningful way.

1.5 OBJECTIVES OF THE STUDY

The objectives of the study were to:

1. Identify the inherent adult learning principles in teaching practices to UG Nursing students.
2. Explore lecturers' views on the current pedagogical practices of teaching the research module to UG Nursing students.
3. Acquire an understanding of the perspectives of the lecturers and supervisors of research and research projects related to research knowledge acquisition by the UG student.
4. Obtain a holistic picture of the perspectives expressed by the supervisors of Masters degree candidates relating to the application and transfer of embedded research knowledge.
5. Develop a set of respective guidelines that possesses the potential to favour the productive use of research knowledge and scientific inquiry so that it may aid in the transition of a research student from an UG to a PG capacity.

1.6 RESEARCH QUESTIONS

Research questions intended to guide the inquiry to achieve the objectives. Therefore, the following research questions guided the study:

1. What are the different strategies that may be employed to ensure teaching and learning of research methodology to UG students?
2. How does the current research pedagogical practices encourage research outputs and publication writing amongst UG students?
3. How does the current pedagogical UG research teaching and practice methodologies offer or provide sufficient transition for the UG student to progress to higher-level PG studies?
4. How does the current research pedagogical practices sufficiently ensure adequate research knowledge capacity for self-directed research appraisal and inquiry of the graduate nurse for PG studies in nursing?

These research questions are further aligned to the aspects outlined in the proposed theoretical framework that was used by the researcher as depicted in Table 1.1. The Healey and Jenkins Framework is made up of four aspects:

1. Research-Tutored.
2. Research-Based.
3. Research Led.
4. Research Oriented.

These four aspects are further detailed and applied in the Theoretical Framework section.

Table 1.1: Research questions aligned to the proposed theoretical framework

Precepts of Healey and Jenkins Framework	Research questions aligned to the theoretical framework
1. Research-tutored	What are the different strategies that may be employed to ensure teaching and learning of research methodology to undergraduate students?
2. Research-based	How does the current research pedagogical practices encourage research outputs and publication writing amongst undergraduate students?
3. Research-led	How does the current pedagogical undergraduate research teaching and practice methodologies offer or provide sufficient transition for the undergraduate student to progress to higher-level post graduate studies?
4. Research-oriented	How does the current research pedagogical practices sufficiently ensure adequate research knowledge capacity for self-directed research appraisal and inquiry of the graduate nurse for postgraduate studies in nursing?

1.7 SIGNIFICANCE OF STUDY

In exploring the pedagogical research practices and research, supervision in the UG Nursing curriculum, and discussing and describing the challenges and benefits of using the prescribed approaches to teach research methods, the researcher hopes to highlight the teaching strategies that promote research teaching and learning to UG Nursing students.

The current undergraduate degree incorporates research basics in their modules like terminology in methodology and the research process fundamentals. These form the groundwork and foundation of research projects in masters and doctoral studies. A masters and doctoral student is required to have some embedded knowledge of these foundational research principles.

Teaching and learning strategies and activities within a course in research methods may provide the opportunity to engage more students in UG research and achieve similar benefits for students who participate in extracurricular research. Thus, it may be important to provide a foundation and instil excitement for research amongst other health sciences UG students, whilst encouraging faculties and students in other disciplines to use a similar approach. It was envisaged that the findings of this study will provide a clear vision of the 'students as researchers' approach. The benefits of adopting a 'students as researchers' approach will also accentuate the need for the completion of the research cycle for students, through supporting research dissemination and publication at an UG level.

The proposed guidelines aim to accentuate how improved methods of research facilitation and teaching can be navigated at UG level utilising the principles of adult learning. The proposed guidelines will also endeavour to guide the management of newly appointed lecturing staff. Therefore, adoption of the proposed guidelines can assist management processes that have the task of creating a work environment which favours the productive use of skills and

teaching practices. These guidelines can advance competent graduates with a sound research knowledge capacity that are ready to undertake PG studies and ultimately contribute to improved healthcare.

1.8 RESEARCH METHODOLOGY

This study employed a qualitative, exploratory, descriptive design to collect data to understand and explore pedagogical practices as well as institutional perspectives and practices of teaching and supervising the research module in the relevant nursing programmes. This was done to develop guidelines for pedagogical practices that would ensure the research preparedness of UG Nursing students.

1.9 STRUCTURE OF THE THESIS

CHAPTER 1: OVERVIEW OF THE STUDY

In chapter 1, the researcher aimed to render an overview of the study by presenting the problem statement, key objectives, and significance of the study, as well as a brief view of the related literature review and the methodological approach of the study.

CHAPTER 2: LITERATURE REVIEW

In this chapter, literature that describes and debated the value and practice of teaching research methods to UG Nursing students from a local, national and international perspective were provided.

CHAPTER 3: THEORETICAL FRAMEWORK

Chapter 3 provides an overview of the theoretical underpinnings that guided the study and the conceptualisation of how the pedagogical practice of research

methodology was outlined, further applied and contextualised to the topic of inquiry.

CHAPTER 4: RESEARCH METHODOLOGY AND DESIGN

In this chapter, the researcher discusses the research methodology and design that outlined the strategies used to address the main context of the study. A detailed discussion on the sample selection, sample size, the collection of data and the analysis of the data is included here as well.

CHAPTER 5: PRESENTATION OF FINDINGS

Chapter 5 presents the results of qualitative data using a thematic analysis of the data and the key findings that were included and elaborated on, by way of themes and sub-themes. Findings from interviews were corroborated by the review of the accessible documents from the various institutions.

CHAPTER 6: DISCUSSION OF FINDINGS

This chapter provides a discussion of the findings in relation to the facilitation of the research module in the UG curriculum.

CHAPTER 7: GUIDELINES FOR PEDAGOGICAL PRACTICES TO ENSURE RESEARCH PREPAREDNESS OF UNDERGRADUATE NURSING STUDENTS

This chapter focuses on guidelines for the implementation of research methodology courses and the pedagogical practices that embrace the facilitation thereof, that can influence successful research knowledge transfer to the UG student.

CHAPTER 8: CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

Chapter 8 presents the conclusion, limitations and recommendations of the study.

1.10 SUMMARY OF THE CHAPTER

This chapter provided an overview of the study. The objectives of the study together with the problem statement and rationale was outlined. The chapter alluded to the development of guidelines that could strengthen the pedagogical practices of UG research programmes, thereby benefitting students, faculty mentors and the university. This could help lay a sound academic foundation to enable students to develop independent critical thinking skills along with other oral and written communication skills. The following chapter provides a detailed review of the relevant literature, providing an in-depth understanding of how effective teaching and learning of the research process impacts valuable learning objectives that could have a lasting influence whilst preparing UG Nursing students for professional service and enhancement of healthcare.

CHAPTER 2
LITERATURE REVIEW

2.1 INTRODUCTION

This chapter drew on past studies that related to the topic of pedagogical practices in research education to present-day practices of what is of relevance to the topic of inquiry. Neuman (2014: 27) describes the literature review as a “carefully crafted” account of recent studies on the proposed topic of interest. The literature review in this study is based on a review of studies undertaken aligned with the research problem and aims of the study. Aspects of research methodology were sourced to identify trends and practices in research education in an attempt to meet the objectives of the study. In sourcing practices of research education in nursing, one cannot exclude the valued perspectives and experiences of all relevant stakeholders of the nursing research education journey. These were considered from local, national and international perspectives to identify trends, gaps as well as best operating practices, in teaching and learning of the research module in nursing education.

2.2 SOURCING RELEVANT LITERATURE

For the purpose of the study, a literature search was conducted using various search engines such as, Academic Search Complete; Cumulative Index to Nursing Allied Health Literature (CINAHL) plus with full text, EBSCO Host, Education Resources Information Centre (Eric) on EBSCO Host platform, Google Scholar, Medical Literature Online (Medline) with full text, South African e-publications, Science Direct and the Ministry of Health and WHO websites. Different search words were used related to the research topic such as nursing education, nursing research, evidenced based practice, UG research. Terms and concepts were used independently and combined with other key terms to broaden search parameters. The literature search was conducted from

inception to conclusion of the study to exhaust all perspectives of the topic of inquiry.

2.3 THE GENESIS OF RESEARCH IN NURSING

To understand the proposed inquiry, one requires an in-depth view of the inception of research in the field of nursing. Of recent, much deliberation has surrounded the area of nursing history and its relevance to nursing education and current trends in practice (Nieswiadomy 2018: 1 – 6). The incorporation of research methods in the training of health care practitioners has been discussed from as early as the 1970s and while much effort has been afforded to achieving this aim, there is minimal support for the pedagogical approaches (Peachy and Baller 2015: 434). The acquisition of research skills and the ability to fully understand the research methodologies rely fully on participation in the research project (Adedokun *et al.* 2014: 139).

Nursing is a scientific art that supports EBP and therefore the boundaries between research and nursing practice can become somewhat blurred (Peachy and Baller 2015: 434). Research forms the basis of, supports and informs healthcare decision-making. Without research, the concept EBP will be negated (Burns and Grove 2016: 14). Since the days of iconic leaders and theorists in nursing, research has been undertaken to test current trends in practice.

Research was introduced at the very foundation of this art of caring. Florence Nightingale, a pioneer of the profession was the first researcher in the Crimean War in the 1850s when she called for practice-based research. The same study noted that these very pioneers of nursing who had completed Masters degrees and seemingly incorporated a research-based practice during their professions went on to attempt higher studies with much success (Kotze 2014: 8 – 12). Numerous methodologies have been explored since 1970. Peachy and Baller (2015: 434) maintain that the progressive strives for excellence in the healthcare environment led to the introduction of nursing research modules and

content was changed from a traditional format to one of evidence appraisal and synthesis. Ozay (2012: 453 – 464) argued that traditional ideas of knowledge acquisition have since evolved and now circulated in a manner that requires skills aligned with research and inquiry. Rather an evidence-based arena of scientific knowledge acquisition is now evident.

2.4 RESEARCH IN EDUCATION AND TRAINING OF THE NURSING STUDENT

At the commencement of the UG programme, at most Nursing Education Institutions (NEI), research projects have been included in the curriculum and formed a component of the final assessment criteria. Research has been part of nursing education and has since moved from a predominantly didactic approach to more evidence practice-based projects in the learning process (Healy and Jenkins 2017: 2). An exploration of the levels at which academics influenced research education and practices was made and distinguishing between the educator and the student was established. Upon drawing on the experiences that spanned over two decades, policies and practices were embedded into UG research and inquiry into the Higher education Institutions (HEIs) (Healy and Jenkins 2017: 2). Meeker, Jones and Flanagan (2008: 377) argue that at whatever stage research is introduced into the training programme, students find it difficult or challenging to appreciate the value of research in their practice. Adding to this, is the knowledge and experience of the faculty in teaching research (Spiers, Paul, Jennings and Weaver 2012: 3). A structured programme, based on evidence-based practice to rectify shortcomings, can enhance the research outputs of the graduate nurse.

Tertiary education aspires to produce high-quality graduates and graduate attributes as proposed by Ozay (2012: 454 – 464). This author argued that to facilitate this aspiration, students had to acquire knowledge and understanding through the process of research and understanding. Nursing is renowned for its continuous “strive for excellence” characteristic as outlined in the characteristics of the nursing profession (Jooste 2018: 9). It is, therefore, no

surprise, that the introduction of research to nursing education came to be and has since made great development, ensuring many nursing students graduate to the level of doctorate.

2.5 RESEARCH KNOWLEDGE ACQUISITION IN NURSING

While a significant amount of interest to promote research skills and the undertaking of PG studies is rife internationally, little attention is afforded to research methodologies in nursing UG studies (Lombard and Kloppers 2015: 2). The challenge of framing a research idea and the successive re-drafting can be a relatively new, yet an overwhelming experience for UG students, especially as they are expected to make the transition to an independent mode of study (Vahed and Singh 2017: 224). Lombard and Kloppers (2015: 2) identified that the UG research evaluation process is one of the weaker points in higher education facilities. The authors debated over and agreed that there was a need to orientate UG research evaluators through training initiatives. This has raised many questions about the success of graduate projects and concluded that a thorough analysis had to be done to defend the discrepancies in grades awarded by thesis supervisors and examiners.

Kuh (2017) in his video presentation, maintained that there should be reliance on evidence to support the success of students. This presenter further identified ten high-impact activities to enhance student success and five of these involved engaging the students in research and inquiry. The pedagogical shifts proposed by Kuh (2017) suggested a review of the practices that caused the shift and places the student experience at the centre. This leads to the four “overlapping ways” in which students and educators may engage (Healy and Jenkins 2017: 03). In their framework; the Healy and Jenkins Research-Teaching Nexus; four domains are explored in the teaching of research methodology namely: Research-Tutored, Research-Based, Research-Led and Research-Oriented. Healy and Jenkins (2017: 17) embarked on a mission to enhance the linkage between education and “discipline-based” research. They concluded that the sure way to link education and research in students was to engage them in

inquiry, which meant they would become “producers” and not mere “consumers” of knowledge.

Peachy and Baller (2015: 436) state that UG students of the Health Sciences are similar to an underserved population in attaining research experience. Apart from the limited resources and research pedagogical practices for learning, the researchers noted that there were many other factors such as teaching and assessment strategies within a training programme, that still needed to be considered. Despite the many techniques and avenues that can be adopted by the lecturers, the time factor for learning must be evaluated for effectiveness.

Peachy and Baller’s (2015: 436) study noted that students are unable to derive a researchable problem and extract and utilise literature relevant to the topic of inquiry. The same study adds that faculty lecturers and supervisors find that covering content was disproportionate to the research project and evaluation. In a study by Long, Bischoff and Aduddell (2019: 172), the research process was investigated, and it became apparent that more guidance and innovative teaching and learning strategies were warranted to assist students to understand the research processes. The research curriculum is guided by the research module descriptors. A module descriptor, which is the main source of information about a specific module, summarises key information about the module including the module title, credit value, aims, intended learning outcomes and assessment methods. The research study guide or learner guide provides HEIs and students with research course outcomes, expectations, progression criteria of research projects, and various grading criteria for formative and summative assessments.

2.6 THE RESEARCH STUDENT PERSPECTIVE

According to Vahed and Singh (2017: 224-230), research learning at an UG level is more likely to be the first time a student is expected to adopt a self-directed role as a researcher. This is different from their previous learning

experiences where their lecturer mainly drives their work. The challenge of framing a research idea or a topic and the successive re-drafting is truly new for UG students. This can be overwhelming for students, especially as they are expected to make the transition to an independent mode of study. The authors further reveal in their study that UG research can be the bedrock of PG research, particularly in terms of ensuring that there is a much-needed supply of future researchers to be recruited and trained that will add to the country's knowledge economy. Ozay (2012: 455 – 464) identified that pressures arising from economic constraints imposed a utilitarian perspective on the relationship between research and teaching. The ranking of universities is measured by the research outputs of its faculties and depends a lot on the departments' capacity to acquire funding and production of high-quality publications. This leaves educators, who are driving research at ground level, with the dilemma of finding a balance between research outputs and research teaching. In addition to this, Ozay (2012: 455 – 464) states that universities offer modules in research designed to assist in developing research skills and methodologies. However, studies revealed that students' perceptions of the UG research were not favourable as they voiced dislike and claimed its non-relevance. More importantly, studies revealed that students felt that much knowledge retention took place in the first year of training, but this task is given at the end and felt that they were merely an audience to research and had little involvement in the actual research process (Ozay 2012: 456).

While this situation prevails; nursing students enter the profession with a view to practice the art of nursing. Few step into the world of academia and though it may be the forethought of some; a thorough grounding of the profession is required before embracing the world of nursing academics to fully explore the world of research.

Sudria, Redhana, Kirna and Aini (2018: 91) in their expression of Experiential Learning Theory, described learning as a process whereby knowledge is created through the transformation of a person's experience. Linking knowledge can help bridge the gap between what was previously unclear or unfamiliar to what is now known and experienced. This can be likened to the nursing process, according to Burkhart and Hall (2015: 160). In the United

States, a decline in training nurses is expected, due to nurses that are exposed to the researcher role and ultimately pursue research graduate education in nursing (Burkhart and Hall 2015: 161). It was further added that students are often negative and consider their research courses a nightmare.

A study by Macheski, Buhrmann, Lowney and Bush (2008: 44) supports the view that students have a negative attitude to research courses. Quality research teaching and supervision at an UG level provide the impetus for research lecturers/facilitators and supervisors to successfully engage with students' allowing them to progress to higher levels of PG studies (Vahed and Singh 2017: 224).

Supporters of rigorous UG research engagement claim that quality supervision enables students to effectively engage with their research projects, enabling them to develop higher-order research-related skills such as critical thinking skills. It is noted that these skills not only assist students to plan and organise their research work in real-world settings but help students to also hone in on their individual problem-solving and analytical skills (Vahed and Singh 2017: 230). Notably, these capabilities can be applied to the professional practice of any pedagogical practice, thereby enabling students to be better prepared for a knowledge-based economy. It should also be noted that this is a national imperative in the South African Department of Higher Education and Training (DHET) research agenda.

2.7 RESEARCH AND SOUTH AFRICAN NURSING EDUCATION

Currently, the South African Nursing Council (SANC), as a Nursing Education regulatory body, does not prescribe standards on how the nursing research module should be facilitated in the UG Nursing programmes at Nursing Education Institutions (NEIs) in South Africa. It does however outline the research module descriptors, the allotted credits, duration of course content and outcomes. There are currently no set guidelines on how best to navigate this important module to ensure optimum outcomes for best practices in health care or acquisition of scholarly knowledge.

Each NEI is allowed to devise their assessment criteria and strategies accordingly to ensure that the research module is facilitated to meet the desired learning outcomes. According to the study by Peachy and Baller (2015: 434), the inclusion of research methodology in professional health education courses has been actively debated since the 1970s. The same study notes that although there was some effort directed at achieving such an aim, little has been written about any successful pedagogical approaches to that effect.

Arguably, what is then needed is a rigorous exploration of research supervisor perspectives on student knowledge acquisition and current research teaching and learning practices in the UG Nursing programme. Scientific inquiry provides PG Nursing students the opportunity to become responsible professionals of competence and integrity in the area of health and human performance. It can also stimulate the development of independent critical thinking skills as well as oral and written communication skills. This can further instil in the UG student the confidence to form one's conclusion based on available evidence, promoting independence, collaboration, and innovation.

Vahed and Singh (2017: 224) argued that little has been documented on developing students' experiences of UG research studies in preparing lecturers to empower students for PG studies. These authors found that proponents of UG research claim that quality supervision facilitated students and allowed them to engage with their research project; helped develop critical thinking, planning, and structuring of their research work in the real-world setting. This further assisted with developing problem-solving and analytical skills, which is one of the core elements of understanding the research process.

2.8 RESEARCH AND INTERNATIONAL NURSING EDUCATION

A study was done in India that examined the pace and progress of nursing research in the Asian continent and noted that research was not new to nursing and that nursing as a profession often had to underpin practice with relevant

theories from other disciplines to inform practice (Macaden 2020: 6 – 11). Whilst these theoretical perspectives helped express and guide the nature of the nursing practice, they did not guide nursing research. This study concluded that whilst nursing research has progressed tremendously in the developed world and was keeping pace with their counterparts in the health, education and social care sectors, a similar pace in progress has not been manifested in developing countries. Therefore, it became essential to generate a unique knowledge base for nursing research that allowed the profession to evolve its own rights with disciplinary credibility (Macaden 2020: 6 – 11). Another study revealed that in India, the nursing profession followed EBP and that statutory councils such as the Indian Council of Nurses, have initiated continuing nursing education at the national and state level as a mandatory practice to renew the licensure for nursing practice (Sawane and Kaur 2018: 39). Inter-professional research for nurses and inculcation of research in the curriculum is mandatory. Sawane and Kaur (2018: 39); add that the nursing educator or lecturer, in today's times of rapid advancement in technology, may no longer be the only way for knowledge and skill transfer, both in the classroom and in the clinical setting. Findings from this study revealed that the integration and application of theory to practice is critical in nursing. Therefore, most nursing colleges recommend strategies to improve nursing education by recruiting more experts that can support existing faculty to develop their educational research provision and practice (Sawane and Kaur 2018: 39).

Macaden (2020: 6 – 11) agreed and stated that western ideas such as EBP, quality assurance, and quality improvement have been propelled by research in the nursing field. Despite there being a large number of individuals in the faculty of nursing with the necessary training and experience, there exists a scarcity of skills in pursuing active research to generate knowledge that informs nursing practice. This can be ingrained at an UG student level. Kean University in the United States has implemented a mentorship programme to foster scholarly and professional research growth in nursing education (Krause-Parello, Sarcone, Samms and Boyd 2013: 106). These authors have concluded that while research is a requirement for one's career advancement, nursing may

not have as much consideration. They further recommend the integration of nursing and research in nursing education to increase the quality and outcomes in practice, and thus the need for good research education in training.

2.9 THE RESEARCH AND EDUCATION JUNCTION

Healy and Jenkins (2017: 54) make a distinction between students who “build” on knowledge and those who “explore and acquire” existing knowledge where their experiences are a novice. The first can be seen as worthy for senior students, however, our experiences teach that given sufficient support and encouragement, more students can engage in learning discoveries and inquiry. It was this course of the discussion that led to linking “education and research” and “UG research” (Healy and Jenkins 2017: 54).

There have been limitations of the studies reviewed as proposed by Hurlbut and Elkins (2018: 1 – 3); who further advised that more studies must be undertaken before drawing firmer conclusions about the nature of the link between research and teaching of research and instil a passion for everyday relevance in healthcare.

Ali and Younas (2021: 116 – 118) first proposed an examination of the possible link between research and the time spent on teaching. Secondly, they maintained that if a curvilinear relationship was not detected, a “regression analysis” considering factors such as discipline and level of study would result. This he noted would affect both the role of research and the role of teaching research. Thirdly, these authors agreed that supplementing the regression analysis could occur at the level of the individual, with a thorough departmental level analysis that measured outputs such as available teaching strategies and resources. This, he noted, would create a balance between knowledge transfer and knowledge acquisition.

2.10 CONTRASTING PERSPECTIVES OF THE RESEARCH-EDUCATION JUNCTION

Ali and Younas (2021: 116 – 118), explored the positives and negatives in the research and teaching link. An article presented by Sawane and Kaur (2018: 39) corroborates many of the deductions made by highlighting the following aspects:

2.10.1 Positive relationship

- Several arguments postulate a positive relationship between research and teaching.
- Research ensures expert and contemporary knowledge transfer to the student and this contributes to learning.
- Information may be outdated especially in developing areas and lecturers who are active researchers may bring this updated information to the students. Research results may be used to amend and clarify topics.
- HEIs are sure to benefit from exposure to updated methodologies with upgraded scholarly activity.
- Education from active researchers are more inclined to a critical approach rather than just a “passive acceptance” of facts.
- Students have come to appreciate being taught this way, which adds to the authenticity of the work.
- “Research leads to credibility enhancement”. Students respect teachers who are esteemed and respected in their fields.
- Active research interest is for good university teaching. There is a correlation between the two that lead to excellence in research.
- Exposure to research makes students more likely to consider doing research themselves.

2.10.2 Negative relationship

- Time is very limited to do both. Students could do with more time.
- Teaching success may depend on gregariousness that might tend to be inversely correlated with research success attributes such as intellectuality.

- Research tends to be much more specialised than teaching and this would produce gaps between research content and research teaching content.
- In consideration of these perspectives it is evident there exists a correlation and the importance is evident to look deeper into pedagogical practices that can improve research outcomes in the graduate nurse.

2.11 ADULT LEARNING PRINCIPLES AND RESEARCH OUTCOMESIN NURSING EDUCATION

Tan (2007: 207) expressed that UG research structures a way for scholars to become independent thinkers and gets them in readiness for PG programmes. It was revealed that basic research concepts were required to be emphasised and integrated earlier in the curriculum and the skills and activities needed in the research process were present, but not explicitly tied to the research project and therefore caused some confusion among faculty and students (Long, Bischoff and Aduddell 2019: 171). A pedagogical culture was proposed in which ideas could be debated, and investigation and evaluation of the teaching and learning of the subject could be carried out because very few interventions relating to research curriculum design and teaching existed (Vahed and Singh 2017: 224 – 226).

Aligning a learning principle like a Research-Teaching Nexus to a curriculum can impact the outcomes of the research module. While accepting that there are no “one size fits all” kind of approach to teaching research; the multifaceted ways in which research can be taught at NEI’S cannot be overlooked. The study of the relationship between the teaching-learning process and research is a controversial subject in institutions of higher education. Currently, there is a shift from focusing mainly on the activity of the academic towards a much deeper approach that encompasses the role of students. There is a more in-depth exploration of synergies between teaching and learning in higher education and research, and aspects related to institutional culture and university policy. Elken and Wollscheid (2016: 9) exhaust this area of interest, highlighting the points of consideration above. They further state that Higher Education and Training

Institutions are now calling for the products of research to be utilised and transferred to innovative education. This means going beyond the past notion of good research guaranteeing good teaching.

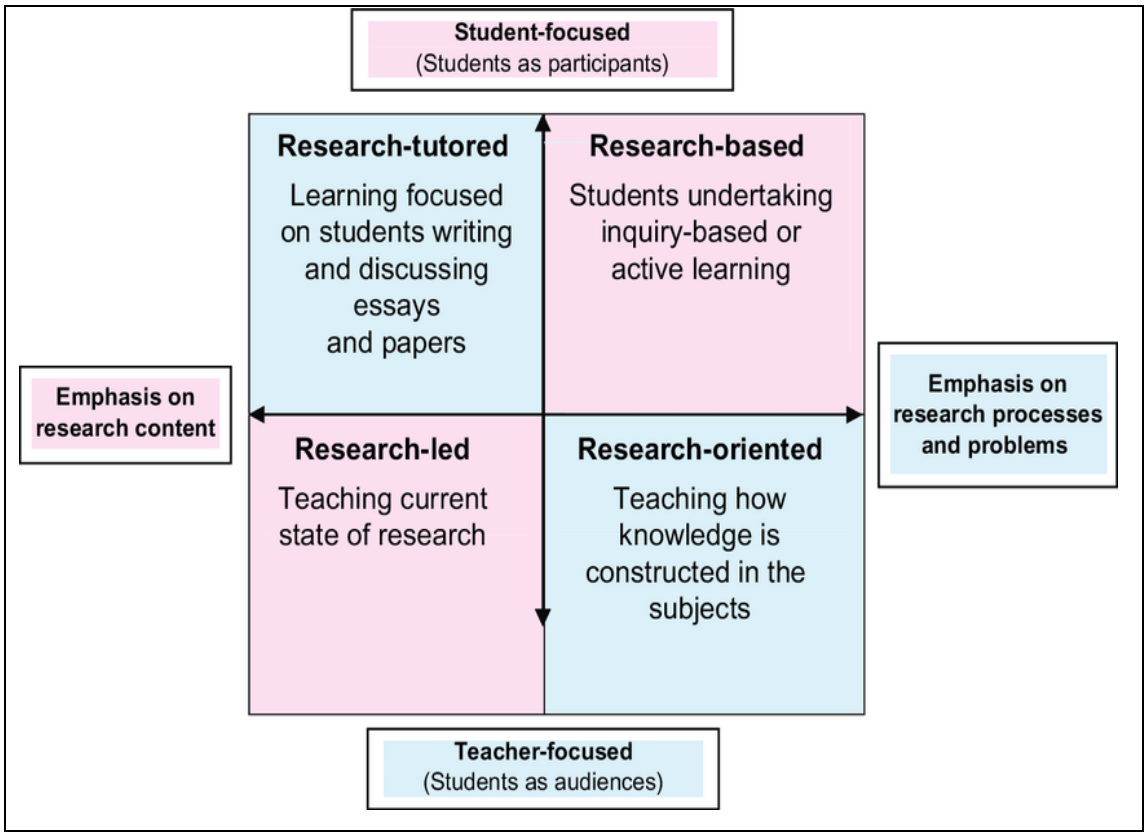

Figure 2.1: Modified framework for research in UG learning adapted from Healy and Jenkins (2017: 3 – 17)

While the concept of research in nursing and higher education is given recognition in its endeavour to improve on healthcare trends in nursing and associated field; the literature reviewed expresses the lack of a standardised structured delivery of teaching the methodologies to achieve an optimum quality outcome. PG study facilitators have found the area of research knowledge to be inadequate. The research curriculum warrants review and improvements. More studies are needed in the area of teaching and learning of research to determine further best practices.

