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**The registered nurse's experience of
online professional development:
An action research study**

**A thesis presented in partial fulfilment
of the requirements for the degree of**

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ABSTRACT

This action research project enabled nine registered nurses (RNs), with varying computer skills, ages and clinical specialties, to explore the reality of designing online learning activities for professional development. The aim of this research was to establish which educational strategies would assist a multi-generational, digitally-differentiated nursing workforce to flourish in an online environment for their professional development.

Through a process of six action research spirals, the research participants examined the potential benefits of, and barriers to, transitioning to an online environment for continuing professional development. E-learning is becoming increasingly prevalent as an option for maintaining competence in a clinical environment. With the latest developments in web-based technology there is the potential to capitalise on both andragogical and heutagogical learning.

Benefits and barriers to online professional development are explored, with online learning activities developed for each of the three clinical areas of surgical ward, operating rooms (OR) and post-anaesthesia recovery unit (PACU). Suggestions for enhancing success of transitioning to web-based learning for clinical settings are discussed. At any point in time, the current body of clinical knowledge is rapidly changing so that content learnt will, within five to ten years, be revised. In addition, maintaining professional competence is now a requirement of professional bodies. Therefore, a focus on life-long learning and the development of skills to enable access to relevant contemporary information is essential. If an organisation is going to offer online professional development, they must be deliberate in their planning, implementation and ongoing support in order to provide learner driven (heutagogical) content that capitalises on the full extent of Web 2.0 capabilities.

Rather than imposing online learning for PD, this action research project increased the participants' familiarity with the online environment, enabling them to engage with the development of learning activities.

The use of web 2.0 capability in this action research project enabled participants and the researcher, involved as a learning designer, to collaboratively construct learning activities specific to each of the clinical contexts. As a result recommendations are made for learner driven PD activities that benefit the RN, the organisation and most significantly, have the potential to positively influence patient care.

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This thesis is a testament to the people that have surrounded me and encouraged me along the journey of lifelong learning. After leaving nursing school in 1982 with my Diploma of Nursing, I vowed that I would never, ever go near a training institute again. I loved learning on the job about techniques and skills that had relevance to my professional development. However, I did not believe that educational establishments had anything of value to offer me. As nursing education moved towards university qualifications, I decided to take just one paper to prove that I was not suited to tertiary study. Imagine my surprise on finding that I not only enjoyed it but I succeeded in it. This was the beginning of my changed perception of lifelong learning.

I have the deepest gratitude to my fellow research participants who willingly jumped into the unfamiliar waters of online professional development and swam through the plethora of experiences that have contributed to what you are about to read.

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to distinguish it from electronic learning which could also include a CD-ROM that is computer based and not online.

PD – Professional Development

Synchronous – Users accessing online activities at the same time as each other

URL – Uniform Resource Locator: Used on the internet to find the location of a specific resource/website/webpage/document

Chapter One: Introduction

What Do I See Happening?

As a nurse educator and online learning designer, I am surrounded by staff with divergent views on both professional development (PD) and on the use of computers in a healthcare setting. Some staff are *au fait* with using social networking sites, e-commerce, and computers in general, whereas there are other staff at the opposite end of the spectrum. Some are unsure of how to turn on the computer and see no usefulness in its inclusion within the healthcare arena.

The Nursing Council of New Zealand (2007) has legislated that, to maintain a practising certificate, Registered Nurses (RNs) must undertake ongoing PD. This is primarily significant because RNs no longer have a choice about maintaining their competence to practice and are legally required to continue PD activities throughout their career. The public at large is becoming increasingly web savvy and have an expectation that staff will come to the workplace trained and ready to provide treatment in line with current best practice. Worldwide there is a move towards storage and retrieval of electronic health records and information (Byrne, 2012).

Historically, nursing was seen as one of the three options open to women, including teaching and office work (K. Whitehead, 2007). The entrance requirements for nursing during the 1970s, when many current older nurses completed their training, was a pass in University Entrance and, for some, a demonstrated skill at school certificate only (the latter corresponds to the current Year 11 in New Zealand high schools). It is therefore perhaps not surprising that some older nurses see themselves as academically unprepared for additional tertiary study and, furthermore, do not and have not viewed themselves as needing, wanting, or benefitting from ongoing education. However, times have changed both in expectations of Life-Long Learning (LLL) and in the technological possibilities for PD.

In the last quarter of the twentieth century and the beginning of the twenty first century, there has been a phenomenal uptake of worldwide interconnectedness via the internet. The World Internet Project (P. Smith, Gibson, Crothers, Billot, & Bell,

2011) has found that 86% of New Zealanders are now online with 91% of users accessing the internet via broadband and 96% of respondents who use social media having a preference for Facebook. We are increasingly a socially connected population.

For nurses with a mandated requirement to demonstrate clinical competence and ongoing PD, combined with the hospital network's decision to offer online PD, the synergy between LLL and web-based technologies is becoming increasingly palpable. The stage is set but can, and will, all RNs be able to navigate through this plethora of technology to access, and thereby enhance, their clinical knowledge and positively impact patient healthcare outcomes?

Action Research Project

This action research project enabled a group of multi-generational, digitally differentiated RNs in a private surgical hospital to take control of their PD, developing skills in digital technology for the purposes of LLL. Until 2011, all PD conducted by the private surgical hospital network was in a self-directed learning package or involved staff leaving their workplace to attend training workshops. In some instances this required travel across their city or out of their region with the associated costs of travel, accommodation and food.

In discussion with colleagues and management, there was widespread agreement that online learning was a direction that our organisation needed to pursue for the delivery of some of our PD activities. Colleagues specifically highlighted education focused on topics that were currently covered by self-learning packages requiring an individual to follow a set progression through specific content as ideal for the online learning environment. They considered mandatory PD requirements such as fire, intravenous certification theory, health and safety induction, and fire safety theory, to be the most appropriate topics to cover initially.

A number of factors have coalesced recently that enable this network of hospitals to transition some PD to an online format. Computer technologies available within the hospitals are reaching the end of an upgrading process, increasing the number of computers available and modifications to the infrastructure to facilitate interaction within the network's internal intranet and external internet access. There has been a

growing awareness of pockets of brilliance in relation to innovative PD activities within the network being limited to individual geographical locations but potentially beneficial to the whole organisation. In addition, the limitation of self-directed learning formats currently offered has been recognised. Given these factors, and the potential for success to be moderated by the way in which online learning is implemented, I saw the opportunity of undertaking research specifically to investigate how, as an organisation, we might transition into the online environment to support our RNs' PD with the potential to positively influence patient care. In this action research project, the intention was to elicit from the participants the topics they deemed significant for their, and their colleagues', PD. I planned to explore this during the research project.

Background

Nursing informatics has been recognised by the Nursing Council of New Zealand (2010a) as a requirement of undergraduate curricula in order to prepare graduates for competence in the RN scope of practice. Twenty first century nurses require the ability to recognise when and what new information is required; find, critically analyse, and organise the information found; and subsequently use it in clinical settings to improve practice and patient care. In tandem with this is a worldwide move by nursing accreditation organisations to require maintenance of professional knowledge and skills (American Nurses Association, 2001; Nursing and Midwifery Board of Australia, 2010; Nursing and Midwifery Council, 2010; Nursing Council of New Zealand, 2008) to name just a few.

Over the last 30 years there has been an exponential development of computer technology and, with the introduction of the World Wide Web, connectivity. This period began with Web 1.0 content which included online reference libraries, multimedia learning activities, and websites. Essentially, all of these types of online resources provide access for a learner to a body of content. In comparison, Web 2.0 functionality enables the learner to interact and create their own content (Kesim & Agaoglu, 2007). Online elements that support this are email exchange, discussion forums, voice chat, blogs, content and presentations transmitted in static and video formats, podcasts, YouTube, media players, social networking sites, gaming and virtual reality experiences, to name but a few. These emergent electronic advances can be,

and have been, used by educators to deliver instructional content in a variety of formats (Baker & Brusco, 2011; Joyce & Brown, 2009; Kesim & Agaoglu, 2007)

Challenging widely held beliefs about knowledge and learning began early last century. Whitehead (1931) noted that the twentieth century was the first period in human history where the transmission of knowledge from the previous to the current generation was no longer sufficient. Up until this point in time, the life span of individuals was shorter than changes in knowledge. In essence, what a person learned during their lifetime had previously been sufficient for their entire life and would be passed on to the next generation. Whitehead (1931) asserted that knowledge was now, in 1931, being refined and revised at such a rate, that it changed in a period shorter than a person's lifespan. He suggested that, while "there can be no preparation for the unknown" (A. N. Whitehead, 1931, p. xix), people would need to continuously revise their knowledge by engaging in lifelong learning. When we consider the exponential pace of knowledge creation in the twenty first century, a LLL mindset is vital for healthcare professionals' practice.

In the late twentieth century, Knowles (1990) lamented the fact that models of education, or pedagogy, appeared to be frozen and was no longer sufficient for the accelerated pace of change that society faced. There are several assumptions that Knowles, Holton, and Swanson (2011) say drives adults in their learning: their self-concept and prior experiences, a need to know, readiness to learn aspects that are relevant to their context, and an intrinsic desire for job satisfaction, better quality of life, or self-improvement. The latter is focused on 'I need this information to help me with a situation I'm facing now'. It is these factors that influence the efficacy of the adult learning experience. "The most important learning for all – for both children and adults – is learning how to learn, acquiring the skills of self-directed inquiry" (Knowles, 1990, p. 167). An individual's prior experiences of learning and the methods in which knowledge usually was transmitted will impact greatly on their future knowledge acquisition.

When considering the prior learning experiences in relation to the ages of nurses within our organisation, of RNs (68%) who gave their age details, the age group

demographics closely parallel the New Zealand practising RN population (Nursing Council of New Zealand, 2010b). These show Millennials were – 9.62% (11.6% NZ), Gen-X – 52.1% (51.1% NZ), and Baby Boomers – 38% (38% NZ) within our RN population. Many of the nurses within the network’s Gen-X and Baby Boomer groups aged 40 years or older (67.34%) will have completed their nursing training over twenty years ago and their expectations of what PD should look like may be aligned with their prior learning experiences. PD in many aspects of nursing appears by and large to have continued in an instruction paradigm to the present day. However, the notion of education primarily delivered with a teacher/expert giving instruction via a lecture has been challenged in recent years. There is still a latent view that, ‘unless an expert instructs me, my learning experience is not valid.’ Anecdotal evidence from other nurse educators highlights frustration with colleagues who want to be ‘spoon fed’ as in, ‘Give me the information I need to know, so I can learn it’, with some staff appearing reluctant to take responsibility for their own learning. To be fair, these expectations may reflect the RN’s prior experience of education with a mindset that valid learning using an alternative framework is inconceivable.

However, Barr and Tagg (1995) challenged this view and stressed that education needed to be focused on learning rather than instruction. They assert that educators must intentionally reject an instruction paradigm in order to fully embrace a learning paradigm. This requires a move away from a didactic delivery of content to a student centred delivery (Coomey & Stephenson, 2001). Such a paradigm shift emphasises learning through interaction and acquiring practice, concepts and skills that can be transferred to a new situation. Learning is viewed as collaborative and supportive and involves all participants together – educators, students, and the organisation – collectively responsible for the learning offered and dynamically developing the programme with each successive group of participants. If learning to enhance a nurse’s PD is the end goal, what do we need to do differently to get there?

Within a clinical environment the learning process for nurses is dynamic and no professional can entertain a finite body of knowledge for every eventuality. Instead, what such clinicians need to develop is the ability to learn and think about any situation that may present itself. Adult learners desire the ability to establish their own

learning needs, to seek out learning opportunities relevant to their context, plan the experiences to assist them, and find answers to problems through research and investigation (Knowles, et al., 2011).

Typically, within nursing, one frequently used method of PD has been in the form of self-learning packages. In these modules of learning, the language of learning has been adopted, namely, 'learning outcomes' without the intent of a learning paradigm (Barr & Tagg, 1995). The content is directed by an educator and the experience controlled with the outcome being an example of 'other-directed' learning. This is in contrast to adult learning principles which emphasise 'self-directed' learning where motivation is reliant on how the participant perceives the importance of the material (Knowles, 1990). Many of these current learning packages have served as places to deposit content with minimal action required on the part of the learner. Bellman, Bywood and Dale's (2003) research noted a prevailing view of 'I've met the PD hours requirement, I've got the certificate' rather than an emphasis on how the learning experience had transformed one's knowledge and practice.

Changes in knowledge and clinical practice are unlikely to be seen if the online environment is seen merely as a repository for information. In order for PD to capitalise on the potential that the online environment provides, it is necessary for this hospital network to discover what formats will be of most benefit to a nursing workforce that is multi-generational. This digitally differentiated workforce ranges from nurses who have had no, or limited, involvement with computers in personal or professional life, to nurses for whom nursing informatics is essential to their clinical practice. For some of nurses, the online environment is foreign and creates anxiety. Prensky (2001) names these people as "digital immigrants" (p. 2) whereas he names as "digital natives" (p. 1) those who are accustomed to using computers and social media and see the online environment as integral to their lives. This project will investigate ways of enabling online learning to meet these diverse needs.

Mezirow (2000) asserts that for adult learners, learning that is viewed as important is whatever the individual decides is important to themselves. This aspect is reflected in this research in two ways. Firstly, a feature of action research is that the participant is

continually part of creating knowledge through action and, secondly, as the focus group generates new evidence and tests its validity, the group decides on further action based on what is considered important to the participants (McNiff & Whitehead, 2010). Through a cyclical process of acting, observing, and reflecting, this research will provide a way for participants to influence what will be considered integral to online learning for PD (Holly, Arhar, & Kasten, 2009).

Research Objective

This private surgical hospital network is moving from paper-based and study day formats to an increased amount of online delivery for PD. In order to discover what strategies will assist these nurses to flourish in an online environment, it is of most benefit to engage them in a process of systematic enquiry, reflection and action (Stringer & Genat, 2004). Action research methodology provides such a process.

This participatory action research project necessitates providing opportunities for learners to function as a community of practitioners, located in a real-world clinical context, and focused on addressing real clinical issues. In this way, as they developed online PD learning activities, the research participants were expected to find and analyse information, evaluate it in the light of current clinical practice and their prior experiences, and, through dialogue and negotiation with their fellow researchers, construct meaning and knowledge.

Alvin Toffler, developing psychologist Herbert Gerjuoy's quote, "tomorrow's illiterate will not be the man who can't read; he will be the man who has not learned how to learn" (Toffler, 1970, p. 367), asserted that there was an imperative to teach people how to "learn, unlearn and relearn" (p. 367). In this millennial age, this assertion could be translated into, 'the illiterate of our time will be those people who have not learned how to access the knowledge and information they require where and when they need it.' The key for online PD is for nurses to learn how to access and interpret essential information for the moment it is required and then be able to assimilate this knowledge into their practice resulting in enhanced patient care.

Given the coalescence of legislated PD requirements and the private surgical hospital network's decision to offer online PD, this participatory action research project

provided the opportunity for currently practicing RNs to examine the reality of online learning for PD, identify possibilities and constraints, and, in light of these findings, collaborate with fellow participants in creating online PD activities for their RN peers. With these features in mind, this action research project would explore what aspects would enable multi-generational, digitally differentiated RNs to flourish in an online environment for their PD.

Structural Outline of Thesis

Chapter One: This Introductory Chapter has outlined the context for this action research project. The aim of the study has been stated, along with the environmental, social, professional and clinical imperatives for offering ongoing PD activities that meet individual RNs' andragogical learning needs. The author's role as a nurse educator and online learning designer, in tandem with the hospital network's desire to offer online PD activities, has provided the opportunity to investigate what activities might be beneficial and how best to support staff engagement in an online PD environment.

Chapter Two: This chapter provides an in-depth explanation of the context for this research and establishes the focus for the project. A review of the literature with relevance to online learning, professional development, andragogical principles, and action research methodology is presented.

Chapter Three: This Research Design chapter examines the chosen methodology in more detail and the methods used to investigate online professional development for RNs. Data collection, by way of six iterative focus groups, provided opportunities for participant discussion, collaboration, development of online PD activities, and reflection on research experiences and outcomes. Ethical considerations and participant recruitment are enunciated along with discussion on analysis of data and reflexivity.

Chapter Four: This chapter presents the results of this action research project in three iterative phases: Setup Phase, Collaborative Phase and Closure Phase. Each of these phases encompasses one or more focus group meeting cycles.

Chapter Five: The Discussion Chapter brings together the results of this research in conjunction with relevant literature. It highlights five conceptual elements that will influence the effective implementation of online PD within a clinical context and reviews the overall research process.

Chapter Six: This final chapter draws together the emergent issues that organisations, RNs, managers, nurse educators and learning designers need to be mindful of as they initiate PD within an online environment. Seven recommendations are made for implementing online PD activities.

