

Research article

Nursing student reflections on a research internship: A reflective discussion following the Gibbs' reflective cycle

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ABSTRACT

Background: Evidence-based practice underscores the importance of utilising research-based skills in the delivery of care. However, entry-to-practice nursing curriculums in Australia currently do not provide students with practical research opportunities. Acknowledging this gap, an Australian university initiated a two-month summer research internship that aim to expose undergraduate nursing students to clinical research under the mentorship of a nursing academic.

Aim: To understand the opportunities and challenges of a research internship and its contribution to developing research knowledge and skills for future nursing practice and leadership.

Design: A reflective discussion following the six stages of the Gibbs' Reflective Cycle.

Settings: A two-month research internship at an Australian University was held over the summer.

Participants: Two successful nursing students (FO and BM) who were both students in the Master of Nursing (Graduate Entry) program.

Methods: Following the Gibbs' Reflective Cycle, a description of the internship experience was outlined, alongside feelings encountered. The opportunities and challenges of the internship are explored, evaluated, and analysed with related literature to inform an overall conclusion. To support other nursing students pursuing similar research endeavours during their professional transition, an action plan was developed.

Results: The optional summer research internship proved to be a valuable experience for participating nursing students. FO and BM were granted co-authorship on their respective research projects, providing opportunities at international nursing and midwifery conferences and several avenues for career advancement.

Conclusions: Nursing research internships contribute to students' personal and professional development. This paper highlights the need for universities to provide innovative educational opportunities to students that enrich evidence-based nursing practice and inspire further opportunities.

1. Introduction

Graduate entry-to-practice nursing curriculums in Australia consist of theoretical units, clinical skills learning, and healthcare placements over a minimum of two years. The program of study aims to prepare nursing graduates with the skills to provide high-quality care in diverse settings. However, opportunities for students to participate in clinical research is often not a compulsory feature of nursing curricula despite the positive impact of research-based skills when delivering evidence-based patient care (Ferreira et al., 2022; Black et al., 2019; Wu et al., 2018).

The transition to graduate nursing raises responsibilities and expectations that undoubtedly create a stressful environment (Toothaker et al., 2022; Urban and Barnes, 2020; Van Patten and Bartone, 2019). Limited exposure to research endeavours significantly hinder students' proficiency in examining, analysing, and implementing findings into day-to-day practice, negatively impacting patient care (Pinto et al., 2023; Abu-Baker et al., 2021; Wu et al., 2018), and exacerbating the challenges during this transition (Toothaker et al., 2022). Acknowledging this critical gap, an Australian university initiated a two-month optional summer internship that aimed to provide a unique opportunity for nursing students to experience research training by undertaking

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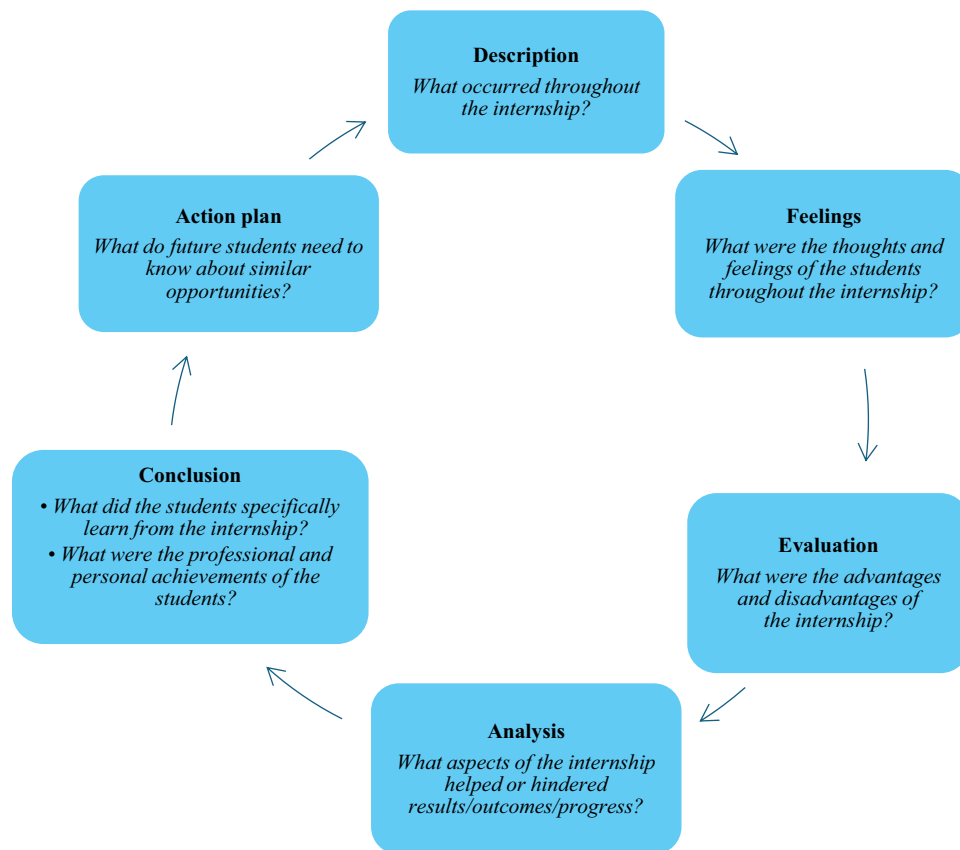


