UTILISING THE HEALEY AND JENKIN'S RESEARCH TEACHING AND CURRICULUM DESIGN NEXUS TO TRANSFORM UNDERGRADUATE NURSING RESEARCH COMMUNITIES OF PRACTICE

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ABSTRACT

In science, research is known to be a diligent systematic inquiry into nature and society or both. It assists in validating and refining existing knowledge and generating new knowledge. Lecturers and scholars have embraced the integration of evidence-based practice into the nursing education curriculum in numerous ways. Although the learning competencies necessary for research competencies amongst undergraduate nurses include an understanding of the basic concepts and processes of research methods, it does not adequately support student preparedness for the attainment of postgraduate research competencies. The design of this study adopted a qualitative, exploratory and descriptive course of enquiry that explored current pedagogical research practices amongst lecturers and supervisors. A case study approach utilising, specifically, a cross-case analysis helped provide a clear picture of institutional pedagogical practices related to the topic of inquiry and its implementation thereof. The cases from approved local, national and international higher education institutions formed the setting for the study. Lecturers facilitating and supervising undergraduate and postgraduate research studies comprised the target population of a purposive sampling selection. In this study, the authors utilised the Healey and Jenkins Teaching Nexus to show that the research engagement of students and nursing research communities of practice can be strengthened if embraced by sound pedagogical practices.

The Nexus outlines four concepts that guide the pedagogical practice of the research module that promotes undergraduate students as researchers. The authors of this article concluded that it was necessary to engage students as producers and not merely as consumers of knowledge.

In this study, the researchers also utilised the Nexus to show students' engagement in fostering different teaching approaches to research knowledge acquisition.

Keywords: pedagogical practices, research, undergraduate and postgraduate nursing, lecturer, supervisor and curriculum.

INTRODUCTION

The 21st century has seen a significant evolution in the role of nurses. Nurses work in various settings such as hospitals, classrooms, community health departments, the industry and private healthcare practice. The testing of competence and innovation of nurse education has evolved to meet a decent standard in their continuous strive for excellence and professional advancement (Jooste 2018, 10). Nursing research is fundamental to the practice of professional nursing globally, and the importance of its inclusion in the undergraduate (UG) nursing curriculum cannot be over-emphasized. Johnson (2020, 88) notes that community engagement (CE) within the context of HEIs relates and extends itself to its internal communities of teaching and learning as well as to its external non-university communities for various purposes and in a variety of different ways (Lombard and Kloppers 2015, 1–14), agree that an educational institution is also tasked with using curricula, institutional policies, and structures to develop pathways to enroll students' success progressively. Therefore, understanding the core elements of the research process and methodology is a crucial enabler for UG students to experience and understand the concept and importance of nursing research.

This article demonstrates the use of the Healey and Jenkins Teaching and Curriculum Design Nexus to show that research engagement of UG students and nursing research communities of practice can be strengthened if embraced by sound pedagogical practices.

Research methods in the field have existed since 1970 and have shown connection and relevance to the ever-changing healthcare environment. Following this, nursing research modules and content focus have changed from a traditional format to evidence appraisal and synthesis (Peachy and Baller 2015, 434). Using an approach that incorporated experiential 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 enquire and critically appraise the literature and other scholarly works to establish evidence for topics of inquiry related to their practice (Nieswiadomy and Bailey 2018, 6).

Nursing is a scientific art supporting evidence-based practice (EBP); therefore, the boundaries between research and nursing practice can become somewhat blurred (Peachy and Baller 2015, 434). Research forms the basis of and supports and informs healthcare decision-making processes. Without research, the concept "evidence-based practice" will be negated

(Gray and Grove 2020, 14). Since the days of iconic leaders and theorists in nursing, research has been undertaken to test current trends in practice. According to Peachy and Baller (2015, 434), the skills obtained from the analysis may inform healthcare decision-making, allowing nurses to better advocate for patients and provide the best possible care. Whilst most nurses who provide patient care will be consumers of nursing research and implement evidence-based nursing practice for optimal nursing care, information from nursing research findings can directly impact the care provided to patients in all healthcare settings across the globe. The teaching of research methodologies in higher education focuses more on knowledge transfer whilst affording little or no attention to the context and application of the acquired knowledge (Munabi 2016, 4). Students' research outputs account significantly for the research-related status of most higher education institutions. Therefore, keeping track of student research-related expectations and performance is a crucial quality control measure (Vahed and Singh 2017, 224–230). The same study found that acquired research skills such as problem-solving and analytical skills not only empower postgraduate (PG) students but also enable them to be better prepared for a knowledge-based economy, which is a national imperative in HEIs research agenda.