Chapter Two: Literature Review

Introduction

In examining the literature relevant to online PD, this review will provide the context for the research project on online learning within andragogical learning frameworks. Current research into PD activities offered within the online environment will be examined. Literature from the disciplines of nursing, medicine, allied healthcare, and education are discussed. Key themes include theories of learning, an overview of online learning, what is currently being offered for PD, effective principles of online learning, and factors influencing online PD. The relevance of an action research approach will be posited. While it is not possible in this chapter to fully elaborate on this chosen methodology, the topic will be expanded further in the following chapter. This literature review will conclude with a justification of the research topic for this thesis.

Methods

Literature was collected through a search of CINAHL, OVID, ERIC, Psych Info, Academic search elite, Education Research Complete, Health Business Fulltext Ellite, Health Source: Nursing/Academic Edition, Master FILE Premier, Academic Search Elite, PD Collection, Business Source Premier, ScienceDirect, E-Journals, Humanities International Complete, Teacher Reference Center, using the keywords PD, online learning or education, e-learning or elearning or e learning, ongoing education, nursing. Due to the pace of technological developments in the online environment, this review focused primarily on literature from 2000 to 2012 published in English. Other relevant literature was also located through a search of pertinent references cited in located literature. Given the broad range of sources for this literature review, terms used for the role of a person facilitating educational experiences differ across contexts and therefore are referred to in this research with a variety of descriptors

such as course facilitator, tutor, learning designer, online facilitator, online instructor, and educator.

With the exponential growth of the online environment influencing most facets of life, there has been a consequential growth in online learning opportunities (Darbyshire & Fleming, 2008; Maor & Volet, 2007). Over the past 20 years, healthcare professionals have been accessing computer-mediated, ongoing PD to maintain competence (Maor & Volet, 2007; O'Neil, Fisher, & Newbold, 2009; Ousey & White, 2009).

Plank (1998) asserted that nursing needed to embrace the potential that the internet provided for ongoing education or risk obsolescence. However, in order to actualise this potential, individuals need to develop skills to manage and navigate through the online environment (J. Edwards & O'Connor, 2011; O'Neil, et al., 2009; Shuster & Pearl, 2011; Sweeney, Saarmann, Flagg, & Seidman, 2008). Within five years, it is envisaged that all healthcare professionals will be using information technology in all facets of patient care (Hinton Walker, 2010). In addition to this, the current volume of emerging biomedical knowledge doubles every 20 years (Stewart, Teoh, Pitts, Garden, & Rowley, 2008). If healthcare professionals are unable or unwilling to embrace online educational opportunities, there is a risk of disenfranchisement and marginalisation from both involvement with ongoing PD and its application in day to day clinical practice (Green, le Page, & Greensill, 2009).

The term 'online learning' encompasses the use of computer technology to enhance learning and may take a multitude of forms. Historically, it has focused primarily on the use of the personal computer for learning. However, constant advances in emerging technology continue to expand the possibilities. There are two distinct aspects to this – the tools used and the technological capabilities. The tools used include, but are not limited to, personal digital assistants (PDAs), i-Pads, virtual reality, mobile phones, digital video and audio recorders, interactive whiteboards, and Web 2.0 technology which allows the learner to interact with, manipulate and contribute to the content (Kesim & Agaoglu, 2007). The technology/methods being used include synchronous and asynchronous learning, blended delivery, voice over internet protocols (VoIP), and wireless (A. Edwards & Finger, 2007).

Within a nursing context, there are diverse generational differences among staff. Net generation learners, also known as millennials, have very different educational expectations from their predecessors. Millennials are looking for activities that will develop technical skills and self-management, that capitalise on creativity and innovation, and that will contribute to a clear career path (Meister & Willyerd, 2010). They want immediate feedback and knowledge development that capitalises on their digital skills and engages them in interactive, experiential learning (Skiba & Barton, 2006). This generation of learners has been termed “digital natives” (Prensky, 2001, p. 1) because of their propensity for the online environment and computer mediated social interactions. In contrast, the majority of the current New Zealand nursing workforce is in either the Baby Boomer (38%) or the Gen-X age group (51%) (Nursing Council of New Zealand, 2010b) and are what Prensky termed “digital immigrants” (2001, p. 2) meaning that they were born prior to a technology mediated environment, have developed differing levels of skill with increasing amounts of exposure, and view technology as a useful ‘tool’. Skiba and Barton warned that, if educators fail to transform current educational practices into engaging, collaborative, knowledge-constructing, interactive social activities, then the NET generation will choose to opt out.

Andragogy

The term pedagogy arises from the Greek words for ‘child’ (paid) and ‘leader of’ (agogus) and “literally means the art and science of teaching children” (Knowles, et al., 2011, p. 60). Pedagogy is commonly used in literature and theory pertaining to both children and adults. However, its focus was primarily to teach children with the teacher having responsibility for content organisation, delivery, timing and evaluation and the child taking a submissive place in the learning environment (Knowles, et al., 2011). In contrast, learning theory that gives cognisance to the unique characteristics of adult learners is known as andragogy (Knowles, et al., 2011) (see Appendix B).

Traditionally the teacher acted as a gatekeeper to knowledge. Freire (1972) described the notion of banking whereby the ‘expert’ teacher assumes the role of putting the knowledge into the student who is the passive recipient. Historically, the dominant

pedagogy within academic education was didactic with lectures as the most common instructional delivery method (Bevis & Murray, 1990). This instructional method was based on a seventh century style of teaching children that was common in monasteries and cathedral schools (Knowles, 1990). Shovein, Huston, Fox, and Damazo (2005) suggested that this resulted in training rather than engagement with the learning and subsequent knowledge creation.

In contrast, Knowles et al. (2011) asserted that andragogy, an intentional process of learning with adults, begins with the learner's curiosity about a topic, focuses on their need to understand something, and gives learners the opportunity to be self-directed. Such a learner brings into this inquiry their self-concept, their previous experiences, internal motivations to learn, and orientation to find solutions to real problems (Knowles, et al., 2011). Freire and Macedo (1996) asserted that curiosity is an essential component of human ontology. Such curiosity has, at times, been constrained by dominant forms of educational practices. Instead, a teacher can dynamically manage the educational experience in which the learners actively engage in planning, directing, and participating with the topic and are not being merely consumers of the learning.

With the advent of online learning, Freire's (1972) assertion, that responsibility for learning be shared jointly by both the learner and the teacher, can be realised. The teacher is able to engage in dialogue that supports all participants to learn, including themselves. The online environment offers teachers the opportunity to divest total control of the content and instead offer guidance to course participants as they co-create the learning (Shovein, et al., 2005). Such relinquishing of control by teachers requires a paradigm shift in 'who' it is that decides 'what' important knowledge is and 'how' it is best acquired (Myrick & Tamlyn, 2007; Randall, Tate, & Loughheed, 2007). This revision of the teacher's role and position places them as a supportive guide in the learning process and emphasises the role of the student as determining what, where, how and why learning is important.

Statistical data suggests that there has been an increase in the number of adult learners in New Zealand in the past 15 years. Figures for 1996-2006 (Statistics New Zealand, 2006) show a 9% rise in the numbers of people beyond the school leaving age

of 15 years who achieved higher qualifications. There have been notable increases in the participation of women, people over 25 years of age, and those who are pursuing both employment and study (D. Oblinger, 2003; Statistics New Zealand, 2006). In response to this, it is important to provide material in appropriate formats and contexts for adults managing their learning in such varying circumstances. Some studies warn that a failure to look critically at current ineffective teaching and learning practices in the light of effective andragogical principles will fail to prepare participants for lifelong learning in an increasingly complex technological world (Cartwright, 2000; Darbyshire & Fleming, 2008; Myrick & Tamlyn, 2007). Instead, what is required is a willingness to take a risk and embrace a complete paradigm shift from what has been to what could be.

Toffler's (1970) assertion 40 years ago of the importance of being able to relearn previously learned content, continues to be salient in an age where what is known is dynamic, fluid, and constantly changing. A decade ago, Frand (2000) highlighted the changed characteristics of learners in the information-age and subsequent changes needed in pedagogical practices. Frand contended that there would be an emphasis on the process of learning occurring over a lifetime rather than acquiring a body of knowledge as a discrete event. Key features would be the centrality of the learner, their life situation, their educational experience and learning needs, their work circumstances, and expertise (Cercone, 2008; Frand, 2000). Learning design would consider their individual needs and tailor the learning experience to meet these specifically. This would result in a clear move away from the 'broadcast television' method of delivering content. Instead the focus would be on a collaborative community of learning that ebbs and flows and is dynamic according to identified learning needs. Organisations and educators need to be looking for ways to promote a culture of life-long learning that facilitates the PD which is now a requirement of many healthcare professional bodies (Southernwood, 2008).

Feldman and Weiss (2010) asserted that rarely does PD result in a change in practice. They believe that this can be attributed to the fact that such change is birthed in self-awareness and realisation about one's own professional practice. Perhaps this finding could be attributed to the underlying pedagogy of many PD activities. If these activities

are seen as opportunities to transmit knowledge to the participants without significant time included to reflect on application to practice and follow-up analysis of implementation and changes to practice, then much of the content covered may well be ineffectual.

While much research has highlighted various aspects and outcomes of online learning, little has examined the quality of the teaching methodologies used. In Robley, Farnsworth, Flynn and Horne's (2004) study, it was apparent that tutors provided the framework for learning whilst allowing participants to create knowledge upon that foundation. Such knowledge construction in the context of a constructivist learning environment was described by Crotty (1994) as one in which learners are "required to examine thinking and learning processes; collect, record and analyse data; formulate and test hypotheses; reflect on previous understanding; and construct their own meaning" (p.31). The online environment can provide a mechanism for lifelong learning developed on adult learning principles that is fully immersed in a constructivist learning paradigm.

Online Learning

The term 'online learning' describes a variety of forms. It can include a fully online course, a computer assisted course that uses some online resources along with a self-paced workbook and, lastly, hybrid/blended delivery. The latter two terms include a mixture of online activities and face-to-face activities with interactions between course participants and instructors (Lehmann & Chamberlin, 2009). The incorporation of andragogical principles (Knowles, et al., 2011) within the online environment allows students to direct their own learning whilst the instructor moderates, guides, and mentors the learner.

A key aspect of successful online learning noted by Robley et al. (2004) is this interaction between the learners and the tutors. The obvious differences evident in a face-to-face class, such as verbal and language skills, accents, personality types (retiring or outgoing), are reduced in an online environment. This levelling can either enhance or reduce dialogical interchanges between course participants. Online learning can, at times, have a three-dimensional effect (Robley, et al., 2004) in which

the learner can see, hear and touch the content thereby building and layering knowledge to the point that it becomes a virtual object able to be examined and manipulated. In contrast, reduced eye contact, facial expressions, and body language cues, in conjunction with perceived isolation, can be issues. In an effort to manage these potential issues, there are a number of elements that can enhance engagement with online course content.

A broad variety of resources are able to be used in the online environment including video, audio, graphs, websites, documents, case studies, scenarios, and discussion forums (O'Neil, et al., 2009). Often cited key components of online continuing healthcare education courses are frequent interaction with quality content (Casebeer et al., 2004) and a choice in scheduling, topics, time, and place of learning (Cobb, 2004). How the course design incorporates these elements has a major influence on how successful any online learning experience will be (O'Neil, et al., 2009).

Within the literature, a number of issues with online learning have been identified as having a negative influence. The lack of tangible IT support when and where it is required, has been noted (Pawlyn, 2012) and a lack of computer resources (Moule, Ward, & Lockyer, 2011). Irrespective of how engaging the online content may be, the participant's experience is inextricably linked with their current level, or lack, of computer skills (J. Edwards & O'Connor, 2011; Shuster & Pearl, 2011). If the course site is viewed as merely a repository for resources with scant regard for weaving these into the curriculum or consideration of using them in an interactive way, then the benefits of the online environment are likely to be minimised (Carroll, Booth, Papaioannou, Sutton, & Wong, 2009; Ladkin, 2004). As with any skill, the more a person persists with developing competency, the higher the competence achieved. Campbell, Gibson, Hall, Richards and Callery (2008) noted higher participant achievement associated with increased interaction with the course discussion postings. If a participant comes to the online environment with some misgivings and then finds it difficult to navigate around the site, this can negatively influence their experience and outcomes (Carroll, et al., 2009). Additionally, balancing competing demands of online access at work and at home has been identified as a potential barrier to successful online engagement (Pawlyn, 2012).

Ke and Xie (2009) showed that online courses with well-structured content and tangible support, were preferable for adult learners. Their conclusion supported Richardson's (1995) finding that older adult learners strove for comprehension of content whereas younger students tended to cover the content at a surface level with a focus on completing the assessments. Therefore, courses that incorporate collaboration, co-construction of knowledge, and interactive online discussions lead to greater adult student satisfaction (Dorrian & Wache, 2009; Ke & Xie, 2009; Pallikarakis, 2005).

Online learning is advantageous because access is available to anyone with internet capability, regardless of geography. There is flexibility in terms of where and when it is accessed. The cost long-term is lowered because of both economy of scale (small and large numbers can be catered for equally) and reduced travel requirements (Atack, 2003; Dorrian & Wache, 2009; Peacock & Hooper, 2007; Pullen, 2006; Southernwood, 2008; Wilkinson, Forbes, Bloomfield, & Fincham Gee, 2004). However, an increase in class size will lead to a subsequent increase in the tutor's management and course moderation workload.

One of the main benefits espoused by promoters of online education is the ability for participants to fit online education around family and work commitments (Mattes, Nanney, & Coussons-Read, 2003; Michael, 2004; Ousey & White, 2009; Peacock & Hooper, 2007). The flexibility of access to education anywhere at anytime is a key positive feature for adult learners (Horton, 2000; Michael, 2004). However, Govindasamy (2001) contended that it is not only the notion of anytime, anywhere that is significant, but also the compatibility of the content to the participant's context, skill level, and perceived need.

Drawing from a constructivist perspective based in the findings of Piaget (1954), Vygotsky (1962), and Bruner (1996), Southernwood (2008) asserted that learners will use the online resources available to construct their knowledge in an ongoing discovery of information. Such knowledge construction arises out of collaboration, discussion, questioning, investigation, application, and critical reflection on findings. It is precisely these interactions between the participants and the tutors, grounded in

authentic learning activities, that facilitate this development of knowledge (Chen, Chen, & Tsai, 2009; Darbyshire & Fleming, 2008; Salt, Atkins, & Blackall, 2008; Southernwood, 2008). Individualised construction of knowledge runs counter to the traditional notion of an empty vessel waiting for the teacher to fill – a concept still prevalent in the minds of many who grew up in an era where the “sage on the stage” (King, 1993, p. 30) was viewed as the valid form of instructional delivery. From this viewpoint, the expert transmits their knowledge to novices whereas, according to this perspective, discussion and collaboration may be viewed as a frivolous waste of time, not ‘real’ learning. What constructivists assert is that researching, challenging others, and articulating one’s thoughts will lead to meta-cognitive development of knowledge (Randall, et al., 2007).

These processes of thought and inquiry directly parallel the cognitive processes, critical thinking, and collaboration occurring during patient management and, as such, are a familiar way of approaching a situation whether it is healthcare related or educational (G. G. Smith, Passmore, & Faight, 2009). The goal in all of this is to develop an excellent learning environment for PD that facilitates changes in practice at the clinical coalface which enhance patient care.

Online Professional Development

Health professional bodies increasingly require their members to provide evidence of continuing professional competence (Casebeer, et al., 2004; ChanLin & Chan, 2010; A. Edwards & Finger, 2007; Peacock & Hooper, 2007; Pullen, 2006; Stewart, et al., 2008). Confirmation of ongoing PD is a requirement of the Nursing Council of New Zealand (2007) in order for RNs to maintain a current practicing certificate. To meet these requirements, there are numerous organisations and professional bodies currently offering either subscription or free PD via online courses (Casebeer, et al., 2004; Dumchin, 2010; Peacock & Hooper, 2007).

When an individual sees clearly the relevance of the learning experience to their own particular work situation, their engagement and learning outcomes are enhanced (Knowles, Holton III, & Swanson, 2005). Online learning provides a way in which individuals can delve deeply into topics of interest with particular relevance to their

own professional specialty. Six weeks after Atack's (2003) nursing PD online course ended, the research participants noted that they were now proactive on the clinical practice of their topic and were autonomously searching the web for resources that were useful to their clinical setting. This aspect was noted also by Owston, Wideman, Murphy and Lupshenyuk (2008) with reference to the content of online PD for teachers occurring as they functioned in their work role, that is, situated within the work context and directly relevant to their teaching practice. The more closely aligned the course content was to the workplace experience, the greater a change in practice was observed (Owston, et al., 2008).

There are a number of elements that have been identified that influence the effectiveness of online learning. These include aspects of logical sequencing of information, established andragogical framework, collaboration, discussion, supportive environments, and effective use of a variety of resources to develop new skills. Such factors contributing to successful learning will be investigated in the following section.

Effective Online Learning

The research suggests that effective online learning embodies a number of distinct factors such as dynamic content and structure, collaboration in communities of practice, organisational support, and the availability of resources.