2.12 SUMMARY OF THE CHAPTER

This chapter has helped to contextualise research pedagogical practices. Insight was gained into UG Nursing research as a subject matter, as well as the international and local perspectives and practices of research teaching and training to UG Nursing students, as related to the topic of inquiry. Student perspectives and teaching methodologies were explored to afford an understanding of the inquiry. The inception of the research module and its journey thus far highlights the progressive nature of the nursing profession with an ever-continuous endeavour to enhance healthcare in South Africa. The following chapter will focus and elaborate on the theoretical framework that was used to guide the study.

CHAPTER 3

THEORETICAL FRAMEWORK

3.1 INTRODUCTION

The previous chapter presented a review of the literature related to the topic of inquiry. The genesis of the research was explained and the progression of this component related to the nursing education curriculum in higher education was explored. This chapter will present the theoretical model that guided the current study, further examine related theories and justifies the relevance of the chosen model. It should be noted that while there exist, numerous models that aim to guide teaching and learning, this chapter justifies the utilisation of the Healy and Jenkins model and how it was applied to the study.

3.2 THE PURPOSE OF THE THEORETICAL FRAMEWORK

A theoretical framework is a structure that directs research on formal theory based on an explanation of the relevant phenomena (Maree 2015: 30). Brink, van Der Walt and van Rensburg (2014: 26) further claim that every study should have a framework as it is the underpinning of any study. It assists in the organisation of the study based on propositional statements resulting from current theories. Maree (2015: 31) also defines a framework as an abstract, logical structure of meaning, such as a portion of theory, which guides the development of a study and enables the researcher to link findings to a body of knowledge. Therefore, within the context of this study, the following theories were explored for their suitability and relevance to the topic under study. as explained below.

3.3 SOCIAL LEARNING THEORY

The Social Learning Theory relates to the learning processes and social behaviours and proposes that new behaviours can be acquired by direct

observation and imitation of others. Studies by Devi, Khandelwal and Das (2017: 721) and Bandura (2006: 165) perceived self-efficacy as a person's notion or belief in his or her competence to plan and execute a delegated task to achieve an outcome. These authors noted that, if one aimed high; one was motivated despite any obstacles that may present themselves. Four important aspects have been outlined which are mastery experiences, vicarious experiences, social persuasion and physiological responses to experiences. The Social Learning Theory (Figure 3.1 below) encompasses all traditional behavioural theories, in which behaviour is primarily ruled by reinforcements emphasised by various internalisations of the student (Devi, Khandelwal and Das 2017: 722).

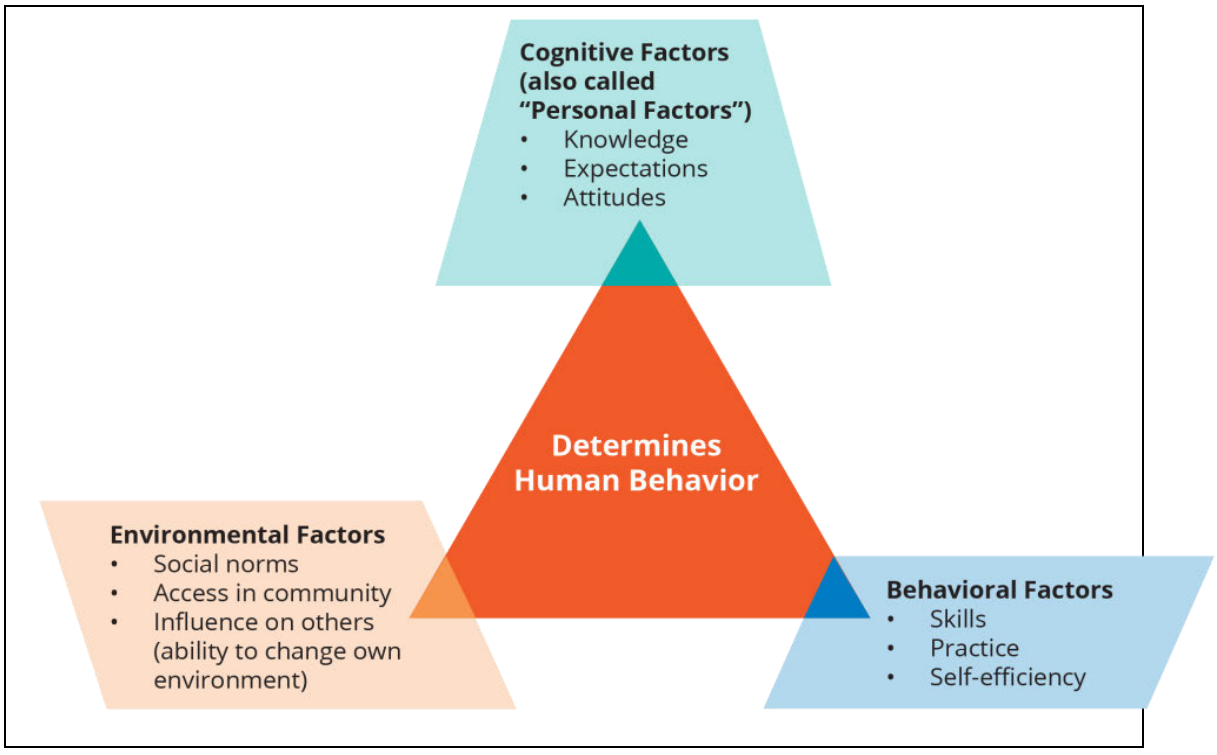

Figure 3.1: Bandura's Social Learning Theory Model

This theory highlighted a variety of learning processes of an individual such as behavioural, environmental and personal factors that determined human behaviour and, in this case, learning. However, it did not apply to the proposed study as very little is said about pedagogical practices.

3.4 KOLB'S EXPERIENTIAL LEARNING THEORY

Kolb's Experiential Learning Theory operates on two degrees; that being a four-stage cycle of learning and four separate learning styles. Kolb's Theory (Figure 3.2 below) focused primarily on a learner's internal cognitive processes (Sudria *et al*. 2018: 91). Research education may draw on the cognitive aspect of experiential learning; however, this theory suggested that learning must involve the acquisition of concepts to be applied in multiple situations.

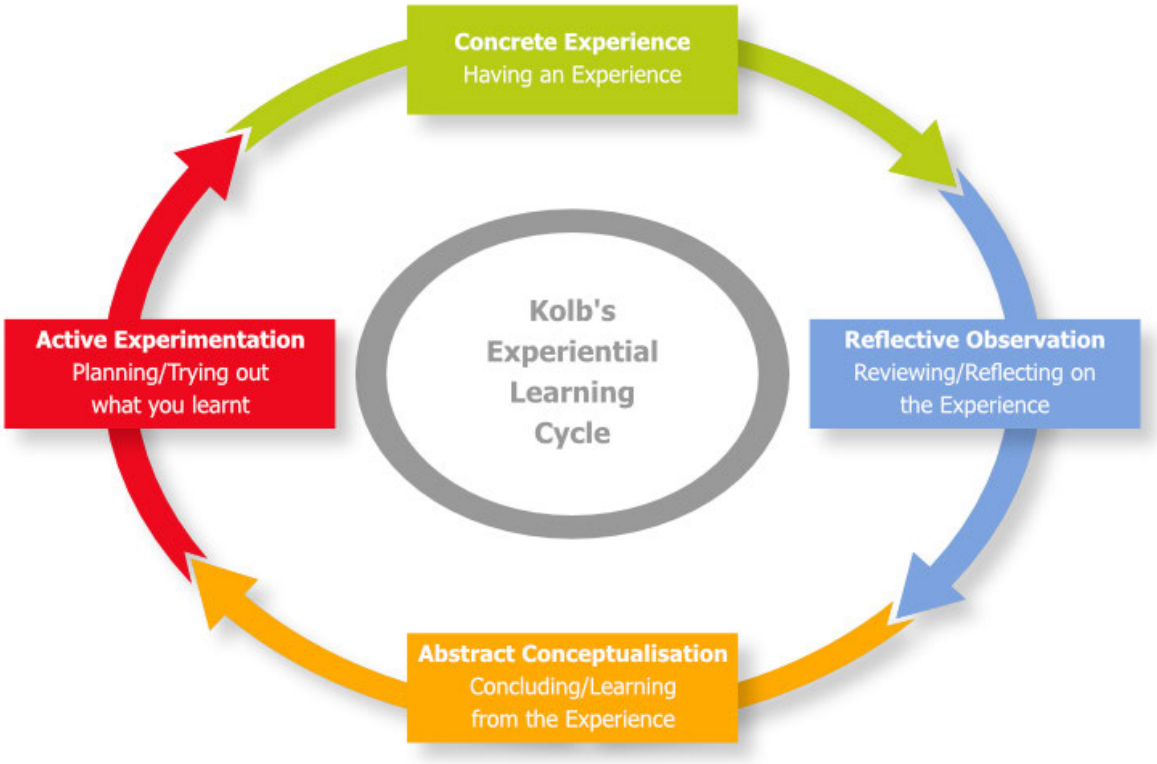

Figure 3.2: Model of Kolb's Experiential Learning Theory Model (Sudria *et al*. 2018: 91).

The following are the components of the model:

- Concrete Experience – This is a reinterpretation of an existing experience.
- Reflective Observation of the New Experience – This component relies on the understanding of the experience.
- Abstract Conceptualisation – This means that from the understanding, there should be an emergence of new ideas.

- Active Experimentation – This occurs when there is the application of the idea.

Although Kolb's Experiential Learning Theory could have been applied in this study, some of its components neglected the exploration of the actual transfer of knowledge content.

3.4.1 BACKGROUND TO THE THEORETICAL MODEL USED TO GUIDE THE STUDY

Ozay (2012:454 – 464) undertook a study among academics of various academic backgrounds and identified the Research Teaching Nexus. This model forms a framework that is categorised into three distinguished planes of research and teaching and was considered apt in guiding this study.

The following are the various dimensions of the Research Teaching Nexus:

- The Tangible Nexus – This dimension focuses on the transmission of current knowledge
- The Intangible Nexus – Here the focus is on influencing student's perception of the status of knowledge and their attitudes toward knowledge
- The Global Nexus – This dimension focuses on the departmental impact of the research programme

Ozay (2012:454 – 464); later proposed that there are dimensions of this Research Teaching Nexus, which can be specifically and directly diffused or embedded in research teaching and facilitation. This multidimensional model would be useful and relevant in research curriculum design and knowledge production in teaching and learning. This author further identified the following four different aspects of the Research Teaching Nexus:

- Research-led.
- Research-based.
- Research-oriented.

- Research-informed.

Healey and Jenkins (2012: 128 – 144) further built on this Research Teaching Nexus by placing these forms in a model:

- Student-focused versus teacher-focused and students as participants versus students as the audience in the first axis.
- Emphasis on research content versus emphasis on research processes and problems in another axis.

3.5 THE RESEARCH AND CURRICULUM DESIGN NEXUS

Ozay (2012:454 464) viewed the nexus (Figure 3.3 below) as research-informed teaching. Healy and Jenkins (2017:3-6) described the nexus as a multi-level relationship that globally focused on all facets of research intending to provide direction, frameworks and resources to all role-players of research.

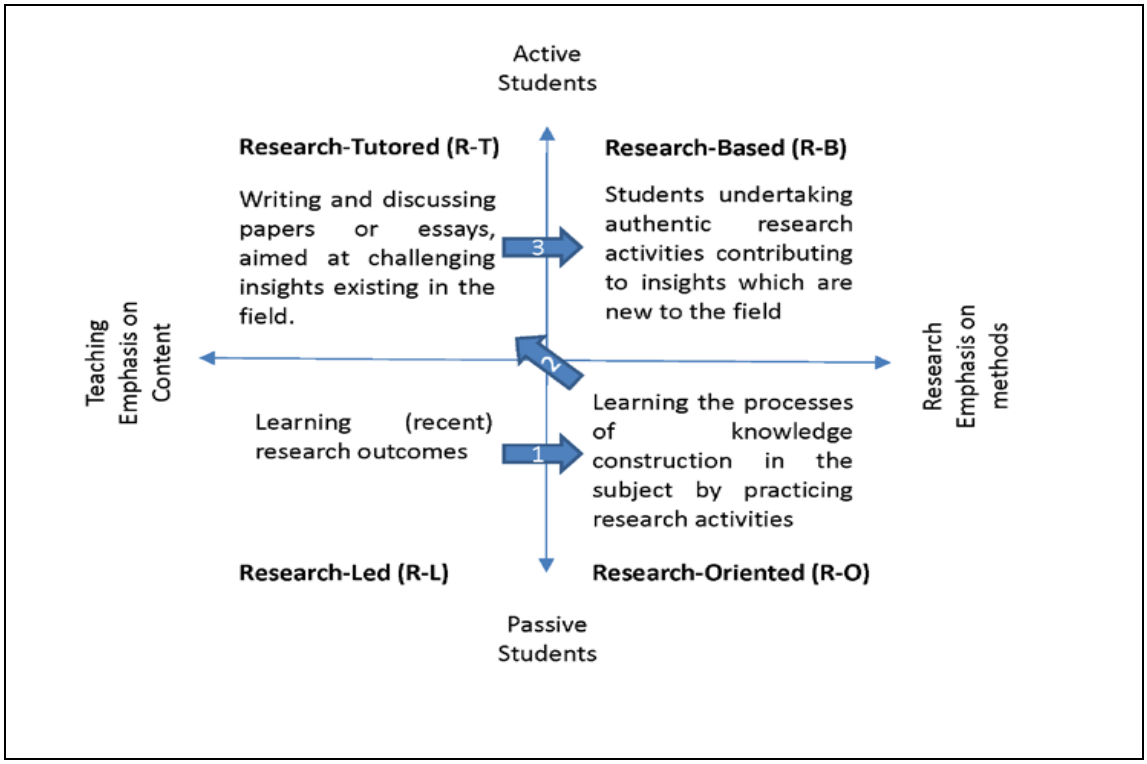

Figure 3.3: Curriculum Design and the Research Teaching Nexus (Ozay 2012: 453 – 456).

The Nexus Model formed a framework for the exploration of many curriculum approaches as a basis for the engagement of students in research inquiry. Pilkington (2010: 247), in her review of the Nexus by Healy and Jenkins, stated that the creators of the model explored research and research inquiry in the UG curriculum in such a manner that it was accessible to policymakers, academics course leaders and educational developers.

3.6 THE MODIFIED RESEARCH TEACHING NEXUS

Ozay (2012: 455 – 464) highlighted this so-called research-informed nexus as a key element of the model. It was proposed that this represented a scholarly approach to teaching and learning and therefore should be linked to all the possible practices. This also expanded on the concept of a research-based curriculum, and that teaching as academic work and organising of studies in the form of a curriculum; should be based on existing knowledge about learning. The modified model (Figure 3.4), is student focused and could therefore be utilised to contribute and emphasise the original model.

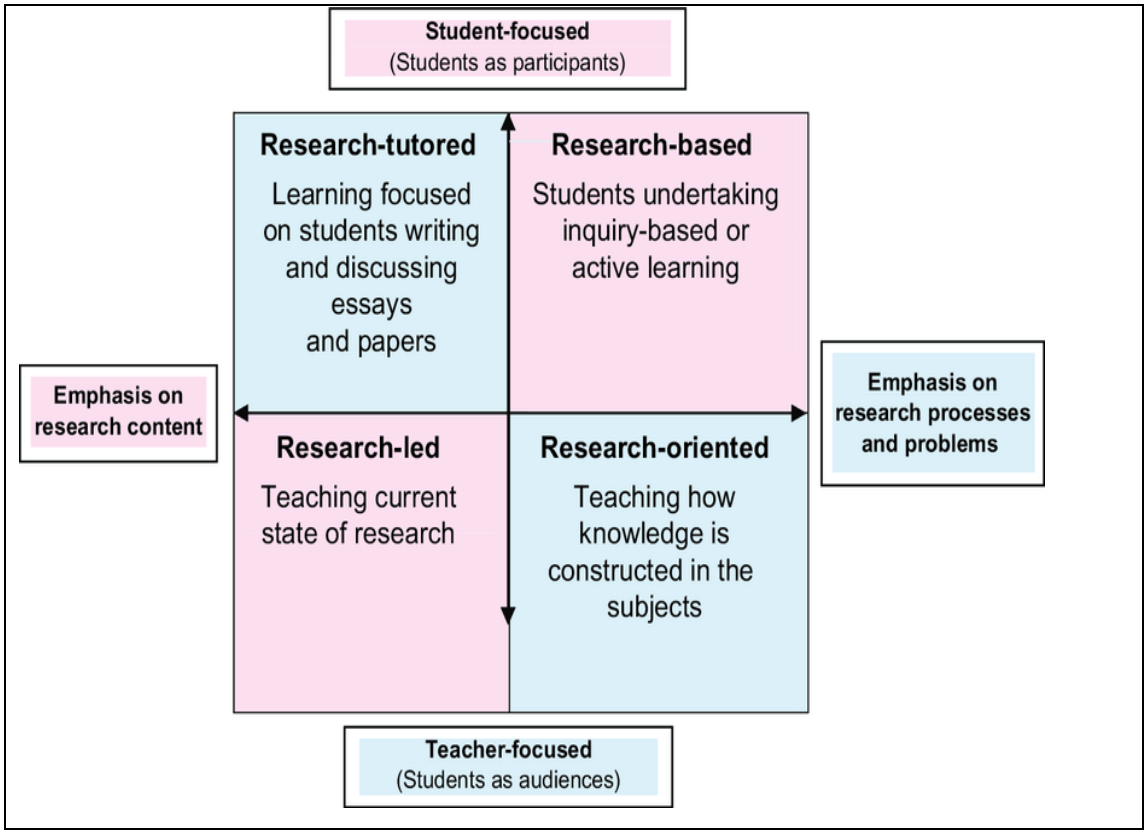

Figure 3.4: A modified framework for research in UG learning – The Healy and Jenkins Research Teaching and Curriculum Design Nexus (Ozay 2012: 453 – 464)

An interdisciplinary approach was used to outline some of the differences in the way information is disseminated and data is revealed in society, accompanied by a version of how these differences impacted teaching and learning (Ozay 2012:453 – 464). The author further related that the realistic framework on the nature of UG research was embraced to demonstrate how research could be interrelated in UG education to enhance student learning. Ozay (2012: 454 – 464) explained further that research was previously more concerned with the empowerment of students to acquire knowledge and skills, and graduate without really acquiring the necessary experience. Many students graduated having accumulated whatever number of courses are required, but still lack a coherent body of knowledge or any inkling as to how one sort of information might relate to others (Ozay 2012: 464). Thus, the modified model was student-focused and sought ways to enhance the learner experience.

3.7 APPLICATION OF HEALY AND JENKIN'S RESEARCH TEACHING AND CURRICULUM DESIGN NEXUS TO THE STUDY

This study aimed to explore the perspectives and practices and experiences of lecturers involved in research facilitation and supervision of research projects and proposals in the UG Nursing programme. Based on the findings of this study, the ultimate aim was to develop a set of guidelines that would assist to inform and advise all parties in a constructive and meaningful way, of the multiple dimensions and constraints of research methodology during teaching and learning. Therefore, in consideration of the Healy and Jenkin's Research Teaching Nexus (Figure 3.4) as a framework for this study, each component of the model was utilised to show the integration of research and teaching in alignment with the objectives of the study.

The Nexus outlined four concepts that guide the teaching and learning of research to develop students as researchers (Healy and Jenkins 2012: 1-7). These researchers concluded that it was necessary to engage students as producers and not merely as consumers of knowledge. In this study, the researcher utilised the Nexus to show the engagement of students in fostering different teaching approaches.

3.8 THE COMPONENTS OF THE NEXUS

Research-led: This phase involves learning and adopting the necessary knowledge of the discipline. The aim here is to focus on what is taught currently to reflect the current practices in nursing education. The research determines current practices from the participants to ensure that teaching methods are in keeping with current trends to achieve maximum knowledge.

Research-oriented: In this phase, the focus is on the development of the students' skills and knowledge to engage in the research methodologies and methods in nursing. The researcher will seek to know if the research outputs of the students are worthy of publication and if the knowledge acquired can lend to successful self-directed inquiry for PG studies.

Research-based: In this phase, the student is actively engaged in the inquiry and the research so that they are producers and not just consumers of the knowledge. From investigations of the document or record reviews, the researcher will be able to conclude the success of projects undertaken by the students.

Research-tutored: The need for research to be critiqued and discussed within the parameters of nursing, by way of mini-seminars, discussing a project or subject, can be an example of a strategy employed to determine the learning acquired by the student.

By using the Nexus (Figure 3.5) to guide the interview process, the researcher was able to ascertain the objectives of the study.

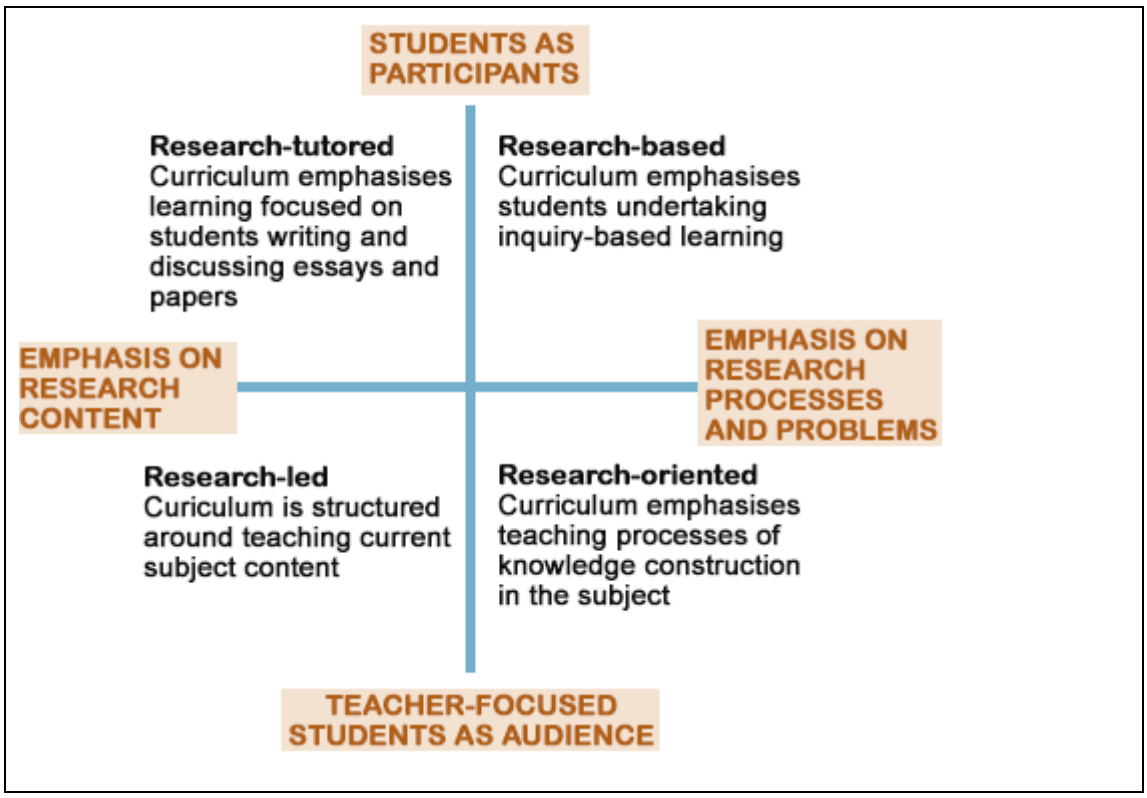

Figure 3.5: Diagrammatic application of Healy and Jenkin's Research Teaching and Curriculum Design Nexus (Healy and Jenkins 2012:1-7)

These research questions in this study as depicted in Table 3.1 below were aligned to the aspects outlined in the proposed theoretical framework. This further guided the researcher in attaining the study's objectives as outlined in Chapter 1.

Table 3.1: Research questions aligned to the proposed theoretical framework

Precepts of Healey and Jenkins Framework	Research questions aligned to the proposed theoretical framework
1) Research-tutored	What are the different strategies that can be employed to ensure enhanced teaching and learning of research methodology to UG students?
2) Research-based	How does the current research pedagogical practices encourage research outputs and publication writing amongst UG students?
3) Research-led	How does the current pedagogical UG research teaching and practice methodologies sufficiently transition the UG student for higher level PG studies?
4) Research-oriented	How does the current research pedagogical practices sufficiently ensure adequate research knowledge capacity for self-directed research appraisal and inquiry of the graduate nurse for post graduate studies in nursing?

3.10 SUMMARY OF CHAPTER

Chapter 3 presented the theoretical framework that aimed to guide the study. The Healy and Jenkins Research Teaching Curriculum Design Nexus outlined the components that guided the research inquiry. The components of the Nexus were explained to draw an understanding of the methods and strategies employed in the teaching and facilitation of the research modules in Higher Education. The suitable representation of the concepts clearly defined the course of the inquiry of this study. The next chapter will detail the methodology that directed the process of the study.

CHAPTER 4

RESEARCH DESIGN AND METHODOLOGY

4.1 INTRODUCTION

The previous chapter outlined the theoretical framework used to guide the study. The current chapter describes the methodology employed in this study. The major purpose of conducting this research was to understand and explore pedagogical practices as well as institutional perspectives and practices of teaching and supervising the research modules in the relevant nursing programmes. This was done to develop guidelines for pedagogical practices that would ensure the research preparedness of UG Nursing students. A case study research approach was adopted to address the research questions surrounding the phenomenon under study. A detailed explanation of the study population, sample size determination as well as methods and criteria for selection is also highlighted in this chapter, while data collection and analysis methods are also discussed.