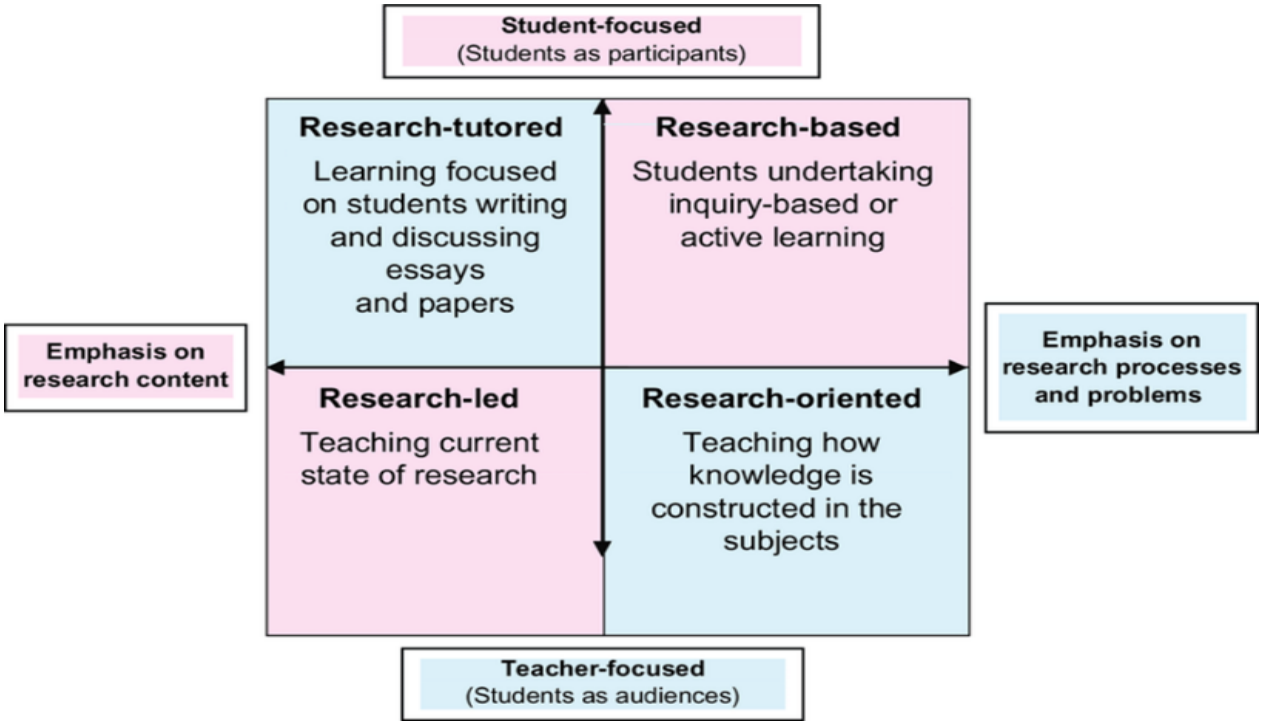

Figure 1: The Healey and Jenkin's Research Teaching and Curriculum Design Nexus (Healey and Jenkins 2017).

There is thus a need for participating HEIs to make individual learner and institutional adjustments to align the teaching of research methods with their vision and mission statements. This article, therefore, argues that utilising Healey and Jenkin's Research Teaching and

Curriculum Design Nexus (Figure 1) will foster academic and professional research growth in nursing education. The Nexus outlines four concepts that guide the teaching and learning of research to develop students as researchers (Jenkins and Healy 2012, 128). This article, concludes that it is necessary to engage students as producers of knowledge but not as merely consumers of that knowledge.