Content and structure.

The key to successful online education is the synergy that can occur between clear pedagogical and, for adults, andragogical, foundations merging with effective use of technology (Donnelly, 2010). It is imperative that content is not just transposed onto the web platform with the expectation that this will be sufficient for learners to engage with and succeed in their PD. It is, after all, online learning and not merely online reading.

Bloom's (1956) taxonomy that assists with categorising educational objectives into six levels (knowledge, comprehension, application, analysis, synthesis, and evaluation), has subsequently been revised by Anderson, Krathwohl, and Bloom (2001) to differentiate between the level of cognitive processing used to complete a learning

activity and, additionally, the type of knowledge being constructed – factual, conceptual, procedural, and meta-cognitive. Appendix B shows the activities that relate to each level and the types of products of learning that might result. Jimenez (2011) has developed what could be considered a new taxonomy with relevance to the digital age by relating these to the varying capabilities of technology (see Appendix C). The use of technology enables and accelerates human interactions. Used well, these tools can allow learners to learn in a manner and style that is appropriate to their individual needs, skills, and context. Appendix C shows traditional methods of learning in the outer circle and recent modes in the middle circle with the inner circle showing what learners could do if they were put in control of their learning using Web 2.0 technologies. This tool can assist learning designers as they plan the content and resources used within an online learning activity.

When considering what content to include on a course, Gurr (2009) noted that it would be impossible for a course to keep pace with knowledge creation. Therefore, he recommends that online courses teach the participants ‘how to learn’ by developing in them the skills to search, access, interpret, and implement clinical information relevant to their practice. In essence, they provide a framework that allows the participants to teach themselves (Robley, et al., 2004). From the educationalist’s perspective, clear learning outcomes, logical sequencing of content, and activities that will enhance engagement and collaboration are important (Palloff & Pratt, 2007). By establishing these learning goals, educators create an atmosphere of mutual respect and clear communication channels. In this way course instructors support the learner to make autonomous decisions about their own learning (Southernwood, 2008). Lehmann and Chamberlin (2009) talked of planning a course backwards, beginning with the desired learning outcomes and then deciding what activities will bring these to fruition – starting with a broad perspective and delving down into increasingly detailed information (Koschmann, 1996). Coupled with this is the recommendation to offer options for the learner to choose when they would like to go ‘deeper’ into the content.

Induction to the online environment is important (Australian Flexible Learning Framework, 2009) with the provision of printed guides, guided tours or demonstrations online, introductory modules, beginners’ assistance, and support from

an experienced online learning user. Some workplaces (25%) surveyed by the Australian Flexible Learning Framework (AFLF) (2009) assisted their staff with computer literacy sessions to support online novices' access to online PD activities. It can be useful to introduce the learning management system (LMS) and demonstrate how to access and navigate through the site resources (Jönsson, 2005). Jönsson (2005) highlighted these elements in the online setting as being effective in inspiring students as they proceed through the course. Hull and Saxon (2009) asserted that deliberate and regular, twice per week, interactions by course facilitators with the participants are necessary in order for co-construction of knowledge to occur within online discussion forums.

At the beginning of a course it is helpful to include a session outlining to participants the rationale for the online component and the virtual learning environment (VLE) used, and how to access the site and navigate through the content (Peacock & Hooper, 2007). Some courses begin with a face-to-face session to initiate social cohesion and allow for practical demonstrations (Jönsson, 2005). The AFLF (2009) report did highlight that the transition to online learning environment for PD requires deliberate change management strategies and tangible assistance to participants as they acquire skills using online technology. In order for PD activities to be of the most benefit, the AFLF report emphasised the importance of assessing participant readiness prior to involvement with online learning activities.

In addition to developing learners' navigational skills, relational factors that enhance socialisation into the online course format are also important (Dorrian & Wache, 2009). Clarifying for learners what this environment offers that is different from face-to-face courses is particularly important for those participants new, resistant to, or anxious about the online environment. Dorrian and Wache also suggested the inclusion, at the outset, of activities that will enhance interactions between course participants, such as online icebreakers, information about netiquette, and course expectations, discussions, and activities.

An example of effective online learning is provided by Pallikarakis' (2005) biomedical engineering course in which participants had advanced experience with using

computers (medium) and basic knowledge on image processing (content). Pallikarakis (2005) found high levels of approval from course participants on the content, presentation of material, and the online medium used to facilitate this course. It is interesting to note that this course attained high approval ratings even though the sample included people for whom English was a second language, and the course was conducted in English. The level of support provided within the course meant that language was not an additional barrier to learning in an online environment. There was unanimous agreement on the usefulness of the course and a desire to see similar courses of this nature. In addition to awareness of the content and structure of an online course, the potential synergistic effect of an interactive online community on learning outcomes is significant.

Collaboration.

A key foundation to successful online learning is support from fellow learners and from the course provider in terms of technical and administrative support, particularly in the form of tutor moderation of forum discussions. The tutor facilitation must create a supportive environment (Bourbonnais, 2010) in which feedback is deliberate, relevant, and opportune in order to enhance learner input and amplify collaboration (Carroll, et al., 2009; Gleeson, 2010; Seiler & Billings, 2004).

Chen et al. (2009) asserted that, although the course moderator attempts to guide the discussion on the 'topic', the main purpose of online discussions is to promote relationship. In the absence of face-to-face interactions, it is imperative to establish social cohesion to create an educational community that shares knowledge (Chen, et al., 2009; Ragoonaden & Bordeleau, 2000).

Online interactions between peers and learning instructors have been found to be a critical element in course involvement and completion (Attack, 2003; Maor & Volet, 2007; Seiler & Billings, 2004; Thompson & MacDonald, 2005). Many authors have highlighted the importance of these interactions between novices and experts in establishing successful online professional communities of practice (Chikh & Berkani, 2010; Granic, Mifsud, & Cukusic, 2009). This support is not solely reliant on the online

learning facilitator and can come from a wide range of colleagues within the workplace as well as course cohorts (Australian Flexible Learning Framework, 2009).

Essential elements of the online environment identified by research participants (Robley, et al., 2004) were not so much the technical skills required but more the tangible human factors of which the more notable aspects were consistent with Maslow's (1953) findings of love and belonging as significant human needs. The participants (Robley, et al., 2004) spoke of the importance of respect and connectedness that ongoing dialogue fostered. This was mediated by class sizes of less than 25. The results of these elements directly influenced the participants' self-esteem needs and professional and personal growth.

Pallikarakis' (2005) research arose after the author's involvement with a course on advanced biomedical engineering. The previous use of multimedia resources to aid the teaching of this course, coupled with participants who were based in more than ten European countries, led the designers to use Koschmann's (1996) collaborative learning model (CLM) whereby a small group of learners agree to be actively involved together in a cooperative pursuit of knowledge. The tutor acts as a resource and facilitator. Pallikarakis (2005) asserted that adults learn best in an environment that is social and participative whilst their knowledge is developing. Knowledge acquisition and application go hand in hand and it is the interactions between all involved that enables the construction of knowledge to be achieved (Koschmann, 1996).

The development of a community of practice with shared understandings and other commonalities can be difficult to establish in the online environment (Owston, et al., 2008). In response to this, Owston et al. (2008) recommended a blended delivery which combined a regular face-to-face component to help develop this sense of community. Additionally, Chen et al. (2009) suggested that moderators need to pose questions in discussions that will elicit higher order critical reflections rather than merely result in the sharing of experiences. There will be a need to refocus discussions back to the topic and ask questions that encourage deep learning, purposeful discussions, and mindful reflection in order to support knowledge development.

Communities of practice provide the opportunity for participants to see and hear experts discussing and demonstrating relevant topics. Pletka (2007) asserted that realistic learning environments that adults experience when they are learning a hobby or developing a personally desired skill, contain highly effective andragogical elements that mirror such communities of practice. He pointed out that usually one learns how to tie a knot on a fish hook just prior to catching a fish. The skill is developed through trial and error as fish are caught or lost and the learner is actively engaged in their own learning. This process happens within the context of expert and novice collaborating together and covering essential skills at just the right moment. An additional element to this scenario is the conviviality of the occasion, conversations, food, proximity, and stories of those that got away. Pletka (2007) contended that net generation participants will have grown up in an environment of similarly collaborating with their peers, customising content, and contributing to others' work in contexts such as Facebook, YouTube and Wikipedia. If such interaction is commonplace for the next generation of professionals, then educationalists would be well advised to embed these aspects into educative delivery methods. Net generation participants will be looking for opportunities in online learning courses to acquire knowledge rooted in experience and refined through practice and discussion. In this way, a complete circle of learning, practice, and reflection can lead to higher level cognitive functioning and deeper understanding of the topic.

Gleeson's (2010) participative action research had participants identify their own learning needs and move beyond meeting prescribed competencies. The aim was to create a space for learning in both a professional and a personal sense. It was hoped that discussions would lead to transmission of tacit and explicit knowledge between the participants, some of whom were expert whilst others were trainees. The ultimate intention of Gleeson's (2010) research was to enable participants to 'be' palliative care doctors rather than to 'do' palliative care medicine. The application of social constructivist principles, encouraging knowledge sharing between novices and experts, reflection, and application to complex clinical situations, encouraged this state of 'being' to become an active reality.

In order to enhance learning and maintain involvement, ongoing and regular dialogue is essential (Atack, 2003). Given the physical distances there will be between course participants and the reality of working alone on a computer, the perception of isolation can be salient (Johnson, 2008; O'Neil, et al., 2009; Palloff & Pratt, 2005). Thus, a community of learning that embraces trust, respect, and a love of learning is foundational to an online course's success (Gurr, 2009).

In contrast to traditional forms of education, an online collaborative community of practice can offer distinct benefits to ethnically and culturally diverse participant groups (Palloff & Pratt, 2005). This is especially true for those societies that elevate the importance of collaboration and community. However, it is of concern that, in a review of research studies, Maor and Volet (2007) found that the majority of online learning examined did not foster collaboration, development of knowledge, or communities of practice. As such, the inclusion of elements that establish these aspects will be an imperative to success.

Organisational support.

In order for the full benefit of online learning to be actualised, the culture of an organisation needs to fully embrace PD in tangible ways. This could take the form of facilitating education leave for ongoing PD, providing resources, profiling online learning opportunities (Chen, et al., 2009; Peacock & Hooper, 2007; Wilkinson, et al., 2004; Wilson & Stacey, 2004), and creating regular opportunities for interaction with the content (Michael, 2004; Peacock & Hooper, 2007). Such a supportive environment is essential given that the typical work schedule may not allow time for such activities. A successful example of this is the blended delivery of an eight week long medical coding course (Wooding, 2010) in which the participants from one organisation were told that they did not have to come into work or sit at their desk during this period. Access to content was available via any internet capable computer. The two participants given this support and flexibility topped the course and have subsequently excelled using their newly developed knowledge. From an organisational perspective, this might seem an expensive and unnecessary waste of financial resource. However, by providing the space for authentic learning to take place in an atmosphere that did not require the participant to juggle their usual professional workload, the learning

was rich and deep and highly effective. The combination of internal motivations a participant may have, the increased personal value that they gain and the provision of tangible benefits such as those previously mentioned can provide additional incentive for online engagement (Samarawickrema, Benson, & Brack, 2008). In addition to this Wilson and Stacey (2004) also noted the additional benefit of online PD activities counting towards academic credits.

In tandem with support from the participant's organisational workplace is the support offered by the organisation that hosts and runs the course (Seiler & Billings, 2004). There needs to be adequate information about the course, how to access material, how to navigate through it and what to do if further assistance is required. In clinical environments, where health professionals were encouraged to discuss their learning with colleagues and management, a consequential increased level of organisational support was apparent (Maor & Volet, 2007). Ongoing organisational support is a critical element for successful online learning. It begins with the planning and design of learning opportunities and continues into the choice of resources that will actualise the learning.

Resources.

Online resources can encompass learning activities, sources of information and tools. Effective use of online learning resources has been examined by a number of researchers (Grassley & Bartoletti, 2009; Littlejohn, Falconer, & McGill, 2008) who have highlighted the capability of resources currently available, such as wikis and blogs, which enable participants to develop, comment on, and collaboratively edit the content for a chosen topic or article. It is not merely the use of an online learning resource in and of itself that determines its effectiveness. Factors that influence the effectiveness of any learning resource are its usability, applicability to the community of the participants' context, and the extent to which it can be actively engaged with and manipulated by participants within the learning context (Littlejohn, et al., 2008; Seiler & Billings, 2004; Watkins, 2010).

Ho and Kuo (2010) and Kordel (2008) asserted that ideal online learning resources are easy to use and access, allow for asynchronous interactivity, involve simple, discrete,

small chunks of activity, include hyperlinks to relevant sources, nurture curiosity, and provide learner control of the experience. When these aspects are included, Ho and Kuo (2010) claimed that positive learning outcomes can result.

Online learning activities need to be immersed in realistic professional experiences in order to have meaning and purpose for adult learners (Owston, et al., 2008). Carroll et al. (2009) noted that activities capitalising on the interactivity that an online learning environment offers, enabled transferability to the workplace and are deemed to be of most use to participants. Such activities included scenarios and case studies that had immediate relevance to the work environment. This experience was enhanced when navigation through the online learning environment was straightforward, easily followed, and clear (Carroll, et al., 2009; Wilkinson, et al., 2004). The availability of downloadable resources enhanced flexibility and choice over when, where, and with whom learning activities were undertaken. In contrast to much other research, Carroll et al. (2009) discovered that the opportunity to choose to work alone enhanced the learning experience.

Against this richness of resources, Kordel (2008) noted a worrying propensity for instructors to move PowerPoint presentations to the online environment with minimal functionality and consider this an advance in technology. Kordel's suggestion (2008) that the design of some learning management systems inhibits effective discourse warrants further consideration.

An essential element in online education is the ongoing, iterative review of the course (Dorrian & Wache, 2009; Lehmann & Chamberlin, 2009). Thompson and MacDonald (2005) stressed the imperative of being able to rapidly redesign an online course in response to these reviews. This is particularly important after a course is launched and feedback from participants will assist in refining how well the course functions from a participant perspective. An ongoing task of the instructor will be the need to correct links that do not function correctly. It is not just the availability of new technology or media that will ensure learning is effective. When content is valid and engaging and the resources used capitalise on available hypermedia functionality, learning outcomes

can be highly effective (Watkins, 2010). However, this is influenced by a number of key influential aspects which will now be examined.

Influential Aspects

Participant characteristics.

Positive beliefs about web-based learning will influence participant attitudes to web-based PD (Kao & Tsai, 2009). Kao and Tsai examined the effect of belief about one's own ability in using the technology and how this affects a participant's ability to act within this environment. The degree of confidence will influence how the participant feels when using the technology. Kao and Tsai (2009) recommended that potential participants be given the opportunity at the outset to develop their online abilities and practice with tools. In this way, their skill levels and confidence will increase, optimizing potentially positive attitudes to online PD and outcomes.

In this regard, it is important to assess the level of learners' technological skills rather than making assumptions about their ability to navigate well through the online material (Kordel, 2008). The implementation of online PD should be preceded by careful planning to anticipate and account for any issues prospective participants may have (Kao & Tsai, 2009).

Owston et al. (2008) noted that participants who interacted with others and collaborated to develop projects, had greater learning benefits. In contrast, other participants who viewed from the sidelines and did not complete a project, were deemed by Owston et al. (2008) to have received minimal benefit. The barrier of appearing to ask a 'stupid' question compromised online peer interactions. Carroll et al. (2009) observed the phenomenon known as 'passive lurking', also noted as a negative aspect by Peacock and Hooper (2007). On the surface this limited involvement could be seen as a detractor but, paradoxically for some participants, such hovering gave them the opportunity to listen, synthesise, and learn from the contributions of other participants. A potential outcome of this behaviour is that the participant is learning throughout and, at a later opportune moment, can contribute as effectively as any other member of their cohort. In fact, it could be argued that the participant's silent reflection and assimilation of knowledge could be of as much

benefit to learning as talking through a topic for a participant who is vocal. Each of these aspects signals differences in learning style, neither better nor worse than each other but, in their difference, providing distinct benefits in a learning environment that provides choice for such diversity. As influential as learning styles can be to a participant's online experience, so too are the ways that technology impacts the online environment.

Technology.

The online environment may be a totally foreign learning medium to some participants. A key to managing this may be to articulate the parallels with participants' current experiences with respect to emails, Trade Me and Facebook websites. However, Samarawickrema et al. (2008) noted that even participants versed in using online technology needed additional support when engaging in an unfamiliar activity. As competence with information and communication technology (ICT) seems to be a clear predictor of participant satisfaction and course completion, Wilkinson et al. (2004) suggested that participants be given an assessment prior to undertaking online courses clarifying their level of competence and identifying additional support that might be required.