Fig. 1. Application of the Gibbs Reflective Cycle (Gibbs, 1988).

clinical and practical research supported and mentored by an experienced nursing or midwifery academic. To date, little knowledge or understanding about the impact of this type of learning activity is available in the literature. Through the Gibbs' Reflective Cycle, authors (FO and BM) reflected on their experience of undertaking a research internship alongside their nursing studies (Ingham-Broomfield, 2021). This paper aimed to provide a critical reflection of the internship experience with the hope of understanding how it developed two nursing students' knowledge of research and established the importance of research on patient care.

2. Background/literature

Research internships offer a multitude of benefits for students (Van Patten and Bartone, 2019; Roberts et al., 2024). Students receive practical guidance from experienced professionals that enhances their research-based skills in collecting and analysing data, corroborating findings with relevant literature and utilising acquired learning for further skill development (Vien et al., 2023; Wu et al., 2018). Upon successful completion of these programs, students are well-positioned for career advancement (Anyango et al., 2024) and other research initiatives within the field (McSweeney et al., 2018; Howell et al., 2019; Roberts et al., 2024).

In nursing and midwifery, though research internships are not uncommon, they are frequently in short supply (Paterson and Strickland, 2023), and the outcome of these programs on nursing and midwifery students research knowledge and skills is not known. Factors such as sufficient funding and shortage of academic mentors' further constraint the availability of these opportunities (Roberts et al., 2024). Consequently, offering optional internships could serve as a vital link between theoretical education provided within universities and real-world practical experience during the transition to becoming a graduate

nurse (Roberts et al., 2024; Anjum, 2020).

Insightful reflective practice is essential to the professional transition as it integrates nursing theory into practical experience (Barchard, 2022; Shin et al., 2023). Since the 1970s, evidence-based nursing practice has evolved to include a holistic care model, defined by the International Council of Nurses (2012) as "a problem-solving approach to clinical decision making that incorporates a search for the best and latest evidence, clinical expertise and assessment, patient preference values within a context of caring" (2012, p. 6). This practice involves a comprehensive collection and processing of research to implement findings within the clinical environment, which improves patient outcomes (Black et al., 2019).

A common framework for reflection is the 1988 Gibbs' Reflective Cycle. The six-stage cycle (description, feelings, evaluation, analysis, conclusion, and action plan) deconstructs a particular event, addressing limitations and challenges as learning opportunities (Gibbs, 1988; Ingham-Broomfield, 2021). This structural approach applies to nursing students in developing practical and professional competencies (Zhan et al., 2023).

3. Aim

To understand the opportunities and challenges of a research internship and its contribution to developing research knowledge and skills for future nursing practice and leadership.