THE COMPONENTS AND APPLICATION OF THE HEALEY AND JENKIN'S RESEARCH TEACHING AND CURRICULUM DESIGN NEXUS

Research-led

This phase involves learning and adopting the necessary knowledge of the discipline. Current pedagogical UG research teaching and practice methodologies should be innovative enough to sufficiently transition the UG student to a higher level of PG studies.

Research-oriented

This phase focuses on developing students' skills and knowledge to engage in nursing research methodologies and methods. Current research pedagogical practices should sufficiently ensure adequate research knowledge capacity for self-directed research appraisal and enquiry of the graduate nurse for PG studies in nursing.

Research-based

In this phase, the students are actively engaged in the enquiry and research so that they are producers and not just consumers of the knowledge. The success of projects undertaken by the students and the pedagogical practices used by research facilitators will further encourage research outputs and publication writing amongst UG students.

Research-tutored

This phase focuses on students' writings and discussions. 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 students. Here, it is envisaged that different teaching, learning and assessment strategies used in the UG research curriculum will ensure enhanced teaching and learning of research methodology to nursing students, creating a springboard for future research learning and teaching.

Literature reviews have yielded information relating to pedagogical practices in UG

research. In fact, it was noted that UG research experiences are enriched by high-impact competencies and structured teaching opportunities and practices (Peachy and Baller 2015, 434). However there remains a paucity of information on how UG student research teaching and learning promotes student preparedness for further studies, such as at a Master's degree level. This has stimulated renewed interest in the debate about the quality and quantity of research outputs which further influence the results of graduate students and have the potential to foster nursing research practices and scholarship at a higher level.

LITERATURE REVIEW

Research is usually introduced at the foundation level of this art of caring. Florence Nightingale, a pioneer of nursing, was the first researcher in the Crimean War in the 1850s when she called for practice-based research. The study noted that the pioneers of nursing who had completed master's 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, according to Peachy and Baller (2015, 434). They further maintain that the progressive strive for excellence in the healthcare environment has led to the introduction of nursing research modules. Since then, the content was changed from a traditional format to one based on evidence appraisal and synthesis. Ozay (2012, 453) also argues that conventional ideas of knowledge acquisition have since evolved and that they now circulate in a manner that requires skills to be aligned with research and inquiry. Rather than an evidence-based arena of scientific knowledge, knowledge acquisition became evident.

At most Nursing Education Institutions, research projects have been included in the curriculum during the UG program designing and formed a component of the final assessment criteria for completion of the qualification. Research has been part of nursing education and has since moved from a predominantly didactic approach to more evidence-based projects in the learning process (Healey and Jenkins 2017, 2). The levels at which academics influenced research education and practices were explored, and distinctions between educators and students were established. Upon drawing on the experiences that spanned over two decades, policies and procedures were embedded into UG research and inquiry into the HEIs. Meeker, Jones and Flanagan (2008, 377) argue that at whatever stage research is introduced into the training programme, students may experience difficulties appreciating the value of research in their practice. Additionally, the knowledge and experience of the faculty in teaching research accountants the most (Spiers et al. 2012, 3). A structured programme based on (EBP) to rectify shortcomings can enhance graduate nurse research output.

While a significant amount of interest in promoting research skills and undertaking PG

studies is rife internationally, still little attention is afforded to research methodologies in nursing during UG studies (Lombard and Kloppers 2015, 2). The challenge of framing a research idea, and the successive re-drafting of such, can be a relatively new yet overwhelming experience for UG students, especially as they are expected to transition to an independent mode of study (Vahed and Singh 2017, 224).

Sudria et al. (2018, 91), in their expression of Experiential Learning Theory, describe learning as a process whereby knowledge is created through the transformation of a person's experience. This means linking knowledge with practice can help bridge the gap between what was previously unclear or unfamiliar with what is now known and experienced. And this can be likened to the nursing process, according to Burkhart and Hall (2015, 160). Relative to this, a decline in the training of nurses in the USA was anticipated because nurses were exposed more to researcher roles than teaching and nursing roles, hence pursuing research graduate education in nursing (Burkhart and Hall 2015, 161). On the other hand, it was reported that students were often pessimistic about research modules and considered them a nightmare and demanding.