Gibson, Jack and Rennie (2006) in their research into computer literacy skills, emphasised a LLL focus for PD with regard to training and skill development in ICT. The majority of their respondents (62%) had self-taught computer literacy with nearly one-third ranking themselves as having nil or low computer competence. Gibson et al. (2006) suggested that ICT training be included as part of a national PD strategy. This finding was supported by Attack (2003) who also found that the research participants felt underprepared and required assistance with effective database and web searching skills, posting and responding to discussion forums, sending emails and attaching files to emails, downloading plug-ins and documents required to use the course material, uploading, and information about working offline. Research participants noted that it was "like learning a foreign language before you could start to learn what you had signed up for" (Attack, 2003, p. 292).

Sweeney et al. (2008) outlined keys to successful online PD activities for RNs. Of significance was the finding that, when the participants encountered technical problems, they drew back from online tutorial involvement. This led Sweeney et al. (2008) to stress the importance of a combination of online and live workshops to demonstrate basic skills and navigation through the online material.

In the years between 2004 and 2010, participants have had an increasing affinity with the internet and searching the World Wide Web (Bond, 2010). However, many reported feeling overwhelmed by the volume and dubious quality of results and had not developed complementary skills in search strategies. In addition, whilst the respondents could send and receive emails, they did not have the computer management skills to screen for, and remove, email-attached viruses. Bond (2010) cautioned against the expectation of many educators that participants will pick up the necessary ICT skills by 'osmosis' and instead asserted that this must be actively managed if computer literacy skills are to be used for effective knowledge management. Developing abilities in internet searching and evaluation of results is recommended in undergraduate preparation (Honey & Baker, 2004; Honey, Connor, & Springer, 2011; Scott, Gilmour, & Fielden, 2008).

When interviewed part-way through the course, Atack's (2003) research participants noted that they felt they had not had sufficient time to focus on the course work because of dealing with technology issues. In addition to this, research participants were reluctant to ask for information technology (IT) help as they were unsure what to ask for and also concerned they might not understand the reply. However, ten weeks later, technology was not an issue and most reported high confidence levels with using online technology.

Flexibility.

Successful students have easy access to technology (Dorrian & Wache, 2009; Tallent-Runnels, et al., 2006; Wooding, 2010). Atack's (2003) research found that students who used shared work computers were more likely to return to work after hours to gain unrestricted access to the online course material. Over time, this became less appealing to the research respondents. Secondly, Atack (2003) and Gilmour, Scott and

Huntington (2008) noted that the nature of the clinical workload may not provide time for nurses to focus on the course content and access the internet. Research participants highlighted that many workplace interruptions, in addition to lack of available time on the work computer, were issues they had to contend with. There was widespread agreement amongst the participants (Atack, 2003) that access at work was neither practical nor a realistic solution. In contrast, the benefit of providing ample time in a location and timeframe chosen by the participant was borne out in Wooding's (2010) findings.

Some of the benefits observed by Atack's (2003) research participants were the convenience of choosing when and where they would complete the course. There was no need to take time off work or travel extensive distances. Respondents did note that it was ideal for them to establish a designated space and time to complete their study. The research participants noted that flexibility was a 'two-edged sword' (Atack, 2003, p. 294). It provided convenience but also necessitated dedicating specific time for course work or else other matters took precedence. Participants in Atack's (2003) study noted that through the project they developed time management strategies to assist them with workload requirements. After discussing aspects related to flexible access we will now consider contextual elements of online learning.

Context.

In terms of the learning context, it is important for course designers to take into account differing participant learning styles (Carroll, et al., 2009). Various aspects of the course will appeal to particular types of learners and not all learning is social in nature. Offering choices in a range of delivery styles will ensure that there is variety and that all learners are catered for. Smith (2010) found that the learning style of the majority of RNs enrolled in an online master's degree nursing programme could be described as accommodators. This type of learning style is typically intuitive, preferring hands-on experiences with a 'trial and error' approach to problem solving, and is people oriented. As such, it will be important to consider how to include these elements into the learning design of online PD activities.

The attitudes of adult learners to online learning in the context of the workplace will have an impact on its effectiveness (Ho & Kuo, 2010). Successful online learning is influenced by participant characteristics such as personality, gender, prior experience, skills, and knowledge and by situational factors such as organisational culture and politics, technology available, and corporate support (Tyan, 2004, as cited in Ho & Kuo, 2010). Southernwood (2008) suggested that an online classroom may be less threatening for those who have had a significant length of time since their last formal educational experience. The online environment allows them time to think through their responses before submitting, which may be appealing.

Maor and Volet (2007) found that the majority of courses were designed to meet local needs and few drew on a participants' clinical context as a reference point for course content and involvement. This seems unusual given the prominence of andragogical principles in current educational contexts. There was minimal evidence to suggest that courses were being used between countries (Maor & Volet, 2007) even though online learning can successfully address transactional distances and geography.

One hundred percent of respondents to the Australian Flexible Learning Framework (2009) survey noted that relevance to the workplace context was an essential factor in online learning PD activities. This is also supported by Benson and Samarawickrema (2009). Other high ranking factors were contextualisation to the workplace, inclusion of visuals, meaningful feedback, self-assessment, problem solving and interactive activities, and the use of audio and visuals in the content. For participants in the AFLF (2009) survey, accreditation was the main driver for accessing online learning and two key factors influencing success in this environment were the readiness of the participants and the availability of various online courseware activities.

Successful online learning provides flexible options for course participants to map out their chosen pathway through the content (Jönsson, 2005). Jönsson's medical physics course used a mixture of e-books, e-resources, and online activities along with face-to-face meetings with the teacher and other students in close geographical proximity. Factors that assisted this were the participants' clear need for continuing PD, autonomy on when and how they accessed content, and clear guidelines on course

requirements and completion dates. Participants viewed face-to-face aspects as highly valuable for increasing understanding, social cohesion, and inspiration for learning.

A similar degree of satisfaction was noted by Wilkinson et al. (2004). Participants reported changes in practice following course completion and a high degree of satisfaction with the flexibility, quality of resources and content, and autonomy that the online learning experience offered. In order to avoid the negative effects of prior experiences with unsuccessful educational initiatives, Wilkinson et al. (2004) cautioned that careful planning and implementation is required to address access, preparedness for the IT environment, guiding support, and the effective use of online learning resources.

Issues

A number of issues with online learning have clearly been identified in the research. These include aspects such as the volume of workload in terms of chapters to be read or resources to be accessed, and difficulty with tracking and responding appropriately to online discussion threads (Andrews & Haythornthwaite, 2007; Robley, et al., 2004). For others, it was the often cited issue of technological difficulties (Hew & Hara, 2007; Jonas & Burns, 2010; Peacock & Hooper, 2007; Vyas, Albright, Walker, Zachariah, & Lee, 2010), life encroaching on workloads (Peacock & Hooper, 2007), and lack of, or delayed, feedback from tutors (Andrews & Haythornthwaite, 2007; Samarawickrema, et al., 2008). Robley et al. (2004) noted that, at times, there was a lack of congruence between instructional design that aimed to enlarge the learning experience and content being constrained by assessment methods that narrowed down responses to set answers.

Conversely, improved learning outcomes are evidenced in courses that intentionally embrace construction and internalisation of knowledge in comparison to merely transferring information to the participants. Casebeer et al. (2004) found that participants preferred case-based content with opportunity for more interaction resulting in increased knowledge acquisition and retention of information learnt. In contrast, those courses that were predominantly text based resulted in nearly one third of respondents raising the lack of interaction as a detractor to their learning

experience. In developing online learning experiences it is important for the learning design to be cognisant of the issues raised in order to mitigate their effect.

It can be seen that the effectiveness of online learning is influenced by many differing factors. This research project sought to find out, by involving RNs working in clinical contexts, what aspects were relevant to them.

There is a wealth of research and information into the use and implementation of online learning initiatives to enhance learning for students, educators, professionals and in workplaces. Some of the literature reviewed here has involved action research methodology and has gathered information from participants for the purpose of designing effective online learning resources. However, there is a paucity of research that has included participants as co-researchers, actively engaged in developing the learning resources in an action research spiral (Kemmis & McTaggart, 1988) that capitalises on the rich, technological landscape that is before us. The co-researchers in this present research project will examine their own RN experience of online learning throughout the process of conducting the research. This action research initiative involves research *with* the participants in a collaborative enquiry rather than research *on* the participants (McNiff, 1988). It is this participative, collaborative and co-creational element of action research that distinguishes it from other research methodologies.

There will be an emancipatory co-construction of knowledge both for the purpose of the research project but, more importantly, for the PD of the individuals involved. This will enhance their development of LLL skills in using the online environment, development of online courses for their peers, and in consolidation of knowledge surrounding their chosen topic. Mezirow (2000) asserted that, for adult learners, learning that is viewed as important is whatever the individual decides is important to themselves. This aspect is reflected in this research in two ways. Firstly, a feature of action research is that the participant is continually part of creating knowledge through action. Secondly, as the focus group generates new evidence and tests its validity, the group decides on further action based on what is considered important to the participants. Through a cyclical process of acting, observing and reflecting, this

research will provide a way for participants to influence what will be considered integral to online learning for PD (Holly, et al., 2009). The co-researchers are current practitioners creating and testing online activities for authentic clinical environments.

This research project aims to establish what educational strategies will assist a multi-generational, digitally-differentiated nursing workforce to flourish by using online learning for their PD.

Summary

This chapter has provided the contextual basis for a participatory action research project focused on both online learning and professional development for RNs. It has highlighted the importance of andragogical principles underlying learning activities with adults. In order for online learning to be effective there needs to be attention to the content, structure, resources chosen, how the organisation will support learners, and elements of collaboration within the learning activity. In addition, aspects that influence the efficacy of the online experience include the learner characteristics, interactions with the technology, provision of flexible access to content, relevance to the clinical context and measures to manage issues that may arise. Finally, justification for participatory action research methodology has been given.

The following Research Design Chapter will outline the participatory action research methodology that has driven this project.

Chapter Three: Research Design

“The researcher’s identity and standpoint do fundamentally shape the research process and findings” (Willig, 2001, p. 7).

Introduction

This chapter gives an overview of this action research project’s theoretical basis, planning, development, and implementation involving co-researchers and includes a description of action research methodology and research methods.

To clarify the issues and potential benefits of online PD, I consulted initially with nurse educators, registered nurses in current clinical roles and nursing leaders within our organisation. As part of this, I gave a presentation to a group of colleagues demonstrating the blended delivery of a perioperative nursing course that I had developed. The content of this course was being delivered partly online, partly face-to-face, and partly in the clinical setting. Arising from these consultations, anecdotal evidence suggested that many educators and academics are firmly in the teaching paradigm focused on content, knowledge, lessons, and tasks. Moving to a learning paradigm in which the learner is supported and actively discovers and constructs their knowledge (Barr & Tagg, 1995; Jönsson, 2005), is overdue. Relevant readings and these discussions highlighted widespread agreement that online delivery of some PD activities was an imperative, learning outcomes of current material needed review, and that research into how best to provide this was warranted. The combination of experience, previous study, reading, and discussions prompted me to invite a group of nurses to engage in a year-long, action research learning spiral with the aim of enhancing confidence and skills, and empowering them to take control of their PD.

Action research was the chosen methodology for this study because it is a

participatory process concerned with developing practical knowing in the pursuit of worthwhile human purposes. It seeks to bring together action and reflection, theory and practice, in participation with others, in the pursuit of

practical solutions to issues of pressing concern to people, and more generally the flourishing of individual persons and their communities. (Reason & Bradbury, 2008, p. 4)

An action research methodology was chosen for this investigation because it offered the potential for current clinicians to be integrated in the research process and outcomes. In this way, practice-based ideas are formulated, trialled, and interrogated, resulting in knowledge generation to enhance practice in the clinical context.

Action Research Methodology

Action research incorporates testing ideas in practical environments in order to increase knowledge and provide rationale for the actions taken (Kemmis & McTaggart, 1988). This method focuses on heightening awareness of perceptions with the potential to change current practices. John Dewey, an educational philosopher, commented on the clear impact that educational inquiry could have on the practice of educational research (McTaggart, 1991). He asserted that educational research grounded in practice sat alongside scientific method and moral action. Dewey (McTaggart, 1991) viewed the outcome of education as more than learning content or skills. It involved applying what was learnt, in combination with a developing social consciousness, in order to bring about social action and reform. Thus, practitioners in a community, if given the opportunity to work alongside researchers, can set the agenda, devise strategies to solve problems they face, and transform their circumstances. Action research is primarily committed to improving situations in an ethically sound manner (Holly, et al., 2009).

The term “action-research, research-action” (p. 293) was first used by Collier (1945) to describe the cyclical nature of research beginning with action needing to be undertaken, followed by research to examine the action in detail, and resulting in action to address a problem or situation. During the period 1933 – 1945, Collier (1945) strove to improve the circumstances of Native American Indians whose culture and communal practices were viewed as inferior and repeatedly dismissed by successive government authorities in erroneous decisions aimed at improving the Native American Indians’ social situation. Collier (1945) noted:

We have learned that the action-evoked, action-serving, integrative and layman-participating way of research is incomparably more productive of social results than the specialised and isolated way, and also we have proved that it makes discoveries more central, more universal, more functional and more *true* for the nascent social sciences. (p. 300)

Such a participative action research approach is based on an identifiable need upon which to act, clarification of the problem, involvement of lay people and experts of various disciplines, and the subsequent findings of research resulting in action (Collier, 1945). These aspects exemplify the aspirations of my research project. Current PD activities can be disparate. It is hoped the outcome of this research influenced by both clinical RNs and me as a learning designer, will produce results to influence the planning and delivery of future PD activities. Collier emphasized that when such research avoided coercion and alternatively waited for self-realisation to transpire, the resulting action had significance for all involved.

A contemporary of Collier, Lewin, was a social constructivist who held that belief that a person's experience of reality could be shaped and remoulded as their conscious awareness of reality changed (McTaggart, 1991). Lewin focused on helping his research participants to set aside prejudices and biases so that they could become objective and consider their situation in new ways (McTaggart, 1991). Central to Lewin's premise was group decision-making with a focus on improvement and change (Kemmis & McTaggart, 1988). There was convergence of thought at this time with regards to educators working collaboratively with researchers to examine educational practice however there was no widespread acceptance and behavioural psychology dominated much of the research undertaken in the following 30 years, particularly in the US (McTaggart, 1991). McTaggart talked of a 'sea of scientism' holding the view that practitioners (teachers) were not in the best position to question, understand, or implement changes.

The profound influence of the Second World War, during which ideological viewpoints on democracy, racial supremacy, and totalitarianism were challenged, led to a reconfiguration of views about peoples' rights, status, and decision-making processes

(Kemmis, 1988). Kemmis argued that industrialisation exacerbated worker alienation and left them with no voice in company decision making. These aspects, in combination with the effect of the world-wide conflict, led to heightened awareness and consideration of differing viewpoints. Credence was given to the voice of all, including minorities and not just the loudest or most powerful discourse. Goodlad (2004) raised the issue of the prevailing status of the 'knowledge' of the researcher in comparison to that of the practitioner. Typically, researchers would come to a study with a hypothesis based on acquired knowledge to be tested with a group of subjects who were presumed to have minimal or irrelevant knowledge. The notion of researchers and educational practitioners collaborating, uncommon at the time, was proposed as a useful way of enhancing curriculum development (Tyler, 1984). The resulting discourse initiated positive views of teacher-led research.

Also during this period, Cronbach (1982) challenged the 'unassailability' of the researcher's status in conventional research in relation to internal and external validity, replicability, and objectivity. With positivistic research, Cronbach questioned how much a study could be reproduced in a comparative population having differing socio-cultural values and experiences. If, and how, a programme emerging from such research would be implemented in another context, was dependent on the programme operator, their view on how it should be implemented, and the degree to which they could enforce their methods. Cronbach's view was that those who used the research held responsibility for its external validity. The eventual outcomes of any research, regardless of whether or not it had a predetermined plan, were fully dependent on how the research staff and the study population interpreted the plan. Cronbach asserted that each research proposal could incorporate elements of quantitative and qualitative investigation and analysis based on the relative merits of each approach within a study. He dared to suggest that these approaches were not diametrically opposed as many at the time believed but, instead, findings from each could enrich the data collection, analysis, and usefulness of the findings.

The Brazilian Paulo Freire's (1972) ground-breaking text *Pedagogy of the Oppressed* challenged the authoritarian structures of the day and instead viewed disenfranchised and oppressed people as having the ability to transform their lives. He researched with

them rather than 'did' research 'on' them (Koch & Kralik, 2006). His challenge to political and educational hegemony was perceived as a threat and forced his exile from Brazil for two decades. Freire's view was that, through collaboration, even the most oppressed people can begin to transform their circumstances. This occurs as their self-awareness develops, an outcome of learning to read and write, enabling them to critique their circumstances (Koch & Kralik, 2006). Greenwood and Levin (2008) argued that, to truly cogenerate knowledge, it is essential to have the participants' local knowledge in tandem with the professional researcher's involvement.