4. Methods

The overarching research question guiding this reflection was: *How did the research internship enhance students' research knowledge and skills, and how did their acquired competencies contribute to future practice and leadership in nursing?* Two authors (FO and BM) systematically applied the Gibbs' Reflective Cycle, consisting of six stages (description,

feelings, evaluation, analysis, conclusion and action plan) to answer the question (Fig. 1).

The first stage of the Gibbs' reflective cycle, *description*, prompted the authors (FO and BM) to reflect and describe their experiences of the research internship. To facilitate this process, they considered key questions such as: *What happened? When and where did it take place? Who were involved?* These questions outlined the critical tasks of the internship, identifying initial challenges and expectations between the authors and respective academic mentors (DM and RS), respectively. In the next stage of the cycle, *feelings*, the authors connected and reflected on their emotions throughout the various stages of the internship. This stage involved asking the question, *How did you feel before, during, and after the event?*

In the *evaluation* of the experience, both positive and negative aspects of the research internship were considered, this is the third stage of the Gibbs' reflective cycle. Authors were prompted to evaluate *What were the opportunities and challenges of the experience?*

The fourth stage of the cycle, *analysis*, identified reoccurring themes within the evaluated internship experience of the two authors. For example, 'collaboration', 'challenges' and 'communication' were

consistent phrases. These concepts were compared with relevant literature and nursing practice.

From the reflections in the first four stages, the authors developed informed insights on the internship as well as uncovered practical implications towards nursing practice. This developed a *conclusion*, noting acquired research skills and competencies relevant to a future nurse. Lastly, the reflective process ended with an *action plan*, guided by questions including, *What could I have done differently?* and *What steps can I do to implement this?* This suggested a process for future nursing students to follow and nursing student curricula to incorporate. This action plan also directly addresses many of the challenges and opportunities identified throughout the internship that promoted continued professional development and encouraged feedback and mentorship programs.

As the data encompassed students' experience of a research internship in one Australian University, the process may be different for other students enrolled in different educational institutions. This critical reflection was also not underpinned by rigorous research methodologies and as such cannot be generalised. Ethical approval was not necessary as the study contains the personal reflections of the authors.

5. Data/results/findings

5.1. Description

A two-month optional summer research internship program was offered to students enrolled in either entry to practice or higher degree by research nursing and midwifery programs at an Australian University. Following an expression of interest, applicants were selected and allocated an academic mentor. This academic mentor worked collaboratively with the student on a research project throughout the allocated timeframe. After completing the internship, participating students were awarded a tax-free educational grant of \$3500.00.

The authors (FO and BM) were enrolled in the Master of Nursing (Graduate Entry) program at an Australian University. The cohort consists of students from diverse educational backgrounds. FO holds a Bachelor of Biomedical Science, while BM holds a Bachelor of Arts and a Master of Business Administration. However, both authors did not have practice, experience, training, and knowledge in nursing research.

Authors (FO and BM) partnered with academic mentors (RS and DM), respectively, to collaborate on a specific research project. FO completed the program over the semester break in 2022, while BM completed it in 2023. Each author undertook specific tasks to publish a manuscript as a co-author and present findings at a nursing and/or midwifery conference.

FO contributed to a scoping review of hospital volunteer programs for older patients in acute care. The internship involved investigating databases to extract and critically appraise relevant articles. The review followed the 2020 Preferred Reporting Items for Systematic and Meta-analysis (PRISMA) checklist for systematic reviews (Page et al., 2021) and results were outlined through a study characteristics table. Research findings were published in a poster presentation and manuscript.

BM contributed to a cross-sectional survey on intrapartum maternal hydration assessment and management across Australian and New Zealand maternity units. Tasks involved identifying and contacting maternity hospitals across the two countries to invite personnel to participate in a pre-designed online survey. The survey results were extracted and analysed by collapsing responses into categories, and additional research was conducted, contributing to the discussion. Following this, a manuscript (under peer review), poster, and presentation were prepared.