Studies by Macheski, Buhrmann, Lowney and Bush (2008, 44) support the view that students have a negative attitude towards research courses. Given these experiences, quality research teaching and supervision at the UG level would provide the impetus for research lecturers and supervisors to successfully engage the students in research activities allowing them to progress to PG studies with limited challenges (Vahed and Singh 2017, 224). A study done in India examined the pace and progress of nursing research in Asia. It noted that research was not new to the nursing field and that nursing often had to underpin its discipline with relevant theories from other disciplines to inform practice. Similarly, Macaden (2020, 6–11) observes that Western ideas such as (EBP), quality assurance, and quality improvement had been propelled by research in the nursing field.

According to Tan (2007, 207), UG research has often provided a way for scholars to become independent thinkers and prepare for PG programmes. It was also revealed that basic research concepts needed to be emphasised and integrated earlier into the curriculum, and that the skills and activities required for the research processes were present but not explicitly tied to the research project, which caused confusion between faculty and students (Long, Bischoff, and Aduddell 2019, 171). It was then proposed that a pedagogical culture in which ideas could be debated should be given space. It also suggested that the teaching and learning processes of the research modules should be investigated and evaluated since there were limited interventions relating to the research curriculum (Wagner, Garner, and Kawulich 2011, 75).

RESEARCH PURPOSE, AIM AND CONTRIBUTION

This article, which is part of more extensive study, is aimed at demonstrating the utilisation of the Healey and Jenkin's Research Teaching Nexus in the pedagogical practice of UG nursing research teaching. Aligning the precepts of this teaching nexus to the research questions that guided the study, allowed for a multi-level relationship that focused on all facets of research with an aim to provide direction, frameworks and resources to all role players of research (See Table 1).

Table 1: Alignment of The Healey and Jenkin's Research Teaching and Curriculum Design Nexus to the Research Questions of the study

Precepts of Healey and Jenkins Framework	Research questions aligned to the Healey and Jenkins Design Nexus
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?

The authors, of this article posit that this teaching nexus should be a key consideration for the research knowledge transfer and research knowledge acquisition in the UG nursing curriculum. A greater understanding of research lecturers' and supervisors' 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.

RESEARCH METHODOLOGY

The design for this study was a qualitative, exploratory and descriptive one that employed a case-study approach to explore current pedagogical research practices. This design allowed interaction with the role players of research education to achieve study objectives. After gaining relevant ethical clearance and permission, the researchers were able to interview academic staff employed at the participating institutions, who were involved in teaching and learning of the research module. The researchers were able to review academic records to determine pedagogical practices in the UG nursing programmes of sample universities. Whilst the records assisted in identifying pedagogical practices, the participants' experiences were used as a exploration and probing into the preparedness of UG students in research studies.

Case study approach

A case study approach was utilised to help provide an accurate picture of institutional pedagogical practices related to the inquiry topic and its implementation. Yin (2014, 240) conceptualised case study research as a strategy of inquiry, methodology or comprehensive examination. A case study is an empirical inquiry that investigates a contemporary phenomenon whilst being in-depth and considerate of real-life contexts. Notably, case study research complements a validity-seeking humanistic approach which also helps provide crucial patterns or contextual bodies of data (Yin 2014, 240). Case study methods are further described as enquiries 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 will add to the value of the study since these multiple cases will draw on a single set of cross-case conclusions, and is also termed the comparative case method (Yin 2014, 18). In keeping with a case-study approach and presenting an in-depth study, two data sources were collected to provide a rich investigation of the phenomena. Record reviews and interviews of the participants provided rich data to be explored.

Research setting and population

This study aimed to examine the pedagogical practices of local, national and international Nursing Education Institutions (NEIs), to gain various perspectives on teaching the research module. The target group comprised lecturers and supervisors from the selected ethics-approved facilities who were involved in preparing the nursing research modules, and the supervision of the UG and PG projects at national and international universities. The purpose of exploring the study of research facilitation internationally was to compare the nursing programmes on offer, identify strengths and weaknesses, and adopt best operating practices related to the transfer and acquisition of research knowledge from teaching and learning perspectives. Notably, all nursing programmes within South Africa subscribe to the standards prescribed by the South African Nursing Council (SANC) and share similar curriculum outcomes. Therefore, this study had to ascertain what was being done abroad, and locally whilst considering contextual and relevant nursing governance structures.