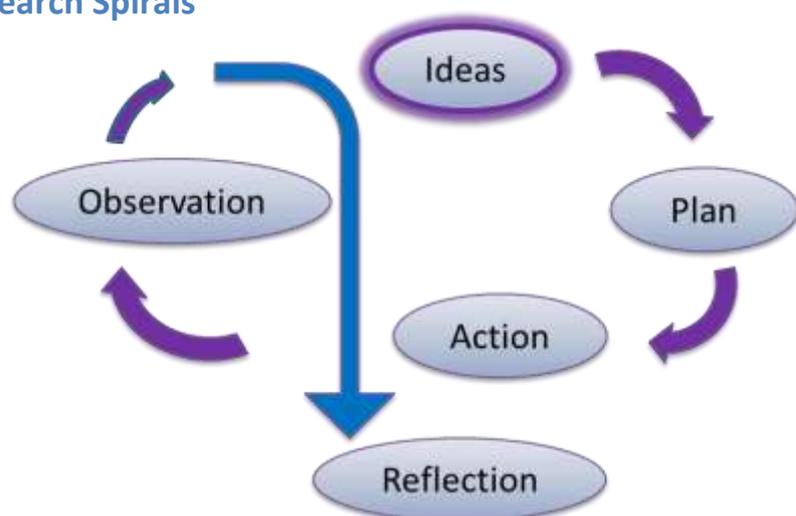
As adults reflect on their prior experiences they validate ideas and assumptions, re-interpreting and establishing meaning for themselves (Mezirow, 2000). Such transformations of thought can be facilitated through the action research process. The pathway to generating evidence and knowledge may be circuitous and unpredictable. In action research, responsibility to critically evaluate these understandings, consider alternative assumptions, and revalidate these through reflective dialogue is undertaken by all research participants, including the 'researcher'. This critical reflection by all participants in action research involves observation, delving below the surface, questioning current belief, observing, assessing, and experimenting. Leistyna, Woodrum and Sherblom (1996) asserted that it is these very aspects that can "affect and effect the socio-political labels and economic realities that shape our lives" (p. 334). Reflexivity involves interrogation of the self by all co-researchers and of the research process (Guba & Lincoln, 2008). It is in this self-awareness and critical reflection, the writing of actions, interactions, hunches, and possibilities, that the research topic emerges and discoveries are made.

Emancipation and a change in practice were the goals of MacLeod's and Zimmer's (2005) research conducted in three small rural hospitals in British Columbia, Canada. Central elements of action research are that, through cycles of collaboration, discussion, and reflection, a change in practice can emerge. However, in this study, although the participants had enhanced their awareness, they declined to act on the outcomes of their research process. They felt that previous attempts to modify practice had failed and, that in order for any change to occur, initial change with decision makers at an organisational and structural level was required. In their

research, the participants' voice was heard by the researcher telling their story. Given the relative size of this current research project's hospitals, it is salient to note that MacLeod and Zimmer (2005) observed an issue of unwillingness to challenge practice in small facilities. They suggest that the benefit must outweigh the perceived risk of taking action in order for participants to contemplate initiating a change in practice. A significant lesson learned was how the researchers might enable emancipation in situations where the participants lack the agency necessary to initiate change. In the light of these findings, it will be important to acknowledge the organisation's willingness to embrace online PD activities whilst concurrently realizing that colleagues may have mixed views and influence on its efficacy.

There are a number of essential elements within an action research spiral (Kemmis & McTaggart, 1988) including an ethical commitment to professional and democratic practice, and a cycle of reflective practice in which there is action, observation, and reflection (Holly, et al., 2009) (See Figure 1).

Figure 1: Action Research Spirals



(Source: Adapted from McNiff (1988, p. 22))

Action research is conducted in a public environment with shared professional conversations. In addition, it is collaborative with participants systematically listening and seeking different perspectives and evidence. Action research participants are seen as co-creators of knowledge (McNiff & Whitehead, 2010) engaging with the research process. Participants are interrogating, deconstructing, and decentring their experience, and taking responsibility for their own actions thereby contributing to

social and cultural reform within their circumstances. During this process of reflection, discussion, and change initiation, the development of self-awareness can lead to transformation in participants' clinical PD spheres.

Integral to my research is the potential subsequent benefit gained by participants. The findings need to be both relevant for participants and take priority over the researcher's desire to investigate this topic or the organisation's goal of establishing PD on an online learning platform. It is essential to be explicit with participants about the action research process and how issues arising during the research will be addressed. As Mezirow (2000) asserted, "what counts is what the individual learner wants to learn" (p. 31). Of prime importance is how the participants and researcher jointly investigate, contemplate, and initiate changes in a widening spiral of knowledge (Stringer & Genat, 2004). The aim of this action research project investigating educational strategies to support digitally-differentiated nurses, is to empower participants to drive social and educational transformation (MacLeod & Zimmer, 2005) resulting in changes in PD activities based on the evidence generated. Essential to the action research process is the experience of the process and the outcome being "educative, enlightening, empowering and emancipatory" (Bellman, et al., 2003, p. 187; Koch & Kralik, 2006).

Ethics Approval

A proposal for the research project was approved by to the Massey University Human Ethics Committee (Appendix D). A second research application was also submitted to the hospital network's National Clinical Medical Committee (Appendix E). Once approval from both bodies was granted, I gave presentations on the research project and provided an information sheet (Appendix F) to Hospital and Departmental Managers at each of the four hospitals. Participants in this project required their departmental managers to adjust roster schedules to allow for their absence from the clinical setting during the focus group meetings. The opportunity for discussion of this project, and its implications for the hospital network, with key groups prior to participants being recruited, assisted in the practical realities of staff being relieved from the clinical workplace during the focus group cycles.

Ethical Issues

As focus groups were to be used through the duration of this project, anonymity of subjects would not be possible. However, during this action research project, participant's names were anonymised through the use of pseudonyms in all written records. The hospital network is identifiable, at their request, however, all other identifying data such as specific hospitals and participant details are anonymised. Confidentiality was maintained by the participants and research assistants signing confidentiality pledges (Appendix G) and by establishing focus group principles and expectations during the first focus group session. The establishment of such foundational aspects helped to clarify and create realistic expectations for both the process and the outcomes. During the process of the research, there was the potential for substantial momentum to develop and therefore discussion around closure or group sustainability after completion of the research was seen to be important. Data was stored in a locked cabinet in the researcher's office and on a password protected computer.

Research Participants

Participants were recruited for the project by way of an information poster (Appendix H) and brochure (Appendix I) that were displayed at four hospitals within the network. Interested registered nurses were asked to contact the researcher by phone or email. All respondents were then sent a questionnaire (Appendix J) with a postage paid return envelope. Inclusion criteria determining which respondents would be eligible to participate were registered nurses working in surgical ward, operating rooms (OR), or post-anaesthesia care units (PACU) within this hospital network. From the questionnaires received, 10 participants were chosen to provide a cross-section of computer affinity; educational background – some with Bachelor degrees, some with nursing diplomas; all currently working in a clinical environment. This representative sample included three ward nurses, three OR nurses, and four PACU nurses. The variety of participants was deliberate to reflect the range of registered nurses working within this hospital network which would ensure the usefulness of subsequent findings and recommendations to these clinical contexts. Their ages ranged from 31 to over 60,

they averaged between one and a half to over 26 hours on the computer each week, their familiarity with computers was between two and four (1 = unfamiliar to 5 = very familiar), all the selected hospitals were represented, and there were one male and nine females. Each participant was sent an information sheet (Appendix K), participant consent form (Appendix L), focus group consent form (Appendix M), cover letter (Appendix N), and a map for the first focus group meeting venue. All of the managers with staff involved in the project were notified so that they could facilitate rostering and arrange time out of the department for their staff member during the focus group meetings.

RN educators were excluded from the participant cohort as their prior experience in the preparation of PD material could have influenced the input from non-educator RNs, which had the potential to affect research outcomes. Their voice might have become dominant and/or repressive for other participants. I was, however, able to include some of their experience and insight in the role of critical friends with whom I could discuss general themes and aspects emerging from the research.

The aim of the focus group meetings was to generate knowledge related to what strategies worked for the participants and, by generalisation, to similar RNs. It was about hearing the needs and issues related to online PD and empowering those involved to influence the design and implementation of strategies supporting a transition to the online environment. The focus group was limited to between eight to twelve participants in order to encourage group cohesion to develop, allow space and time for individual participation, not be too intimidating for participants, and to facilitate transcription identification of voices (Koch & Kralik, 2006). An important factor was the establishment of collegiality and collaboration between RN participants from similar clinical experiences but from different hospitals. A low-key, non-threatening environment was created by having the meetings in a well-resourced public library meeting room. In order to facilitate the development of a positive working environment, a variety of icebreakers and activities were included in the focus group meetings. The participant group was divided into three smaller groups according to their involvement in the same clinical area. These specialist clinical groups would work together for the subsequent research period to develop and trial both the online

learning environment and an online learning activity specifically for their area of expertise.

My role in this research project was as a facilitator leading a group of co-researchers towards an endpoint that was to be defined by the group as we proceeded. Throughout this process, I acted as a catalyst for ideas and solutions, supporting the participants to implement ideas and strategies and assisting them to take ownership of the project. A consequence of the action research approach necessitates accommodating an undefined outcome that would be clarified through the research process.

On the day of the first focus group meeting, one of the participants chose to withdraw when they realised that the project was not going to be entirely online and would involve participation in meetings. This resulted in nine participants from three clinical areas: surgical ward, OR, and PACU. One participant withdrew from the project, after the fourth focus group meeting, following a personal traumatic experience. Another withdrew immediately prior to the fifth focus group due to personal circumstances unrelated to this research.

Data Collection

Initial data collection by way of a descriptive questionnaire occurred during participant recruitment. This gathered information about each participant's clinical work specialty, experience with computers, educational experience, familiarity with using computers, gender, and age range. Such information enabled participants to be recruited who were representative of a wide range of experiences and backgrounds. Subsequent data was collected via focus groups which were audio recorded and transcribed verbatim. Two participants were unable to attend the first focus group meeting and, consequently, individual meetings were conducted covering the same content as the focus group (Appendix O). These were also recorded and transcribed. Immediately after the conclusion of each focus group meeting, the researcher completed a reflective journal entry and recorded a video diary. Field notes and emails to participants were also kept.

Focus group data collection emphasises the importance of establishing a foundation for collaboration (Bellman, et al., 2003) and being explicit about the process and management of issues arising. In relation to this study, the aspects that could be considered included beliefs and values in relation to PD, nursing education, lifelong learning, computers, and technology in our work environment. Bellman et al. (2003) highlighted important aspects to discuss at the first meeting such as realistic expectations of the research process, individual and group values, particularly in relation to PD, and discussion on ways of supporting co-researchers through this process.

To this end, the first focus group meeting outlined the overall scope of this action research project, the focus group method, an introduction exercise to begin to develop group cohesion, revisiting respondents' questionnaire responses on familiarity with using computers, discussion of issues hindering involvement with online PD, and ways to address these barriers (Appendix P).

As the focus groups proceeded through the following months, the emphasis was on collaboration, support from both participants and the lead researcher, establishing a non-coercive yet productive environment in which to develop and examine new ideas and examples of PD activities. Tangible support was offered within the online environment by way of a discussion forum for each of the individual specialty groups as well as an overall research group discussion forum. My role as the meeting facilitator was to direct the focus of the discussions, challenge perceptions and extend the reflections beyond the immediate. Interaction with the online learning site outside of the meeting times was also encouraged. These aspects gave participants the opportunity to develop their skills, confidence and knowledge of the online environment.

Focus Group Meetings

Over the course of 16 months, six focus group meetings were undertaken to discuss and discover what factors were important for online PD activities. A wiki was used to facilitate gathering information and development of ideas. A wiki functions as a central repository of information and documents. It allows a variety of people to collaborate

on these artefacts within the online environment. Any number of people can edit the content in one central document without the need for multiple copies of the document to be emailed back and forth between people in a group. In this project, access was restricted to research participants only. An example of how a wiki functions, 'Wikis in Plain English', can be viewed on the internet at <http://www.youtube.com/watch?v=-dnL00TdmLY>. Three online activities were developed and trialled in a supportive environment by the research participants.

Data Analysis

Immediately after meetings I noted down key aspects that had arisen during the session, wrote and recorded a reflective journal video and transcribed the recordings so that I could begin to become immersed in the data. To analyse the data I listened to and read through the transcripts repeatedly to gain a sense of the whole, as recommended by Koch and Kralik (2006). I focused on what the participants and the data were saying and also considered the discussions from an overall perspective. This phase of analysis involves sorting, coding, questioning, comparing various data, and speculating about what might be happening (Holly, et al., 2009). Through this process a synthesis of emergent phrases, key aspects and concepts were considered and subsequently organised into themes (Joffe & Yardley, 2004). I looked for both explicit and implicit themes within the data. After each meeting and period of analysis, I took back to the participants, during the next focus group meeting, the emergent themes to seek their verification and comment. Gaining consensus with participants ensures that my analysis, my claim to truth, has been tested and verified in a collaborative way (Joffe & Yardley, 2004).

Additional verification of research findings involves multiple methods of data collection including questionnaires, focus group transcripts, field-notes, and research journaling. These diverse sources can provide triangulation of data in the search for truth about what is being studied (L. Richardson & St. Pierre, 2005). Elliot (2003) emphasised that triangulation also comes from multiple perspectives held by a variety of relevant people – participants, colleagues, and management staff. In addition, Flick (2002) asserted that triangulation is not merely an instrument to confirm the validity

of the findings but instead enhances the constancy and scope of the research. However, such a method has the notion of converging on a fixed point, the apex of the triangle, to which the data will lead. In a postmodern context where multiple views can be held in tension and what is seen depends on the angle of the viewer, Richardson and St. Pierre (2005) suggests that the notion of such a fixed view of validity is deconstructed to incorporate multidimensional perspectives.

Using the imagery of crystals, which are entities that absorb external realities and refract them in diverse ways, data can be viewed and analysed in a myriad of ways. Data generated during this research represented multiple perspectives which, during the refractive process of crystallisation, would emerge in multiple understandings of these realities. Richardson and St. Pierre (2005) asserted that “crystallisation provides us with a deepened, complex, thoroughly partial, understanding of the topic. Paradoxically, we know more and doubt what we know. Ingeniously, we know there is always more to know” (p. 963). In this way, the multiple methods of data collection throughout this action research project would be examined with a crystallisation paradigm. Themes emerging from the transcripts would be examined, interrogated, and deconstructed to elicit new knowledge and understanding of efficacious online PD activities.

Reflexivity

My role as the lead researcher in this project, whilst also being a participant, educator, and learning designer, provided some challenges. There was consistently a fine line between offering enough support without my opinions heavily influencing the outcomes. To manage this, groups were encouraged to collaborate, discuss critically, reflect, and come up with their own integrated perspectives throughout this research.

Reflexivity was a vital component of this research and is concerned with the observations made by the participants and me informing the assumptions and interpretations made. It would be important to acknowledge my influence, as the researcher, on the research process and the existing research dynamics (Finlay & Gough, 2003; Guba & Lincoln, 2008; McNiff & Whitehead, 2010). I proposed to undertake double-loop reflexivity (Argyris & Schon, 1996). Single loop reflexivity

relates to reflections made after an action has been taken in response to an observed effect – reflection on action and a resulting change in action is undertaken. Double loop reflexivity occurs when I step outside this spiral to examine the research participants' and my reflections, interpretations, and assumptions (D. Allen, personal communication, February 12, 2011). As I took the research artefacts and interrogated them in the light of values below (e.g. Authenticity – what we are doing works in a real-life clinical context; it is not fabricated), I hoped to begin a process of discovery into online learning for the PD of nurses (Guba & Lincoln, 2008).

Traditional social, scientific research emphasises the neutrality of the researcher (McNiff & Whitehead, 2010) without the imposition of their values on the research. In contrast, action research emphasises the foundational aspects of establishing values that will guide the entire research project. This extends from the initial development of the research proposal, the literature reviewed, methods of data collection, analysis, and conclusions arrived at. In establishing values for this action research project, I reflected on my previous experiences of clinical practice and PD activities. These, in combination with principles of andragogy and an awareness of the participative nature and practical outcome orientation of action research methodology, informed the development of this project's values.

Examination of decisions made and discussion of issues and dilemmas arising during the research process would be judged against the values of this research project. These values are:

Authenticity: What we are doing works in a real-life clinical context; it is not fabricated.

Collaboration: When we work together, we can achieve more than on our own.

Trust: Maintaining trust will ensure that we can each feel safe during this project.

Respect: I will respect participant's individual autonomy and rights to be involved, or not, in this project.

Creativity: There are many as yet undiscovered ways to create PD activities; I am open to suggestions and trialling.

Experimentation: Willingness and encouragement to try new ways of doing PD.

The established principles underlying this research project are flexibility of learning, autonomy, connectivity, and practicality.

Flexibility of learning: This encompasses what, when, and where knowledge is learned and its availability at 'just-in-time' (JIT) moments.