4.2 RESEARCH DESIGN

Maree (2015: 70) describes the research design as a plan or strategy that transforms from the underlying assumptions to specifying the decision of respondents gathering of data methods as well as analysis. The author further states that the choice of the design relies on the researcher's assumptions, skills and research practices which guide how data is collected. Polit and Beck (2017: 743) propose that a design is a plan to address the concept of integrity of a study. The research design for this study was a qualitative, exploratory and descriptive, contextual design that sought to explore current pedagogical research practices. The selection of this design allowed for the interaction with the role players of research education to achieve objective data. All implemented steps and processes are further discussed at length under specific headings.

4.2.1 Qualitative research

A qualitative research design intends to investigate phenomena through the in-depth retrieval of narrative materials (Polit and Beck 2017: 741). This design is suitable to gain insight into the experiences, behaviours, beliefs and attitudes of people within the context where the experiences take place. This design was of value in retrieving data that was directly related to the experiences and opinions of the participants related to their research pedagogical practices, which were current and authentic in this study. This study adopted the case study design which facilitated detailed insight into the phenomena.

4.2.2 Case study approach

A case study approach was utilised helped to provide a true picture of institutional pedagogical practices related to the topic of inquiry and its implementation thereof. Yin (2009: 240) conceptualised case study research as a strategy of inquiry, methodology or comprehensive research. A case study is referred to as an empirical inquiry that investigates a contemporary phenomenon or situation, whilst being in-depth and considering real-life contexts. Notably, case study research complements a validity-seeking humanistic approach which also helps to provide crucial patterns or contextual bodies of data (Yin 2014: 240).

Case study methods are further described as inquiries that ensure an in-depth investigation of contemporary phenomena whose borders might not be clearly defined. A cross-case analysis follows the presentation of separate single cases that add to the value of the study, allowing these multiple cases of evidence to draw on a single set of cross-case conclusions. This is sometimes termed a comparative case method (Yin 2014: 18). The researcher aimed to explore the experiences and perspectives of the role players and employed the constructivist paradigm to make meaning of these experiences. This paradigm stresses that knowledge is actively constructed by persons and relates to the understanding of the lived experience. This allowed the researcher to work towards a comprehensive understanding of how participants related under a

specific condition and how they ultimately added meaning to the phenomenon that was studied (Maree 2015: 74).

In presenting an in-depth study, two sources of data were collected to provide a rich investigation of the phenomena. Semi-structured interviews were conducted with lecturers from the identified facilities that were involved in research teaching and research supervision. Record reviews and interviews of the participants provided the data that need to be explored. Permission was sought from gatekeepers at the selected settings so that a review of records could be done. Records to be reviewed entailed documentation of relevant and related research teaching methods and facilitation that were employed to identify and explore strengths, limitations and best operating practices and gaps.

4.2.3 Explorative research

Explorative research is concerned with examining a topic of interest whereby minimal information is known (Polit and Beck 2017: 726). Using this approach, in this study, enabled the researcher to clarify and give more information about the topic of inquiry, thus broadening the body of knowledge on the issue of concern. The manner, method and scope of collecting data are determined by the chosen methodology and in this case, it entailed semi-structured interviews with participants and a review of records. Therefore, the practices and experiences of the participants were valuable to the study, to have been able to explore and probe into the preparedness of UG students in research teaching and learning.

4.2.4 Descriptive research

Descriptive research provides information related to a particular phenomenon through the provision of detailed information that describes the phenomenon of interest (Polit and Beck 2017: 726). In this instance, the researcher gathered descriptive information from research participants through interviews to paint an in-depth picture of the topic that was explored, and therefore examined the

perspectives, practices, and experiences of all lecturers involved in research teaching, facilitation and supervision of research in the nursing course to determine the adequacy of its delivery and provision.

4.2.5 Contextual research

Contextual research is concerned with a description of the nature of what is in existence. Ritchie, Lewis, McNaughton Nicholls and Ormston (2014: 31) state that contextual research identifies what is current in the social world and how it presents itself. In this study, it was necessary to describe the phenomena as it was experienced by the participants to provide a true account of the experiences. This provided the researcher the ability to unpack and explore the data. The interviews facilitated this by an inquiry from the research questions presented.

4.3 RESEARCH PARADIGM

A paradigm as a worldview is a way of looking at natural phenomena that cover a set of philosophical assumptions and ideas that direct one's approach to studying (Polit and Beck 2017: 13 – 15). The naturalist paradigm, which is often referred to as the constructivist paradigm, is commonly aligned to qualitative research and proposes that reality is not a fixed concept but rather a construction of the individual getting involved in the research and that many constructions are possible from this. It is with this understanding that the researcher was inclined towards the constructivist paradigm, believing that the lecturers and supervisors of research studies act as custodians of these modules and were the best people to relate information pertinent to meeting the objectives of this study.

The researcher, therefore, explored the experiences and perspectives of the role players and employed the constructivist paradigm to make meaning of these experiences. This paradigm stresses that knowledge is actively "constructed" by persons and relates to the understanding of the lived experience. This allowed the researcher to work towards a comprehensive

understanding of how participants related under a specific condition and how they ultimately added meaning to the phenomenon that was studied (Maree 2015: 74).

4.4 PHILOSOPHICAL UNDERPINNING OF A CONSTRUCTIVIST PARADIGM IN THE CURRENT STUDY

The challenges experienced by lecturers and supervisors of research studies as identified in Objectives 2 and 3; were valuable to meeting Objective 5. The researcher sought this paradigm based on other philosophical assumptions like; ontology, epistemology and methodology (Creswell and Creswell 2014: 19 – 22). Ontology is described to be a belief about the nature of reality (Creswell and Creswell 2014: 20). In the current study, this was characterised by the lecturers' and supervisors of UG studies experiences related to the current study of pedagogical practices in research preparedness of UG Nursing students. Therefore, conducting of "one on one" interview with participants allowed for each individual to highlight their experiences if they so desired in their personal spaces, so that the researcher was able to acquire an in-depth understanding of each unique experience.

The epistemological basis of the current study maintained that lecturers and supervisors are the best sources of information from their experiences. Thus, the researcher in the current study proposed that the methodology refers to the procedures and rules that specified how the study should be conducted to achieve the intended outcomes or achieve the sought objectives. In this study, information was sought from lecturers and supervisors of research studies. It was then analysed and interpreted using relevant literature as a way of understanding the participants' experiences and worldviews. From this information, the researcher sought to develop a subjective meaning from their individual experiences and gain a deeper understanding of the phenomenon (Creswell and Creswell 2014: 24 – 25).

4.5 SETTING

Polit and Beck (2017: 744) describe a research study setting as the location of the study. This study aimed to explore local, national and international HEIs to understand the facilitation of research modules. The purpose of exploring the study of research nationally and internationally was to compare the programmes to identify strengths and weaknesses. This was also done to adopt the best operating practices related to the transfer and acquisition of research knowledge from a teaching and learning perspective. Locally, all NEIs subscribe to the standards prescribed by the South African Nursing Council; and were, therefore, more or less inclined to be similar in the curriculum. It was of interest to ascertain what was done abroad and examine if there were existing differences or similarities in the practices of other relevant nursing practice governing bodies and structures. Based on permission received; the selected HEIs formed the location or setting of the study.

4.6 RESEARCH POPULATION

A population in a research study is defined as a target population that satisfies all the elements that meet the criteria to be included in the study (Grove, Burns and Gray 2013: 44). The target group comprised of lecturers and supervisors from the selected approved facilities who were involved in the teaching of the nursing research module and the supervision of the UG as well as PG projects. The researcher identified and approached local, national and international universities for permission to conduct the study, to explore differences and similarities in the undertaking of the pedagogical practices in research. Selection and sampling were based on ethical approval from these universities. The Research Advisors/Administrators and the Director of the Faculty of Health Sciences were contacted for permission. Based on the responses and granting of permission, the lecturers involved in the teaching and facilitation of research from the identified HEIs, who comprise the target population of the study, were approached and informed consent was obtained.

4.7 SAMPLING PROCESSES

According to Maree (2015: 79), sampling refers to the selection of a quota of the population for the study. This author further implies that purposive sampling means that participants are selected because they carry a defining characteristic that makes them holders of the data required for the study. The richest source of the data required is sought for in-depth investigation and retrieval of data. According to Burns and Grove (2016: 312), this sampling method allows for the researcher to select the participants that are most knowledgeable about the phenomenon studied. The sample comprised lecturers directly involved in teaching and facilitation of the research module and lecturers involved in the supervision of UG and PG research study projects. Non-probability purposive sampling was utilised to identify the participants. For the national and international participants, the participant information guide and consent were distributed to all in the identified population once the gatekeeper's approval was achieved. Based on the number of available lecturers that met the selection criteria, a minimum of three (3) to five (5) participants per identified university were selected.

4.7.1 Inclusion criteria

- All lecturers that were involved in the supervision of UG and PG nursing students
- Lecturers who facilitated or taught the research module
- Only lecturers from the identified ethically approved Higher Education Institutions could participate in the research

4.7.2 Exclusion criteria

- All lecturers not involved in the facilitation and supervision of the research module.
- Lecturers who had not facilitated or taught the research module.
- Lecturers from universities that were not ethically approved for the study.

4.7.3 Recruitment of participants

By networking, the researcher was able to build professional relationships by outlining the purpose of the study to gain cooperation. Once a rapport was established with the research advisors, the researcher gained the trust and maintained a professional relationship with the advisors to ensure professional cooperation. An understanding of the purpose of the study was ensured to gain cooperation. The research advisors of the respective sample institutions assisted in arranging designated time slots to discuss the study purpose with the identified participants and to address any queries before commencement. A well-informed participant information guide served to fully inform the participants. Coercion into participating was non-existent and the participation was voluntary. Research principles were always maintained throughout the study.

4.8 DATA COLLECTION

In qualitative research, data collection is naturalistic and aims to understand the phenomena in real-world settings and no attempt is made to manipulate the phenomena (Maree 2015: 78). On receipt of gatekeeper permission from the identified universities, and only after full ethical clearance from the Institutional Research Ethics Committee (IREC) (Ethics no: IREC 192/21), (University Ethics Clearance), the researcher arranged for data collection sessions with the participants. The interviews were conducted during working hours; however, care was taken to avoid a disruption of the daily work routines of the participants. All participants were informed about the study through the information letter (Appendix 4: Letter of Information to the Interview Participants) prior so that a signed informed consent (Appendix 5: Consent) was obtained to commence the interviews. Only then did the researcher schedule interviews at the convenience of the participants. Interviews were conducted online and in private between the interviewer and interviewee. Each private interview lasted approximately 20 minutes.

After gatekeeper permission was sought and received and after full ethical approval, the researcher sought access to the target population online via the Research Advisors/Administrators of the selected HEIs. Online communication was preferable to avoid face-to-face contact in adhering to COVID-19 protocols. All interviews were conducted via pre-appointed, online sessions.

The data collection strategy in this study took the form of online interviews and a review of research module records. Online interviews as opposed to face-to-face interviews due to the COVID-19 pandemic social distancing protocols, were utilised to gather data. Online interviews were undertaken via Skype, Microsoft Teams and Zoom. All interviews were video and audio recorded through Skype or Microsoft TEAMS or Zoom which is featured on these software applications. In this way, the researcher was best able to capture the participants' facial expressions, gestures, attitudes and words. This allowed for the enhanced credibility of the study. Interviewees were informed about the purpose of recording the sessions and permission to record was sought before commencement. Two data collection strategies were utilised in this case study approach, namely interviews and record reviews.

The aim of using multiple strategies to extract data in this study was to increase the validity of its findings and ensure a thorough understanding of each case. Various methods of data collection methods strengthen the reliability of the data; thus, the case study method was employed to provide an in-depth exploration of the perspectives of the participants.

4.8.1 Interviews

The purpose of the qualitative interview is to see the world through the lens of the participants, as they are the richest source of information (Maree 2015: 87). The interview is described as that which provides indirect information that is filtered through the eyes of the interviewees (Creswell and Creswell 2018: 188). This method of data collection is targeted and focuses directly on the

phenomenon explored. It is also insightful by way of individual perceptions and meanings (Yin 2014: 106).

Where face-to-face interviews were permitted; the interviews were conducted privately to ensure confidentiality. All COVID-19 policies and protocols were adhered to in terms of hand sanitising and maintenance of the prescribed 1.5-metre social distance between interviewer and interviewee. Semi-structured interviews were conducted with open-ended; probing-type questions that addressed the research questions and facilitated the discussion between both parties. The number of interviews was dependent on data saturation. Participants were duly informed of their right to opt-out of the interview at any stage. Demographic data collection (Appendix 6a: Demographic Data) allowed for an understanding of the levels of expertise of the selected lecturers. Interview recordings were transcribed by the researcher.

4.8.2 Document /Record reviews

Document or record reviews represent the data to which the participants give attention to (Creswell and Creswell 2018: 188). The researcher aimed to analyse organisational documents in the form of study guides and module descriptors to exact as much information as possible. Case study research as a research approach requires clarification and therefore a cross-case analysis following a presentation of separate single cases was utilised to add to the value of the study. The multiple cases drew on a single set of cross-case conclusions to strengthen the study (Yin 2014: 18). This will assist in enhancing understanding of the research phenomena like learning outcomes and duration of modules as well as the assessment records.

Record reviews served to provide a stable source that could be revisited for reference. It was also specific and details of exact events were included over a while (Yin 2014: 106). Multiple sources of data were accommodated by the case study method and this allowed for seeing the data from different perspectives. Record reviews added to the value of the data collected from the

participants. Permission was sought from the approved HEIs to access study guides and descriptors. The purpose of the study intent for the review of records was outlined in the information letter. The researcher arranged an online meeting with the relevant authorities to further explain why it was warranted for the study. For the International HEIs, the same procedure was followed once permission from the relevant authority was sought. Record reviews (Appendix 7: Review of records) in the proposed study, may add to the credibility of the data collected from the participants, whilst seeking to satisfy objective one of the studies.

4.9 PRE-TESTING OF DATA COLLECTION TOOLS

The purpose of the pre-test is to analyse the feasibility of the proposed study and identify any possible errors in the methodology (Brink, van der Walt and van Rensburg 2018: 175). These authors further maintain that by conducting a pilot study; the researcher can avoid dire consequences in the study with regard to rigor and scientific value. A pre-test or pilot study was done to check for ambiguity in the instructions or wording of the instrument. Timeframes were measured as well. A sample of two participants was included in the pilot study. Research experts were included to identify any errors and verify the study. To the satisfaction of the research experts, the instrument was deemed fit for use in the study.

4.10 DATA SATURATION

The concept of data saturation is said to be that point of the data collection when the collection of fresh data brings no new evidence or insights (Creswell and Creswell 2018: 186). This stage of the study proved tedious to the researcher as an exhaustive effort was made by repeated comparisons and review of the data to ensure no idea or response was overlooked. At that stage, data collection was stopped and data analysis was commenced.

4.11 DATA ANALYSIS

4.10.1 Qualitative data analysis

Thematic analysis, as described by Ritchie *et al*. (2014: 271) encompasses the discovery, interpretation, reporting patterns and “clusters of meaning” within the collected data. Working methodically through transcribed texts, the researcher identifies subjects that are integrated into themes that ultimately address the research questions of the study. The researcher personally transcribed each interview. The voice-recorded responses were listened to repeatedly and thereafter transcribed and compared to the transcribed data to ensure validity. Information from the field notes was compared to the recordings on the audiotape to ensure that all data had been captured. During the transcription phase, the researcher conducted a preliminary analysis focusing on describing the recurrence of the different categories and linked the codes to create meaning. Relevant quotations from the participants’ responses were noted. The concepts were then translated into codes and codes into themes. The conceptual framework that guided the study predetermined the themes according to which data was organised. Data was manually coded and checked against the conceptual framework to ensure rigour of the analysis process by validating the researcher’s own interpretation of the data.

Creswell’s six phases of data analysis was utilised to sort and organise the data from the interviews as described in Creswell and Creswell (2018: 192 – 197). These are outlined in phases as described below:

4.10.1.1 Phase 1: Organising and preparation of the data

This step provided an overall picture of the information gathered like a general idea of what the participants were feeling and saying and the tone of the ideas. The researcher personally conducted the interviews and all interviews were transcribed and records sorted thematically. All field notes and transcriptions were reviewed and arranged into categories and then transformed into codes.

4.10.1.2 Phase 2: Review of the data

Data was read through line by line to capture every detail and relevant notes were made to capture the essence of the interviews. The transcriptions proved to be a lengthy process as they required effective listening and transcribing of the recorded data. Field notes were checked against the transcriptions to ensure all information was captured.

4.10.1.3 Phase 3: Coding of the data

Data was coded to categorise information and sorted appropriately. It is at this step that the study starts to take shape in the forming of the themes from the ideas and responses. The researcher carefully categorised the data to be coded by organisation of the sentences based on the precise wording of the participants.

4.10.1.4 Phase 4: Generation of description and themes

Descriptions were generated by consolidating the categories into themes and thereafter headings. This involved a rendering of detailed descriptions of the participants, events, and the environment. The generated themes were presented as the major findings of the study, which presented the various perspectives that were supported by the transcribed direct quotations. It was here that theme connections are made.

4.10.1.5 Phase 5: Representing the description and themes

The themes generated were explored and analysed from all the data to reveal the outcomes. A narration of the findings is presented in the following chapter capturing the essence of the study. Themes and sub-themes were discussed in detail backed up by direct quotes from the participants. The findings were presented in a table to provide a conceptual map of the outcomes.

4.10.1.6 Phase 6: A narrative of the findings

A report was constructed detailing the findings that were interpreted from the outcomes above. The themes that were generated formed headings that led the discussions of the findings. Theme connections were also made and discussed.

4.10.2 Analysis of the record reviews

The record reviews were purposed to corroborate the data gathered from the semi-structured interviews adding to the trustworthiness of the study. This study further proposed a review of the following non-confidential documents to triangulate information about the topic of inquiry. Documents that informed the criteria as outlined in Table 4.1 constituted institutional, departmental and public domain records such as research module descriptors, research study guides and research-learning outcomes. Other pertinent details of the research module such as duration, module design, and teaching and assessment strategies were also examined.

Table 4.1 depicts the sources of evidence that the researcher utilised to either corroborate, augment or refute the evidence from the records that were reviewed. This further assisted in the emerging lines of inquiry that related to the research problem during the data analysis phase.

Table 4.1: Criteria that informed the reviewing of records

CRITERIA	RECORDS REVIEWED
1. Conceptual issues of the research module design.	Review of: • Research module descriptors. • Study /Learner guides. • Research learner outcomes. • Module duration (period of research module). • Teaching strategies (pedagogical practices specific to the research module and learning outcomes and competencies). • Assessment criteria – specific to the research module and competencies. • Assessment strategies – specific to the research module and competencies.
2. Structures and processes used to monitor, assess, or improve teaching and learning of research in UG Nursing education.	• Research policies or guidelines (institutional and departmental). • Ethical review guidelines. • Module time frames.
3. Contextual issues of the research module in UG Nursing education pedagogical practices.	• Institutional constraints/concerns affecting teaching and learning of research module. • Professional development. • Best practices that enhance teaching and learning of module.

4.11 TRUSTWORTHINESS

Trustworthiness can be validated by principles outlined by Lincoln and Guba's strategies of credibility, transferability, dependability and confirmability (Polit and Beck 2017: 539). The use of multiple methods of data collection added to the trustworthiness of the study. Engagement in the research settings caused a deeper understanding of the phenomenon explored (Brink, van Der Walt and van Rensburg 2014: 171).

4.11.1 Credibility

Credibility refers to the assurance of the truth and interpretation of the data (Brink, van Der Walt and van Rensburg 2014: 172). This was achieved by an established engagement in the field until data saturation was achieved. The aim of this was to establish a rapport and build on the trust of the participants. Triangulation of the different methods of data collection was to seek various viewpoints on the phenomena. A peer debriefing sought the opinion of experts to afford credibility.

4.11.2 Transferability

Transferability refers to the potential of applying these findings to other studies (Brink, van Der Walt and van Rensburg 2014: 173). The researcher adhered to the inclusion criteria by purposive sampling and ensured that data saturation was reached to enhance the transferability.

4.11.3 Dependability

Dependability refers to the availability of evidence should the study be repeated with similar participants in the same setting and context; the findings should be the same (Brink, van Der Walt and van Rensburg 2014: 173). A stepwise review of the process of the data collection was done by peers and experts in the field to compare and verify findings.

4.11.4 Confirmability

Confirmability refers to the congruency of the data in terms of correctness and significance (Brink, van Der Walt and van Rensburg 2014: 173). The examination of the data by the experts added to the confirmability of the study. Through the debriefing exercise, the experts attested to the fact the investigation was supported by the data presented to establish confirmability.

4.11.5 Authenticity

Authenticity refers to how researchers show a range of realism in a fair and just manner (Brink, van Der Walt and van Rensburg 2014: 173). All reports conveyed the truth and experiences of the participants. Thus, this research report elicited a sensitivity from the readers to relate the true emotions and experiences of the participants.

4.12 ETHICAL CONSIDERATIONS

Research ethics refers to the conduct of research procedures with adherence to professional, legal and social obligations to the participant in terms of their rights as persons (Polit and Beck 2017: 727). The research ethical clearance process was followed until the point of receiving full ethical clearance from IREC. It is only at this point that the researcher made contact and presented the proposal to gatekeepers of the identified universities.

While all research ethical principles were observed; the following ethical principles were rigidly followed in this study.

4.12.1 Privacy and anonymity

This ensured that participants' right to have their input kept in the strictest of confidence (Polit and Beck 2017: 141). Interviews were conducted around the participant’s availability. A private venue and space were arranged. All content from the interviews will be kept confidential and accessible to only the researcher and supervisors. Recordings will be stored in lock-up cupboard by the researcher to which no one except the researcher will have access until the prescribed point of discarding.

4.12.2 Informed consent

Participants were informed of the study goals, potential risks and benefits of the study as well as time constraints (Polit and Beck 2017: 144). The Letter of

Information for the interview Participants (Appendix 4) detailed all information necessary for the participant to make an informed consent or refuse participation. The consent form (Appendix 5) signed by the participants was an acknowledgment of being made aware of the absence of risks as well as the details of the study. The researcher also availed herself to answer any queries surrounding the interview and the purpose of the study. All interviews were conducted by the researcher to assuring confidentiality. The option of not participating was outlined to avoid coercion.

4.12.3 Respect for persons

Having three convictions relating to autonomy; religious consideration and diminished autonomy was the first consideration in this study (Brink, van Der Walt and van Rensburg 2018: 29). These principles were adhered to at every phase of the study. The participants were given the right to make their own decisions regarding participation to ensure autonomy. The absence of pressure or coercion ensured autonomy was not diminished. The study made no demarcation of religious standing at any point.

4.12.4 Justice

This related to the principle of fairness (Brink, van Der Walt and van Rensburg 2018: 30). The study population had a right to fair selection and this was done by ensuring that all participants were given the information and consent forms timeously. Participants were selected fairly and based purely on the selection criteria. No reference to race, sex or denomination was made in the study.

4.13 SUMMARY OF CHAPTER

This chapter outlined the groundwork of the study and showed the different aspects of qualitative research processes followed by the researcher in this study that guided it to reach the point of analysis. The case study approach has been articulated and presented in this chapter, with a description of the different

data collection strategies relevant to a case study approach. Data analysis and findings will be presented in the next chapter.

CHAPTER 5

PRESENTATION OF FINDINGS

5.1 INTRODUCTION

Chapter 4; preceding this chapter, described the methodology that guided this study and a detailed account of how data was collected, analysed and presented. Brink, van der Walt and van Rensburg (2018:46) describe the analytical process as involving “integration and synthesis” of non-numeric data that is captured in themes and categorised through coding. This chapter first presents a description of the sample and then a presentation of the findings. The study aimed to explore the perspectives, practices, and experiences of facilitators and/or lecturers involved in research teaching, facilitation and supervision of research projects and proposals in the UG nurse training programmes. This qualitative inquiry was facilitated by interviews held with research educators and supervisors of UG Nursing programmes, nationally and internationally from ethically approved institutions. The purpose of the interviews was to address the following research questions that were aligned with the research objectives of the study. The research questions were:

1. What are the different strategies that may be employed to ensure the teaching and learning of research methodology to UG students?
2. How does the current research pedagogical practices encourage research outputs and publication writing amongst UG students?
3. How does the current pedagogical undergraduate research teaching and practice methodologies offer or provide sufficient transition for the undergraduate student to progress to higher-level PG studies?
4. How does the current research pedagogical practices sufficiently ensure adequate research knowledge capacity for self-directed research appraisal and inquiry of the graduate nurse for PG studies in nursing?

In this chapter data will be analysed and presented in two sections:

- Section A – interviews with the lecturers and facilitators of nursing research in UG Nursing programmes.
- Section B – record reviews of the documents presented at the various approved universities.

5.2 SECTION A – INTERVIEWS WITH THE LECTURERS AND FACILITATORS OF NURSING RESEARCH IN UNDERGRADUATE NURSING PROGRAMMES

5.2.1 Sample realisation

The study sites included universities from local, national and international locations. Once gatekeepers' permissions were sought, letters of information were sent to participants and interviews were conducted at the convenience of the participants, maintaining all privacy and confidentiality protocols.

5.2.2 Pre-test

Brink, van der Walt and van Rensburg (2018: 161) describe the pre- test as an aim to detect possible flaws in many areas of the study like the data collection, methodology or design. This allowed the researcher to correct and amend the data collection tool before progressing with data collection. A pre-testing to ensure validity and practicality of the interview schedule was conducted with two (2) participants that were not included in the main study. It assisted to determine the clarity of the interview questions, the effectiveness of instructions, and data collection methods.

5.2.3 Interview process

On completion of the pilot study, it was noted that no changes had to be made to the interview schedule. The researcher proceeded to conduct twelve interviews with educators and supervisors of research in the nursing UG programme from the approved teaching and learning HEIs. Semi-structured

interviews with open-ended questions guided the interview process as per the interview schedule of the study (Appendix 6b: Interview Guide). Further probing was necessary during the interview discussions to achieve as much data as possible. The number of interviews was dependent on data saturation.

5.3 DEMOGRAPHIC DATA OF THE PARTICIPANTS

The tables presented below aim to depict data on the demographics of the lecturers and supervisors collectively to give the reader a general idea of the target population.

5.3.1 Age

Table 5.1 presents the age range of the participants that are related to the experience and expertise of the participants in nursing research education.

Table 5.1: Age of participant

RANGE	NO OF PARTICIPANTS
> 60 years	1
51 – 60 years	7
41 – 50 years	3
31 – 40 years	1

5.3.2 Nursing research educational experience of the lecturers

Table 5.2 represents the research educational experience of the participants, as an experienced lecturer would facilitate and teach the module differently drawing from his / her experience as compared to a novice lecturer who may be relatively new to the pedagogy of nursing education and research.