Data collection and procedure

The data was collected using online interviews and academic records. The aim of using multiple strategies in this study was to keep with the case-study methodology and to increase the validity of the study's findings.

Recruitment of participants

The researcher built a professional relationship outlining the purpose of the study with research advisors/research directors of the participating NEIs. An understanding of the purpose of the study was sought to gain cooperation, and a designated time slot to discuss the study purpose with the identified participants was arranged. This helped clear queries before commencement. A well-informed participant information guide served to fully inform the participants about the nature, purpose and procedures of the study, and a clause on voluntary participation and withdraw was embedded.

DATA ANALYSIS AND INTERPRETATION

Interview data

The researcher analysed the collected data to sort and organise the data according to Creswell's six steps of qualitative data analysis (Ishtiaq 2019, 41). The analysis and interpretation of the data was an explanation of emerging themes which formed the core of the research findings as outlined below:

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. All field notes and transcriptions were reviewed and arranged into categories and then transformed into codes.

Phase 2: Review of the data

Data was transcribed to capture every detail and relevant notes were made to capture the essence of the interviews. Field notes were checked against the transcriptions to ensure all information was captured.

Phase 3: Coding of the data

Data was coded to categorize information and sorted appropriately. Excerpts were transcribed verbatim.

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 about the participants, events, and the environment verbatim.

Phase 5: Representing the description and themes

The themes generated were explored and analysed from all the data to reveal the outcomes.

Phase 6: A narrative of the findings

A report was constructed detailing the findings that were interpreted from the outcomes above.

Record review data

The record reviews were purposed to corroborate the data gathered from the semi-structured interviews, adding to the study's trustworthiness. This study further proposed a review of the non-confidential documents in the public domain such as module descriptors, study guides and learning outcomes to, triangulate information about the topic of inquiry. Also, information on duration, design, and teaching and assessment strategies for this module were examined.

DISCUSSION OF THE FINDINGS ABOUT THE HEALEY AND JENKINS TEACHING NEXUS

The findings of this study revealed that teaching practices varied and that research courses were not dependent on a particular method of teaching at UG levels of nursing education as evidenced by just some of the actual participant excerpts below. This was in keeping with findings by Flotman (2021, 83–100), who states that every research journey is unique and that the relationship between students and teachers should be transparent and based on adult learning principles. The following excerpts relates to the Research oriented precept of the Healey and Jenkins Research Teaching Nexus. They indicate that during a crisis period like the COVID-19 New Normal imposition, there was a lack of frameworks or policies to drive the teaching and transformation of research at UG nursing.

> "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).
>
> "... 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).

Notably, the methods utilised by academics for knowledge transfer were either "face-to-face" or online resulting in a blended learning approach. Findings also revealed that there was an

absence of policies and guidelines that could guide the teaching of the research module. Teaching and learning of research posed further challenges with the introduction of online learning especially during the COVID-19 period, making it imperative that the research module design and specific guidelines to this effect, be revisited.

Healey and Jenkins (2018, 54) maintain that there is a distinction between students who "build" on knowledge and those who "explore and acquire" knowledge in exploration of the various pedagogical practices and experiences of the lecturers' teaching. It was further found that research-led and research-informed pedagogical practices allowed novice nursing students to learn and adopt necessary research knowledge. The research-led phase of the mentioned Nexus drew on exploration and perceptions of the lecturers and their current pedagogical practices to determine if they were sufficient to ensure UG nursing students' preparedness in the research module. This study's findings reveal that, while pedagogies differed, factors that prevailed were duration of teaching and the absence of guidelines to ensure standardised education of research modules at the UG nursing student level, as per participant quotations below which are aligned to the Research-led precept of the above- mentioned Nexus.

> "... 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).

This excerpt relates to the Research Led precept of the Healey and Jenkins Research Teaching Nexus and shows that current pedagogies were insufficient to ensure an adequate knowledge acquisition of the research student.