Autonomy: The learner choosing where they go within the learning experience, having control over their learning journey.

Connectivity: Learning is seen as a life-long activity, connecting learning with professional and personal contexts, and connecting with other learning experiences over a lifetime.

Practicality: Relevance and applicability to real-life professional contexts.

I was aware that within this research there would be many layers of factors influencing various elements and outcomes of the project. During data analysis, I planned to peel back these strata and examine aspects emerging from the data.

Summary

This chapter has outlined the methodology upon which this action research project is based. It has clarified the ethics approval process and how ethical issues will be managed. Recruitment of participants and their demographics and selection criteria have been discussed along with data collection, focus groups, and data analysis procedures. Lastly, the overarching aspects of reflexivity and value statements have been enunciated. The following results chapter will present the analysis of data emerging from three iterative phases of an action research spiral.

Chapter Four: Results

It's interesting to see ... how nursing learning has changed so much.... My first interactive learning experience was in my third year. I did tech training and we had to learn as a group. And I found that quite scary. I'm thinking, 'Well they don't know anything either! And I don't know anything! How are we going to learn? We haven't got a teacher!' And I remember that first experience of like, 'This isn't going to work, they're mad!'

But actually ... we did learn it, and we learnt it really well because we had to go out and find out all the information ...and share it with the whole group ... it was just a whole new style. And I think online is another whole new style.
(Maggie, FG2003, p. 14)

Introduction

The results of the data analysis for this study will be presented in three iterative phases within this chapter. Each phase contains one or more focus group meeting cycles, the data from which will be described in the following format: a descriptive section related to the data collection process will lead into an analysis section presented around the emergent themes from each focus group which will then be followed by a comment on each cycle's iterative impact on the next cycle. An outline of this action research process, described in this chapter, follows on the next page. Completing an action research project situated in a specialist clinical context proved challenging given the timeframes of this master's thesis.

Research Phases

Setup Phase:

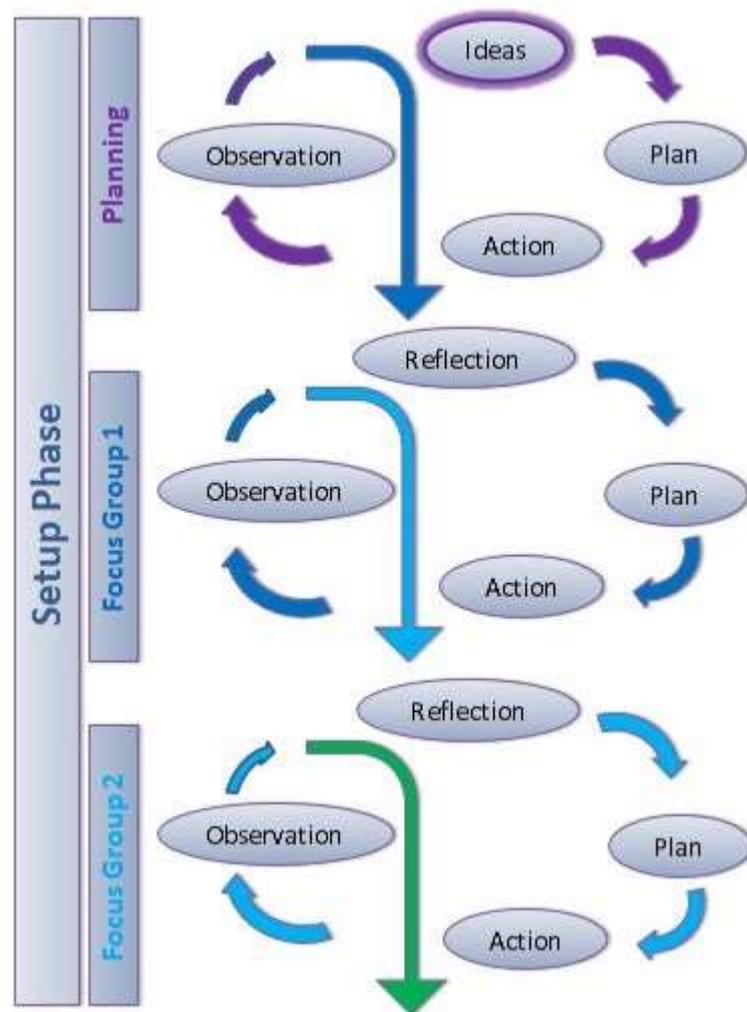
- Planning
- Focus group one
- Focus group two

Collaborative Phase: Focus group three
Focus group four
Focus group five

Closure Phase: Focus group six

The Setup Phase comprises the period of preparation for the focus group commencement and the first two focus group meetings (see Figure 2).

Figure 2: Setup Phase – Action Research Spirals

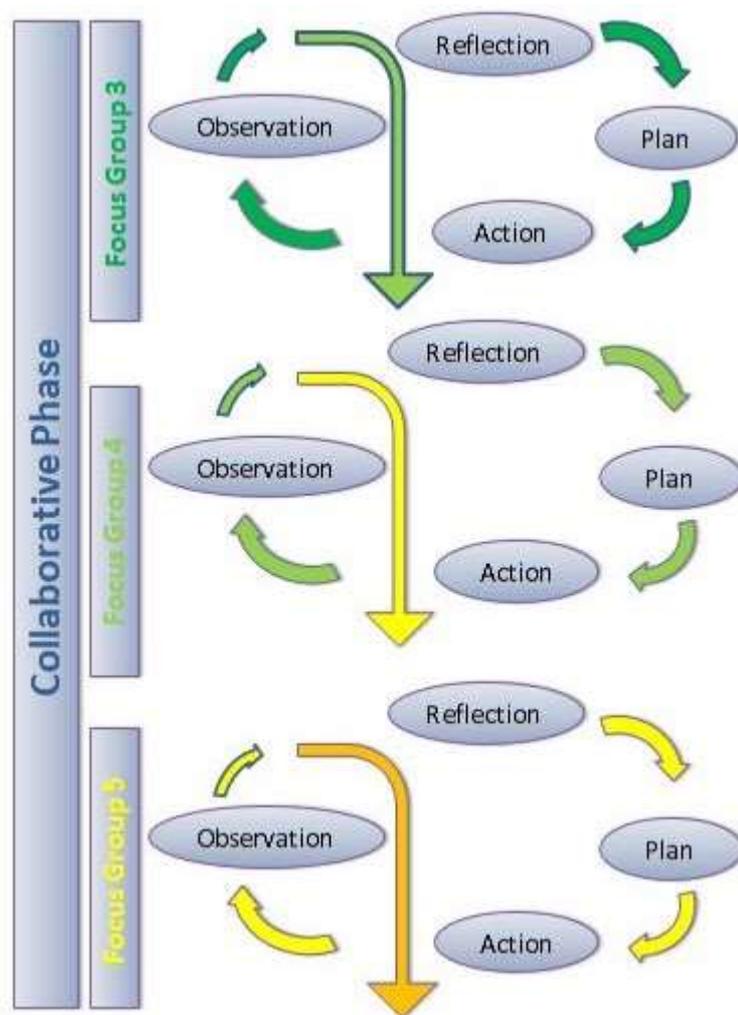


The preparation time enabled dissemination of information about the research to potential participants, department managers, and hospital managers. This period also

established operational and philosophical foundations for the remainder of the project.

The Collaborative Phase encompasses focus groups three to five during which time the research participants began to work collaboratively in small clinical specialty groups (see Figure 3). Using a wiki, emails, a discussion forum, and some face to face sessions, each group began to develop an online learning activity focused on an aspect relevant to their own clinical setting.

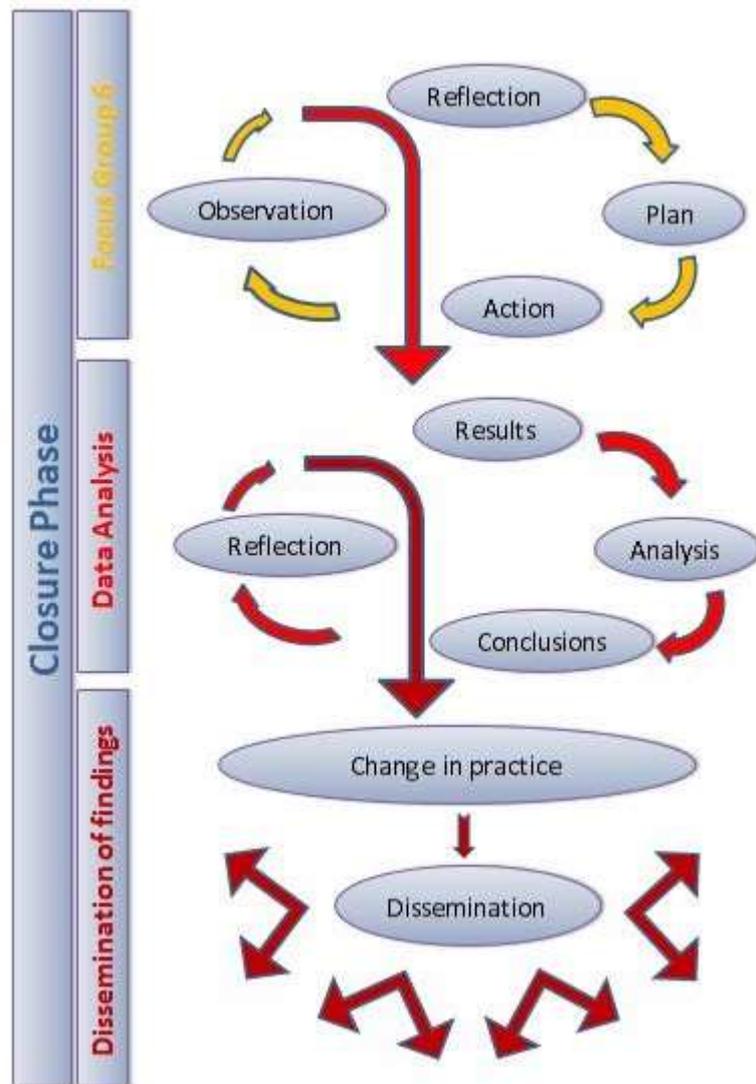
Figure 3: Collaborative Phase – Action Research Spirals



The Closure Phase of this project saw a final focus group with a subset of participants to review and reflect on the outcomes of the research and to consider implications for

future development of professional development online learning activities (see Figure 4).

Figure 4: Closure Phase - Action Research Spirals



In order to arrive at a contextual understanding of the data, thematic analysis will be used. An interpretation of this analysis will be conceptualised in the Discussion Chapter (p. 113). The entire action research spiral is shown in Appendix Q.

Increasingly computers are seen as a tool that can be an integral component of ongoing professional development. However, it is quite clear that there are aspects of

the online environment that make it challenging for some nurses. Notably, when using computers, there will be technical difficulties that present themselves without any apparent reason which can be extremely frustrating. Bella's sentiment, "I still don't trust them ... [I] don't trust me either!" (Bella, FG1007, p. 7) is salient.

Setup Phase

Focus Group One – The Online Learning Environment

I've got a little laptop, it sounds great doesn't it and its Wi-Fi and I haven't a clue how to make that work. It's got Skype and [I] haven't got a clue how to make that work! It sounded good when I was buying it but I'm not using any of it, haven't got a clue. (Bella, FG1007, p. 11)

This research project's aim was to explore what would enable multi-generational, digitally-differentiated registered nurses to flourish in an online environment for their professional development. The initial preparation part of this phase was informed by findings from the literature review. This was followed by discussions with colleagues about the potential benefits, perceived barriers and impediments, and generation of ideas on what online learning for professional development might look like for our organisation.

Data collection process.

It was important to remember that the involvement of each of the participants was in addition to their usual busy professional and personal lives. Because of this, I informed the research participants that they were not expected to undertake work related to this research outside of the focus groups. However, if they had time available and chose to, I welcomed this additional involvement. I did not want to make their engagement too onerous.

The participants either did not know each other at all or knew each other only as acquaintances. Two people worked within the same department but were not in daily contact. For this reason, it was important, initially, to include moments within the focus group sessions for participants to get to know each other and to gain confidence

in their involvement within the group. Two participants were unable to attend the first focus group meeting – one due to illness and the other due to workload constraints. Individual meetings were arranged with these last two participants and the format followed the semi-structured focus group outline used during the first focus group (see Appendix O).

During the initial focus group meeting, I clarified the purpose and goals of our research: to find out what professional development opportunities are relevant, to develop some guidelines on what would assist the participants' professional development in an online environment, and to develop some professional development activities to trial. A brief description of research aspects – action research, focus group method, and confidentiality – were given to help set this activity in the context of the overall research project.

Data analysis and emerging themes.

During the first focus group, the participants raised aspects that could be influential within online professional development: affinity and confidence. To begin with, we revisited the affinity with computers continuum that had formed a part of their initial questionnaire (see Appendix J). Participants were asked to discuss with another participant the motivations for their responses on the initial questionnaire and were encouraged then to share this with the group.

Affinity.

During the discussion on affinity with computers, it became apparent that many of the participants felt reasonably proficient commenting that, “for day to day things, I generally manage reasonably well” (Lockie, FG1007 p. 7). Although Lorraine did not feel very proficient with Excel spreadsheets, she said, “I can do Microsoft Word and some tables and stuff” (FG1007 p. 8). Some noted that they were not expert but were able to successfully complete everyday activities on the computer – emailing, entering text or data, and completing restocking spreadsheets. As Maxwell said, “I’m not a whizz with the computer, I can do quite a bit with it” (FG1008 p. 3). Participants were aware of the positive possibilities that computers, the internet, and technology presented whilst simultaneously noting the increased fear, frustration and difficulty

that could be associated with using computers. “My fear of computers is really quite huge and I’m always scared I’m going to do something and wipe what I’ve done” (Bella, FG1007, p. 6-7). For James, fear was also a salient factor. “It petrified you going into it ... wipe the whole lot off! You know, until you realise that it’s not going anywhere!” (FG1009, p. 5). These sentiments, and the associated anxiety, were an evident, underlying theme during the discussion.

Confidence.

A second aspect that emerged during this focus group was the varying levels of confidence and skills. Minimal knowledge and experience can result in misinterpretation. Maggie gave an example of a person who, when asked if Windows was open, literally went and opened the windows in her house (Maggie, FG1007, p. 13). Whilst the humour here was noted by the entire focus group, the very real frustrations that novices can feel were tangible.

Knowles et al.’s (2011) assertions, that adults are motivated to find solutions to real problems relevant to their context and have an identified need for understanding, were supported. This can be seen in Bella’s frustration with the online environment. “For me, it’s not understanding why it went wrong. What the hell did I do wrong ... you know ... that made that happen? Because if I could figure that out, I wouldn’t do it again!” (Bella, FG1007, p. 10).

The setup phase focused primarily on professional development currently offered, and what potentially could be offered. The data produced is consistent with the impediments raised in the literature and therefore we looked at eliminating common obstructions in order to give us freedom to discover possibilities and to reveal as yet undiscovered preclusions to online professional development. Emergent themes within this phase will now be explored.

Resources.

Within the data, the beginnings of the investigative process produced a mixture of possibilities and noted impediments. The group identified two main categories to consider in moving towards an online environment for professional development – access to resources and presentation of content.

Access to resources.

Participants agreed that access to computers was a particularly pertinent issue that was affected by a number of factors that included

- insufficient time available to access;
- minimal availability of a quiet space to complete an activity;
- the costs of computer hardware and software purchases;
- insufficient quantity of computers, workload requirements moderating access;
- the degree of ability to access from home or work;
- limited bandwidth impacting on the quality and speed of access to resources;
- availability of 24 hour helpdesk access; and
- the amount of preparatory training to navigate through the online resource.

James noted that sometimes it was just having someone available to talk you through, “then you might suddenly, as you’re going through it, think ‘Oh gosh yes’.... You just needed somebody to say, ‘Click on there, there and there’” (James, FG1009, p. 11).

Constraints.

For some, it was the quality of the time available to access the resources that was a constraining issue. If there was an expectation that the staff member could and would be called back at a minute’s notice, then this was not an ideal environment. James saw that there was the potential for available online time during a shift.

It’s a bit hard’ cos I mean, there may be half an hour that you’ve got between patients or your patient in theatre and coming back and you’ve just got onto your, whatever you’re looking up and doing whatever and then you’ve got to go fetch a patient from theatre. So you’ve got to log off, just what you manage to do, you’ve got, in between and you might be in the middle of a programme somewhere and have to give that up. (James, FG1009, p. 6)

To counteract this, some participants suggested that it was preferable to be allocated a set period of time to know that a resource could be accessed without interruption.

A variety of issues were raised in regard to workplace constraints and what is currently offered for professional development. Attendance at any professional development

session requires planning and coordination. However, Maggie noted that, even though it may be thoroughly planned and scheduled, the workload on the day may “turn to custard” thus preventing attendance (FG1007, p. 22). The scheduling might mean that the activity is offered infrequently and, if the timing does not suit the participant or the department, then there is no choice but to miss out on the opportunity. This was noted by a number of participants to be particularly hard for part-timers and night staff who, due to their unsociable hours and reduced work time and other commitments, may have even fewer opportunities to attend these infrequent sessions (FG1007, p.22).