5.2. Feelings

Reflecting on the start of the internship, a mixture of uncertainty, curiosity, and excitement throughout this journey was clear. Having no

Table 1
Obstacles and possibilities identified throughout the research

Challenges	Opportunities	Quotes
Uncertainty combined with lack of research experience	Enhanced confidence in research capabilities: The internship provided foundational knowledge and research skills, enhancing confidence	"Having no previous background in academic research, I felt apprehensive if I had the necessary skills. However, the experience has significantly boosted my confidence" – FO
Technology issues	Improved Problem-Solving capabilities: Encountering and resolving technology issues has enhanced adaptability and problem-solving abilities	"Encountering technology issues that disrupted data collection and analysis required quick assistance from IT services. This experience improved my problem-solving skills whilst demonstrating the need for contingency plans" – BM
Learning New Software and Tools	Developing Technical Skills and utilising new software: Learning new techniques is essential for research and professional practice.	"Navigating unfamiliar software and analytical tools (e.g. Rayyan) was challenging but essential for developing my technical skills" – FO
Balancing Workload	Enhanced Time Management: Effectively balancing the workload is applicable to a professional setting.	"Adhering to tight timelines required balancing multiple tasks simultaneously, this honed my time management skills and ability to effectively prioritise" – BM
Collaborative Environment	Strengthened Network: Working closely with mentors throughout the internship and peers improved teamwork capabilities applicable to professional environment	"Working closely with a diverse team has led to many personal and professional relationships beyond the internship" –FO "The collaborative environment is valuable for professional networking and was essential for a successful project" – BM
Communications	Enhanced Communication Skills: Presenting research findings and preparing materials for a diverse audience improves communication skills.	"The communication skills developed through preparing and presenting research findings has been helpful in interdisciplinary collaboration and enhancing confidence" – FO

previous background in academic research, we felt nervous and doubtful if we had the necessary skills for the role. Initial encounters with mentors were instrumental in setting expectations, laying out effective communication channels, and integrating regular meetings and email exchanges to enhance support mechanisms. As we navigated each research activity, we became eager to contribute and uncover new findings to supplement existing knowledge within the field. Towards the end of the program, a sense of achievement and fulfilment of what was accomplished was felt. We became inspired to share our valuable experience with others, especially like-minded nursing students and promote the importance of research and its role in promoting patient care.

5.3. Evaluation

The collaborative team environment was essential to success as FO and BM worked towards a unified vision within set timelines (Roberts et al., 2024; Van Patten and Bartone, 2019). Mentors, DM and RS, provided insightful ideas and approaches that consolidated learning and enhanced capability. Mentors' deep understanding of the subject matter, combined with extensive clinical, educational, and facilitation experiences, developed important outcomes such as publication of manuscripts and presentation of posters. Valuable networking throughout the program provided collaborations and opportunities within the field. For example, FO and BM are emerging nurse leaders (ENL) under a leadership program offered by the Australian College of Nursing (ACN). The authors are embarking in other academic pursuits for continued professional development.

Adhering to the tight timeline of the internship, required a balance of workload and task prioritisation in relation to data collection, analysis and reporting findings to ensure timely completion of the project. During the internship, BM encountered technology issues disrupting the data collection and analysis process, requiring IT services to recover data promptly to meet the project deadline. FO navigated unfamiliar software and analytical tools (e.g. Rayyan and EndNote) posing a steep learning curve, necessitating additional time and support from the librarians to effectively implement these tools for data examination and analysis. These unpredictable and challenging situations are beneficial for future practice as nurses often face clinical situations necessitating adaptive critical thinking (Martí-Bonmatí, 2023; Vizeshfir et al., 2022). The skills gained from the internship, including technology utilisation, data analysis and contingency planning, directly applicable to quality improvement initiatives and the implementation of evidence-based practice in nursing (Anyango et al., 2024; Black et al., 2019; Huckstadt, 2023). The specific challenges and learning opportunities encountered by the authors are summarised in Table 1.

Throughout the internship, there was a strong motivation to succeed due to the positive implications of research for future practice. Professionally, the internship positioned us in a favourable position compared to our peers within the same nursing degree. The internship provided a competitive advantage when responding to key selection criteria for future employment positions (Kattiyapornpong and Almeida, 2022; Kim et al., 2022). Since completing the program in 2022, FO has successfully completed the ACN ENL program and pursued a research assistant role alongside her graduate program. BM is pursuing the same leadership program and further education upon graduating in early 2025.