These findings also outlined some deficiencies in capacity building of the nursing student in UG research studies. Thus, the research-based aspect of the Nexus, which examined whether students can become producers and not just consumers of the research knowledge revealed that a gap exists in the understanding, and retention of the research processes and research concepts' clarification at UG nursing students' level both nationally and internationally. Additionally, the research-led aspect of Healey and Jenkins Nexus addressed whether the pedagogies and practices that were currently in place were sufficient to prepare UG students to transition to PG studies such as master's and doctoral programmes. Findings from this study demonstrated that teaching practices were insufficient to groom a well-rounded and knowledgeable student in scientific research enquiry. Suggestions for policies and set guidelines from research participants highlighted the need for standardisation of the pedagogical methods to teach research. A more active strategy, which valued critical thinking, was favoured to afford students a feel of actually doing research rather than just learning for qualifications. The following

excerpt is also directly related to the Research Led precept of the Healey and Jenkins Research teaching nexus.

> "... 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).

It was also found that there was a need for a policy or guidelines on what the student should be assessed on in a standardized way such that they assist any lecturers to effectively teaching research modules. The focus of this, in line with the research-oriented phase of the teaching Nexus in question, was the development of students' skills and knowledge in research methodologies in nursing.

Healey and Jenkins (2017, 3) proposed a review of practices that would bring a shift in students' experiences. In their research-led and research-tutored phases, the emphasis is on students' knowledge in learning, and details of how the curriculum is structured to achieve student outcomes. The relevance of these phases in this study was to determine strategies that can enhance the teaching and learning of the nursing research modules, and determine if the current strategy is adequately prepared UG or 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) equally agree that there was a minimal effort 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.

> "... where you see the problem is where students actually have to apply this knowledge in post-grad 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).

This excerpt relates to the Research tutored precept of the Healey and Jenkins Research Teaching Nexus and shows the discrepancy in what is taught and what is grasped. The utilization of the Nexus would therefore be beneficial to bringing the teaching and learning aspect together.

Peachy and Baller (2015, 441) also found that the content taught was disproportionate to the required research project and its subsequent evaluation processes. The same authors revealed that, while policies outlined information about the research module, there was also a

lack of guidelines or standards for research facilitation.

> "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).

The Research Based precept of the Healey and Jenkins Nexus shows the purpose for a foundation on which the learning must be based. The views of Participant 10 above is one of the excerpts that show students look out for these "maps of enquiry" so to say in the teaching and learning journey.

The research-based phase of the Healey and Jenkins Research and Curriculum Design Nexus thus requires that students should undertake inquiry-based learning (Healey and Jenkins 2017, 1–13). This will assist in determining if the student is actively involved in the research processes and can understand the research project's concepts and methodology as evident in the excerpt below:

> "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).

This study aimed to determine if current pedagogies were effective in ensuring that project work was worthy of publication and could ultimately increase research outputs in nursing. As Silva et al. (2021, 2–8) maintained, the pertinence of developing skills for research and the worthiness of starting this at the training level will mostly count in such processes. It was therefore apparent from the records' reviews that many references were made relative to UG students' research guidance and development. This finding seemed to agree with Hurlbut and Elkins (2018, 1–3). They argued that prevalent conversations about access and availability of research opportunities will allow students to be introduced to and engaged in research practices.

CONCLUSION

The study was conducted using local, national and international universities (NEIs) as participating institutions, where research is taught as a module at the UG nursing training programme level. While many theories have guided pedagogies in nursing education, this study opted for the Healey and Jenkins Research Teaching and Curriculum Design Nexus to underpin the study. The interviews of nursing research lecturers, supervisors, and records helped reveal several factors that were considered. These factors were further important in proposing guidelines that could be used to advise all stakeholders involved in the teaching of nursing research modules. PG Policies could also help inform various dimensions and constraints of

research methods pedagogy in generic disciplines. These may potentially augment the productive use of research knowledge and scientific inquiry, which can aid UG students easily progress into and succeed during PG research studies.

In their Research and Teaching Nexus, Healey and Jenkins outlined four significant components that aimed to guide policy-makers and course leaders to structure the teaching and facilitation of research modules. The findings of this study have agreed that the adoption and alignment of this nexus with teaching practices in research modules, will facilitate the synthesis of best practices that can be implemented to ensure optimum knowledge retention and research preparedness of the student at UG and PG levels.

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