During this research, aspects related to professional development generally were raised, notably in relation to scheduling and availability. Some participants highlighted personal constraints producing tension between expectations of professional development occurring within work time or within a person’s personal and family time. In addition there was an expressed hesitancy to ask for help from a helpdesk and then, after overcoming the embarrassment of not knowing, not being able to understand the jargon used by the helpdesk person. David recalled being asked who their internet provider was and, with acknowledged amusement from the focus group, admitted to having no idea what was being talked about (FG1007, p.20). The significance of a highly competent professional acknowledging a lack of competence was a significant feature throughout this research project. This and other common inhibitors are beginning to emerge and will be examined further in the Discussion Chapter (p. 113).

It became apparent that many participants could use computers for everyday activities like sending emails or searching on Google to find information but, when something did not work, they might be at a loss to know how to solve it or even how to access appropriate help.

There seemed to be a prominent fear of crashing the whole computer system coupled with, for some, a heightened awareness of gaps in their technological skills, “... I’m not very proficient ... I used to know but have forgot already” (Lorraine, FG1007, p. 8). Some participants articulated their fear of not saving their computer documents

correctly or loss of saved work through no fault of their own. Maxwell “was off sick for nine weeks, there was a computer change ... it had all gone ... so I’ve started it again!” (FG1008, p. 6). Trial and error now meant that James tended to copy a document and work on a duplicate one so as not to corrupt the main document. Many participants commented that they were very aware of the need to save their work regularly after having experienced the trauma of losing unsaved work.

Presentation of content.

The manner in which content is presented to learners will have direct influence on the learning experiences. Aspects that will affect this are how the content is structured and delivered, the nature of the feedback, and the learner’s preferred learning style.

A key principle of andragogy is that the learning has relevance to the learner’s context, taps into their curiosity about a topic and focuses on their need to understand. Tosca described an online learning course focusing on blood transfusions.

They went through everything you needed to know before you [administered] blood. Why ... what ... how to actually collect blood and prepare to give it to a patient.... They went through it all first and then you got yes/no answers, but if you got no, you could go back and look at what the right answer was... that was really good. (FG1007, p. 21)

This topic had authenticity to Tosca’s clinical context because it covered what she ‘needed’ to understand and dealt with aspects that she will face in reality (Atack, 2003).

In addition to this, how the content was provided was felt to have a number of influences on the learning experience. If a participant was unable to keep up with the pace of the learning, they would be less likely to stay engaged.

... an Excel training day, quite a few years ago. She kind of lost me about half-way through and then I got really angry and I cut off completely and I didn’t remember anything from the rest of the day ‘cos I was angry with myself that I couldn’t understand it but it was going too fast for me to be able to ask her. (Tosca, FG1007, p. 18)

During learning experiences, if the learner begins to feel lost and the pace does not slow to facilitate understanding, then Tosca's experience was that it led to switching off and was ultimately detrimental to learning.

An ideal structure for online learning was suggested by Lockie in the form of a block of content followed by a content question with the chosen response leading to a specific pathway,

... you did your learning by reading this piece and answering a question, yes or no or something. And on the basis of what you answered you were referred to a certain area, which might say, "Yes you're quite right because of something". Or, it might say, "No you were wrong, have a look up such and such place". (FG1007, p. 18)

A correct response would offer reinforcement pertaining to the correct response and lead to the next block of content; an incorrect response would offer feedback as to why it was incorrect and would take the participant back to the original content or some reinforcement of that content before posing the question again. Lockie felt that this type of pathway and feedback was especially helpful to a person working through an activity on their own as is usually the case in an online environment. This is in contrast to the current experience with paper-based, self-learning packages where, if a person chooses the wrong answer, they might need to wait an extended length of time before their answers are assessed and they find out if they were correct. Their wrong answer may have been cemented in their memory without any corrective information to alert them to the mistake.

With online activities, the feedback can be immediate and responsive to the participant's current level of knowledge. "If I ever did a computer programme, that's how I thought I would like to learn. So that my 'No, you were wrong' was immediately backed up with 'but this is where you went wrong'" (Lockie, FG1007 p.19). Lockie's suggestion is supported by Frand's (2000) view of the learner's needs being central to the content given.

The participants were beginning to reveal an awareness of some possibilities for our online professional development. Maggie had completed an online learning activity recently and valued the opportunity to read some content, be tested on it, and, then, if an answer was incorrect, to reread the content and have another try. It was not a negative experience of feeling like, “Oh, I’m terrible!” but more like “It’s okay to go back and do it again” (Maggie, FG1007 p.28). Similarly, using videos to demonstrate skills could provide the opportunity for a learner to stop and review any section as many times as they need in order to learn the process of the skill.

Another factor influencing these issues would be a participant’s learning style. James noted that he is a visual person who likes to understand something before moving on to the next segment whereas other participants may be “happy to go ahead and try, muddle their way through it, try this way and that way. And others are just [hands off gesture], no ... I need somebody” (FG1009, p. 8). These are just some of the many varying aspects that will influence a person’s ability to engage with the content.

Professional development – Issues.

An impediment unique to this particular clinical environment of online professional development is the necessity to keep critical lifesaving, life changing processes operational within the hospital. In other professions, staff members can be released to go for professional development and relieving staff can be hired to fill the space. In a clinical setting, where specialist skills are necessary, this may not be so easily accommodated. In an effort to solve this dilemma, the current practice of obligatory attendance at professional development activities during the weekend, in addition to working a full week, was noted to be an issue.

We’ve been having a couple of in-service study days on a Saturday and they have been well attended but I know that there are a core group of people that really resent having to come into work on a Saturday even though they’re being paid ... it’s Saturday that they resent because it’s eating into what is only a two-day weekend. (Tosca, FG1007 p.22-23)

This aspect was highlighted in research by Gould, Drey and Berridge (2007) which highlighted staff resentment at taking annual leave to maintain PD, particularly if the

main outcome was to improve service delivery. In addition to this, scheduling may not suit part-time or permanent night staff with additional competing demands on their time, "There's not a lot of choice, often it's that day or you've missed it for the year" (Bella, FG1007, p. 22). Commonly, PD activities may be offered on Saturdays to be less disruptive to the organisation's operation with scant regard for the disruption to staff members' personal time commitments. However, sometimes attendance was seen by the attendees as a means to an end so that recognition of hours for professional development recognition programme (PDRP) portfolios could be completed.

Other participants noted the disparity between different departments. There appeared to be preferential treatment for some staff in regards to gaining management support for attendance at various professional development sessions or conferences. In discussion, this was attributable to a number of factors. These related to the staff member frequently asking to go to events, or their personality meaning that they are not shy in asking, or they are "pushier", while other staff accommodate their absence at the expense of their own professional development.

You've got a team of people, there's always a couple putting up their hand to go to everything and it's a bit of resentment there that the others don't get to go ... they are more pushy ... the nice people that say "oh don't worry, I'll cover if you want to go" ... there needs to be more of a fair system. (Maggie, FG1007 p.23)

The difficulty management experience in making decisions on who can have access to PD activities was acknowledged and there was general consensus on the need for equitable access to these opportunities. However, equality of choice in what is offered may assume a 'one size fits all' approach when, in actuality, the content covered in an activity does not accommodate varying levels of knowledge or learning needs. In order to provide equity for learners, provision of choice within a learning activity could provide opportunity for equitable outcomes specific to each learner's individual requirements.

Solutions: Anytime, anyplace, any pace, any subject – (4 As).

After discussing the issues that currently existed with professional development activities and the potential issues with moving to an online environment, the participants were asked to consider possible solutions. Many of their responses were in line with the 4 As – “anytime, anyplace, any pace, any subject” (Stiles & Orsmond, 2002, p. 48). The benefit of not having to fit in with a restrictive time schedule and, instead, having a choice of when and where PD was accessed, was considered a distinct advantage. For mandatory activities, the provision of a time period within which to complete, whether it be a month or longer, would enable staff to manage their own time, work at their own pace, and not have to attend an activity in a specific place.

By having PD activities available online, participants felt that this offered equitable access to the resources. However, this could be affected by the availability of a computer and provision (or lack of) of available time and a dedicated, quiet space to complete any activity.

A solution for assisting a less-skilled computer user into the online environment was to take some activity that they knew and enjoyed already, an enjoyable known, and use the unknown computer environment as a medium to show them some new actions that they could do in that activity. For example, after reviewing the theoretical content relevant to setting up an instrument trolley for a surgical procedure, the next learning activity could include a ‘click and drag’ function in which the learner could place the various instruments on an onscreen ‘sterile trolley’ according to the content that they had just covered. In this way they are learning content related to an enjoyable activity but in a new format. Thereby, the format, online learning, becomes less obvious because the level of enjoyment in the activity is more prominent.

Impact on Next Iteration

The inclusion of an ‘ice breaker’ and the room set up with one central table appeared to assist participants in developing rapport with each other and to create an atmosphere that enabled open discussion of prior experiences including fears and anxieties pertaining to the online environment. One of the participants suggested

including multiple pathways in the learning activities for a learner to take dependent on their answers to questions. Within this focus group, there was an emphasis on appropriate and timely feedback for learners as they worked through a learning activity. There is an activity component, called a 'Lesson', available within our LMS, which facilitates this type of functionality so I kept this in mind as we progressed in our planning.

I was not able to cover all of the things that I had planned for the focus group meeting so I decided to address those aspects during the second focus group meeting. I was aware of the need to modify my expectations for the second meeting so that the scope of it was more realistic for the available time. In addition to this, it was important for the meeting to have the freedom to go in the direction that the participants' discussion took it.

Focus Group Two – Framing Up the Learning Activity

It said why you got it wrong. It said it nicely ... no, you've misunderstood a and b, and if you got it right, it said why you were right. I quite liked that... You are instantly getting the right answer; you're reinforcing the right answer. So you can guarantee, the next time you run through it, you don't make the same mistake again, and I quite like that sort of thing. (Bella, FG2003, p. 7-8)

Data collection process.

The second focus group occurred six weeks after the first meeting. It began similarly to the first in that there was an activity designed to 'break the ice', to help the participants to get to know each other better, to catalyse them to talk about an aspect that had been raised in the previous focus group, and to outline the topics of this second focus group meeting. Lockie and Bella noted that "we are not hopeless cases after all" (FG2003, p. 1), while Tosca was "looking forward to learning more about what was available... ideas around what we could do" (FG2003, p. 1 – *NB: as reported by her partner*).

Literature review findings.

During this session, the focus group considered the potential benefits of moving to an online environment and possible topics for some professional development activities. Once we had completed our discussion on the benefits of online learning, we focused on the findings from the literature review. These included aspects such as choice of where, when, and what was accessed, anytime-anywhere; identifiable issues online learners need to manage; access and effective use of technology; levels of anxiety; and degrees of autonomy with regard to content and pathways through such content. We also discussed the underlying philosophy of the learning experience which could be based on pedagogical or andragogical learning principles, traditional and current views of teachers and learners – “Sage on the stage” compared to “Guide on the side” (King, 1993, p. 30).

We discussed the importance of content, construction, and consolidation – the three Cs proposed by Bird (2007) and highlighted in Dumchin’s (2010) article. Our learning activities needed to ensure that we allowed time to cover the content in sequential steps, allowed the learner time to construct knowledge appropriate to their needs, and included opportunity for reflection and consolidation of the content that had been covered. Bird (2007) stressed the importance of dialogue and discussion throughout an online course and we needed to consider how we could include these elements.

In order to begin developing a learning module, there was discussion on ways of organising content for any proposed learning activity including subject, context (level and purpose), topic, prerequisite skills and knowledge, and learning approach. Using the whiteboard, we brainstormed these aspects using a sample topic of ‘Basic Computing’ (see Table 1).

Table 1: Organising content for a learning module – An example "Basic Computing"

<i>Headings given to the group</i>	<i>Details supplied by the focus group</i>
Curriculum area: Basic computing	
Subject / Discipline:	Aims to answer the following questions: – How do I access a learning module? How to find information on Google?

Context / Level of study: 1. Aimed at ... 2. Purpose	Our hospital staff, all areas. Introduce the online learning site. Be able to effectively use the site. Enable a participant to enrol in a course.
Topics / Domain:	Creating and deleting folders. Emailing and attachments. How to save, copy and paste.
Pre-requisite skills / knowledge:	Minimal keyboard skills. Turn computer on. Access the internet. Positive attitude.
Learning approach:	Teacher led or Learner controlled?

This was followed by the formation of three clinical specialty groups to discuss possible topics and content organisation of their chosen online learning activity using a planning template (see Appendix R) based on work by Granic et al. (2009) and Lehmann and Chamberlin (2009). Then I introduced the wiki as the main repository of information for each group's learning activity. A wiki is an online site where documents can be stored and edited by anyone with access to the document. It acts as a single place to store the document so that there are not multiple versions of it being emailed within a group. This focus group session ended with each clinical specialty group coming up with a list of suggested topics from which, later, they would choose one to proceed with (see Table 2). Govindasamy (2001) highlighted the importance of the online content being compatible with the participant's perceived need, skill level, and context. With this in mind the participants chose their respective potential topics.

Table 2: Possible online professional development topics

Ward Group	General patient conditions: hypertension, diabetes. MDROs – Methicillin Drug Resistant Organisms. Developing a teaching session: how to prepare, what to include. Guide for audits – how to, what to
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Operating Room Group	<p>Patient safety / Staff safety – positioning, needle stick injury, splashes.</p> <p>Scenarios – patient becoming septic, patient bleeding, pulmonary embolus.</p> <p>Plastic surgery update.</p> <p>Communication.</p> <p>Refresher for specific conditions e.g. Diabetes.</p> <p>Help to educate the patient.</p> <p>Anatomy and physiology of a specific condition and surgical solutions.</p> <p>Infection control – MRSA etc.</p> <p>Correct documentation in the OR.</p> <p>Refresher on basic principles of sterility in the OR.</p>
Post-Anaesthesia Care Unit Group	<p>Spinal anaesthetics – effects, issues.</p> <p>Guide on writing a document.</p> <p>Learn how to write a case study.</p> <p>Updates / Facts on most commonly used drugs.</p> <p>Guide to doing an audit.</p> <p>Mandatory topics – Fire, CPR, Health and Safety, Infection control.</p>

During the period after this focus group and before the third focus group, I prepared a template that split the topic into discrete sections called “chunks” (R. M. Smith, 2008). This would help the research participants to organise their topic, content, resources, and thoughts about this learning activity. I planned to use this resource during the third focus group meeting but one of the participants was particularly keen to move on with the planning so I emailed the resource to all groups ahead of time. I had hoped that this might help with each group’s planning. However, this served to highlight the need for a discussion about competency based outcomes, realistic time frames for online learning activities, and to clarify appropriate types of online resources.

Extenuating circumstances.

I had planned to show the participants a variety of online resources but, due to problems with broadband streaming at the venue, the sites loaded extremely slowly and were so fragmented in the viewing that it was not possible to proceed. Instead, I gave the participants the links to these sites. We discussed the template and I

encouraged them to start thinking about their topic and begin breaking the content down into specific areas that the template suggests. I also suggested that if they chose to, they could work together in the intervening time between now and the next focus group meeting, which was in two months' time, to flesh out some details about what might be in the various parts of their course. The hope was that, by December, we would come together and start to formulate some more details about the chosen topics.

Again, due to the streaming issues and lack of time, I was unable to show them how to use the wiki. This demonstration within the group situation was to have been a key part of my scaffolding to support their learning and it was disappointing not to have been able to show them at this time. What I planned to do instead, was to set up a wiki page for each of their topics and, next time, to go online and show them how the wiki worked and how they could edit and add content to it. Then, whatever information they had gathered over the next phase, whether it was resources, online articles, videos or photos or other artefacts, the participants could start to upload that onto the wiki site and start to flesh out their learning module.

In hindsight, it might have been better (and definitely more helpful) to have made the focus groups two hours long in order to complete all that I had wanted to cover. On the other hand, trying to ask for that much time out of the person's work schedule might have been too much for the managers to accommodate.

As the meeting facilitator, there was quite a lot to keep track of while the focus group was happening. Although I had prepared ahead of time the various topics and aspects that I thought would be worth pursuing during the focus group, managing the time, the flow, and responding appropriately to the participant's comments and involvement was a challenge at the time. These aspects will be developed further in the Discussion Chapter (p. 113).

Data analysis and emerging themes.

Within this second cycle of the setup phase, the results of focus group two will be examined under the three emerging themes of presentation of content, feeling safe, and learner characteristics.

Presentation of content.