Table 5.2: Nursing research educational experience of the lecturers in UG Nursing programmes

RANGE	NO OF PARTICIPANTS
1 – 5 years	4
6 – 10 years	NIL
11 – 15 years	5
16 – 20 years	NIL
21 years and above	3

5.3.3 Nursing research supervisory experience in UG and PG studies

Table 5.3 presents the nursing research supervisory experience of the participants, which again impacts the level of the supervision expertise of student research projects.

Table 5.3: Nursing research supervisory experience in UG and PG studies

RANGE	NO OF PARTICIPANTS
1 – 5 years	3
6 – 10 years	4
11 – 15 years	3
16 – 20 years	NIL
20 years and above	2

5.3.4 Research outputs of successful Masters and Doctoral degree supervision

Table 5.4 depicts the research outputs of the participants which denote the acquired supervision and research experience of the lecturer/facilitator.

Table 5.4: Research outputs of successful Masters and Doctoral degree supervision

Number of successful Masters and Doctoral students supervised	
RANGE	**NO OF PARTICIPANTS**
0	4
1 – 5	3
6 – 10	3
>10	2

5.3.5 Research publications of the participants

Table 5.5 depicts the publications of the participants to show the expertise of the research facilitator or lecturer. This expertise shows that updated trends in research are taught.

Table 5.5: Research publications of the participants

RANGE	NO OF PARTICIPANTS
0	5
1 – 5	1
6 – 10	1
>10	5

5.4 THEMES AND SUB-THEMES THAT EMERGED FROM THE COLLECTED DATA

There were seven (7) major themes that emerged from the data collected (Table 5.6). Sub-themes were generated from the major themes to provide further clarity. The themes were then explained in relation to the study objectives as noted below. Direct quotes from the recordings support the findings of the study.

The following research objectives of the study were further correlated to the emerged themes as per Table 5.6 below:

1. Identify the inherent adult learning principles in teaching practices to UG Nursing students.
2. Explore lecturers' views on the current pedagogical practices of teaching the research module to UG Nursing students.
3. Acquire an understanding of the perspectives of the lecturers and supervisors of research and research projects related to research knowledge acquisition by an UG student.
4. Obtain a holistic picture of the perspectives expressed by the supervisors of Masters candidates relating to the application and transfer of embedded research knowledge.
5. Develop a set of respective guidelines that possesses the potential to favour the productive use of research knowledge and scientific inquiry so that it may aid in the transition of a research student from an UG to a PG capacity.

Table 5.6: The presentation of major and sub-themes that emerged from the data

THEME	SUB-THEMES	RELATED RESEARCH OBJECTIVE
1. Contemporary pedagogical practices of UG Nursing programmes.	1.1 Blended or mixed methods of facilitating and teaching research.	Objectives 1 and 2
	1.2 Online methods of facilitation and teaching research.	
	1.3 Policy and guidelines surrounding pedagogical practices of teaching research in UGNursing programmes.	
2.Research knowledge acquisition and capacity building of the UG Nursing students.	2. 1. Concept clarification of research methodology in UG Nursing students	Objective 3
	2.2. Assessment strategies of research methods in the UG Nursing programme.	
3.The skills level / adequateness of the UG nursing student to transition into Masters and Doctoral programmes.	3.1. Concept clarification of the research process by PG nursing students.	Objectives 3 and 4
	3.2. Research preparedness of the PG nursing student to manage and complete full Masters and Doctoral projects within stipulated timelines.	
4.Research teaching and facilitation of the research module in UG Nursing programmes.	4.1 Design of research module descriptor in UG Nursing programmes.	Objectives 1 and 2
	4.2 Research preparedness of the Nursing Research student to manage and complete a full project within stipulated timelines.	
5 The Lecturer and supervisor's perspectives of research education in nursing.	5.1 Advantages of the lecturer and supervisor perspectives of research nursing education.	Objective 4
	5.2 Disadvantages of the lecturer and supervisor perspectives of nursing research education.	
6.Suggestions by research lecturers and supervisors for enhanced facilitation of the research module in UG Nursing programmes.	6.1 Curriculum design and module review of the UG Nursing programme.	Objective 5
	6.2 Suggestions for enhanced research knowledge acquisition of the UG Nursing student.	

5.4.1 Theme 1: Contemporary pedagogical practices of UG Nursing programmes

In relation to objectives 1 and 2; Theme 1 explored the many adult learning principles and current pedagogies in facilitating and teaching the research module at UG Nursing programmes. Many responded with diversity to pedagogical practices they utilised in research. It was evident that a range of instructional teaching methods was employed by different lecturers at different institutions. Most preferred the case-based method and a more practical approach to teaching the module. Discussions revolved around how the student is better able to relate concepts in research by practical application and understanding a research problem through being involved directly, as opposed to being lectured to on the topic of research.

Three (3) sub-themes arose from this major theme: namely:

Sub-theme 1.1: Blended or mixed methods of facilitating and teaching research

Some lecturers preferred blended methods and employed both lecturing and practical methods as they verbalised that research was a practical subject, and required a more practical skill acquisition. Case-based teaching and learning were prominent in most institutions where the application was at the fore of the learning experience. The practical experience for application was the preferred mode of teaching research. It was noted that the majority favoured the practical "hands on" approach to teaching research where they expected students to be able to relate the research concepts to the projects they embarked, on as evidenced by the excerpts below:

"Predominantly it's more hands on and practice based as in looking at the foundations and concepts and also looking at the application where you can take the concepts learnt and the terminology and the skills are the most important ones but with COVID, we've been doing things online…. So blended

learning is predominantly what happened…. Your dominant learning is skills." (Participant 11)

"…face to face" ….. where you are able to network and as you know research is very practical and therefore you cannot just look at the theoretical aspect… it is good to draw from your experience…. It must be hands on". (Participant 6)

"… I asked students to come up with a problem from everyday situations… once they identify their problems it was easy to apply the research process…it is never straight forward lecture method… certain concepts must be lectured but it must also be relatable when they are able to draw from their bedside problems… more case and problem-based teaching and learning." (Participant 1)

"… and also, the facilitation should not be made to feel like it's an abstract … they should be able to understand it as they do it…". (Participant 7)

Sub-theme 1.2: Online methods of facilitation and teaching research

With the introduction of the recently imposed "new normal" teaching and learning as an adopted online approach, many have voiced that there have been negative impacts on collaborative learning, which is common with group work in research in UG studies noted in excerpts below:

"…online teaching has affected the group work and collaboration of learning research…the ability to identify with each other as part of the group dynamics…. people with different locations gives the learning experience a stiff or sort of cold atmosphere…you are alienated behind a computer without support". (Participant 1)

"…yes, online learning has affected the research collaboration greatly reason being … sometimes you never know if they are even listening to you…slows the whole research process." (Participant 3)

"I currently teach a virtual class so I put them into break out groups drawing from evidence-based practice to get research outcomes…students are less likely to engage, and that is anecdotal at this point." (Participant 10)

"...absolutely it has…. That comes with some of the bad habits with not responding to online communication …same with students … virtual collaboration has become increasingly difficult, even some academics find it difficult to use online tools." (Participant 6)

Sub-theme 1.3: Policy and guidelines surrounding pedagogical practices of teaching research in UG Nursing programmes

Many participants indicated that there are module descriptors and study guides. It was evident that some institutions did not have study guides and relied on the course as adopted by the lecturer. There were no guidelines for referencing how to achieve module outcomes. Module descriptors "mapped out" the duration and outcomes to be achieved, but failed to provide detail on how content needed to be delivered. The following excerpts provide evidence:

"... to be honest there are no policies or guidelines …it was just something stipulated down that research project must be done within this period and completed in this time but there is nothing specific like a guideline that will assist me in supervision or teaching as to how must I go about it…".(Participant 3)

"… Yes, there are study guides and the students have an idea of what to expect when they come to class… but not really a guide as to how best to teach it… different methods are used." (Participant 6)

"Yes, we have course objectives and everything is mapped according to our program outcomes…we do not have study guides and policies but we have activities that are mapped back to everything in the course." (Participant 10)

5.4.2 Theme 2: Research knowledge acquisition and capacity building of the UGNursing students

In relation to objective 3; this theme explored perspectives of knowledge acquisition of the UG Nursing student at various universities. It was of importance to note differences, similarities and trends employed to ensure retention of knowledge of the research content. The knowledge acquisition of the UG student was dependent on many factors. From the sub-themes identified below; the following factors were common to the majority of the participants. Students were required to understand concepts in the research methodology and most assessment strategies did not fully evaluate this. Some quizzes and tests did evaluate this at the onset, but a lack of retention was evidenced in most projects as per the statements below:

Two (2) sub-themes emerged from this major theme, namely:

Sub-theme 2.1: Concept clarification of research methodology in UG Nursing students

UG Nursing students grappled with concept clarification and group work that was evident in their projects. Research concepts were notably difficult to grasp at the onset and many participants voiced this as a huge concern. Some agreed that PG students are better able to take on learning instructions on methodology but at the UG level it was a problem as attested by participants below:

"It is far better when you have contact in group work form rather than online as group work is contribution by all which is not always easy as some miss the concepts by those that are more active and dominant." (Participant 11)

"I give an article and ask them questions on the article to help them grasp the terms in research and some grasp it and others don't seen in group work… when you ask them to do a critical evaluative analysis of the article they cannot… it would be easier if there would be a module just dedicated to

research methodology so that when they come to Masters they don't struggle." (Participant 7)

"…even as seasoned researchers some of us have problems with getting research going so yes its absolutely unrealistic to take students who have no concept of research and expect them to understand research … they battle amidst all the other learning that they have." (Participant 8)

Sub-theme 2.2: Assessment strategies of research methods in the UG Nursing programme

Assessment strategies were not forthcoming in discussions with the participants in this study. Many voiced that they used quizzes and small tests. What was common though, was that online learning and the duration of the module proved to be a matter of concern as it impacted face-to-face and online assessments and assessment tools. It was also noted that the research theory module, spanning six (6) months, was facilitated concurrently with other learning modules. Below are the statements made in reference to this:

"Currently, the time frames are unrealistic……. they have to write an exam and pass theory after just six months of theory; and then do the project which is like a year of the practical research while doing other modules." (Participant 4)

"Assessment aspect is in the module descriptor… they are usually followed by the student and lecturer to link the learning outcomes… and with online assessment it is difficult as both battle with tools…" (Participant 6)

*"Quizzes and short tests are done at intervals to see if they grasp the concepts and it differs in various institutions……it's just not enough." (*Participant 7)

5.4.3 Theme 3: Research teaching and facilitation of the research module in UG Nursing programmes

In relation to objective 3 and 4; the perspectives as identified in the theme above is pivotal to determining embedded knowledge and capacity of research to embark on higher PG studies. Research learning in UG programmes forms the foundation of research knowledge acquisition and conceptualisation of the research process. Participants agreed that there was a paucity of research knowledge in the PG student when it came to research concept clarification, although they were better able to understand learning instructions. Most participants believed, that had there been a good grounding in the research at the UG level, students would cope better and the task of the research lecturer would be easier. Whilst, some participants can embrace the PG studies like Masters and Doctoral studies, some battle, as they have not grasped the basic research knowledge. Notably, those who had robust research learning experiences do well, but it was also noted that when it came to further education and embarking on tertiary studies, nurses sometimes are reluctant to take on further studies after they are employed in a clinical setting.

Two (2) sub-themes emerged from this major theme, namely:

Sub-theme 3.1: Concept clarification of the research process by UG nursing students

Concepts are difficult to grasp and this increases teaching concerns for the lecturer or supervisor, who has to go back and re-teach the basics of research. Many shared this view and also mentioned that those who had basic research grounding were able to continue on their research journeys with ease, as noted by the statements made below:

"... where you see the problem is where students actually have to apply this knowledge in PG studies… you don't actually see it coming out… and you yourself having to start all over again teaching the research process… whereas

if they had grasped this embedded knowledge they will be able to run with their projects." (Participant 1)

"You find that they struggle with concepts and the elementary of research and have to go back and learn and then sail through the system without knowing the concepts well." (Participant 6)

" …. many just complete and go on to do work and put studies behind… there are very few that actually take on studies while working in the hospital setting… it is more the ones in academics that pursue further studies." (Participant 3)

"… I feel like we have to go back to research basics and cover everything they should come with…to understand what is expected of me ….it can be overwhelming". (Participant 10)

Sub-theme 3.2: Research preparedness of the PG nursing student to manage and complete full Masters and Doctoral projects within stipulated timelines

For those that did embark on further studies, it was evident that there were good and bad experiences. Of all the participants interviewed, only one (1) participant had verbalised having a good PG study experience, whilst others felt that a gap still existed in the understanding of research. The following excerpts clarify this:

"…there is a difference as the post grad student will go do what you ask as compared….as they as more adult in to undergrad… with a good grasp of knowledge of research…" (Participant 3)

"Well… I found that most PG students struggle and most of that comes from the way the UG research was taught and the way it was executed as a project… you find that during the missed opportunity of learning in the undergrad… eh… I don't want to use the word "bad" but they tend to struggle a lot because they

have to go back and learn the elementary of research again to embark on new projects." (Participant 6)

5.4.4. Theme 4: The skills level of the UG nursing student to transition into Masters and Doctoral programmes

In relation to objectives 1 and 2 of the study, an understanding of the module design for facilitation and teaching of research was imperative in determining research pedagogical practices and trends thereof. There existed prescriptive designs that differed in name only and when compared to international trends during discussions with international participants, it was realised that there were no standardised or prescribed methods of pedagogy. However, the perspectives of participants that were interviewed, add to the understanding that the practices of teaching and learning research in the UG Nursing curriculum needs to be robust and rigorous enough to sustain research knowledge transfer and acquisition.

The facilitation of the research module in the UG Nursing programme was based on the prescribed module descriptors stipulated by the regulatory bodies that authorise nurse education and training. These descriptors outline the learning and teaching outcomes to be achieved as well as the duration of the research module at various NEIs. Whilst, it was noted that some institutions had a very detailed and organised design to teach the research module, others felt it was the duty of the facilitator or lecturer of the research module to propose and strategise the planning and delivery of the research module. It should be noted that international universities referred to the designing of the teaching and learning content as "modular mapping".

Most of the institutions that were sampled had common experiences and views of the stringent time frames for the completion of the research project. All those interviewed were of the opinion that the time factor impacted on achievement of the expected learner outcomes for the research module.

Two (2) sub-themes emerged from this major theme, namely:

Sub-theme 4.1: Design of research module descriptor in UG Nursing programmes

While many institutions had module descriptors that outlined the programme outcomes and duration of the various modules, many participants shared their views of the concerns that could be improved upon. A more practical approach related to the design of the research was a strong suggestion as participants felt that the research module design could be facilitated differently based on the year of study, to yield better outcome achievement. This came through in many responses as evidenced by the responses below:

"Yes, we do the module descriptors and study guide….it is the gold standard and guides all modules and lecturers…. but it should be taken into consideration the year of study or level of study" (Participant 11)

"Basically, the way that the time tables are structured… theory and the project is done in isolation in nursing and very seldom in conjunction and this doesn't really encourage the practical aspect of learning that comes with research teaching…the research module must be structured around level of concentration and the year of study of the student." (Participant 6)

"If there is a way that the research module can be fit into the curriculum from level 1or year 1…. then different aspects of research can be incorporated especially the aspect of reading culture which becomes very domain to solve problems in research and that is why students plagiarise…." (Participant 7)

"…motivation of the student plays a major role to get the student to grasp concepts very early in their training … research knowledge transfer at undergrad level is lacking." (Participant 1)

"If we as lecturers can have a good strategy on how to deliver the lecture in research then I believe the student will have time to Master the theory and do the project….to be honest with you …it is bad… we expect that once theory is done even though not everything is mastered but you find that you have to teach everything again…." (Participant 3)

"… because of the nature in which the program is designed in undergrad… I would like to see the module being introduced in phases starting early in student training." (Participant 5)

Sub-theme 4.2: Research preparedness of the Research Nursing student to manage and complete a full project within stipulated timelines

The duration for the completion of the research module was a factor, which came through in most responses as most participants felt that the module time frames were insufficient to understand the research process, apply the necessary knowledge and embark on various research projects.

The following excerpts from the participant recordings reveal the responses highlighting the issue of time constraints of the research module:

"… in research it is important to follow a certain transition to develop certain topics and concepts and the areas one has an interest in … and if one cannot grasp these…. one cannot move on to extended literature and searches and be focused… done over a semester about four to six months… however some are a little quicker to pick up concepts and some may take a little longer … no its not sufficient time to grasp research concepts." (Participant 11)

"When students embark on higher studies …. they span over 2 years part time and 1-year full time… taught as continuous assessment in PG and in UG and supervision is done in the student's spare time …. students still battle and I still feel that students should be given more time…six months to carry through a research project is definitely insufficient." (Participant 1)

"… it is taught over a period a one year… but it is divided into theory and practical… however when you look at the time it's very short… where we expect them to master everything…kind of… like not enough….and we expect quality." (Participant 3)

"I would say the period … for me it's not well structured…. Usually a one - day stretch period for a lesson to get meaningful learning…. The periods should be broken because after some time you lose the class… so shorter hours between periods so that students are fresh … bearing in mind the concentration span." (Participant 6)

"… the time is too little… its very over-packed…and we push them for quality…it's not fair." (Participant 7)

Many viewed the time constraints as a variable that also depended on the student's ability to grasp research at the elementary level. Those that had a good grounding of research at the UG level took on PG projects well and needed marginal guidance from supervisors, whereas other students required a lot more research mentoring, coaching and support. This is noted in the excerpts below:

"… depends on student's ability to understand the research process the student is able to run with projects… students do need guidance and support from the supervisor…. but success rates differ…and depends how fast they learn." (Participant 1)

"…Basically … looking at the time frames… I don't want to appear that I'm speaking negatively … but I would they appear not prepared to conduct an actual study… they need more time for theory…and research methodology … they need more than what is allocated to them." (Participant 3)

Although the completion of projects was factored around time and understanding of research, it assisted both the facilitation of research and students when projects were more practical and evidence-based. Seemingly, when students were asked to draw from their experiences and formulate research problems, they were able to actively engage in research projects and apply the acquired research knowledge. To this effect, the time factor for achievement of research outcomes was yet again a cause for concern as per the participants' statements below:

"…. the biggest challenge is fully grasping the research process in the allocated time… and this requires time." (Participant 1)

"…the research projects are delayed …time is not enough…as the students' encounter so many challenges… some submit way after deadline…" (Participant 3)

*"… the success of the project is usually tied to the extent to which the student adheres to the aspects of literature searches and reading and that is why the research theory module should not be taught in isolation… the more the student adheres to the methodologies and have a feel of what research is all about the more successful they will be research." (*Participant 6)

"Time is a big concern…but allowing the students to focus on evidence-based practice and draw from their experience has made completing a project much more doable." (Participant 10)

5.4.5 Theme 5: The lecturer and supervisor's perspectives of student preparedness in nursing research education

In relation to objective 4, a correlation of the participant perspectives and viewpoints lent itself to a better understanding of how students faired on completion of training and UG studies. These perspectives gave the researcher an insight into the success or failure of research projects that were embarked

upon in both UG and PG studies. Perspectives ultimately gave value to this objective by highlighting the advantages and disadvantages of teaching the research module and supervising projects. It was interesting to note that many participants shared similar experiences and views on lecturing, facilitating or supervising the research module, despite the varied locations of the institutions. The supervisor's perspective was vital to determining the level of competence and achievement of the research outcomes as evidenced by a student's PG studies.

Two sub-themes emerged from this major theme:

Sub-theme 5.1. Advantages of the lecturer and supervisor perspectives of nursing research education

Despite the many challenges, some did note that they had good research report writing capabilities and were able to successfully complete projects. This was evidenced by actual excerpts below:

"… you find the more students read about different methodologies and designs …they are more able to grasp and come up with very good write ups or research." (Participant 6)

"… probably 80% to 85% are successful in completing a passable research project and by that…. I do not only mean that the project is well researched but…. they understand what they did in research…." (Participant 10)

"The area of the DRC where the students have the opportunity of presenting their work before a panel of academics to offer meaningful suggestion … the institutional review committee creates that level of a robust kind of process …for their research learning and writing styles." (Participant 6)

"I learn from my students every time I teach this course… there is always something new in research teaching…and we should be open to this…" (Participant 9)

Sub-theme 5.2: Disadvantages of the lecturer and supervisor perspectives of nursing research education

While some lecturers and facilitators of research had student projects that reached completion, some had negative experiences as well. Projects that did not reach completion and plagiarism were major negatives voiced. The issue of time being insufficient reared once again. The following excerpts support these inferences:

"No… no projects that I have supervised or taught in undergrad have been taken for publication…" (Participant 3)

"There is no connection between what they have done in theory and what they about to do in a project because it is done in isolation... and students struggle and it becomes bad not only for the student but also for the supervisor…. many plagiarise as they do not know how to source material." (Participant 6)

"The design of the program has not prepared them adequately; the time frame is too short...it is a battle as they appear not to have grasped the research process." (Participant 8)

"There is a bit of disconnect between the way the theory is delivered away from the project…. it should be done together…. By the time they come to the project aspect they just have no clue what they are supposed to do and how to go about it … it would be interesting to see them working on the project while they learn theory from the word go… you see the effects in the quality of the write ups and their work when there is lack of reading culture." (Participant 6)

"… *no work from undergrad supervision has been taken for publication… hardly any students from undergrad progress with research to Masters studies*." (Participant 1)

"… *time and role expectations…. teaching is just one component of research … we must marry teaching and scholarship which is lacking…"* (Participant 10)

5.4.6 Theme 6: Suggestions by research lecturers and supervisors for enhanced facilitation of the research module in UG Nursing programmes

In relation to objective 5, it was imperative to understand what was proposed by the lecturers and supervisors that taught and facilitated research. Suggestions, that could favour the productive use of research knowledge and scientific inquiry to ensure an easier transition for students to embark on research projects from UG to PG studies, were welcomed. The participants were eager and forthcoming with suggestions and recommendations to improve and enhance the facilitation of the research module. Amongst the many proposals and suggestions, two recurring suggestions were forthcoming. Many had similar suggestions and most of the recommendations surrounded the issue of the time factor of the research module and research concept clarification enhancement.

Two (2) sub-themes emerged from this major theme:

Sub-theme 6.1: Curriculum design and module review of the UG Nursing programme

Numerous recommendations centred around the curriculum design and review of the research module. It was voiced that the curriculum design needed a review of the facilitation of the module as evidenced in the suggestions made below:

"Research for the undergrad student should start from the word go…. or the beginning of the student's training…. and carry through their course so by the time they reach 4th year they are well versed with the content… time frame is too limited and content in research is too much…. and that is one of the reasons the module is often a at risk module at most institutions." (Participant 1)

"Two years is sufficient for a research project but it depends on how the learning outcomes are structured throughout the programme…the research reading and writing culture must start early in the course…. research must become a culture in learning… there must be standardisation of the teaching method in UG level... there must be a way … a particular method to refine research skills to develop a PG life that is mostly based on research and that has been the problem seen at PG level." (Participant 6)

"I would recommend that our UG students get a good grasping of research concepts … I don't think they at the level to conduct projects… there should be a really god articulation of research at each level from early… then students at Master level would have a good grasp of underpinnings of research… and we would not have to revisit that." (Participant 10)

"… if they really want good research projects they need to have research teaching spread over the four years so that the student is constantly engaged in the research process." (Participant 8)

Sub-theme 6.2: Suggestions for enhanced research knowledge acquisition of the UG Nursing student

Recommendations surrounded the introduction of guidelines and early implementation and introduction of research as a module in the UG Nursing programme. The following excerpts support this deduction:

"… since higher education emphasises research I would recommend that maybe adopt a style whereby we get people get involved in the theory aspect… so that when students have a problem understanding me… someone else may present it better… also that maybe the literature review in future should start very early in the programme." (Participant 3)

"If they are exposed to research from the word go… it makes it easy for them to adapt and there will be less stress on the part of their supervisors a well…. If a culture of reading starts early ….. you cannot be a god researcher if you not a good reader… there are just no short cuts to this… there should be an intro at level 1 and level 2 to research to develop a reading culture; it will go a long way in assisting them in their research projects." (Participant 6)

"… yes, had there been policies or standard guidelines it can guide us and lead us to one direction and preventing problems in teaching research." (Participant 3)

"Students should be allowed to present their final project which is where it is scored at the level of DRC ….most of the time there is no standard to that so we don't even know how the eventual project is scored and if there can be a guideline and a structured way of saying how the student has been guided to get their final score it will be very nice way of ensuring best practices." (Participant 6)

5.5. SECTION B – RECORD REVIEWS OF THE DOCUMENTS PRESENTED FROM VARIOUS UNIVERSITIES

This study employed two methods of data collection to add to the credibility of the data collected, whilst seeking to satisfy objective one of the study. The different data collection strategies were also relevant to a case study approach utilised in this study. Where accessible, the researcher corroborated the information gathered from the records with the data gathered from the interviews. The researcher was permitted to view study guides and other

records such as research module descriptors as well as teaching and assessment strategies, related to the sample institutions. Other available records on websites and electronic portals were accepted as public domain records that did not lend to a breach of confidentiality and privacy of the institution. The documents were analysed utilising the criteria in Table 5.7. below to inter-relate the above reviews with the documents presented amongst the different institutions.

Table 5.7: Table of criteria that informed the reviewing of records

CRITERIA	RECORDS REVIEWED
1.Conceptual issues of the research module design in UG Nursing programmes.	Review of: • Research module descriptors in the UG Nursing programme. • Research student study guides of the UG Nursing research module. • Research learner outcomes and specific criteria to be achieved at the end of the research module • Duration and time frames of the research module. • Pedagogical practices specific to the research module and learning outcomes and competencies of the research module in the UG Nursing programme. • Assessment criteria and its alignment to the research module and competencies in UG Nursing programmes. • Assessment strategies and its alignment to the research module and competencies in UG Nursing programmes
2. Structures and processes used to monitor, assess, or improve teaching and learning of research in UG Nursing education.	• Research policies or guidelines; institutional and departmental applicable to research teaching and facilitation • Ethical review guidelines. • Plan of research activities within stipulated time frames.
3. Contextual issues of the research module in UG Nursing education pedagogical practices.	• Institutional constraints/concerns affecting teaching and learning of research module. • Professional development of lecturers and supervisors of UG research • Adoption of best practices that enhance teaching and learning of the research module.

5.5.1 Document reviews of local universities

5.5.1.1 Conceptual issues of the research module design in UG Nursing programmes

A review of the research module documents at local universities corroborated the views of the interviewees in that there were study guides and module descriptors of the module as detailed by the regulatory body SANC specifications. There appeared an overall similarity in research course content, outcomes and duration of the research module. Teaching strategies varied amongst the different lecturers and there was no set or prescribed method laid out in the research module descriptors. Learning outcomes were detailed but the mode of teaching was left to the lecturer or facilitator. The research module at most institutions appeared to be carried out through the academic year and summative tests and a research project formed part of its assessment strategies. The research project, which formed the major part of the outcomes to be achieved was externally examinable and moderated at some institutions.

