
For inspiring student nurses and midwives to understand and use research findings, developing confident clinicians who integrate evidence into their everyday practice.

SUMMARY OF CONTRIBUTION AND CONTEXT

As a scholar I weave together research, teaching, learning and service in an integrated program of work for students that values and promotes the concept of 'evidence for practice'. I have gained international, national, institutional, peer and community recognition for my command of the field, teaching research and evidence based practice to student nurses and midwives. Feedback indicates that the innovative teaching strategies I use make a measurable difference to student learning and subsequent outcomes, and that I have an impact on graduate nurses' confidence in using evidence in their practice.

CRITERION 2: DEVELOPMENT OF CURRICULA, RESOURCES AND SERVICES THAT REFLECT A COMMAND OF THE FIELD

I specialise in teaching nursing and midwifery research and evidence based practice, which students have traditionally found one of the most challenging areas of both our undergraduate and postgraduate programs. One of the professional standards that the disciplines of nursing and midwifery are measured by is the ability of clinicians to base their practice on rigorous evidence produced as an outcome of research. A recent study of registered nurses seeking to identify individual barriers to research utilisation (excluding time), found that a lack of skills in critiquing and synthesising research findings, lack of understanding of databases containing peer reviewed literature and perceived difficulty in accessing research findings were the top three barriers to registered nurses use of research in practice.¹ Across the country, undergraduate nursing curricula contain units of study in relation to research and evidence based practice to differing degrees, with the emphasis on research generation versus application varying across institutions. In spite of the priority of this topic area in nursing courses, crowded curricula and the tendency of students to place importance on subjects they perceive as holding greater relevance to their future practice², will often mean that registered nurses and midwives lack an adequate understanding of concepts underlying research and evidence based practice. This limited foundation results in clinicians having reduced capacity to bring research findings to the point of care.³ As evidence based practice is fundamental to quality care,⁴ nurses' lack of research understanding will ultimately impacts on their patients' health status.⁵

Thank you so much - your passion for research is a big help to our learning (Unsolicited student email, 2012).

Doctor Jane Mills was inspirational as a lecturer and as a Subject Coordinator. I thought the subject was going to be really boring and tedious but Doctor Mills made it fun to learn and the competition between the groups was good. The assignment was interesting as it allowed me to find out more about a topic that I was interested in rather than having the same topic as everyone else in the class (Student evaluation, 2010).

As Associate Dean Research for the Faculty of Medicine, Health and Molecular Sciences (FMHMS), and Director of Research for the School of Nursing, Midwifery and Nutrition (SNMN), I thread research and evidence based practice through my scholarly work; teaching, researching and providing service to both James Cook University and the community of far north Queensland. I have been actively engaged in this type of work since 2007 both at my previous place of employment where I was a Senior Research Fellow (NHMRC) and at JCU. Developing innovative strategies to make research real for student nurses and midwives at our University, and also in the wider region, is fundamental to achieving my goal of developing confident clinicians able to apply evidence at the point of care. Personalising the research success achieved in the SNMN by using staff and higher degree candidates as illustrations, connecting theory to practice through application, and focusing content on how to use research findings; inspires both undergraduate and masters level students to believe in the importance of linking research findings to clinical practice and motivates them to incorporate evidence into their everyday clinical lives.

IMPACT ON STUDENT LEARNING & ENGAGEMENT

An important driver of my work in developing curricula and resources for student learning is questioning how I can make the concepts of research and evidence based practice more engaging for my audience. Producing my own resources for teaching and learning such as co-authored textbooks concerned with nursing and midwifery research is an example of my command of the field. Titles include, *Grounded Theory: A practical guide*⁶, *Using Research in Healthcare Practice*³, which was the third most popular undergraduate text for nursing research courses in 2011, and a chapter in *Navigating the Maze of Research: Enhancing Nursing and Midwifery Practice*⁷, also a top selling Australian text. In particular, the first of these books is receiving outstanding reviews⁸⁻¹⁰ that consistently identify the ease with which I link theory and practice. Current book projects for 2012 include another research text for Sage Publications titled *Qualitative Methodologies: A practical guide* (Mills & Birks) aimed at beginning post-graduate research students and doctoral candidates.

Designing and developing curriculum for undergraduate student nurses begins by consulting with industry partners to familiarise myself with current practice and resources in relation to the topic. Contextualisation is an important consideration in making sure the content taught meets local needs as well as the national standards. JCU's place in the world is the torrid zone, which includes regional, rural and remote areas of Australia and the Western Pacific. Even though the principles of evidence based practice and research apply more generally, when developing curriculum and

As a guide for learning grounded theory the book is outstanding... Over two dozen learning activities, scattered throughout the book, invite the reader to reflect on key issues of theory and practice (Dick, 2011, p.5).