The internship was enhanced through collaborative discussions with academic mentors and research teams, which established a strong support system throughout the project (Sarabipour et al., 2022; Feng et al., 2024). For example, BM connected with multi-disciplinary teams across Australia and New Zealand, which provided a unique perspective outside the nursing sector. Their respective mentors facilitated direction and accountability through email correspondences and meetings. They provided advice for developing many skills as FO and BM navigated new software and systems (She et al., 2023; Van Patten and Bartone, 2019).

Our contributions to the research internship have strengthened our

communication and interpersonal skills (Black et al., 2019; Zhan et al., 2023). Through a structured flow, we effectively executed and consolidated knowledge from various activities under the support and encouragement of our mentors (Van Patten and Bartone, 2019).

The additional resources available were recognised and embraced and these allowed for the successful completion of the research projects. Resources varied from technology and scholarly resources to librarian and IT support.

5.4. Analysis/discussion

The positive effects of evidence-based training, including research internships among nursing students in their transition to professionals, have been recognised by researchers (Abu-Baker et al., 2021; Miller et al., 2020; Roberts et al., 2024). Nurse-led research increases students' knowledge, confidence and capacity within the field (Olive et al., 2022).

The research internship provided a unique collaborative environment within a nursing context (Huckstadt, 2023; Roberts et al., 2024). Both FO and BM are co-authors of a peer-reviewed manuscript. In early 2023, FO submitted the findings through a poster presentation which was awarded as 'best poster presentation' at two international nursing and midwifery conferences. BM also contributed to a presentation and poster in mid-2024 at a national midwifery conference. Both authors focused on translating complex research findings into language suitable for a multitude of audiences.

The preceptor-student intern relationship is rooted in mutual motivation. The student must be intrinsically motivated and versatile in achieving project goals (Sarabipour et al., 2022; She et al., 2023). In research endeavours, the mentor must provide adequate student support (Miller et al., 2020). This symbiotic relationship establishes a sense of comfort and support whilst uncovering new skills (Feng et al., 2024; Van Patten and Bartone, 2019). Researchers have identified the practical benefits of such experiences, noting that nursing students who undergo research placements experience improvements in communication and interpersonal techniques (Black et al., 2019; Smith et al., 2024; Zhan et al., 2023).

The skills acquired from the research internship will be valuable in our future nursing roles as early exposure and development to critical thinking and reasoning skills trains one's capacity to understand patients' conditions and provide appropriate care (Martí-Bonmatí, 2023). Proficiency of research methods, data management, and analysis instils confidence in nurses to participate and lead quality improvement projects and research (Ballantine and Potter, 2023; Black et al., 2019). For example, during the internship, we encountered different tasks varying in priority mimicking the clinical environment where patients are triaged according to acuity. Time management and task prioritisation were necessary skills to meet agreed deadlines (Vizeshfir et al., 2022). After the internship, we were able to interpret and share research findings with a broader audience (Hare and Whitehouse, 2022; Ferreira et al., 2022). The ability to convey complex information is necessary for effective inter-disciplinary communication, patient-centred care, and lifelong learning (NMBA, 2016, Standard 2.7, 2.8 and 3.3; Abu-Baker et al., 2021; Miller et al., 2020; Wu et al., 2018).

5.5. Action plan

Following completion of the research internship, FO and BM were able to appropriately integrate evidence-based findings into practice. Within the clinical environment, skills including critical thinking, interpersonal and time management, also contributed to positive patient outcomes. We prioritised personal and professional development, including joining leadership programs offered through professional nursing organisations.