5.5.1.2 Structures and processes that were used to monitor and assess or improve teaching and learning of research

Notably, a set policy or guidelines that detailed the undertaking of teaching nursing research was absent from all NEI records that were reviewed. The researcher was unable to obtain any hard or soft copies thereof. All local institutions relied on the research module descriptors and the generic institutional research policies as outlined on the institutional website. Time frames for the project stages were dependent on the departmental research advisor or research coordinator. One of the international institutions that were sampled, however, had arranged the research project into stages that fit into the overall course time frames.

Adoption of guidelines can assist in academic management processes, where the task is creating a work environment that favours the productive use of skills and teaching practices. This will advance competent graduates with a sound research

knowledge capacity to undertake PG studies and ultimately contribute to improved outcomes in healthcare

5.5.1.3 Contextual issues of the research module in UG Nursing education pedagogical practices

While there exists university ethics and integrity policies, there is no direction on review timeframes for research projects. Furthermore, there appears no defined policy or guidelines for professional development and training for the research lecturers/facilitators. It should be noted that the best practices noted from record reviews were the presence of research module descriptors that afforded some structure to the research module facilitation. In the absence of prescribed guidelines, this assisted to guide the lecturer with pedagogical practices and to achieve the stipulated outcomes of the research module.

5.5.2 Document reviews of national universities

5.5.2.1 Conceptual Issues of the research module design

National universities subscribed to similar methods to local universities for research facilitation. The research module guide was halted at the proposal level of the full research project. The nursing students did not advance to the full project and this research proposal was supervised and thoroughly examined to achieve research outcomes. However, it was noted that study guides are sometimes referred to as learner guides. were a little more detailed and module content and duration spanned over two weeks, shorter than other local universities. The research lecturers favoured the case method of research as students were tasked to work on projects arising from problems evident in the clinical fields that they worked in. Assessment strategies included summative tests, evaluations and presentation of a full research project at the end of the final year of nurse training. One university even stopped at the research proposal stage and considered this as the completion of the research module.

5.5.2.2 Structures and processes that were used to monitor and assess or improve teaching and learning of research

The policies in the department conformed to the institution at large as well. There existed no specific policy or guideline that detailed how the module should be taught or conducted. Lecturers were left to navigate their approach to teaching and facilitation of the research module. Ethical review protocols were clearly defined on the websites and aligned with the institutional policy.

5.5.2.3 Contextual issues of the research module in UG Nursing education pedagogical practices

Nationally, the lecturers had little and no issue with the facilitation of the module online or face-to-face. There was adherence to timeframes on the part of the student, so this differed in a way from the local universities where timeframes proved to be an issue. There were no records of professional development for the research lecturers or supervisors. Lecturers embarked on self-learning activities by attending seminars and workshops outside the university. The best practice noticed here was that the research module design was more specific and detailed. It outlined the teaching and learning outcomes to be achieved and this seemed to offer guidance to the lecturers of research.

5.5.3 International universities

5.5.3.1 Conceptual issues of the research module design

It was interesting to note the similarities in the facilitation and teaching of research internationally. While local and national universities have module descriptors and designs; research course maps are used internationally. The course map outlines the details and outcomes of the research module which entailed many similarities in terms of outcomes and criteria to be achieved on completion of the module. The duration of the research module spanned over sixteen weeks and the facilitation of the module is by division of the students

into “break out” groups. These break-out groups are considered teams. As in national institutions, the project is based on their real-life experiences within the clinical setup. A strong leaning toward evidence-based practice was noted in the course mapping.

Virtual classes were preferred and the course map detailed this, as break-out group works that fit into tidy time frames that were implemented by one university. Time also proved an issue with the others. Evidence-based practice appeared the general choice and lecturers utilised the case-based method to achieve the desired research module outcomes. Assessment criteria were specified which included summative tests and evaluation at different stages of the full research project which was the requirement for passing the research module.

5.5.3.2 Structures and processes that were used to monitor and assess or improve teaching and learning of research

While module outcomes were defined, there were no policies and guidelines that could guide a research lecturer on the facilitation of the research module in UG Nursing. There were policies surrounding ethical review and approval with stipulated time frames. There were no departmental review committees, so all reviews were done at a faculty level. The module maps detailed module outcomes as well as assessment requirements. Assessments encompassed the research project at various stages as well as summative tests.

5.5.3.3 Contextual issues of the research module in UG Nursing education pedagogical practices

The main constraint, as verbalised by interviewees from the international sample, was how the time factor impacted the nursing research graduate. Sixteen weeks as outlined in the course map was considered insufficient for a research knowledge transfer and for students to produce a quality research project. Lecturers had occasion to develop professionally and had to undertake research advance classes to be updated. There were no records of this though,

as verbalised by the participants. Lecturers of the research module were also given the opportunity to self-develop and attend symposia and workshops to be upskilled.

The evidence-based practice inclusion in the module design or course map as it is referred to lent itself to a very interesting addition that could prove beneficial and add to the body of knowledge of the nursing practice. While locally, the tendency is toward research generation; evidence-based practice can enhance nursing practice and not just in nursing education. Local universities, which do not favour the practice of research in the clinical arena and patient care, would benefit from evidence-based projects.

5.6 SUMMARY OF CHAPTER

Chapter 5 detailed the data collection and analysis of the interviews with participants and this was corroborated by the review of the accessible documents from the various institutions. A general overview provided details of pedagogical practices in research that varied locally, nationally and internationally. The aim of the data analysis was to attempt to answer the proposed research questions that guided this study. The next chapter will discuss the findings of the data collected and corroborate or refute with published literature.

CHAPTER 6

DISCUSSION OF RESULTS

6.1 INTRODUCTION

The preceding chapter presented and categorised data into themes and sub-themes and related the information to the objectives of the study. This chapter aims to interrogate further literature sources to validate or refute the findings. An in-depth discussion of the findings in relation to the objectives and the theoretical framework that underpinned the study will be presented. Healy and Jenkin's Research Teaching and Curriculum Design Nexus outline four concepts that guide the teaching and learning of research to attempt to develop students as researchers (Healy and Jenkins 2012: 12). This study set out to explore the practices and experiences of lecturers/facilitators/supervisors in relation to the teaching and learning of research in the UG Nursing programme.

This chapter will illustrate the alignment of Healy and Jenkin's Research Teaching and Curriculum Design Nexus to the objectives of the study and the findings of the study, as presented in Chapter 5. As data collection for this study comprised of interviews and record reviews, a discussion of the results will be presented in two sections. Section A will comprise a discussion of the interviews and Section B will comprise a discussion of the record reviews.

6.2 SECTION A: DISCUSSION OF THE INTERVIEWS

This section entails a discussion of the components of The Healy and Jenkin's Teaching and Curriculum Design Nexus in relation to the findings and the research objectives of this study.

6.2.1 Alignment of the Healy and Jenkin's Teaching and Curriculum Design Nexus to the research objectives of this study

The Healy and Jenkins Teaching and Curriculum Design Nexus comprises four components that guided the study objectives. As discussed in Chapter 3; each of the components detailed the phases of the study. These were aligned to the themes that emerged as well. The correlation between the Research Teaching and Curriculum Design Nexus, the objectives and the emergent themes will be presented in a table and thereafter discussed.

Alignment of the findings with emergent themes from the interviews to The Healy and Jenkins Teaching and Curriculum Design Nexus and the research objectives of this study.

The table below is a representation of the themes that emerged from the study in relation to the study objectives. The researcher aims to show how these relate to the components of the Healy and Jenkin's Research and Curriculum Design Nexus presented in this study. The major themes, as well as the emergent sub-themes, are presented.

Table 6.1: Alignment of the findings with emergent themes from the interviews

THEME	SUB-THEMES	RELATED OBJECTIVE	RELATED PHASE OF THE NEXUS
1.Contemporary pedagogical practices of UG Nursing programmes.	1.1 Blended or mixed methods of facilitating and teaching research. 1.2 Online methods of facilitation and teaching research. 1.3 Policy and guidelines surrounding pedagogical practices of teaching research in UG Nursing programmes.	Objectives 1 and 2	Research-tutored
1. Research knowledge acquisition and capacity building of the UG Nursing students.	1.1. Concept clarification of research methodology in UG Nursing students 1.2. Assessment strategies of research methods in the UG Nursing programme.	Objective 3	Research-based
2. Research preparedness of the post – graduate nursing student to transition into Masters and Doctoral programmes.	2.1. Concept clarification of the research process by PG nursing students 2.2. Research preparedness of the Research nursing student to manage and complete full Masters and Doctoral projects within stipulated timelines.	Objectives 3 and 4	Research-led
3. Research teaching and facilitation of the research module in UG Nursing programmes.	3.1. Design of research module descriptor in UG Nursing programmes. 3.2. Research preparedness of the Research Nursing student to manage and complete a full project within stipulated timelines.	Objective 1 and 2	Research-based
4. The lecturer and supervisor's perspectives of research education in nursing.	4.1. Advantages of the lecturer and supervisor perspectives of research nursing education. 4.2. Disadvantages of the lecturer and supervisor perspectives of nursing research education.	Objective 4	Research-oriented
5 Suggestions by research lecturers and supervisor's for enhanced facilitation of the research module in UG Nursing programmes.	5.1 Curriculum design and module review of the UGNursing programme. 5.2 Suggestions for enhanced research knowledge acquisition of the Ug Nursing student.	Objective 5	Research-oriented

6.2.1.1 Major Theme 1: Contemporary pedagogical practices of UG Nursing programmes

The sub-themes that emerged from this theme to be discussed below are:

1. Blended or mixed methods of facilitating and teaching research.
2. Online methods of facilitation and teaching research.
3. Policy and guidelines surrounding pedagogical practices of teaching research in UG Nursing programmes.

The first objective of this study was aimed at exploring adult learning principles that are demonstrated in the teaching practices of the UG Nursing students. The second objective was an exploration of the views and experiences of the lecturers and the supervisors of the research programme related to their pedagogical practices.

In relation to the above objectives, the findings of this study revealed that teaching practices varied and that research was not dependent on a particular method in teaching and facilitating research at UG levels of nursing education. Nursing students were not permitted on campus due to the imposed lockdown restrictions. Notably, the methods utilised by academics for knowledge transfer were either “face to face” or online resulting in a blended learning approach as evidenced in the resultant sub-themes. The move to online teaching and learning in higher education grew, owing to many factors especially the COVID-19 pandemic (Goodwin, Kilty, Kelly, O’ Donovan, White and O’ Malley 2022: 1 – 2). Given the “new normal” imposed by the COVID - 19 pandemic, HEIs made the move in pedagogy to online teaching and facilitation to bridge the learning gap that prevailed. This is in keeping with a study done by Naidoo, Naranjee and Sibiya (2021:17 – 35), who found that behaviours and approaches by academics in a learning institution, assisted them to effectively respond and improvise in navigating the COVID - 19 pandemic implications on teaching and learning.

It should be noted that at the time of data collection; the method of online teaching and facilitation of the research module was in operation both nationally and internationally. This was due to the world at large being within the ambit of the restrictions imposed by world leaders and the WHO to curb the pandemic. Lecturers seemingly favoured blended and mixed-methods such as the lecture and case study methods, employed before the lockdown. The paradigm shift in higher education teaching and learning was seen as innovative and flexible and created an opportunity for diversity and improvement of technological skills. The virtual method differed in that all teaching and facilitation of the module, while posing many challenges was still embraced and the change was welcomed by both the student and the teacher.

The findings of the emergent third sub-theme of this major theme showed the value of policies and guidelines in the teaching and facilitation of the research module. While some institutions internationally had policy course maps, nationally the lecturers depended on the module descriptors of the research module to guide their teaching. The findings revealed that an absence of policies and guidelines that guided the teaching and facilitation, which would have brought benefits to the nursing student and the teacher of the research module. Teaching and learning of research posed further challenges with the introduction of online learning and the findings reveal that a framework or guideline was needed. In their study; Goodwin *et al*. (2022: 1 – 5) showed how a framework or guide or a “strategic programme” as they referred to it, would be of benefit to teaching various modules in nursing education. These authors further elaborated that the curriculum design could be modified so that training sessions and customised workshops of the module, incorporating educational designs and assessment strategies in a framework, could be of benefit.

The findings in Theme 1 reveal that pedagogies differ and policies and guidelines were absent indicating a need to revisit the module design and guidelines. Healy and Jenkins (2017: 54) maintain that there is a distinction between students who “build” on knowledge and those who “explore and acquire” knowledge. In an exploration of the various pedagogical practices and

the perceptions and experiences of the lecturers in teaching the research module; this study revealed the absence of guidelines.

The research-led component of the Healy and Jenkin's Teaching and Curriculum Design Nexus shows that the novice nursing student is required to learn and adopt necessary research knowledge and requires a look at the pedagogies in teaching and facilitating the research module to enhance research education in higher education (Malcom 2014: 289). This author, in her critical evaluation of understanding the research-teaching link in higher education, explored how Healy and Jenkin's Teaching and Curriculum Design Nexus impacts the knowledge attainment of research principles by the nursing students by way of research-led and research-informed pedagogical research practices.

The research-led phase of the mentioned Nexus drew on exploration and perceptions of the lecturers of research and their current pedagogical practices to determine if current pedagogical practices were sufficient to ensure UG Nursing students' preparedness for the research module. This study's findings revealed that while pedagogies differed, the factor that prevailed was the duration of the teachings and the absence of a guideline to ensure a standard of teaching research at the UG Nursing student level.

6.2.1.2 Major Theme 2: Research knowledge acquisition and capacity building of the UG Nursing students

The sub-themes that emerged from this major theme to be discussed below are:

1. Concept clarification of research methodology in UG Nursing students.
2. Assessment strategies of research methods in the UG Nursing programme.

Knowledge acquisition was dependent on many factors. While the presentation of the content varied across the different universities, the clarification of content was evident in the product of work by the students. This was evidenced by the projects presented and the assessment strategies employed by national and international universities alike. The fulfilment of mini-research projects was common in all universities. Methods of assessment were not explicit or standard. Mini tests and quizzes were common to all the participants in line with the 'new normal' teaching and learning trends in higher education (Goodwin *et al*. 2022: 1 – 5). Notably, online learning did not favour the time factor and much-needed collaboration in projects. While students were successful in tests and evaluations that ranged from tests and critiquing of research articles as assessments; it was noted that students lost clarification of concepts by the time they embarked on PG studies, as will be discussed later in this chapter. Peachy and Baller (2015: 440) expressed that students were incapable of deriving a research problem or critiquing literature for the study. The authors also highlighted the time factor was insufficient to evaluate for effectiveness.

The current study revealed that students grappled with concept clarification in research. Lecturers verbalised challenges and negative aspects of this, as evidenced by the participants' accounts in the interviews. Long, Bischoff and Aduddell (2019: 172) maintained that more "innovative teaching and learning strategies" were required to understand the research process in nursing education. Reid, Briggs, Carlisle, Scott and Lewis (2017: 1 – 8) showed the influence of research in nursing and therefore the value of understanding the research concepts for research so that there is advancement in nursing care.

Objective 3 aimed to determine the perspectives of all role players in the teaching and facilitation of research nationally and internationally and aligned itself to this sub-theme. The general perspective, with regards to concept clarification in knowledge acquisition and capacity building, is that there exists a gap. A study by Allari (2016:66 – 68) revealed that students felt that the research module could not be implemented in nursing practice and therefore grasping the research process was transient. This further shows that while

students pass the assessments of the research module, the tendency of fleeting retention of the concepts exists as evidenced in PG students. There exists a challenge when these concepts are needed to be understood especially when PG students needed to embark on further studies. Findings clearly outlined a deficiency in capacity building of the nursing student in UG research studies. Thus, the research-based aspect of Healy and Jenkin's Research and Curriculum Design Nexus (2012: 12), which examined whether students become producers and not mere consumers of the research taught, revealed that a gap does exist in the understanding and retention of the research process and research concept clarification in PG Nursing students both nationally and internationally.

6.2.1.3 Major Theme 3: Research teaching and facilitation of the research module in undergraduate nursing programmes

The following sub-themes that emerged from this theme to be discussed below are:

1. Concept clarification of the research process by UG Nursing students.
2. Research preparedness of the Ug Nursing student to manage and complete full Masters and Doctoral projects within stipulated timelines.

Objective 3 set out to determine the role players of research teaching and facilitation perspectives with regards to knowledge acquisition of research amongst PG Nursing students. Objective 4 aimed to determine the perspectives of the supervisors of PG Nursing students with regard to embedded research knowledge required to embark on PG studies.

The findings of this study revealed that participants both locally and internationally; agreed that a grounding at an elementary level of the research process and concept clarification was pivotal to any successful research project, more so in UG Nursing studies. Participants expressed a gap in knowledge capacity among the UG Nursing students. While PG nursing students proved better with learning instructions, they lacked research concept clarification and lecturers had to re-teach the basics of research. Allari (2016:

67) expressed that the teaching of research to nursing students was worth modifying to address this and that lecturers should approach research teaching with different strategies at different levels. This author further proposed that the lecturer should also be “research active” which is often not the case. Lecturers are often just facilitators and teachers of the research module (Allari 2016: 62 – 68). The emphasis is based on the achievement of outcomes evidenced by assessments at the end of the module duration, which ranged from 14 to 16 weeks nationally and internationally. This equates to one semester to assimilate the research process and concepts sufficiently to embrace their mini project and meet the qualification objectives. While the project is done over approximately 10 months, it should also be noted that at HEIs, the year commences, post- registration, around the second month and concludes around the eleventh month. Silva, Mendez, Ventura, Costa, Silva and Silva (2021: 2) highlighted the importance of “deepening the knowledge” of the research concepts and scope in teaching UG research. These authors go on to express the complexities of the vocational training systems and teaching and learning events that compound this research teaching process.

The research-led aspect of Healy and Jenkin’s Research and Curriculum Design Nexus (Healy and Jenkins 2017: 2) addressed whether the pedagogies and practice methodologies that were currently in place were sufficient to prepare the UG student to transition to PG studies like Masters and Doctoral programmes. Findings from this study provided evidence that teaching practices and methods were insufficient to groom and mould a well-rounded and knowledgeable student related to research scientific inquiry.

6.2.1.4 Major Theme 4: The skills level/ adequateness of the UG Nursing student to transition into Masters and Doctoral programmes

The sub-themes that emerged from this major theme to be discussed here are:

1. Design of research module descriptor in UG Nursing programmes.
2. Research preparedness of the PG Nursing student to manage and complete a full project within stipulated timelines.

Objectives 1 and 2 were once again addressed and aligned to this theme as the adult learning principles had to be explored to determine the teaching and learning methods. This would ultimately determine the preparedness of the research student. Adedokun *et al*. (2014: 139) express how the acquisition of research skills is dependent on actual participation in research. Whilst there exist varied prescriptions on how the outcomes of the research module should be achieved, the factor that stood out with all the participants was that this module lacked pedagogical structure. The findings revealed that participants of this study believed that standardised guidelines for the facilitation of the research module would assist in helping the educators and students to achieve their learning and teaching outcomes with greater understanding and knowledge (Allari 2016: 67). The same author argued that structured guidelines would assist in course review and facilitation.

Module descriptors nationally, and module maps internationally, detailed module outcomes only, while guidelines and structures that detailed and described the research process were lacking. The consensus from participants was that a set standard on how to achieve the research outcomes would prove beneficial. Lombard and Kloppers (2015: 2); highlighted that despite much interest and effort shown by scholars to promote research skills, little attention was afforded to the teaching of research methodologies in UG studies. The differences in teaching pedagogies among the various supervisors did have an impact on how students carried out and completed research projects. Findings, therefore, alluded to a need for the research curriculum to be reviewed.

It is understood that with varied pedagogical styles and methods in teaching research, each required a method that would cause the student to engage in critical thinking. Case-based teaching and critical analysis were the most preferred methods. While the lecture method was used by some lecturers, it was apparent that for the understanding of research, retention of the research process and methods were required. Mere learning off content and evaluation of research proved to have less than optimum outcome preparedness of the student for this module. Therefore, retention of the content to ensure research

preparedness was needed. Once again, as highlighted by Allari (2016: 63), the research module was not popular with nurses as they are more inclined to the practical aspect of nursing rather than the intellectual work and doing research in practice, except in the field of nursing education.

The findings showed that projects were completed by the research students. However, supervisors found challenges with time frames and the research embedded knowledge when these students embarked on PG studies which question the research preparedness of students. Whilst Vahed and Singh (2017:224 – 230) describe UG research as the “bedrock” of PG studies, the design of the research curriculum for UG students should ensure that students have sufficient exposure to the research process to gain sufficient exposure. In relation to the Healy and Jenkin’s Research and Curriculum Design Nexus; the research-based phase examined whether the student is actively engaged in the research study or inquiry to produce research and not just be able to pass the research module (Healy and Jenkins 2017: 2). The findings of this study revealed that while current pedagogies to an extent help student achieve success in completing the module, it is not without challenges. The time factor is again highlighted that given more time to grasp research concepts, the student will complete their mini projects with ease at the UG level. For this, the curriculum design of the research module must be revisited. Research outputs from the projects had greater success internationally than nationally as there appeared to be more instances of publication at an international level.

6.2.1.5 Major Theme 5: The lecturer and supervisor’s perspectives of research education in nursing

The sub-themes that emerged from this major theme to be discussed here are:

1. Advantages of the lecturer and supervisor perspectives of research nursing education.
2. Disadvantages of the lecturer and supervisor perspectives of nursing research education.

Objective 4 aimed to determine the perspectives of the supervisors of PG studies, for example, the Masters and Doctoral programmes; on the application and transfer of embedded knowledge by the PG students they supervised. This information would highlight the PG Nursing students' knowledge acquisition and capacity building of the research module outcomes. The perspectives of the supervisors helped the researcher gain insight into the challenges experienced in UG and PG research studies. The findings in this study revealed that while approximately 80 % of the students completed their UG projects; it was of an average standard. Participants stated that it was not done well, but in some instances, some students gained a flair for the subject and produced good projects. It emerged that internal research processes like Departmental Review Committees at a few institutions had a major impact on the outcome of the project. Students in some institutions had this avenue to be guided accordingly before the submission of their projects for examinations.

Vahed and Singh (2017: 224 – 230) expressed the transition of the student to adopt a self-directed role as a researcher as opposed to the conventional learning experiences where their work is steered by a lecturer. While some students embraced this transition and were able to run with learning instructions; some found this a challenge, as evidenced by their research projects and delays in completing projects on time. Some participants shared positive experiences like engaging in the learning experience themselves where they also learned from the process. The review committees proved beneficial and assisted in providing somewhat robust research studies. Most of the participants expressed a lack in the ability of the student to correlate the theory of research to the actual implementation of the project. Many participants stated that while this was a challenging experience for the students; it ultimately negatively affected them as well.

It was discovered that many had issues with the way the curriculum was structured to facilitate the research module. In their study; Kawulich, Wagner and Garner (2012: 75) detailed the need for the research curriculum to be reviewed in the area of teaching and learning to enhance best research

practices. In relation to Healey and Jenkin's Research and Curriculum Design Nexus; the research-oriented phase aims to determine if the current pedagogies sufficiently ensure adequate research knowledge capacity for self-directed research inquiry of the graduate nurse to embark on PG research studies (Healy and Jenkins 2017: 2). The findings of this study revealed inadequacies as evidenced by the sub-standard projects and poor research outputs in terms of published works, more nationally rather than internationally.

6.2.1.6 Major Theme 6: Suggestions by research lecturers and supervisors for enhanced facilitation of the research module in UG Nursing programmes

The sub-themes that emerged from this major theme to be discussed here are:

1. Curriculum design and module review of the UG Nursing programme.
2. Suggestions for enhanced research knowledge acquisition of the UG Nursing student.

Objective 5 of this study aimed to develop a set of guidelines that will have the potential to favour the productive use of research knowledge and scientific inquiry to aid in the transition from an UG to a PG research student. It was therefore imperative to consider the viewpoints and suggestions presented by the role players in the facilitation and teaching of research to ease the transition and attempt to enhance research education in nursing. The general common suggestion amongst the majority of participants was that the research module should be introduced earlier in the training programme. In this way, students can be given a longer period to grasp research concepts and understand the research process, to work with greater ease on their research projects and complete them timeously. This meant that research should be introduced to the student from the first year of their study programme. By the time they start their research projects for examination, they will be more knowledgeable and submit projects of better quality and worthy of publication. This would also ensure that the academic reading and writing culture is inculcated early.

A method for refining research skills was necessary as per the findings of this study. Given the role of research for EBP in nursing and that research informs healthcare decision-making, it cannot be taken lightly (Burns and Grove 2016: 14). A review of the curriculum and restructuring and redesigning of the research module is warranted. Meeker, Jones and Flanagan. (2008: 377) argue that at whatever stage research is introduced in the training, students will experience challenges. However, giving additional time to grasp new concepts can only prove beneficial. Suggestions for policies and set guidelines were brought to the fore by the participants, highlighting the need for standardisation of the pedagogical methods to teach research. A more active involvement, with critical thinking, was favoured by the case-based method. This would afford students the feel of actually doing research, rather than just learning about it for completion of training purposes.

An assessment policy or guidelines for student research projects will provide standardisation and assist lecturers to teach the research module. This could be a way of ensuring best practices in research in UG Nursing programmes. In relation to Healy and Jenkin's Research and Curriculum Design Nexus, this theme lies in the research-oriented phase dealing with knowledge construction. The focus of this phase is the development of student's skills and knowledge in research methodologies in nursing (Healy and Jenkins 2012: 12). This research-oriented phase; as explained in the discussion of theme 5 above; is aimed at determining if current pedagogies in UG Nursing research studies are adequate to achieve the optimum research knowledge capacity for PG research inquiry and studies.

6.3 SECTION B: DISCUSSION OF THE RECORD REVIEWS

This section will provide a discussion of the findings from the record reviews from the various national and international participating universities. These findings are related to the objectives of the study and the phases of the Theoretical Framework that underpinned the study. Vahed and Singh (2017: 224 -230), in their study, stressed the importance of keeping track of UG students' research outputs and performance as a quality control measure. This

study opted to perform record reviews to corroborate the findings from the interviews and in doing so, served to add rigour to the study.

Alignment of the findings of the record reviews to The Healy and Jenkins Teaching and Curriculum Design Nexus and the research objectives of this study

The table below is a representation of the findings from document reviews of the various universities and how these findings further align itself to the objectives of this study and to the specific phases of the Research Teaching and Curriculum Design Nexus.