Dear Jane,

On Wednesday, members of VCAC met with the senior exec of TNQIT...I want to let you know that Sue, Jo and Donna spoke glowingly of your work with them. As the discussion progressed, it became clear that you have, with Sue, developed a model that we could and should look to apply in respective of other possible developments between us.

All this to simply say thank you very much for your wonderful efforts. Jane, you are always very impressive and I'm so very glad you are at JCU (Sandra Harding, Vice Chancellor and President JCU, 2010).

resources I think about how to teach student nurses and midwives to use these principles in the local context. An example of this is a new elective subject I designed for the refreshed Bachelor of Nursing Science (BNSc) titled Applying Evidence to Practice. The subject focuses on the translation of evidence to nursing and midwifery practice. Students build on concepts of evidence introduced in the pre-requisite subject Evidence Based Practice, which I also teach. During the semester, students are taught the processes of applying evidence at the point of care and evaluating the effectiveness of the change process used. Students are paired with clinical nurse mentors to plan for a change in clinical practice in response to a previously identified focused clinical question and evidence based response. This innovative subject is a direct result of industry consultation and goes beyond current coursework and clinical experiences of students by partnering students with clinicians to plan for the implementation and evaluation of changes in nursing care delivery.

Bringing my research expertise to the field of teaching and learning has allowed me investigate issues to inform curriculum design, in addition to trialling the impact of new teaching, learning and support strategies on student learning and engagement. In 2010/11 I led two studies that provided evidence for JCU's BNSc curriculum refresh. When we began the process of curriculum refresh in 2009 a 'hot topic' for discussion was students' difficulties with basic numerical calculations. In the course of this discussion we debated the need for a new subject that addressed numeracy knowledge and skills for health professionals. In 2010, after undertaking a literature review on the topic, we surveyed the 1st year cohort with regard to their educational history in mathematics and their perceptions of mathematics. Results indicated that students' main issues with numeracy were anxiety based, with no evidence that a deficiency in curriculum content was the problem. Thus, a decision was made not to develop a new subject during curriculum refresh, and instead integrated activities into the first year clinical subjects to reduce students' anxiety levels and strengthen their capacity to succeed with numerical calculations.

The second area of investigation that informed the curriculum refresh was the use of simulation in nursing practice, which is well recognised internationally as an effective method of teaching nursing and midwifery students clinical skills acquisition.

Funding to conduct this study was provided through a Carrick Institute Work Integrated Learning (WiL) Grant. In the previous curriculum, simulation was incorporated into professional experience laboratories through the use of manikins and task based activities. The WiL study investigates the integration of a model of simulation based on the lived experiences of US colleagues at Trinitas School of Nursing in New Jersey, the School of Nursing, University of San Francisco, and a comprehensive review of the literature. Drawing upon previous work in unfolding case studies, we piloted the implementation of combined theory-based tutorials and professional experience laboratories delivered as weekly 4-hour workshops, plus a 6-hour simulated learning experience using standardised patients. The participant cohort was 1st year students enrolled in the subject Clinical Nursing Practice 2 on the Cairns Campus. Measures of student satisfaction using validated US National League for Nursing instruments, student grades, student interviews, standardised patient interviews and staff interviews formed the data set. Findings from this study are now informing a new model of clinical skills acquisition across all of the BNSc clinical practice subjects with the aim of creating safe opportunities for authentic learning in relation to providing comprehensive nursing care. Journal articles reporting the findings of each of these studies are currently under review or will be submitted for review in the next two months.

Scenarios are where you really learn...that's when you get to put it all together, all the theory and practice (M7r11). It was pretty awesome (M7r16). (Student Data from the WiL Study, 2011)

I am very excited about the proposal for the Mentoring Circle project so that individuals and groups of students can be supported in their study (President of the Port Kennedy Association Inc. Thursday Island, 2012)

Currently, I am leading a research team from both the SNMN and the Faculty of Medicine, Health & Molecular Science's Indigenous Health Unit to investigate the impact of mentoring circles as a method of supporting Aboriginal and Torres Strait Islander students studying on the Thursday Island Campus, funded by a JCU Teaching, Learning and Development Grant. This action research study involves the establishment of a fortnightly mentoring circle led by an Indigenous Support Officer working with the Administrative Officer employed at the Thursday Island campus. Students are being encouraged to join a circle where they will explore their experiences of life as a university student and collaboratively develop local support strategies that they believe will work for them.