Following the program, FO and BM have been encouraged to seek out other opportunities related to research, including development of manuscripts, presenting findings at conferences and planning steps to

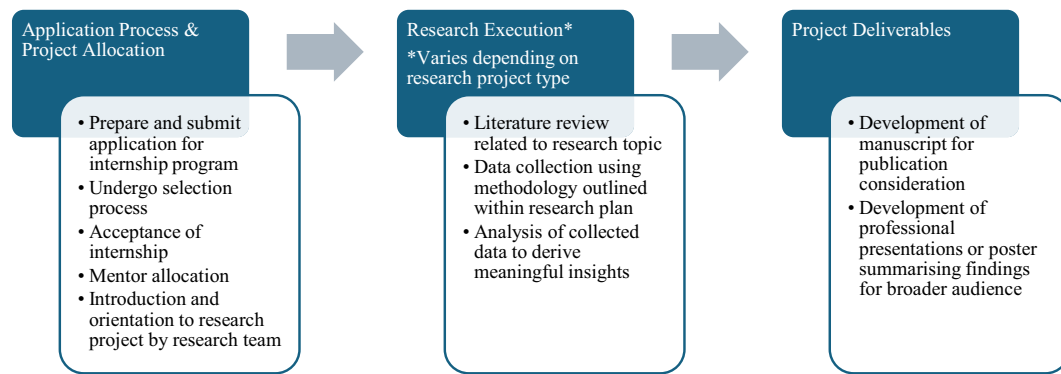


Fig. 2. Internship framework.

enrol into a PhD program.

The process of internship application is a combination of the applicant's interest and the availability of opportunities (Roberts et al., 2024). Once accepted, students may likewise feel eagerness and apprehension given the unknown challenges ahead. To overcome obstacles, engagement with their academic mentors and other available support networks, including librarians and IT services is essential.

Specifically, nursing students need to ensure their practice is contemporary and evidence based. These can be achieved by participating in conferences, joining professional healthcare organisations, and staying engaging with literature and research outputs. Attending networking events, conferences, and seminars is essential for building connections with future mentors and other professionals in the industry. These opportunities allow students to gain practical experience and actively contribute to research initiatives (Wu et al., 2018). Similar to the collaborative clinical environment, nurses work within a multidisciplinary team towards a unified goal. To meet the demands of the dynamic health environment, nurses must be intrinsically motivated to embrace a lifelong learning approach towards professional growth. A structured framework for navigating the summer research internship process included the following steps: application process, project implementation and completion of project (Fig. 2).

5.6. Limitations

Whilst this critical reflection offers important insights into two nursing students (FO and BM) experiences of a research internship, there are several limitations that must be acknowledged. The critical reflection provided is of two students' experiences, who both held previous degrees. As postgraduate students, we were both highly motivated, and equipped with a basic understanding of research, interpersonal skills, and life experiences, resulting in various research outcomes. This may not be representative of the nursing cohort which may impact conclusions drawn.

We have provided a detailed reflection of the experiences of engaging in nursing research internship in one Australian university – this experience may be different for students enrolled in other programs or at other universities. This critical reflection was also not underpinned by rigorous research methodologies and as such cannot be generalised. However, we hope that providing this important reflection in an under researched area reveals potential for future research studies to include a diverse range of participants.

6. Conclusion

The summer research internship program enhanced our personal and professional development in many ways. As critical thinkers with strong interpersonal and communication skills, we adapted to the demanding timelines, changing priorities, and unpredictable circumstances. Within

the clinical environment, these skills sets are applied to patient care. The diversity of skills, knowledge, and connections throughout the program contributes to continued professional development.

It is recommended that nursing curricula incorporate more opportunities for research participation. Educational institutions should consider allocating resources and funding to support meaningful projects and provide students with adequate mentorships. These incentives contribute to positive academic outcomes and advance nursing practice through innovation and evidence-based solutions. Internships and similar programs enhance students' skill sets and foster a culture of evidence-based care early in their professional careers. Integrating structured internships or similar incentives, sufficiently prepares graduates to critically evaluate and implement findings into clinical practice.

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CRediT authorship contribution statement

Francine Antoinette Ocampo: Writing – original draft, Methodology, Conceptualization. **Brianne Genevieve McIntyre:** Writing – original draft, Methodology, Conceptualization. **Debbie Massey:** Writing – review & editing, Supervision. **Rosemary Saunders:** Writing – review & editing, Supervision.

Declaration of competing interest

Debbie Massey is an Assistant Editor for Nurse Education Today. None of the other authors have a conflict of interest to declare.

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