Table 6.2: Alignment of the findings of the record reviews

CRITERIA THAT INFORMED THE RECORD REVIEWS	RECORDS REVIEWED	RELATED OBJECTIVE	RELATED PHASE OF THE NEXUS
1.Conceptual issues of the research module design in Ug Nursing programmes.	Review of: 1. Research module descriptors in the UG Nursing programme. 2.Research student study guides of the UG Nursing research module. 1. Research learner outcomes and specific criteria to be achieved at the end of the research module. 2. Duration and time frames of the research module. 3. Pedagogical practices specific to the research module and learning outcomes and competencies of the research module in UG Nursing. 4. Assessment criteria and its alignment to the research module and competencies in UG Nursing programmes. 5. Assessment strategies and its alignment to the research module and competencies in UG Nursing programmes.	Objectives 1 and 2	Research tutored and Research -led
2. Structures and processes used to monitor, assess, or improve teaching and learning of research in UG Nursing education.	1. Research policies or guidelines; institutional and departmental applicable to research teaching and facilitation. 2. Ethical review guidelines. 3. Plan of research activities within stipulated time frames.	Objective 3 and 4	Research -based
3. Contextual issues of the research module in UG Nursing education pedagogical practices.	1. Institutional constraints/ concerns affecting teaching and learning of research module. 2.Professional development of lecturers and supervisors of UG research. 3. Adoption of best practices that enhance teaching and learning of the research module.	Objective 5	Research- oriented

6.3.1 Conceptual issues of the research module design in UG Nursing programmes

The conceptual issues of the research design in this study addressed the first and second objectives of the study, whereby an exploration of the adult learning principles and pedagogical practices that were in place for the teaching and facilitation of the research module was carried out. A review of the records and documentation showed that module descriptors and study guides were available at the approved study sites. It was evident that the documents from the universities that were under review, seemingly corroborated with the views of the participants from that particular sample set. While study guides had minor layout differences, the module descriptors were approved by their respective regulatory bodies.

There was an overall similarity in course content, outcomes and duration of the research module with standardisations as stipulated by relevant regulatory bodies. It was found that there was no set or prescribed method of teaching or facilitation of nursing research in the module descriptors. Outcomes for the research module were detailed in the records, but methods of teaching the methodologies of research were left at the discretion of the research facilitators. Assessment strategies, according to the module descriptors, encompassed summative tests and assignments and the presentation of a mini-research project at the end of the module. In their study, Spiers *et al*. (2012: 1 – 22) noted that the prescription for certain modules was detailed in module descriptors, but there was a lack of prescription or guidelines on how to teach and facilitate nursing research. The review of the time frames and duration of the research module amongst all participating NEIs ranged between 14 and 16 weeks. This equated to one semester locally, nationally and internationally. Spiers *et al*. (2012: 4) reflected on Kolb's Experiential Learning Styles to show why a fuller range of learning was needed to truly appreciate and engage in research. They further agreed that the facilitation of the research module should be longer than 16 weeks, for knowledge acquisition to take place and for students to grasp and apply concepts of research methodology.

Healey and Jenkins (2017: 3) proposed a review of practices that would cause a shift in the student experience. In their research-led and research-tutored phases of their Nexus, the emphasis rests on the student experience in learning and details of how the curriculum is structured to achieve student outcomes in nursing research. The relevance of these phases to the study was to determine strategies to enhance the teaching and learning of nursing research methodology and determine if the current strategies adequately prepared the UG student for PG studies. Hurlbut and Elkins (2018: 1 – 3) argue that teachers of research have battled to bring the research module "to life "by having nurses engage in research and that a redesign of the research module to address this was needed to "bring the course to life". Peachy and Baller (2015: 433 – 434) agree and state that there was minimal done to support the pedagogical approaches and to enhance quality in teaching and learning practices. Hence, a review of the research module in teaching practice was necessary.

6.3.2. Structures and processes that were used to monitor and assess or improve teaching and learning of research in UG Nursing research education

The perspectives of the lecturers and supervisors on UG Nursing research were necessary to determine the knowledge acquisition and the embedded knowledge of the research content of the student. Objectives 3 and 4 of this study aimed to understand the perspectives of the lecturers and supervisors that were sampled in this study. This was corroborated by a review of the records. It should be noted that only the module descriptors locally and nationally and module maps internationally, were in place to provide details of the research course outcomes as well as its duration. The ethical stipulations set out by the faculty research departments assisted students by way of timelines within which they could work on their projects. This is in keeping with findings by Spiers *et al*. (2012: 1 – 22) to find strategies that help engage students in their own learning

Peachy and Baller (2015: 441) found that the content taught was disproportionate to the required research project and its subsequent evaluation processes. The same authors revealed that while there were policies that outlined information about the research module, there was a lack of guidelines or standards for research facilitation. The research-based phase of the Healy and Jenkins Research and Curriculum Design Nexus requires the student to undertake inquiry-based learning (Healy and Jenkins 2017: 54 – 56). This will assist in determining if the student is actively involved in the research and is able to understand the concepts and methodology of research. This study aimed to determine if current pedagogies were effective in ensuring that project work was worthy of publication and ultimately increase research outputs in nursing. Silva *et al*. (2021: 2 – 8 maintained the pertinence of the development of skills for science and research and the worth of starting this at the training level. It was therefore apparent from the findings of the record reviews, that any reference alluded to UG students' research guidance and development. Hurlbut and Elkins (2018: 1 – 3 agree that prevalent conversations about access and availability of research opportunities allow students to be introduced to and engage in research practices.

6.3.3. Contextual issues of the research module in UG Nursing education pedagogical practices

While the ethical review guidelines were well accepted by some, it was noted that there were no outlined time frames for research activities. There appeared no defined policy on the professional development of the research lecturer. Objective 5 aimed to understand the gaps and deficiencies to develop a set of guidelines with the potential to favour the productive use of research knowledge and scientific inquiry in UG Nursing students to transition to PG studies with greater ease. Reid *et al*. (2017: 1 – 8) argue that the importance of evidence-based practice by research in nursing and healthcare settings should not be underestimated. UG graduate nursing research is therefore an area that needs review to instil or create competence in further PG studies to improve nursing trends and ultimately, healthcare both nationally and internationally.

The Research Module Guide, as it is referred to at one national university that was sampled, differed in one way in that the project ends at the proposal level. The other participants revealed that their students submit a full project. This was seen as their constraint as nursing students did not advance to the full project. Study guides, as sometimes referred to as learner guides were a little more detailed and module content and duration spanned over two weeks, shorter than other universities. Hurlbut and Elikn (2018: 1 – 3) agreed that the practical application of the research process was valuable in the clinical setting, as nursing was a practical subject. These authors claimed that a strong foundation in research methodology was needed to ensure strong research skills for the completion of research projects. Another constraint was that the research lecturers favoured the case method as opposed to lectures in research, as students worked on projects arising from the clinical fields they worked in. The acquisition of research skills and the ability to grasp research methodologies rely fully on active research project participation (Adedokun *et al*. 2014: 137 – 139).

Another concern that was noted, was the time factor for completion of research modules. Module descriptors detailed 16 weeks on average locally, nationally and internationally. Allari (2016: 67) revealed there was a need for modification of the method of teaching research. This author further mentions that understanding research concepts and strategies can take months or years. PG research supervisors, who participated in the current study, verbalised that current time frames for the research module can lead to a lack of understanding, which is later evident in PG projects. Spiers *et al.* (2012: 5) highlighted the struggle of nursing students to comprehend the research process and methodology for application.

A best operating practice that was noted was the presence of the research module descriptors and study guides that afforded some structure to the module. These guided the lecturer with facilitation and allowed nursing students, doing research, to achieve the outcomes of the research module. Locally, nationally and internationally, the findings revealed that the participants

favoured their respective faculty's Ethical Review Committees and policies as they afforded some direction and guidance. Seemingly, this afforded direction and guidance to the actual research project in terms of institutional research ethics and legislation and not the teaching and learning of research in nursing. In relation to the research-oriented phase of the Healy and Jenkins Research and Curriculum Design Nexus, the curriculum emphasises the facilitation of teaching methods and processes for knowledge production in research (Healy and Jenkins 2017: 2 – 5). This phase of the study determines if the current research pedagogical practices in UG students' curriculum sufficiently ensured an adequate research knowledge capacity building for self-directed research inquiry and further PG studies in nursing.

6.4 SUMMARY OF CHAPTER

Chapter 6 discussed the findings of this study in relation to the set objectives of the study. A discussion of how the research questions in the interviews and the review of records from local, national and international universities addressed the objectives of the study, to align with the theoretical framework. The presentation of the tables hoped to show the reader the correlation to assist in understanding the discussion. The next chapter will present a proposal for guidelines for pedagogical practices for UG research teaching and learning that would ensure the research preparedness of nursing students. The guidelines will consider inductive and deductive reasoning from the findings of this study.

CHAPTER 7

GUIDELINES FOR PEDAGOGICAL PRACTICES TO ENSURE RESEARCH PREPAREDNESS OF UNDERGRADUATE NURSING STUDENTS

7.1 INTRODUCTION

Chapter 6, presented a discussion of the results of the current study. Findings showed the resultant themes and sub-themes that emerged from the study and how these themes and sub-themes related to the objectives and the Healy and Jenkins Research Teaching and Curriculum Design Nexus which formed the framework of the study. The responses were also corroborated with literature findings surrounding pedagogical practices and the research module in UG Nursing and a review of the records from the identified institutions. This chapter will describe the development and presentation of the guidelines that will ensure the research preparedness of PG Nursing students.

7.2 THE DEVELOPMENT PROCESS OF THE PROPOSED GUIDELINES

The fifth and final objective of the current study was to develop guidelines that will have the potential to favour the productive use of research knowledge and scientific inquiry to aid in the transition from UG to PG nursing research studies. Notably, the process of developing the guidelines was guided by the information and recommendations from the findings of the current study and in accordance with the study objectives. The proposed guidelines were also developed in relation to the participants' responses and the theoretical framework that guided the study. Analysis of the data resulted in the formation of themes that highlighted the key issues in the facilitation and teaching of the research module in UG nurse training, that needed to be addressed. All responses from local, national and international NEIs that were sampled, were taken into consideration to arrive at the themes and sub-themes as described and discussed in chapters 5 and 6. The resultant guidelines are in relation to the six

(6) major themes, thirteen (13) sub-themes that emerged from the analysis of data gathered from participant interviews and the findings from the review of records from participating institutions.

The guidelines aim to address the issues highlighted to enhance the facilitation and teaching and learning of the research module in the UG Nursing curriculum.

7.3. THE PURPOSE OF THE PROPOSED GUIDELINES

Currently, there exist no guidelines that direct teaching and facilitation of the research module in UG nurse education and training. The findings of this study revealed the lack of a structured way to facilitate or teach this “difficult” module as it differs from the standard modules that relate to the practical field of nursing (Allari 2016:64). The developed guidelines were aimed to inform and guide the stakeholders involved in the teaching and facilitation of the nursing research module in the UG Nursing curriculum. The application of the developed guidelines by the stakeholders will ensure the strengthening of pedagogical practices of the research module in the UG Nursing curriculum. The guidelines will be structured and designed so that stakeholders are guided and updated, and outcomes can be achieved with improved retention of the research process concepts. Adoption of the proposed guidelines can assist in academic management processes, where the task is creating a work environment that favours the productive use of skills and teaching practices. This will advance competent graduates with a sound research knowledge capacity to undertake PG studies and ultimately contribute to improved outcomes in healthcare.

7.4 RATIONALE FOR THE PROPOSED GUIDELINES

The guidelines as explained above aim to address the findings of the study to advise and inform all stakeholders of the research module of the multiple dimensions of research pedagogy. The aim is to ensure the preparedness of the UG nursing student who embarks on PG nursing research studies. The findings of the current study revealed a definite under-preparedness of the student at PG level and a sub-standard quality of the UG projects done. As a

result, the researcher has proposed two sets of guidelines; one that can inform and guide UG pedagogical research practices and one to inform and guide PG pedagogical practices. Inclusion of a set of guidelines for UG research teaching and supervision, not only brings to reality the influence of ingrained research knowledge on UG student outcomes, but it serves to answer the research questions below, that were set out for this study:

1. What are the different strategies that may be employed to ensure the teaching and learning of research methodology to undergraduate students?
2. How does the current research pedagogical practices encourage research outputs and publication writing amongst undergraduate students?
3. How does the current pedagogical undergraduate research teaching and practice methodologies offer/provide sufficient transition for the undergraduate student to progress to higher-level PG studies?
4. How does the current research pedagogical practices sufficiently ensure adequate research knowledge capacity for self-directed research appraisal and inquiry of the graduate nurse for PG studies in nursing?

It should also be noted that the researcher has considered and incorporated the findings from the review of records in the development of these sets of guidelines. The intention, therefore, is to propose a set of guidelines that aims to address the concerns raised, whilst ultimately ensuring an improved and enriched preparedness of the UG research student, to confidently embark on PG research studies. Hurlbut and Elkins (2018: 1 – 4) maintained that, although a 90% retention of content was required to master the research process to reach the full achievement of the outcomes of most research modules, the hope of redesigning the research module would ignite a newfound passion and appreciation for the research process. These authors further noted that the need for improved development of critical thinking and problem-solving skills amongst students doing research was vital. Therefore, the value of critiquing and understanding the research process cannot be underestimated to ensure

an understanding of the credibility of research results from studies for enhanced nursing trends in healthcare.

Hurbut and Elkin (2018) also showed the various stages of categories and levels that the student should master and the understanding of the research process and methodology. They went on to describe the importance of understanding vital outcomes like the use of the library in data searches, critiquing of articles, group presentations and EBP exposure. It should therefore be noted that, while the developed guidelines are not legally binding, they are recommended as a guide to highlight the need for effective teaching strategies that will promote research teaching and learning to UG Nursing students.

7.5 SCOPE OF THE GUIDELINES

The guidelines proposed are aimed at module design and for policymakers in the UG Nursing programmes which include lecturers, facilitators, supervisors and curriculators of the research module in the PG Nursing curriculum. These stakeholders, who are usually tasked with the planning, teaching, facilitation and module design of the research module, may be instrumental in implementing the proposed guidelines. The clear establishment of these guidelines was guided by the Nominal Group Technique (NGT) to make certain that the aim and objectives of the current study are realised (Evaluation Briefs 2006: 7).

7.6 APPLICATION OF THE THEORETICAL FRAMEWORK TO THE DEVELOPMENT OF THE PROPOSED GUIDELINES

In their Research and Curriculum Design Nexus; Healey and Jenkins (2017:54 – 55) outlined four components that aimed to guide policymakers and course leaders to structure the teaching and facilitation of the research module. (Brink, van Der Walt and van Rensburg (2018: 21) describe the framework as a way of organising the study and data, and showing a context to which, the researcher can relate the problem and analyse the findings. The initial step in the proposition of the guidelines was alignment to the context of this chosen

theoretical framework, as detailed in Chapter 3 of this study. This facilitated the synthesis of best practices that could be implemented to ensure the optimum knowledge retention of research concepts for research preparedness of the nursing student in both UG and PG studies.

7.6 RECOMMENDATIONS FOR DEVELOPING GUIDELINES FOR THE RELEVANT STAKEHOLDERS IN RESEARCH IN NURSE EDUCATION AND TRAINING

This study highlighted recommendations by the participants in this study as described in Chapters 5 and 6. Therefore the proposed guidelines are recommended for all stakeholders who are involved in the teaching, facilitation and supervision of research in nursing education.

7.7 PROPOSED GUIDELINES

The findings of this study showed the need for a review of the module design to extend the duration of the module, so that improved absorption of the content can be achieved. The findings also revealed the need for structure and standardisation of the research module at UG level. The proposed guidelines aim to revisit the design of the UG nurse training programme and afford some structure that will ensure an enhanced methodological grasp of content at various levels in the training programme so that efficiency in research is achieved. In this chapter, the guidelines are divided into a set of guidelines for the UG Nursing research teaching and learning and one for the PG research nursing research. It was imperative to address both UG and PG nursing research training programmes to ensure that at the UG level competencies are achieved. This would be beneficial if the nursing graduate decides to embark on PG research studies.

7.8 PROPOSED GUIDELINES FOR THE STAKEHOLDERS OF THE PG NURSING RESEARCH MODULE

The proposed guidelines as highlighted in Table 7.1 below depict the correlation between the various components of the Healy and Jenkins framework that guided the study, the emerged themes of the study and the proposed guidelines for UG Nursing research studies. This set of guidelines is also in keeping with the first, second and fifth objectives of the current study and attempts to provide answers for some of the research questions as set out in Chapter 1.

Table 7.1: Alignment of The Healy and Jenkins Research Teaching and Curriculum Design Nexus to the emerged themes and the proposed guidelines for Ug Nursing research teaching and learning

COMPONENT OF THE HEALY AND JENKINS RESEARCH TEACHING AND CURRICULUM NEXUS	EMERGED THEMES FROM THE STUDY	PROPOSED GUIDELINES FOR PG NURSING RESEARCH STUDIES
RESEARCH - TUTORED (the learning acquired by the student).	1. Contemporary pedagogical practices of UG Nursing programmes.	A1. Ensure a more practical approach to the pedagogical practice as opposed to the lecture method to ensure engagement between the student and the lecturer in teaching and learning research. A2. Research module to incorporate strategies for nursing students to develop responsible, ethical, and competent attitudes toward filtering, synthesising, adapting and applying scholarly and published information.
RESEARCH-BASED (Student is actively engaged in the research inquiry so that they are producers and not just consumers of the knowledge.	2. Research knowledge acquisition and capacity building of the UG Nursing students.	A3. Restructure research assessment strategies to ensure that specific outcomes are assessed at the specific level or year of study, thus ensuring competence in research studies. A4. Ensure rigorous peer evaluation by nursing departments to assess research programmes and programme delivery. A5. Ensure active participation by staff and UG students in annual departmental research days.
	3. Research teaching and facilitation of the research module in UG Nursing programmes.	A6. Review of the current module design to extend the duration of the research module in UG nurse education and training. A7. Enhance knowledge of the nursing lecturer or research facilitator with regards to active learning or inquiry-based teaching techniques.
RESEARCH-LED (learning and adopting the necessary knowledge of the research discipline).	4. Research preparedness of the UG nursing student to transition into Master and Doctoral programmes.	A8. Introduction of a reflective session at the end of the theoretical phase of the research teaching and learning. A9. Creation of research opportunities for student researchers.
RESEARCH-ORIENTED (development of students' skills and knowledge to engage in the research methodologies).	5.The lecturer and supervisor's perspectives of research education in nursing.	A10. Restructure the module design to outline and detail specific research outcomes to be achieved at the end of each level or period of study. A11. Cultivate flexibility, and adaptability of nurse lecturers and facilitators of research by encouraging receptiveness to change and research learning.
	6. Suggestions by research lecturers and supervisor's for enhanced facilitation of the research module in UG Nursing programmes.	A12. Commence the research module in the first year of the UG nurse training programme.

7.8.1 Guideline A1: Ensure a more practical approach to the pedagogical practice as opposed to the lecture method to ensure engagement between the student and the lecturer in teaching and learning research.

A case-based approach can afford a more engaged, practical approach to the teaching and learning of research methods and concepts. While the conventional method of lectures has prevailed over time in the classroom, it is welcomed that a more practical case-based approach and EBP are favoured in research by the participants who have identified gaps in their teaching and facilitation of the research module and made this recommendation.

Rationale for the implementation of the proposed guideline

Engagement in the actual research could lend to better understanding and greater retention of research knowledge by finding solutions to problems identified in their practice arena. Involvement of the student in actual research practices could enhance the retention of the concepts to be learned. Chapter 2 has shown that students expressed that research is “difficult” and separate from nursing. This will help the student relate research to nursing. The findings from evidence-based research can enhance healthcare trends and nursing practice.

Recommendation for the implementation of the guideline

1. Adopting a case-based teaching approach to engage students in the module for UG Nursing research module.
2. Application of evidence-based practice where students source research problems from their practice sites.
3. Research findings from projects should be implemented in healthcare settings to enhance nursing and healthcare trends.

7.8.2 Guideline A2: The research module must incorporate strategies for nursing students to develop responsible, ethical, and competent attitudes toward filtering, synthesising, adapting and applying scholarly and published information.

The use of technology and updated research learning management systems is imperative to keeping up with updated trends in adult learning. The student is required to be knowledgeable about learning management systems in higher education to ensure a critical understanding of what is taught and be able to apply the relevant principles in adult learning.

Rationale for the implementation of the proposed guideline

To be able to conduct research; a student must be familiar with the use of the library, technology and adult learning principles. The world of research is shrouded in ethics and students must understand research ethical principles at the onset, as this knowledge can pave the way for ethical adherence in research of other nursing modules.

Recommendations for the implementation of the proposed guideline

1. Encourage library research workshops to keep staff and students updated with learning management systems.
2. Integrate critique of a research article as a form of student evaluation and assessment.

7.8.3 Guideline A3: Restructure research assessment strategies to ensure that specific outcomes are assessed at the specific level or year of study, thus ensuring competence in research studies.

Assessment plans detail the outcomes to be achieved. A well-structured assessment plan can prove beneficial in assisting the nursing student to achieve certain competencies in research at various levels of training.

Rationale for the proposed guideline

At the end of each semester, according to the level or year of nurse training, the nursing UG should achieve competence in specified research skills to allow the student to progress to the next phase of the research process. By the time they reach their final year, improved competence and understanding of the research process should be achieved to allow for the completion of the research project for examination. Given the effect of the 'new normal in higher education and the move to online learning, this area of teaching and learning requires clear definition and directive (Goodwin *et al.* 2022: 1-5).

Recommendations for implementation of the guideline

1. The assessment plan should detail exactly what learning outcomes should be achieved in each semester of the level or year of training.
2. An evenly spaced out and extended duration of the research module for the achievement of student research outcomes, can prove beneficial for both teacher and student, whilst allowing the student to engage with research learning and knowledge retention.
3. Clearly defined learner outcomes for the research module at each level should form the basis of the assessment criteria to gradually achieve the desired research competence at that level/year of training.

7.8.4 Guideline A4: Ensure rigorous peer evaluation by the nursing department to assess the research programme and programme delivery.

Quality assurance is a key component in HEIs to ensure that standards of education and training needs are in line with regulatory structures and their requirements. A peer evaluation can be considered as a method of evaluation in an institutional audit to determine and assess standards.

Rationale for the implementation of the proposed guideline

Departmental and institutional audit systems inform the strategic planning and monitoring and evaluation systems. These systems promote the improvement and innovation of pedagogical practices in the nursing programme delivery.

Recommendations for the implementation of the proposed guideline

1. Development and alignment of department research policy with institutional research policies- that provides guidance for research activities for teaching and learning.
2. Encourage peer evaluation to enhance programme content and delivery.
3. Encourage student feedback and include it in programme design and curriculum.
4. Provide constructive feedback to staff and students during monthly departmental research committee meetings.

7.8.5 Guideline A5: Ensure active participation by staff and UG students in annual departmental research day.

A research day is an initiative that is dedicated to the awareness and the impact creation of research. HEIs globally are research-driven with many initiatives to enhance research education.

Rationale for the implementation of the proposed guideline

It is a joint initiative by staff and students to foster a culture of research methodology in HEIs globally. Students are encouraged to engage in a fun way in the learning of research. A gentle steer from the conventional learning method can instil a degree of excitement and curiosity in the research module and impact learning.

Recommendations for the implementation of the proposed guideline

1. Implement annual research days for students and staff
2. Ensure that all students at various levels or years of study participate in the annual departmental research day
3. Utilise constructive feedback to improve research pedagogical practices.

7.8.6 Guideline A6: Review of the current module design to extend the duration of the research module in UG nurse education and training.

Time constraints for completion of the research project featured as a common concern to local, national and international universities that participated in the current study. Currently, the duration of the research module spans approximately 12 weeks in the third year of training for the UG Nursing student in most universities that were sampled. During this study period, research theory is facilitated. This may allow for the introduction and grasping of the research process concepts, but seemingly, a full research project is facilitated in the fourth year of training, and the student is given a mere eighteen (18) months to conceptualise a proposal and carry the research project to completion. It should be noted that during this time, students attend lectures on other modules as well. This offering of the research module equates to 360 notional hours in total. It should be noted that 120 hours are dedicated to research in the first six (6) months to acquiring research theoretical knowledge. Because these time frames are fragmented, and given the duration of the module, it is no surprise that there is limited and insufficient research knowledge acquisition and inadequate research preparedness of the nursing student.

Rationale for the proposed guideline

The findings revealed that students had difficulty grasping this module as it had little bearing on their day-to-day nursing practice. Time constraints proved to be the main factor as expressed by the participants in this study. Extended duration for the facilitation and teaching of the research module design can lend to greater knowledge retention and learning of the research process. Peachy

and Baller (2015: 440) agree that the finer concepts need to be grasped to fully engage in research inquiry.

Recommendations for the guideline

1. Extend the duration of the research module and allow it to span over all 4 years of nurse training so that the students can continue with the momentum of research learning.
2. Introduction of the basic research knowledge at an early phase of nurse training by including concepts such as evidence-based practice, which can bridge the gap between research theory and research practice.
3. The creation of early awareness of research concepts in nurse training will resolve the issue of nurses feeling that research is irrelevant and separate from nursing.
4. Introduction of academic writing and article critiquing skills early can enhance the research skills of the student by the time they start a project.
5. Inclusion of specific research competencies at each level or year of training that suits the expected level of research acquisition will assist lecturers and students to identify teaching/learning challenges.

7.8.7 Guideline A7: Enhance knowledge of nursing lecturer or research facilitator with regards to active learning or inquiry-based teaching techniques.

It stands to reason that teachers and facilitators of research must be knowledgeable and experienced to impart their knowledge. An experienced and well-versed research lecturer and facilitator will best understand the method to achieve optimum retention of research concepts taught.

Rationale for the implementation of the proposed guideline

For quality and achievement of regulatory standards in HEI globally, the curriculum developers and advisors must be proficient in the field of research to optimally achieve the desired learning outcomes in research. Experience in

teaching and facilitation of research as well as being active researchers themselves will ensure that optimal standards are maintained.

Recommendations for the implementation of the proposed guideline

1. Ensure research lecturers have sufficient pedagogical research experiences in instructional design and assessment practices.
2. Ensure research lecturers have positive ideological beliefs on research and its impact on nursing inquiry.

7.8.8 Guideline A8: Introduction of a reflective session at the end of the theoretical phase of the research teaching and learning.

All review and amendment is seen as work in progress and lends for continuous improvement so that gaps if any can be identified and methods in the research module design can be improved upon. With change; there is bound to be room for error and adjustment during the strive for teaching and learning excellence.

Rationale for the proposed guideline

Early detection of what works and what does not, will allow the lecturers and facilitators of research to adjust so that research education in UG Nursing can be seen as progressive in its attempt to enhance the research preparedness of the UG student.

Recommendations for the guideline

1. Introduce a reflective session at the end of every phase of the training programme.
2. This should be in line with the outcomes and assessments at that phase of the training.
3. The reflective session can be in the form of forums, questionnaires or a reflective journal account of the students' experience in learning research.

7.8.9 Guideline A9: Creation of research opportunities for student researchers.

Students should be allowed to source research problems evident in their everyday work-life in the clinical area. These realistic and relevant concerns can add richness to the research problems and processes.

Rationale for the implementation of the proposed guideline.

Research is based on scientific inquiry and the field of nursing draws from the sciences in its ethos. Research on evidence-based practice from the clinical arena can stimulate and encourage critical thinking. This avenue can lend greatly to improving problem-solving skills which are vital to the profession of nursing.