Developing innovative approaches to teaching research and evidence based practice that clearly translate to professional practice is key to motivating students, while at the same time positively influencing their attitude to studying. During the semester, I model the use of research data through engaging students in activities that generate data about themselves, which I then analyse and feed back to them. As an example, I email students and ask them to email me back one word that describes how they feel about research. I then use a web-based application *Wordle*, to create a word picture of students' feelings about research in Week 1 which is posted on the subject website accompanied by a textual analysis of the most predominant feelings expressed (qualitative analysis), and an analysis of sample size and return rate (quantitative analysis). This exercise is repeated in Week 10, where I reflect upon the differences between each picture and what this might mean. *All Our Ideas*, a web based interactive data collection instrument is used to allow students to contribute and rank ideas about what would improve their student experience at JCU with a real time analysis that graphs students' responses. And finally, I compile a table of last years student evaluation results that has an action column so students can identify changes to the subject based on previous students' experiences, which I then ask them to complete a short online survey about the results of which are fed back in my lecture on data analysis.

Applying the principles of research learnt during lectures is an important part of making research real for student nurses and midwives. For example, during one tutorial session we conduct a quasi-experiment that tests the

This subject has opened my eyes to research and how to go about it which will help me in day-to-day practice. It may even spur me on to do a bit of my own research (Student evaluation, 2011)

Loved the assignment outline, the poster was fun, once again this increases confidence to be able to showcase something that is from the student's interests, we always talk about empowering and that is what this assignment did for me (Student evaluation, 2011)

hypothesis: fast removal of Band-Aids is less painful than the slow removal of Band-Aids. Working in small groups, students are provided with an instruction sheet, mock explanatory statement and consent form (which has been vetted by the JCU Human Research Ethics Committee), a data collection form and the required equipment. One student volunteers to be the participant, and having completed the data collection, we collate the results as a larger group and calculate descriptive statistics. While the students have a lot of fun throughout this activity, they also begin to

demystify the research process and understand how it connects to clinical practice.

Demonstrating the value of research and evidence based practice, the assessment for NS3118 requires students to choose an area of clinical interest, construct a focused clinical question, design and undertake a strategic search of the literature and then choose one journal article that they believe reports high quality findings which could provide a solution to their identified question. The assignment is based on the process of evidence based practice and replicates what I hope they will be able to do as registered nurses and midwives as a result of participating in the subject. Students present their chosen research study to the class either in the form of a *Pecha Kucha*, which is a six minute and forty second presentation, or a poster. Each of these formats require students to have a very clear understanding of each part of the research process in order to communicate this information in a succinct and meaningful way. In addition, a commentary on the strengths and limitations of the study accompanies their submission. For students, the knowledge and skills learnt through creating their presentation or poster result in an understanding of what it means to actually 'do' evidence based practice and the confidence to present results from implementing a change in their future practice to their peers. As well, the assessment provides a measure for students of what it means to be an informed consumer of research able to appraise the quality of research findings in the context of a particular practice setting prior to implementing a change based on rigorous evidence.

In the three years I have taught the subject, student evaluation results have been consistently higher than the average for the School of Nursing, Midwifery and Nutrition. Importantly my average response rate for students completing the evaluation survey is three times the University average. Top ranking questions with scores higher than 4 included: 2. *The teaching staff worked hard to make this subject interesting.* 3. *My lecturers were extremely good at explaining things.* 9. *The teaching and learning experiences of this subject were well*

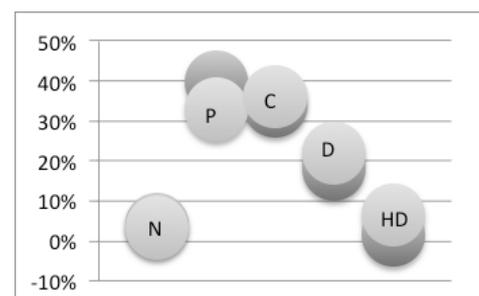


Figure 1: My average grade results in the pale bubbles as compared to the previous four year average

organised. 11. *This subject sharpened my analytical skills.* Interestingly in the two years I taught the subject, there has been a discernable shift in student achievement as indicated in Figure 1. In addition, my average student evaluation response rate of 47.81% in 2010 compares to average University response rate of 13.89% – another indicator of student engagement.

RECOGNITION

Over the past six years, my command of the field teaching research and evidence based practice to nurses and midwives has been recognized at a range of levels. Institutionally, I was awarded a JCU *Faculty Citation for Outstanding Teaching and Learning (2012)*. As well, my appointment as Associate Dean Research FMHMS was in part based on a strong track record of creating a nexus between teaching and research. I represent the faculty on the JCU Research Committee, a sub-committee of Academic Board, and have been appointed a Senior Member of the Higher Degree Education Sub-committee by the Dean of Research Education in recognition of my expertise in higher degree research supervision, teaching and learning. Within the Faculty I teach a master class in grounded theory in the Master of Public Health and Doctor of Public Health as well as supervising a group of 5th year Bachelor of Dentistry students' research. Feedback from graduating students who are now practicing as registered nurses indicates that participating in the subject has a lasting impact on their ability to apply evidence at the point of care. My personal insight into rural and remote healthcare, developed through my own work as a clinician and researcher allows me to value add this dimension to my teaching of research and evidence based practice through embedding knowledge and skill development in the context of JCU's vision and place in far north Queensland, and the tropics more generally.