Recommendations for the implementation of the proposed guideline:

1. Foster deliberate, responsible and thoughtful critical thinking that would be essential for nurses to be effective in their role.
2. Encourage research field trips and collaborative online interaction with other partnering universities.
3. Encourage student participation in research workshops and seminars.

7.8.10 Guideline 10: Restructure the module design to outline and detail specific research outcomes to be achieved at the end of each level or period of study.

Restructuring the research module design will afford the student 600 hours of research theory knowledge acquisition over the four years of training, as opposed to the current 360 hours over the four years of training. This can prove to be sufficient exposure to clinical areas to acquaint themselves with various evidence-based problems and engage in the research process. Grasping of research methodology is transient, as noted by Allari (2016:66-68). In addition, student research proposals should include a strong theoretical and empirical

justification for the development of the proposed intervention or strategy. This should provide a compelling rationale for how the purpose of the intended research will add to the existing body of scholarly knowledge.

Rationale for the proposed guideline

A recommendation noted in the findings of the current study was that there should be active engagement in the research process by the student to better understand and retain the knowledge of the concepts by practical application. Given the current compact nurse training programmes, nationally and internationally, which require students to achieve outcomes in other learning modules; it would greatly benefit the student to have the research module spread over the four years of nurse training. This, not only will assist to enhance retention of what is taught in research but will assist in learning a reduced amount of content in a time frame. Not only can quality teaching and learning take place, but this will help the student to better understand research concepts.

Recommendations for the guideline

1. Structure the module design such that certain criteria are achieved at various levels/years of study in the training programme.
2. Assessments should be aligned to the criteria specified at various levels or year of study in the training programme.
3. In consideration of a re – curriculation; specifics about the assessment at the end of each level should be detailed as part of the assessment criteria and outcomes so that time frames are considered in meeting the desired objectives
4. Concentration on certain concepts for a specific timeframe of teaching and learning, would ease the workload of the lecturer and increase the capacity for student knowledge retention.
5. Students should be assisted to choose research projects that have the potential to improve learning or nursing practice outcomes.

7.8.11 Guideline A11: Cultivate flexibility, and adaptability of nurse lecturers and facilitators of research by encouraging receptiveness to change and research learning.

The profession of nursing is dynamic and innovative and always striving for excellence in its methods. Research in nursing is no different. It is therefore vital that the lecturers and facilitators of research in nursing are adaptable to updated trends in pedagogical practices and learning principles.

Rationale for the implementation of the proposed guideline

Research trends are always updated and improved upon as the findings inform and advise healthcare policymakers. Robust research will ensure that superior quality of research studies is undertaken to ensure recommendations improve and enhance nursing education and ultimately healthcare globally. A continuous impartation of acquired knowledge can lend to upskilling of other lecturers, so that understanding and research knowledge capacity is shared among staff should the need arise for different lecturers to teach and facilitate the research module.

Recommendations for the implementation of the proposed guideline

1. Ensure all research lecturers are kept updated with relevant teaching and assessment methods by attendance to seminars and workshops.
2. Encourage all lecturers to attend research integrity and supervision workshops.
3. Foster a departmental culture of research learning by encouraging independent research studies and publications of nurse lecturers.

7.8.12 Guideline 12: Commence the research module in the first year of the UG nurse training programme.

Findings in the current study revealed that teaching of the research module commences in the second semester of the third year of nurse training and is taught over 12 to 16 weeks, both nationally and internationally. During this time

the student is expected to have grasped all research methodology concepts and be proficient in conducting literature searches and article critiques.

Rationale for the proposed guideline

Commencing research at an earlier phase in the UG training programme can sensitise the student to the “new world” of research methodologies and evidence-based practice ensures a longer duration to learn research concepts and understand the research process. Basics in research can be grasped and a research culture can be adopted much earlier to make the research experience more meaningful to the nursing student.

Recommendations for the guideline

1. Objectives at this early phase in the nurse training should include basics like the use of various search engines to gather data and do literature reviews.
2. Basic terms and concepts can be introduced at this phase and this can benefit students all around when it comes to reference and critiquing techniques.
3. It can prove beneficial at the project stage of the research module; if students are encouraged to foster a culture of reading and critiquing at the onset to identify the validity and rigor of studies.

7.9 PROPOSED GUIDELINES FOR PG NURSING RESEARCH STUDIES

The proposed guidelines as highlighted in Table 7.2 below depict the correlation between the various components of the Healy and Jenkins framework that guided the study, the emerged themes of the study and the proposed guidelines for PG nursing research studies. This set of guidelines is also in keeping with the third, fourth and fifth objectives of the current study and attempts to provide answers to some of the research questions set out in Chapter 1.

Table 7.2: Alignment of The Healy and Jenkins Research Teaching and Curriculum Design Nexus to the emerged themes and the proposed guidelines for PG nursing research teaching and learning

COMPONENT OF THE HEALY AND JENKINS RESEARCH TEACHING AND CURRICULUM NEXUS	RELEVANT EMERGENT THEMES FROM THE STUDY	PROPOSED GUIDELINES FOR PG NURSING RESEARCH STUDIES
RESEARCH-TUTORED (the learning acquired by the student).	1. The extent of the skills and knowledge acquired in the field of research to prepare PG nursing students to transition into Masters and Doctoral programmes.	B1. Ensure that a preliminary assessment of the embedded research knowledge of the PG nursing student is done before commencement of the PG research project.
RESEARCH-BASED (Student is actively engaged in the research inquiry so that they are producers and not just consumers of the knowledge).	2.Research preparedness of the PG nursing student to transition into Masters and Doctoral programmes.	B2. Introduction of a reflection session at the end of the theoretical phase of the research training.
RESEARCH-LED (learning and adopting the necessary knowledge of the research discipline).	3.The lecturer and supervisor's perspectives of research education in nursing.	B3. Structure a research methods short course that can be implemented to assist with student-embedded research knowledge.
RESEARCH-ORIENTED (development of students' skills and knowledge to engage in the research methodologies).	6.Suggestions by research lecturers and supervisor's for enhanced facilitation of the research module in nursing programmes.	B4. Structure the research project with realistic timelines and learning outcomes.

7.9.1 Guideline B1: Ensure that a preliminary assessment of the embedded research knowledge of the PG nursing student is done prior to commencement of the PG research project.

From the findings of the current study, it was evident that at the PG level students are deficient in embedded research knowledge. Participants noted with dismay, that at the PG level the research process had to be re-taught. A pre- assessment is therefore vital to ascertain and validate the degree of

research competencies acquired. It will also be time and cost-efficient to get the student to engage in research methods short course or refresher course before commencement of the project, to update and stimulate research learning.

Rationale for the proposed guideline

This will ensure an assessment of the embedded knowledge capacity of the PG nursing student. It will prove beneficial to know the level of understanding of research methodology and process so that a supervisor is aware of how best to guide the student. Often students struggle with re-learning the research process and concepts before they can actually tackle their projects. Newly qualified nurses are more inclined to work in the practical field of nursing than approach the academic side of the profession, so research courses can reintroduce and refresh embedded research knowledge. This enhances the research journey of both supervisor and student in the progress of the study.

Recommendations for the guideline

1. Ensure a pre-assessment, to determine prior or embedded research knowledge of the PG student before he/she embarks on PG research studies.
2. The assessment should form a prerequisite to the PG study so that the student can achieve the PG qualification timeously and with greater ease.
3. A follow-up mini- refresher course can be introduced to revive the knowledge of research taught as nurses tend to attempt PG studies long after completing UG studies.

7.9.2 Guideline B2: Introduction of a reflection session at the end of the theoretical phase of the research training.

Reflective learning has proved to be beneficial in higher learning as it bridges learning gaps. Students are the best evaluators of their learning. If true; they can identify their shortcomings in their learning and address them to achieve desired learning outcomes.

Rationale for the proposed guideline

A reflective analysis of the learning at the end of each phase in the training programme can help the student identify his / her shortcomings and address the learning gaps. This exercise can prove beneficial to the lecturer as well to help him/her identify concerns in teaching and learning practices, allowing them to make the necessary amendments to best teach and facilitate the research module for nurse training.

Recommendations for the guideline

1. Implement a reflective learning exercise post-research teaching/facilitation in the form of a reflective journal or questionnaire.
2. A remedial or revision plan should be in place to address the gaps in research learning.

7.9.3 Guideline B3: Structure a research methods short course that can be implemented to assist with student-embedded research knowledge.

Engaging the student in a research methods course before commencement of the PG study can improve the quality of the research work embarked upon, and benefit teaching and learning practices.

Rationale for the proposed guideline

PG students sometimes embark on further studies long after they graduate. Normally graduate nurses enter the “world of work” and work in the clinical area and practice bedside nursing. This is to gain the required practical experience to embark on further nursing educational studies. Often a required amount of practical experience is an expected criterion to be successfully recruited into a PG programme of study.

Recommendation for the guideline

1. Allow for preliminary testing of research embedded knowledge during the application and selection processes of PG studies.

2. Introduce a research method short course for the PG student on commencement of PG research studies.
3. Stimulate the recall of previous research knowledge by additional research assignments aligned to the research methods course offered.

7.9.4 Guideline 4: Structure the research project with realistic timelines and learning outcomes.

Timeframes in research are so valuable in that they afford the student perimeters within which to work in. PG studies are often undertaken by students who are in full-time employment. The setting of timelines will allow them to plan and organise themselves to meet their research learning outcomes in their studies.

Rationale for the proposed guideline

Timelines will ensure that the PG student is aware the expectations of the supervisor and himself/herself, at the onset Students can plan and organise their schedule to accommodate their studies. Realistic timelines also allow for adequate learning and research facilitation to take place.

Recommendations for the guideline

1. Have clearly defined timelines for each stage of the research process or activity.
2. The timelines should be realistic and be part of the memorandum of understanding between the supervisor and the student in a signed declaration.

3. The timeframes must be realistic to allow for quality research outputs and applications.

7.10 SUMMARY OF THE PROPOSED GUIDELINES

The researcher has proposed the guidelines for all relevant stakeholders in research education in nursing. While the researcher set out to address the pedagogies of the PG Nursing programmes, it became evident that PG research studies in nursing needed to be addressed as well. The productive use of research knowledge and scientific inquiry acquired in an UG programme often determines the transition and research preparedness of the student from an UG to a PG level. Therefore, the guidelines were proposed for the UG and PG nursing programmes. The guidelines were aligned to the framework that guided the study as well as the emergent themes as portrayed in Tables 7.1 and 7.2 respectively.

7.11 EVALUATION OF THE PROPOSED GUIDELINES

Guidelines should be evaluated by various methods such as seeking professional input and review of experts or professionals who were not involved in the development of the guidelines (Thomas 2017: 38). This will ensure clarity, internal consistency and acceptability of the guidelines. This author further states that testing of the guidelines can ascertain the feasibility of use in healthcare practice. A review of the guidelines after a specified period to amend where required is the final phase of the evaluation. The ultimate aim of this study was to develop a set of guidelines, which could inform and advise all stakeholders on teaching and facilitating nursing research. In addition, the multiple dimensions that enhance research methods pedagogy increase the productive use of research knowledge and scientific inquiry to promote the UG and PG research student as emerging scholars. Thomas (2017: 38) outlines eleven characteristics to ensure the effectiveness of the guidelines namely; validity, cost-effectiveness, reliability, reproducibility, representative development, clinical applicability, clinical flexibility, clarity, meticulous

documentation, scheduled review and unscheduled reviews. The table below aims to present these characteristics.

Table 7.3: Thomas' 11 Characteristics for effective guideline development and evaluation (Thomas 2017: 38)

Characteristics	Explanations
Validity	Guidelines should be rigorously developed and consistent with the available scientific evidence. In this study, literature was reviewed, professional experts were consulted for their inputs, and recommendations from study participants were taken into consideration.
Cost-effectiveness	The developed guidelines are recommended for addressing the pedagogies of the UG research module and PG research supervision and teaching.
Reproducibility	The findings of the study were triangulated to enhance the developed guidelines. This further ensures that developed guidelines would yield similar recommendations using the same findings of the study.
Reliability	Guidelines in this study were developed systematically and rigorously so that given the same clinical circumstances, another health professional would apply the recommendations similarly.
Representative development	Guidelines development included the stakeholders of research teaching and lecturing in nursing
Clinical applicability	The target population was defined as stakeholders involved in the teaching and facilitation of research in UG Nursing programmes. But the proposed guidelines could be utilised to inform PG nursing studies
Clinical flexibility	UG Nursing students training outcomes were taken into consideration to ensure that the developed guidelines were clinically flexible.
Clarity	The developed guidelines were supported by rationale and recommendations for their implementation to ensure clarity.
Meticulous documentation	The process of guidelines development involved the details of who participated, methods used and the recommendations were linked to the findings of the study.
Scheduled review	Professional experts in the field such as the research supervisors will review and validate the developed guidelines before they are disseminated for implementation purposes by the stakeholders in the teaching and facilitation of research in the nursing programme.

Unscheduled review	Periodical review and modification of developed guidelines will take place during their implementation at the universities globally to ensure trends are updated and research pedagogical practices are progressive.

7.12 DISSEMINATION OF THE PROPOSED GUIDELINES

It is anticipated that the guidelines proposed in this study will be disseminated to the broader nursing education community for evaluation and implementation. Recommendations can thus arise from utilisation. Various modes of dissemination will be employed such as publications in nursing education and research journals, research and nursing education symposia and presentations at local, national and international conferences. Soft and hard copies of this study will be available for access at the Durban University of Technology libraries and the other universities approved for this study. The guidelines will also be disseminated to all policymakers, curriculum developers and regulatory bodies of the UG and PG Nursing programmes at a national and international level.

7.13 SUMMARY OF THE CHAPTER

The proposed guidelines aim to address the current research pedagogies for improvement and enhancement of research in nursing education. Furthermore, the developed guidelines were supported with recommendations to be taken into consideration during the implementation by all stakeholders in nursing education. Chapter 8 will present the limitations, recommendations and concluding remarks of the study.

CHAPTER 8
CONCLUSION, RECOMMENDATIONS AND LIMITATIONS OF THE STUDY

8.1. INTRODUCTION

Chapter 7 presented the process for the proposed guidelines for pedagogical practices to ensure research preparedness of UG Nursing students to assist them with transitioning into PG research studies.

Themes and sub-themes as well as the review of records comprised the findings of the study as detailed in Chapter 5 of this study. These findings guided the development of the proposed guidelines. The rationale and recommendations for the implementation of the proposed guidelines for all stakeholders of research teaching and facilitation in nursing, nationally and internationally were further discussed in Chapter 7. This chapter now presents the conclusion, recommendations and limitations of this study.

8.2. CONCLUSION OF THE STUDY

The study was conducted using local, national and international universities as participating institutions, where research is taught as a module in the UG Nursing training programme. While many theories guide pedagogies in nursing education, the researcher chose the Healy and Jenkins Research Teaching and Curriculum Design Nexus, and details and application of this framework were provided in Chapter 3 of the current study. The findings from the interviews of nursing research lecturers, facilitators, supervisors and record reviews of the study revealed several factors that were taken into consideration. These factors in conjunction with the NGT were considered to develop guidelines that could be used to advise all stakeholders of teaching or facilitating nursing research, of the multiple dimensions and constraints of research methods pedagogy that will have the potential to augment the productive use of research knowledge

and scientific inquiry to aid in the transition from an UG to a PG research student.

These proposed guidelines are therefore intended for implementation by relevant policymakers, teachers and facilitators of research in nurse training locally, nationally and internationally.

8.2.1 Realisation of the study objectives

The objectives of this study were achieved by interviewing the lecturers and facilitators of research in UG Nursing programmes and those lecturers who also supervise PG nursing research. The objectives set out to explore adult learning principles and lecturers' viewpoints of the current pedagogical practices in teaching and facilitation of the research module. Objectives were also set out to determine research knowledge acquisition of the UG Nursing student, and embedded research knowledge of the PG nursing student locally, nationally and internationally. By triangulating the two sets of data obtained in the study, the researcher was able to obtain valuable information by seeking various viewpoints, whilst employing the ethical principle of credibility (Polit and Beck 2012: 590). This data was then analysed using thematic analysis to reach conclusions and make the necessary recommendations.

8.2.2 Realisation of the aim of the study

This study aimed to explore the perspectives, practices, and experiences of all lecturers involved in research teaching, facilitation and supervision of research projects and proposals in the nursing programme. Depending on the findings of this study, the aim was to develop a set of guidelines, that may assist to inform and advise all parties of the multiple dimensions and constraints of research methods and pedagogy. It was envisaged that this would be offered in a constructive and meaningful way. These proposed guidelines will serve to ensure the productive use of research knowledge and scientific inquiry in UG and PG nursing research studies.

The study adopted a qualitative, exploratory and descriptive research design (Polit and Beck 2017: 726). The themes, sub-themes and categories that emerged by analysis of the data were discussed in Chapter 6 of this study and was guided by the integration of the Healy and Jenkins Research Teaching and Curriculum Design Nexus that formed the theoretical framework of this study. The resultant findings of the study were utilised to develop guidelines to ensure research preparedness of UG Nursing students locally, nationally and internationally which were presented in Chapter 7.

8.3. RECOMMENDATIONS

The recommendations that emerged were based on the findings that emanated from the analysis of the data in the study. This led to the development of the proposed guidelines to ensure the research preparedness of UG Nursing students, which will ultimately aid in the transition from UG to PG nursing research studies.

8.3.1 Recommendations for the use of the developed guidelines within the province

The proposed guidelines were developed for recommendation to all relevant stakeholders involved in the teaching and facilitation of research in nursing education locally, nationally and internationally for the following purposes:

1. Guidelines to be considered by policymakers and regulatory bodies of research in nursing education locally, nationally and internationally
2. The guidelines will be disseminated amongst relevant institutional stakeholders that may comprise lecturers, facilitators and supervisors of research in nursing education and training, after being incorporated into nurse training programmes that can inform their pedagogical practices.
3. To allow for integration of assessment strategies at each study level or year of study, whilst considering the desired research learner outcomes to be achieved at that level of study.

4. For the development of a research policy working document integrating the guidelines that can be mandated in nursing education locally, nationally and internationally.
5. To ensure mandatory selection criteria in the selection of research lecturers and facilitators in nursing education and training to foster effective pedagogical practices in nursing research education.
6. Foster a culture of peer-evaluation amongst research lecturers and facilitators to ensure a continuous strive for excellence in nursing research education.
7. The policy will be implemented by all relevant stakeholders of nursing research to advise on UG and PG accreditation for nursing research studies.
8. To be evaluated and recommendations for review considered as part of institutional quality assurance processes to ensure their effectiveness in nursing education and training.

8.3.2 Recommendations for future research

The findings of the study revealed gaps in the facilitation of the nursing research module in the UG Nursing programme and its delivery thereof, within a local, national and international context.

The following may be considered for future research

1. While the study included some approved local, national and international universities; it is recommended that further studies of a similar nature be extended to other universities that were not included in this study.
2. This study focused on the perspectives and practices of the lecturer and facilitator of nursing research. It is recommended that further studies be used to determine and explore student perspectives on research pedagogies.
3. The competence of the research teacher and facilitator was highlighted in this study. It is recommended that studies to ascertain the level of

competence and criteria for qualification to teach research, to be explored.

4. A wider study incorporating the views of the nurse education and training regulatory bodies is required to explore the practicality and feasibility of prescribed time frames within the relevant curriculum frameworks.

8.4 CONTRIBUTION OF THE STUDY TO THE BODY OF KNOWLEDGE

The study was in line with the outcomes to be achieved in the nursing research module in the UG nurse training programme. Excerpts retrieved from the literature search and the qualitative nature of this study revealed that there existed a gap in the embedded knowledge and knowledge acquisition of research methodology at UG level in nurse training. The findings of the study also confirmed that a review of the duration or time frame allowed for research module facilitation to UG nurses should be a priority. The findings of this study enabled the researcher to propose guidelines that addressed the findings. The proposed guidelines are intended for implementation by universities globally to enrich the area of research. HEIs have in recent decades emphasised the role of research and scholarship by supporting student research development and training.

Guidelines of this nature are therefore considered timeous to inform and guide stakeholders regarding research preparedness of nursing students. This study will ultimately pave the way for enhanced and more robust research dialogue within nursing education, the general nursing profession and its myriad of specialities, as well as the healthcare setting at large. The improved research capacity of nursing students will ensure more studies based on EBP and scientific inquiry. Nursing research is an essential component of the educational process and has without a doubt influenced current and future professional nursing practice, making it critical to the nursing profession to advance the delivery of optimal professional nursing practice.

8.5 LIMITATIONS OF THE STUDY

The following limitations were identified in this study:

1. The study comprised the perspectives and practices of the lecturers and facilitators of research locally, nationally and internationally. It would be of value to note the experiences of the pedagogies in nursing research from a student perspective.
2. Record reviews from the international approved institutions were conducted online and while the researcher was free to probe the interviewee and review the records, this was not the case in all other participating institutions in the study.
3. This was a descriptive, explorative qualitative design and may have yielded further findings had other research methods such as a mixed-method, been employed.
4. Several stakeholders, whose information could have enriched the findings of the study such as those concerned with promulgating nurse training regulations at a national level, were not included as a sample in this study.

8.6 SUMMARY OF FINDINGS

This chapter detailed the study summary, recommendations and limitations of the study. A literature search confirmed and identified gaps in the teaching and facilitation of the research module by noting an absence of set guidelines for pedagogical practices to ensure the research preparedness of UG Nursing students. Whilst the aim and objectives of this study were realised, the study yielded guidelines that would not only ensure research preparedness of the UG student but also PG nursing research students at a local, national and international level. Recommendations for implementation and evaluation of the effectiveness of the developed guidelines were suggested for future research. Despite the identified limitations of this study that could have resulted in different findings, the aim of the study was achieved.

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APPENDICES

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Appendix 1: University Ethics clearance

Institutional Research Ethics Committee
Research and Postgraduate Support Directorate
2nd Floor, Berwyn Court
Gate 1, Steve Biko Campus
Durban University of Technology

P O Box 1334, Durban, South Africa, 4001

Tel: 031 373 2375
Email: lavishad@dut.ac.za
http://www.dut.ac.za/research/institutional_research_ethics

www.dut.ac.za

21 December 2021

Ms P Padayachee
29 Cactus Place
Belfort
Pietermaritzburg
3201

Dear Ms Padayachee

Guidelines for pedagogical practices to ensure research preparedness of undergraduate nursing students: A case study of institutional perspective and practices.
Ethical Clearance number **IREC 192/21**

The Institutional Research Ethics Committee acknowledges receipt of your gatekeeper permission letter.

Please note that FULL APPROVAL is granted to your research proposal. You may proceed with data collection.

Any adverse events [serious or minor] which occur in connection with this study and/or which may alter its ethical consideration must be reported to the IREC according to the IREC Standard Operating Procedures (SOP's).

Please note that any deviations from the approved proposal require the approval of the IREC as outlined in the IREC SOP's.

Yours Sincerely

Prof J K Adam
Chairperson: IREC

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Appendix 2a: Letter to the Gatekeeper Permission Committee

29 Cactus Place
Belfort
Pietermaritzburg
3201
[Date]

The Gatekeeper Permission Committee
Name of University
PO Box XXXX
XXXX
XXXX

Request for Permission to Conduct Research

Dear Sir/ Madam

My name is Poovanesthree Padayachee, a Nursing Doctoral student at the Durban University of Technology. The research I wish to conduct for my Doctoral thesis involves: **Guidelines for research pedagogical practices to ensure Research Preparedness of undergraduate nursing students: A case study of institutional perspectives and practices.**

I am hereby seeking your consent to interview lecturers involved in the teaching and facilitation of research in the undergraduate nursing course as well as those who supervise postgraduate studies of newly qualified nurses. I would also be grateful to have access to the study guides and success rates of the nursing undergraduate research module for record reviews.

I have provided you with a copy of my proposal which includes copies of the data collection tools, letter of information and consent to be used in the research process, as well as a copy of the approval letter which I received from the Institutional Research Ethics Committee (IREC).

If you require any further information, please do not hesitate to contact my supervisor, Dr V. Naidoo on vasanthrien@dut.ac.za. Thank you for your time and consideration in this matter.

Yours sincerely,

.....
Poovanesthree Padayachee (Ms)
Durban University of Technology
Cell Number: 0839909662
Email: PoovanesthreeP@dut.ac.za

Appendix 2b: Approval letter from the Gatekeeper Permission Committee

Directorate for Research and Postgraduate Support
Durban University of Technology
Tromso Annexe, Steve Biko Campus
P.O. Box 1334, Durban 4000
Tel.: 031-3732576/7
Fax: 031-3732946

12th November 2021
Ms Poovanesthree Padayachee
c/o Department of Nursing
Faculty of Health Sciences
Durban University of Technology

Dear Ms Padayachee

PERMISSION TO CONDUCT RESEARCH AT THE DUT

Your email correspondence in respect of the above refers. I am pleased to inform you that the Institutional Research and Innovation Committee (IRIC) has granted **Gatekeeper Permission** for you to conduct your research "Guidelines for pedagogical practices to ensure research preparedness of undergraduate nursing students: A case study of institutional perspectives and practices" at the Durban University of Technology. **Kindly note that this letter must be issued to the IREC for approval before you commence data collection**.

The DUT may impose any other condition it deems appropriate in the circumstances having regard to nature and extent of access to and use of information requested.

We would be grateful if a summary of your key research findings would be submitted to the IRIC on completion of your studies.

Kindest regards.
Yours sincerely

DR LINDA ZIKHONA LINGANISO
DIRECTOR: RESEARCH AND POSTGRADUATE SUPPORT DIRECTORATE

Appendix 3a: Letter for Gatekeeper permission to the Research Advisor/Coordinator/Director to local, national and international nursing educational institutions

29 Cactus Place

Belfort
Pietermaritzburg
3201
[Date]

The Research Advisor/Coordinator
Name of University
PO Box XXXX
XXXX
XXXX

Request for Permission to Conduct Research

Dear Sir/ Madam

My name is Poovanesthree Padayachee, a Nursing Doctoral student at the Durban University of Technology. The research I wish to conduct for my Doctoral thesis involves: **Guidelines for research pedagogical practices to ensure research preparedness of undergraduate nursing students: A case study of Institutional perspectives and practices.**

I am hereby seeking your consent to interview lecturers involved in the teaching and facilitation of research in the undergraduate nursing course as well as those who supervise postgraduate studies of newly qualified nurses. I would also be grateful to have access to the study guides and success rates of the nursing undergraduate research module for record reviews.

I have provided you with a copy of my proposal which includes copies of the data collection tools, letter of information and consent to be used in the research process, as well as a copy of the approval letter which I received from the Institutional Research Ethics Committee (IREC).

If you require any further information, please do not hesitate to contact my supervisor, Dr V. Naidoo on vasanthrien@dut.ac.za. Thank you for your time and consideration in this matter.

Yours sincerely

.....
Poovanesthree Padayachee (Ms)
Durban University of Technology
Cell Number: 0839909662
Email: PoovanesthreeP@dut.ac.za

Appendix 3b: Approval letter from the Research Advisor/Coordinator/Director- Sample Nursing Education Institution (a)

Directorate for Research and Postgraduate Support
Durban University of Technology
Tromso Annexe, Steve Biko Campus
P.O. Box 1334, Durban 4000
Tel.: 031-3732576/7
Fax: 031-3732948

12th November 2021
Ms Poovanesthree Padayachee
c/o Department of Nursing
Faculty of Health Sciences
Durban University of Technology

Dear Ms Padayachee

PERMISSION TO CONDUCT RESEARCH AT THE DUT

Your email correspondence in respect of the above refers. I am pleased to inform you that the Institutional Research and Innovation Committee (IRIC) has granted **Gatekeeper Permission** for you to conduct your research "Guidelines for pedagogical practices to ensure research preparedness of undergraduate nursing students: A case study of institutional perspectives and practices" at the Durban University of Technology. **Kindly note that this letter must be issued to the IREC for approval before you commence data collection**.

The DUT may impose any other condition it deems appropriate in the circumstances having regard to nature and extent of access to and use of information requested.

We would be grateful if a summary of your key research findings would be submitted to the IRIC on completion of your studies.

Kindest regards.
Yours sincerely

_____
DR LINDA ZIKHONA LINGANISO
DIRECTOR: RESEARCH AND POSTGRADUATE SUPPORT DIRECTORATE

Appendix 3c: Approval letter from the Research Advisor/Coordinator/Director- Sample Nursing Education Institution (b)

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

10 November 2021

Mr Poovanesthree Padayachee
Department of Nursing
Faculty of Health Sciences
Durban University of Technology
Email: PoovanesthreeP@dut.ac.za

Dear Ms Padayachee

RE: PERMISSION TO CONDUCT RESEARCH

Gatekeeper's permission is hereby granted for you to conduct research at the University of KwaZulu-Natal (UKZN), towards your postgraduate degree, provided Ethical clearance has been obtained. We note the title of your research project is:

"Guidelines for pedagogical practices to ensure research preparedness of undergraduate nursing students: A case study of institutional perspectives and practices."

It is noted that you will be constituting your sample by conducting interviews with Lecturers (Taking in account the regulations imposed during lockdown ie restrictions on gatherings, travel, social distancing etc. Zoom, Skype or telephone interviews recommended) at UKZN.

Please ensure that the following appears on your notice/questionnaire:

- Ethical clearance number;
- Research title and details of the research, the researcher and the supervisor;
- Consent form is attached to the notice/questionnaire and to be signed by user before he/she fills in questionnaire;
- gatekeepers approval by the Registrar.

You are not authorized to contact staff and students using the 'Microsoft Outlook' address book. Identity numbers and email addresses of individuals are not a matter of public record and are protected according to Section 14 of the South African Constitution, as well as the Protection of Public Information Act. For the release of such information over to yourself for research purposes, the University of KwaZulu-Natal will need express consent from the relevant data subjects. Data collected must be treated with due confidentiality and anonymity.

Yours sincerely

Dr KE CLELAND: REGISTRAR

Appendix 3d: Approval letter from the Research Advisor/Coordinator/Director- Sample Nursing Education Institution (c)

SUNY Ulster
Ulster County Community College
Nursing Department
Stone Ridge, NY 12484
1-845-687-5235

December 11, 2021

Dear Ms. Poovanesthree (Nessie) Padayachee,

Thank you for the invitation to be a participant in your international study titled *Guidelines for pedagogical practices to ensure research preparedness of undergraduate nursing students: A case study of institutional perspectives and practice.* Thank you for considering our facility as an international sample. As part of Suny Ulster County Community College, it will be an honor to participate in your Research project.

We wish you all the best.

Regards,

Dr. Ellen Tangney

Dr. Ellen Tangney
Associate Professor of Nursing
tangneye@sunyulsster.edu
1 (518) 687-5240

Appendix 3e: Approval letter from the Research Advisor/Coordinator/Director- Sample Nursing Education Institution (d)

NIGER STATE COLLEGE OF NURSING SCIENCES
SCHOOL OF NURSING P.M.B. 50 BIDA
COMMUNITY NURSING PROGRAMME
Motto: Selfless Service and Sacrifice

Our Ref: SONB/GEN/VOL.1/10 Your Ref: Date: 15TH NOVEMBER 2021

Ms Poovanesthree Padayachee
Department of Nursing Faculty of Health Sciences
Durban University of Technology
Email: PoovanesthreeP@dut.ac.za

Dear Ms Padayachee

RE: PERMISSION TO CONDUCT RESEARCH

We acknowledge the title of your research project:

"Guidelines for pedagogical practices to ensure research preparedness of undergraduate nursing students: A case study of institutional perspectives and practices."

You are hereby granted permission to conduct research in the School of Nursing Bida, Niger State, Nigeria.

It is noted that you will collect your data through interviews with Lecturers. Please ensure data collected is treated with due confidentiality and anonymity.

We wish you every success in your studies.

Yours faithfully

DR ALIYUADAMU MUYE RN, PhD
COORDINATOR

Appendix 4: Letter of Information for interview participants

Title of the Research Study: Guidelines for research pedagogical practices to ensure Research Preparedness of undergraduate nursing students: A case study of institutional perspectives and practices.

Principal Investigator/s/researcher: Ms Poovanesthree Padayachee (D Nursing Candidate).

Co-Investigator/s/supervisor/s: Dr V. Naidoo, D Nursing (Supervisor); Prof M.N. Sibiya, D Tech: Nursing (Co-supervisor).

Brief Introduction and Purpose of the Study: The components necessary for research competencies amongst undergraduate nurses comprise an understanding of the basic concepts and processes of research methods and a review of the literature in that area. Research teaching and learning at an undergraduate level may not necessarily ensure adequate student preparedness for attainment of post-graduate research competencies. The aim of this study will be to explore the perspectives, practices, and experiences of all lecturers involved in research teaching, facilitation and supervision of research projects and proposals in the nursing course to determine the adequacy and relate the teaching and learning to other universities with an aim to maximize learning outcomes of the undergraduate student.

Greeting Good day Sir/ Madam.

Introduce yourself to the participant: I am Poovanesthree Padayachee; D Nursing Candidate.

Invitation to the potential participant: I would like to invite you to participate in the research.

What is Research: Research is a systematic search or enquiry for generalized new knowledge. This would entail an in-depth investigation of the proposed topic which in this study is the teaching and learning of research of the undergraduate nursing student. Collection of data which will be interpreted and analysed to reach results that will be used to add to the body of knowledge. In this interview you may feel free to ask questions and query anything may need to know to ensure that you are comfortable in your participation. You may discuss this with your family and friends and are under no obligation to participate. For this purpose, a copy of the letter of information document will be given to you.

Outline of the Procedures: The researcher will be conducting the interviews online and face to face where permissible due to Covid19 Protocol. The interview sessions will span

approximately 20 minutes and responses will be recorded via the identified app used for online or tape recorded for face to face.

Risks or Discomforts to the Participant: There are no anticipated risks nor discomfort.

Explain to the participant the reasons he/she may be withdraw from the Study: Participation in this study is voluntary and you may withdraw at any time by informing the researcher

Benefits: The results of the study will be useful in determining gaps in the teaching and learning of the research module as well as identify strengths which we can draw from as we will be relating the results of different identified universities locally and internationally. Guidelines can enhance teaching and learning.

Remuneration: There will be no remuneration for your participation.

Costs of the Study: You will incur no costs to participate in this study.

Confidentiality: Your participation is strictly confidential as there will be no disclosure of names at any time. Your interview will take place privately by arrangement with you at your convenience. All records and data collected will be kept under lock and key by the researcher.

Results: Results and findings will be disseminated via approved publications. Should there be any significant new findings you will be contacted directly.

Research-related Injury: There are no anticipated research-related injury.

Storage of all electronic and hard copies including tape recordings: All hard copies of data collected will be stored by the researcher for a period of 5 years. The Supervisor alone will have access to this. At the end of the 5 years all data will be destroyed.

Persons to contact in the Event of Any Problems or Queries: In the event you have any queries please contact the researcher on 083 990 966, my supervisor on 031-373 2748 or the Institutional Research Ethics Administrator on 031-373 2375. Complaints can be reported to the Director: Research and Postgraduate Support Dr L Linganiso on 031-373 2577 or researchdirector@dut.ac.za

Appendix 5: Consent

Full Title of the Study: Guidelines for pedagogical practices to ensure research preparedness of undergraduate nursing students: A case study of institutional perspectives and practices.

Names of Researcher/s: Mrs Poovanesthree Padayachee

Statement of Agreement to Participate in the Research Study:

- I hereby confirm that I have been informed by the researcher, Mrs Poovanesthree Padayachee; about the nature, conduct, benefits and risks of this study - Research Ethics Clearance Number: _____.
- I have also received, read and understood the above written information (Participant Letter of Information) regarding the study.
- I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.
- In view of the requirements of research, I agree that the data collected during this study can be processed in a computerised system by the researcher.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.
- I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.

_____	_____	_____	_____ / _____
Full Name of Participant	**Date**	**Time**	**Signature / Right Thumbprint**

I, P. Padayachee; herewith confirm that the above participant has been fully informed about the nature, conduct and risks of the above study.

Appendix 6a: Demographic data

PARTICIPANT DEMOGRAPHIC QUESTIONNAIRE

Instructions
Kindly answer the following questions about yourself.
This data is required to assist in formulating an overall picture of the staff composition and characteristics.
Please mark the appropriate box with an X.

SECTION 1 DEMOGRAPHIC DATA

1.Age of participant

31 – 40 years	
41 – 50 years	
51 – 60 years	
> 60 years	

3. Nursing research educational experience of participant

1 – 5 years	
5 – 10 years	
10 – 15 years	
15 – 20 years	
20 years	

4. Nursing research supervisory experience of participant

1 –5 years	
5 – 10 years	
10 – 15 years	
15 – 20 years	
20 years	

5. Research outputs of participant

Number of successful Masters supervised	
0	
1 – 5	
5 – 10	
>10	

6. Number of research publications by participant

Number of publications	
0	
1 – 5	
6 – 10	
>10	

Appendix 6b: Interview guide

Appendix 6b: Interview guide

1. Describe the teaching method that you employ in your research class
2. Do you have access to other modalities of teaching research and if so what are they?
3. Undergraduate research projects are often taken on in groups. Has the change to online affected this research collaboration in any way?
4. Explain the period of teaching of the research module in your institution
5. From your experience would you agree that this is sufficient time to grasp the research methodology to conduct a full project?
6. What has been the success rate of the research projects presented at the end of the module?
7. In your experience as a supervisor; describe the research knowledge capacity of the students as evidenced in their projects.
8. As the supervisor; have any of the projects you worked on with undergraduate students been taken a s work for publication.
9. From the students that have graduated; have you had the chance of supervising their master's project and f so describe your experience
10. From your holistic experience in teaching and facilitating research in undergraduate nursing, describe your opinion the research preparedness of the graduate in relation to the module time frame.
11. What would be your recommendations if any?

Appendix 7: Record review guide

Name of Institution: ---------- Date: ----------

CRTIERIA	COMMENTS
1.Conceptual issues of the Research Module Design	
Research module descriptors	
Study /Learner guides	
Research learner outcomes	
Module duration (period of research module)	
Teaching strategies (pedagogical practices specific to the research module and learning outcomes and competencies)	
Assessment criteria – specific to the research module and competencies	
Assessment strategies – specific to the research module and competencies	
2. Structures and processes used to monitor, assess, or improve teaching and learning of research in undergraduate nursing education	
Research policies or guidelines	
Ethical review guidelines	
Module time frames	
3. Contextual issues of the research module in undergraduate nursing education pedagogical practices	
Institutional constraints/concerns affecting teaching and learning of research module	
Professional development	
Best practices that enhance teaching and learning of module	

Appendix 8a: Sample 1 of a transcript

Interviewer	Okay so now that we covered the demographics, how would you describe your teaching method at your institution … what do you use in your research classes
Participant	Lecture methods and group discussions
Interviewer	Okay…just that
Participant	Ehhh… and presentations… mainly
Interviewer	Okay … do you have access to other modalities of teaching
Participant	Errrrr… No…. yes
Interviewer	Okay … and they are
Participant	Those that I have mentioned
Interviewer	Okay are these online given the current pandemic?
Participant	Yes just online ... ya previously it was face to face
Interviewer	Okay. Undergraduate nursing projects are often taken on in groups and eh … with the change to online learning ... has the affected the research collaboration
Interviewer	Yes, it has affected this greatly.
Participant	Okay.
Interviewer	Errr… reason being you know normally we meet with the students online sometimes you never even know whether they are even listening to you but in most cases you see with the performance standard coz its's different when you are with them face to face compared to online coz when you are with them in contact you would be discussing everything in front of you and you would be showing them step by step what has to be done I believe it actually slows the whole process
Interviewer	The period for this module… what would you describe the period to be fort teaching research
Participant	Can you elaborate the question, please?
Interviewer	Yes…if I am doing management … management is done over 1 year or 6 months. the period for research module at your institution? Over how long?

Participant	It is taught over a period of a year
Interviewer	Over 1 year …okay. Would you like to tell me a bit more that
Participant	Uh … it over 1 year but it is divided because there is a practical part and a theory part so students have to do the theory before the practical research. So, they have to write a test and pass those tests then they will have to do the practical research. If you look at the time it's very short because you find that time is taken by the lectures and students have to conduct the project over a very short period of time where we expect them to have mastered everything within also a very short period of time. So, it's kinda like not enough that what I can just say… its kinds like not enough. Okay that was my my… hello
Interviewer	Hello, I am with you.
Participant	That was with my previous experience but currently research is actually done over a period of 1 year and 6 months. It's just a continuous exam where they just have to pass chapter 1 to chapter 3 if I am not mistaken and then they do the actual project.
Interviewer	okay….
Participant	So, which also is a year which I can say is a bit more coz it's a year of the practical research and 6 months of theory research
Interviewer	Would you say this is sufficient to grasp research methodology? Either the year or 2 years?
Participant	Yes. If students get a person. I'm not saying they don't get a person who teaches them research well or perfectly … but I'm saying if then we as lecturers will have a good strategy on how to deliver the lecturer in research then I believe it will be sufficient because they will have enough time to master the theory and incorporate it into the practical. So, I think it's enough, ya!
Interviewer	What you saying is that we actually need a good strategy to give students good understanding.
Participant	That's correct…. Yes….

Interview	Okay. How would you describe the success rate of the research projects?
Participant	The success rate….ummmh… normally the research projects go for 99 to 100 percent I'm not sure if that s what you asking
Interviewer	No, I am saying the students submit projects in groups are they successful in complete projects on time…
Participant	Oh oh! okay … in terms of submission. Even though I said that time seems to be sufficient for them to conduct or to carry out project. We are encountering problems because now err…. students… depends on type of research and facility and setting because normally those students who go outside the university you find that they encounter so many problems like with gatekeepers so it extends the time so in that case you find that some groups may submit on time and some way after the deadline.
Interviewer	Would you say it is a good success rate in meeting deadlines and passing?
Participant	Meeting the deadline … not…. but passing …yes coz it's only a few
Interviewer	And passing you would say that it's a good success rate?
Participant	Yes.
Interviewer	Your experience as a supervisor eh… how would you describe their knowledge capacity?
Participant	To be honest with you it is bad … okay its fair but if I had to choose between bad and good I would have to choose bad.
Interviewer	Okay.
Participant	We expect that once they have done the theory part of research methodology they understand even though they won't master everything because we learn along the way but we expect some of the basic stuff to be known. You find that when you are dealing with the students now that you have to teach them again starting from scratch.

	They won't know about referencing something that they have done in their literature review which you are confident that they've done and passed yet when actually have to do the actual project they bring something which does not speak to what they have actually obtained during their… er … er...theory … what … I don't know how to put it
Interviewer	It does not speak to what you expect them understand?
Participant	But now they come they start the project after passing the theory aspect of research so you expect that now you would be reminding them here and there but you find that you starting afresh … you starting afresh ya.
Interviewer	To teach?
Participant	So, which means it's very bad in that way.
Interviewer	Okay thank you. From your experience have any of the projects that you have worked with… have they been taken for publication?
Participant	No … no … ya no
Interviewer	From the students that you have graduated or that you have finished projects with did you have the chance to supervise any of their Masters or higher learning projects?
Participant	Yes, I did have an opportunity to do so
Interviewer	And how would you describe that experience?
Participant	Ya! In terms of not comparing with undergrad now just or comparing?
Interviewer	You can tell me about either or both
Participant	So, uh… with the post grad I did supervise although I had to be removed because of some requirements. I started for about 6 months. The project was about to be presented to ethics. I was saying there is a difference because you would just tell a person go read here and the person will just go read and write so even if you are following behind the person it wouldn't be as bad as

	compared to the undergrad so ya which means in that one it was good; let me put it like that
Interviewer	And in terms of research knowledge capacity?
Participant	It was good.
Interviewer	Ya okay. So, in your opinion can you describe the research preparedness of the student in relation to the module time frame. You said earlier the time frame was very short. So how would you describe the preparedness of the student within this time frame?
Participant	Er… basically looking at the time frame for research I would say that students… I don't want to appear that I am speaking negatively because….
Interviewer	Remember nobody will hear this … you can tell me your true thoughts
Participant	Ya… in terms of preparedness I would say they appear not prepared to conduct the actual study or to do the project. They appear to be lacking some aspects especially more aspects in research like to be taught further before engaging into the project itself. So, they need more time for theory they need to be taught more about research methodology before they can be transferred regardless of the time like the twelve months in research. When they do the project, they like they need more than what is allocated for the project.
Interviewer	So not so prepared… is that what you are saying?
Participant	Yes.
Interviewer	So, if you had the opportunity to change things and make some recommendations what would they be? Not necessarily change but improve from your experience? From what you have told me you have identified a lot of gaps so if you were given a chance to make a difference change what would it be?
Participant	Okay I believe because research is … since I mean higher education emphasises research eh eh … I would recommend or I

	would suggest that that we maybe adopt a style where a person who is allocated to research will like it and those people who like research would engage during theory aspect because everyone gets engaged during supervision but now those people that are interested can be part of the process of the teaching and learning process whereby I can be teaching the literature review part and the other person can be teaching the research methodology part and the one would be teaching another section so that I believe that .. so that maybe not that I believe … so that if students have a problem with understanding me Mr XXX at least there would be another person that would come in and grasp the most… And, also, that may before because I also know that students have to write an exam what a literature review I would suggest that maybe in future the supervisors would start engaging with students at a very early stage to eliminate problems coz we see that if the first option is not gonna work then we use the option whereby the supervisor is involved in selection of the topic and then development or writing up and how to write it and each supervisor can be able to teach at that time so that by the time they do the project it won't be a waste of time because you will find that they had enough time the previous year doing the research theory when they come for the project we expect them to be flowing and you find you waste a lot of time teaching them things that they should have known and been taught in the previous year so I think that where the delay becomes now… ya…
Interviewer	Okay.
Participant	Those are two recommendations.
Interviewer	Alright.
Interviewer	Are there any policies or guidelines in place for the lecturer of research like you saying you have identified the time frames are short and that by a certain stage in the research module students are not prepared but if someone had to look at the lecturer, is there

	some policy that says this is the first year and the should have achieved this and we move on from there? Is there a policy or guideline that assists a lecturer in achieving that?
Participant	Err… to be honest there is no policy or guideline I'm aware of so even with my previous experience there was no policy or guideline it was stipulated that research project had to done within this period. There is nothing specific as guideline that will assist me as a person who is participating in research supervision or teaching as to how must I go about achieving the goals… I don't if what I'm saying.
Interviewer	No, you saying the right thing. Whats your opinion… had there been policies …. would it be different?
Participant	Definitely… policies or guidelines… definitely there would be a huge difference because I would know as person who is involved in research that this is what is expected of me. This is what I have to do from point A to point B because not knowing and not having something to guide you it makes one to do this thing and the other one is doing another thing so it creates that deviation within one setting so whereas if we have a standard guideline or policy it will actually guide us and lead us to one direction preventing problems and disagreements and fights that might arise
Interviewer	Okay thank you very much at this point I will stop recording

Appendix 8b: Sample 2 of a transcript

Interviewer	Hello. Thank you so much for agreeing to do this with me. Before we get into the deeper questions, let's get the demographics done because we need to correlate experience with ages. How would you describe your age range… 50 to 60.
Participant	50 to 60 yeah
Interviewer	Research supervisory experience
Participant	10 to 15
Interviewer	Research outputs
Participant	5 to 10
Interviewer	More than 10
	Research publications
	5 to 10
Participant	In terms of your teaching the research module at your institution … describe the teaching method
Interviewer	It's a virtual class, so we have synchronized sessions so that I can see their faces and interact and answer questions and I put them into break out groups and I allow the students to choose their own topic. It used to be that it was a research generation course which that students come up with their proposal and successfully defend their proposal and now we've revised that course to be evidence based practice so that they can choose a topic from there on professional practice that they would like to look into further that will improve nursing practice and patient outcomes.
Participant	Thank you very much. your view on the method ... is it working … do you think it can be done differently in terms of the learning principle
Interviewer	I think that we allow them to choose their own topics is enormous because choosing from a list of topics didn't

	work and invariably this is a required course and most of the students I teach are nurse practitioner students and I get at least out of a group of 15 or 20 that will ask why they need to know this information. And so, I bring it back to the fact that when they're working and functioning as healthcare professionals they're going to be more like patient representatives to say this drug is the best and here's the studies that show that and how will you know if what they saying is true and ethical and that has an impact on what you prescribe to your patients. So, I hold these sessions face to face and they seem a lot better afterwards I situate research around their professional practice and that tends to carry them a lot further and enhance their interests
Participant	That sounds wonderful. In your institution do you have module descriptors or something that guides your outcomes?
Interviewer	Our course objectives are mapped back to our program so everything is mapped and it's all within the syllabus
Participant	Okay. Do you have learner and study guides?
Interviewer	We do not but we have outcomes for each module
Participant	Okay. Seeing that we in the midst of this pandemic has the online teaching affected your research module in any way?
Interviewer	No from the first wave that hit New York the surge apart from Fn P courses research is the one that gives them the most trouble … it's the one they spend most time on and it's the course that takes the most effort from them to get through. What we thought was that the surge was gonna present a large attrition number but what we actually found coz we did a retrospect qualitative analysis and what we found is that our retention actually went up in the

	programme and this course and the only data source we had to look at for correlators was just email correspondents and what we found is the students found a lot of comfort in the faculty support. Students appeared to be much more fatigued and less likely to engage. I don't have any facts to support that …. that is just anecdotal information from the faculty when we speak.
Interviewer	With regards to assessment criteria and competencies… is that outlined.
Participant	I'm sorry….
Interviewer	Assessment criteria… for the module
Participant	Yes yes ... we have rubrics
Interviewer	Okay describe the length of the research module …. span over how many months?
Participant	Oh, it's 16 weeks
Interviewer	Would you say this is sufficient to complete a project?
Participant	I would say that the move to evidence-based practice will make that much more doable.
Interviewer	Would you say that students are able to grasp concepts in that time?
Participant	We used to teach this in 8 weeks and we increased to 16 weeks.
Interviewer	Would you say the success rate of the research projects are high …? I mean like are students able to complete the module and present a good passable one.
Participant	I would say probably 80 to 85% percent of them are successful and by that, I mean not only is the project feasible but they understand what they have learnt and understand the connections if that makes sense.
Interviewer	Okay …. you also supervise post grad students how would describe their embedded knowledge before embarking on a post grad study?

Participant	Variable … extremely variable.
Interviewer	Okay thank you for that. Have you found any institutional constraints that have impacted on your research teaching?
Participant	Time and role expectation… role expectations…you know …. eh… teaching is just one component… you gotta have service you gotta have scholarship and if I could teaching and scholarship to this topic then it would be wonderful. I just have not found a way to do that yet.
Interviewer	Okay… thanks so much. Do you have a chance to develop professional and enhance your research skills? Are there opportunities for this?
Participant	I learn from my students every single time.
Interview	But… from the institution… like seminars and workshops just to upskill?
Participant	Yes, the institutions provide continuing education for all faculties and they also provide monetary reimbursements and support for presenting at conferences.
Interviewer	From what you have said it seems that the research module is run well, there is good success rates what would you say are the best practices that contribute to that?
Participant	Because in the US we have a Masters degree and a Doctoral degree so the course that I teach is the Masters level and my recommendations have been that research be evidence-based practice as opposed to research generation so I think that has helped tremendously… pardon me …. sorry Nessie what did you say…
Interviewer	No no no … I'm listening you said evidence-based practice was better as opposed to research generation.

	If you were to make any recommendation for change as I see you are on par with where we at .... ummmh… what would they be?
Participant	My recommendation would be for undergraduate research to plough that wheel …. you know… make sure that the students have a good grasp of the concepts of research as oppose to asking undergrad bachelorette students to conduct research as I don't think they at that level. I think there has to be a really good articulation of what each level has to be responsible for and ACN which is the American College of Nursing … they've done a nice job … I just think that not everyone is on board with that. The faculty and what they expect out of their students and I think if we ascribe to what's expected out of students at each level then I think that the students we get at the Masters program would have a good grasp of the underpinnings of research and we wouldn't have to revisit that… does that make sense?
Interviewer	Yes, it does.
Participant	I feel like we have to have to go back and cover everything that they should come with and that sums down the priors that are required in that level and consequently the next level … so …
Interviewer	Yes…if I'm comparing your last statement is more or less is that the undergrad must more embedded knowledge
Participant	… and I don't have all the answers and I'm not trying to be disrespectful of our colleagues who teach the bachelorettes because we all know they got their work cut out for them … hahaha …. I just think you on to something Nessie because if we have these recommendations why aren't they being followed … is it because there is resistance to curricular vision… is it based on the faculty

	teaching the course and this what their personal wish is for the students to get out of the course.
Interviewer	Do you have a structured framework policy that outlines how the research module should be conducted in undergrad research?
Participant	I'm sorry was that a question??
Interviewer	Yes, like you said the period is over… uhh...
Participant	16 weeks.
Interviewer	Yes 16 weeks.
Interviewer	Yes, so, in that 16 weeks do have a policy or guideline that details how the course should be run from the time they start till they complete.
Participant	Yes, a course outline and everything is articulated weekly.
Interviewer	Thank you so much Prof… I will stop here.

Appendix 9: Letter from the professional editor

EDITING / PROOFREADING CERTIFICATE

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Student number : 21856810

This is to certify that the above manuscript has been proofread and edited for English language grammar, punctuation, spelling, writing style, clarity, sentence structure and layout. The document is formatted according to the institutions requirements and guidelines. The logical presentation of ideas and the structure of the paper were also checked during the editing process. Neither the research content nor the author's intentions were altered in any way during the editing process.

I am a freelance editor specialising in proofreading and editing academic documents. All amendments were tracked with the Microsoft Word " Track Changes " feature and the document was returned to the author.The author has the option of accepting or rejecting each change individually. The author remains responsible for the correct application of the changes in the text and references.

I wish the authors all the best.

19 July 2022

DR NELLIE NARANJEE **DATE**

Appendix 10: Turnitin report