My ability to connect research to clinical practice has also been recognized substantially. My research findings are well utilized by our local healthcare service where I've taught a three day workshop to nurse educators; and internationally where I have been funded twice by the Australia Malaysia Institute of the Department of Foreign Affairs and Trade to co-teach a series of evidence based practice workshops to registered nurses and midwives across Malaysia. In 2012, I will co-lead a team funded by an Australian Leadership Award (AusAid) to design and teach a three week research capacity building workshop to 25 participants from 14 countries in the Western Pacific region. This team will include a current 2nd Year BNSc student as a research intern.

Peer recognition of my expertise in the area of nurse education has resulted in my appointment as Australia's representative on the *International Council of Nurses Education Network*, as an external reviewer by Charles Sturt University of their Master of Nursing program, and as an external moderator for the Diploma of Nursing Program at i-Systems Colleges in Malaysia. In 2007 I was awarded an NHMRC Postdoctoral Primary Care Fellowships, and in 2008 the Royal College of Nursing, Australia's Florence Nightingale Award in recognition of my post-doctoral scholarship. Peer reviews of teaching identify that my command of the field of research and evidence based practice has had a significant impact on improving the student experience as compared to previous years, which is borne out in student feedback on subject data illustrated previously.

My unique understanding of a broad range of research methodologies and methods equips me to 'open the door' for students of nursing and midwifery to the importance of evidence for their future practice. While communicating the theory of research and evidence based practice in way that is easily understandable is important – my ability to take the next step and get students to translate this theory to their clinical practice is where I make a difference to their learning outcomes. As beginning registered nurses and midwives, our graduates need to be informed consumers of research who are confident in their ability to source research findings and then appraise the quality of this evidence in the context of practice. Connecting industry needs and accreditation requirements together I have been instrumental in developing a BNSc curriculum that provides a students with the opportunity to learn knowledge and skills in evidence based practice that will influence not only their experience as a registered nurse or midwife, but also the experience of their patients and families. The nexus between research and practice constitutes the locus of my work and with it my command of the field, evidenced by my extensive research and publication track record coupled with high quality student and peer feedback on teaching and learning.

As a working clinician in a rural setting, Evidence Based Practice with Dr Jane Mills has been an invaluable learning experience. With rural nursing, graduates are often thrown in the deep end ... I constantly research journal articles and EBP when I question if current practices are up to date...I have shared with my peers that I enjoyed the subject and definitely find it of daily benefit to my clinical skills. (Kylie Bradley RN, 2012).

You will be interested to know that since publication in Rural and Remote Health the full text of your article has been accessed 16,710 times, indicating outstanding interest in your work (Jenny Bigelow, Journal Editor, 2012).

This year I noticed a very positive shift in students' approach toward the subject...This can solely be attributed to the fact it was completely revamped by Dr Mills (Dr Caryn West, Peer Review, 2010).

1. Cadmus E, Van Wynen E, Chamberlain B, et al. Nurses' Skill Level and Access to Evidence Based Practice. *Journal of Nursing Administration*. 2008;11:494-503. 2. Birks M, Cant R, Al-Molla M, Jones J. I don't want to become a scientist: Undergraduate nursing students' perceived value of course content. *Australian Journal of Advanced Nursing*. 2011;28(4):20-27. 3. Nagy S, Mills J, Waters D, Birks M. *Using research in health care practice*. Sydney: Lippincott, Williams and Wilkins; 2010. 4. Pearson A, Field J, Jordan Z. *Evidence-Based Clinical Practice in Nursing and Health Care: Assimilating research, experience and expertise*. Oxford: Blackwell Publishing; 2007. 5. Graham I, Logan J, Harrison M, et al. Lost in Knowledge Translation: Time for a map? *The Journal of Continuing Education in the Health Professions*. 2006;26(1):13-24. 6. Birks M, Mills J. *Grounded Theory: A practical guide*. London: Sage; 2011. 7. Usher K, Mills J. Introduction to Nursing and Midwifery Research. In: Borbasi S, Jackson D, Langford T, eds. *Navigating the Maze of Nursing and Midwifery Research*. Sydney: Mosby; 2011:3-26. 8. Allison M. Grounded Theory for a Sapling Researcher: A Book Review. *The Qualitative Report*. 2012;17(11):1-4. 9. Dick B. Book Review: Grounded Theory: A practical guide. *International Journal of Multiple Research Approaches*. 2011;5(2):284. 10. Junek O. Book review: Melanie Birks and Jane Mills, Grounded Theory: A Practical Guide. *Journal of Sociology*. 2012;48:107-109.