Using the online environment for learning is not the total answer for all learning needs. It is a tool that can be used amongst many other ways of learning. Tosca noted that, if a person has learnt using one style of learning, “it can be quite scary to have to be learning where the onus is all put on you to almost teach yourself” (FG2003, p. 13). This mirrors Maggie’s quote used at the beginning of this chapter that it is a different style from what some nurses may be used to but that it can work very effectively. Acknowledgment of this paradigm shift will be important to assist online participants as they embark on this type of professional development learning activity.

There was a growing awareness of possibilities that mitigate the acknowledged impediments with online learning. A clear benefit was flexibility in learning that allows the learner to “take it as fast or as slow as it suits you” (Tosca, FG2003, p. 5) and “you could make a start and wouldn’t need to complete it all in one go” (David, FG2003, p. 5). The online medium can offer “degrees of hardness, start easy and get harder” (Bella, FG2003, p. 5), providing a variety of levels to suit the individual needs of learners.

David (FG2003, p. 10) noted that there is a wide variety of information available on the internet so much so that, if you do not understand the content in one site, you can go to others until you gain an understanding of the topic. This set of circumstances for one person can be engaging and expand their scope of knowledge whilst, for another learner, the sheer volume of choice might be overwhelming and, in fact, close down opportunities for learning because of the associated negative emotions.

The benefit of timely and specific feedback was also highlighted. Bella commented that “It said it nicely... ‘no, no you’ve misunderstood A and B’ and if you got it right, it said why you were right. I quite liked that... you are instantly... reinforcing the right answer” (FG2003, p. 7). Similarly, Lockie appreciated that “You’re getting feedback from what you’re doing... it’s an individual thing and it’s you against you” (FG2003, p. 6). The opportunity to collaborate online was another noted benefit. “It would also be nice to be linking with other people online,” said Tosca, “to ... see how they are getting on, get support, network” (FG2003, p. 6) and “you could bring a forum discussion sort

of thing into it as well” (Maggie, FG2003, p. 6). All of these aspects that the participants were suggesting are supported by Knowles’ (1990) assertion that scenarios, forum discussions, and problem-solving activities, all timed for when the adult is ready to learn, are of more benefit to adult learners than transmitting information in a didactic manner. Knowles said that “the richest resources for learning reside in the adult learners themselves” (p. 59).

Although there was a desire to cover some of the mandatory topics online, Annie (FG2003, p. 9) raised the important aspect of practical demonstrations and tactile learning being important and not possible within an online environment. This was especially so with manipulating equipment (e.g., handling fire extinguishers).

During this focus group, it was pointed out that some of our current professional development activities can tend to be condescending to experienced staff (Maggie, FG2003, p. 9). The facilitators often seem to have the traditional notion of the teacher being the one with the knowledge and the learners being empty vessels.

Feeling safe.

Maggie was realising that she had a greater understanding and ability with computers than she had previously thought (*NB: as reported by her partner*). It seemed to me that perhaps many of the participants have the impression that it is just the Information Technology (IT) experts that are ‘good’ at computers when, in fact, their contribution is at an entirely different level. While the IT professionals are writing the code behind software to enable it to work, the software is designed for a person with no knowledge of coding to be able to use the programme. In their own way, many of the participants are using computers and technology effectively for many everyday activities. Perhaps the ‘I’m no good with computers’ mindset belies the skills that many people are unaware that they have developed.

Learner characteristics.

There were factors that might impinge on some of the potential benefits, notably procrastination, lack of confidence, and avoidance behaviours towards the online content and environment. Tosca recounted a colleague saying, “if it was online, she wouldn’t be doing anything, ’cos she would just keep putting it off all the time ... she

would always find other things that were more important to do” (FG2003, p. 5-6). For Bella it was about “just not feeling confident about my ability, I would probably just keep delaying it in case it became too hard” (FG2003, p. 6). This avoidance relates to the potential for the experience to be too difficult and not necessarily because it has been tried and was actually found to be difficult. Fear of the unknown, paralysing the learner before an activity has even begun, is influenced by learning style, personality, and prior experiences with learning and the online environment. Recognition will need to be given to these aspects when considering what strategies, time frames, and scaffolding will support such learners.

Impact on Next Iteration

I found that the number of topics I wanted to cover in the focus group meeting was very optimistic. After my experience with the first meeting, in which I was able to cover about two thirds of what I had planned, I had pared back my expectations for this second meeting. I wanted to allow sufficient time to make sure that the content had been covered and allow the participants time to construct their knowledge, reflect, and have an opportunity to consolidate the content they had covered. Even then, it took, and required, a substantial amount of time to cover the planning of a learning activity basic outline. We covered aspects such as curriculum areas, the discipline and what the question was that we hoped to answer by the end of the course, whom it was aimed at, what the purpose was, what topics would be covered in the course, if there were any prerequisite skills or knowledge that a participant needed to have, and what the learning approach was that we were taking (as per Table 1, p. 66).

Collaborative Phase

“Let’s get this baby up and running” (Maxwell, C3DF008).

Introduction

The collaborative phase encompasses focus groups three to five which spanned December 2010 to April 2011. During this period, the participants were working collaboratively with their respective clinical specialty research partners developing the details for each of their online learning activities. I had hoped that, by the December meeting, the participants would start to put some of their content into their wiki. Then, perhaps, I would be able to flesh out some of their ideas and do some internet searches for appropriate resources so that, over the January/February period, I could begin to formulate their ideas into a course module including their proposals. I had expected that, by February, we would have something tangible to look at that our April focus group meeting could evaluate. My ultimate aim was that the participants would be able to connect their action research experience of using the online environment with findings from previous research so that, based on their experiences, we could investigate the potential for registered nurses’ involvement in online professional development activities.

Focus Group Three

The iterative collaboration phase encompassing focus groups three to five was focused primarily on developing clinical specialty-related online learning activities that addressed the variety of criteria identified in the setup phase. Using the online learning module planning template (see Appendix R), the focus group meetings were an opportunity for each of the clinical specialty groups to decide on their topic. The ward group chose the nursing management of post-operative bleeding, the PACU group chose to look at the effect of anaesthetic induction agents on post-anaesthesia recovery and the operating room group chose to focus on shoulder surgery. Each group clarified their learning outcomes and divided the content into discrete, manageable chunks that would allow a learner to choose aspects of the content appropriate to their learning needs. In addition, the learning activity needed flexibility

to allow a learner to 'come and go' from the online environment in short, ten to fifteen minute blocks of time dependent on their clinical workload.

Data collection process.

To assist the research participants to become a community of learners within the online environment for this project, I scaffolded the content (Bruner, 1996) that I hoped would support and develop their personal skills in working within this setting. I set up a course site within our LMS (MOODLE) that contained useful resources ranging from links to examples of online professional development, a video link outlining the purpose of a wiki, information about competency-based learning outcomes, to a section for each of the clinical groups, including a discussion forum for each specialty group (see Appendix S).

Prior to this third focus group meeting, I emailed an information letter to each of the participants (see Appendix T) outlining the purpose of the meeting and how to access the online learning site. I also included 'please don't hesitate to contact me if you need some help getting into our site' as a way of mitigating potential access issues and to encourage them to ask for help.

In the period preceding this focus group meeting taking place, five of the participants had logged onto the site and viewed resources. One notable aspect was that one of the participants had accessed the site overnight on the two days prior to the meeting. This highlights both the benefit of having material available 24 hours a day for night staff and choice for staff electing to access online resources at anytime.

Due to staff shortages and high workload, one of the participants was not able to join us for this session. She expressed a desire to meet with me and be involved separately in her own time. However, due to the busyness associated with Christmas and the three week closure of the hospitals over the New Year period, we were unable to arrange a suitable time to meet.

Contacting research participants within the online learning site could be made in a number of ways. There was a general discussion forum for the entire group as well as clinical specialty group discussion forums, and messages could be sent to and from any

participant. When any of these methods was used, an email alert to inform them of the content was automatically sent to the recipient's email address with a hyperlink to the message within the site. During early February, more of the participants were coming into the online site to look at their group's section to view the resources and add content into their wiki. In contrast to the suggestions made by participants in the first focus group regarding the benefit of discussion forums, participants did not use the forums to a great extent and, for some, intermittent access to the site was one element that continued to be evident during this phase. Data from this collaborative phase will continue to be examined using thematic analysis centred on the themes of access, content, professional development, and the concept of feeling safe within the online environment.

Refreshments were available at the beginning of this meeting so that the participants could mingle, relax after their travel and previous day's activities, and socialise together informally. I hoped that this might assist with developing cohesion that could transfer over into the online environment.

Extenuating circumstances.

In accordance with the action research process, we had been following a cyclical pathway of thinking through ideas, planning, taking action; and reflecting on the outcomes, journey and process. During this collaborative phase as we headed into this third focus group there were a number of aspects that influenced the research process during this iterative cycle.

Researcher lessons.

I had not planned to record the separate clinical group discussions during this third focus group, just the overall group discussion. However, once I was at the venue, I realised that when the group split up for the individual specialty group discussions it would be beneficial to have a recorder for each group discussion. I had access to just one Dictaphone and found another device so I was able to record two of the clinical group discussions. This meant that, unfortunately, I was not able to record the OR group's discussion. I decided that this was something that I needed to address before the next focus group meeting. I was subsequently able to source three mp3 recording

devices from a colleague and planned to use them during the remaining meetings to capture any other individual group discussions.

Online navigation.

As we attempted to get each of the participants logged onto the online learning site during this third focus group meeting, it became apparent that there was a learning opportunity in the future for staff in terms of reviewing how to navigate between a number of windows or tabs open on the computer at once. Likening it to the mechanics of how it works in a similar way to tabs in a cardboard file folder, enabled most participants to appear to understand this concept.

In the intervening time between focus groups three and four, I posted some information about how to access the wikis along with how to edit and save content. As mentioned earlier in this section, I realised in January that some participants were not receiving email notifications of forum postings. Sometimes this was due to the fact that they had not added their email address into their online profile while at other times it was because some participants rarely checked their email account. After this, I ensured that the address listed was active and correct. Some participants were not routinely checking their email accounts so I made a point of sending a text message alert to their mobile when I posted any key information onto the site to alert them to log on and read the forum discussion thread. In this way they could keep up to date with site developments.

Influences on involvement.

At the closure of this third focus group meeting there was general excitement and optimism for the next period of moving into the online site for learning activity development. However, over the following two weeks (early December 2010), there was minimal activity on the online site. There were three discussion forum postings from Maxwell during this cycle beginning with, "Let's get this Baby up and running. Hi girls, let me know your thoughts and we can see where we are going from here" (Maxwell, C3DF008, p. 1). Later Maxwell posted, "Can we get this thing up and running? Okay girls. It's action time. We need to progress like no tomorrow. Get in touch please" (Maxwell, C3DF010, p. 1). Neither of these postings received any

response from the other group participants. Whilst this was disappointing for both Maxwell and me, it is difficult to establish the main reason for this lack of response after such a promising conclusion at the third focus group. As it turned out, Bella had been having computer and access problems. Maggie was contending with colleagues who questioned the value of her involvement in an activity such as this that took her away from the patient even on occasions when the department had a light patient load. In addition to this, it was important to give cognisance to the reality of increased workload within the hospitals at this time of the year. Many patients schedule their surgery prior to Christmas so that they can recuperate over the New Year period. So as the year winds to a close, the pace and volume of the clinical workload rises. I needed to fit my requirements in with the participants to go with their agenda and capacity. The hospitals within our organisation close over the Christmas /New Year period so it was likely that participants would be inactive with the research project during this time. In response to these aspects, I sent out Christmas cards to each of the participants as a way of maintaining contact, acknowledging their contribution thus far, offering support, asking them to upload any found content by 28 January 2011, but primarily, thanking them for their involvement with this research project.

I was pleasantly surprised to find that there was activity on the online research group (OLRG) site during January. I emailed all of the participants, mid-January, to welcome them back from their New Year break and to give them some information about modifying the content of their wiki (C3ACTN003). Tosca, the participant who had been unable to attend the third focus group meeting was uploading a substantial amount of information to the group wiki. This raised a couple of issues. Firstly, while it was great to have a participant interacting with the site and although I had sent the information about modifying learning objectives to competency based learning outcomes to this participant individually, she had not been present during the focus group discussion. The content that Tosca had posted was in a traditional teaching outcomes focused framework so I needed to assist her and her group with developing an understanding around competency-based learning outcomes.

Secondly, there was the lack of response to Tosca's wiki content, as mentioned earlier, primarily due to reluctance to edit another person's work. Yet Tosca wanted this type

of feedback and support as evidenced in her plea, “I need some help from you both with this!!” (Tosca, C3DF004). This lack of interaction on the discussion forum was about to be replaced by considerable interaction and collaboration within each group’s wiki.

Data analysis and emerging themes.

Within this initial part of the collaborative phase the results will be examined under the three emerging themes of access to resources, presentation of content, and feeling safe, followed by a consideration of the results under the main theme of professional development.

Access to resources.

As there can be limited computer availability during work time, David (FG3005, p. 3) wanted to know “Can we access the internet site at home?” The answer was, ‘Yes’, access via any computer that can link up to the internet is a feature of the LMS. We reviewed how to access the online learning site and how to update our profiles, add a photo of ourselves, put in some social commentary about ourselves, and how to send internet messages to each other. I showed them how to access their wiki and reviewed the process of editing this.

Discussion forums.

As noted earlier, a discussion forum was set up to facilitate ongoing interactions between group members in the period between the focus group meetings. However, during this third focus group cycle, there was minimal activity on the discussion forums. Maxwell added postings before and straight after the third focus group meeting which were not responded to by his fellow group members (C3DF007, C3DF008). He also used a blog space which the other members of his group thought was a great idea. They decided to interact online after the third focus group meeting, “Yeah, we’re all going to try and talk to each other on it Have a go” (Maggie, FG3005, p. 25). However, it was not until just prior to the fourth focus group meeting that they used the blog space to send a message. An issue with using the blog function is that access to it can be quite cumbersome. A blog is essentially a space to write down one’s thoughts and others can choose to come in and follow the train of thought

and interact with it. However, the discussion forum puts these conversations into one central place and makes it easier for a group of people quickly to see all the group members' postings in a single location and in a sequential order and, if they prefer, to receive email alerts for new postings.

As soon as I received an email alert to make me aware of someone posting a new message into a discussion forum, I came into the course site and replied to their message so that they did not feel like they were talking into a void (Mayne & Wu, 2011). This was an attempt to create a conversation and to minimise potential feelings of isolation and is supported by Mayne and Wu (2011). Unfortunately, the other specialty group participants did not respond similarly to their fellow participants' postings.

In an effort to assist the research participants to access and add content to their wiki, I posted a message in the discussion forum. This included a reminder of how to access the online learning site, a suggestion of collaboration occurring without having to meet up and encouraging them to,

... please go in and have a look and have a try at adding your ideas. If I haven't explained it clearly enough, please give me a call [mobile given]. I'm really happy to talk over anything... Remember, you don't necessarily need to meet up with each other to add content. Just go into the wiki, type in your ideas and your name, and then it will all start from there.

Lack of collaborative response.

To begin with, when I saw that there were no responses, I wondered if the participants were not getting the email alerts to inform them of a new discussion forum posting. I went into the LMS to check if the participants had added their correct email accounts to their user profile as we had discussed during the third focus group meeting. Most had. However, as many participants had uploaded their work email account, unless they were at work and clearing their email account regularly, they would not see the email alert that came when a message was posted to the forum. Some staff did not routinely use the computer at work during their clinical hours and would not even be aware of these requests for help. For the person requesting assistance, however, these

non-responsive reactions to requests for help can exacerbate an already isolating experience. This is discussed further at the end of this collaborative phase.

Presentation of content.

Between the end of the second focus group and this third focus group, the PACU group emailed me their proposed topic and learning outcomes along with a PowerPoint presentation outlining their proposed learning activity. It was wonderful to see their enthusiasm and planning following the previous focus group meeting. This gave us a great place to start and there were some pertinent aspects that we could discuss. It highlighted the need for a discussion about competency-based learning outcomes and realistic time frames for online learning activities, and for clarification of appropriate types of online resources that learners could access. It was important, at the outset, to establish at whom the activity was aimed and at what level of competency. Remaining mindful of the minimal amounts of time available for clinical staff, it was essential to plan the activity in easily achievable time blocks. In addition to this, it was vital to stand back and look objectively at the activity overall to decide if what was expected to be included and completed was realistic given the workplace, individual, and technology constraints that may exist.

Manageable chunks.

Using the planning template (see Appendix R), I asked participants to divide their content up into discrete blocks that the learners could access in 10-15 minute periods of time. Deciding on what amount of content could be covered within this timeframe required a shift in mindset. The PACU group were originally thinking of their topic as a large learning activity as expressed in “We’ve already got two topics right there haven’t we?” (Maggie, FG3005, p. 4). “They’re both very big topics” (Bella, FG3005, p. 4), and “Maxwell was thinking about eight hours to learn” (Maggie, FG3005, p. 4). Subsequently, the PACU group decided to focus on one smaller aspect – anaesthetic induction agents (substances that will induce unconsciousness prior to an anaesthetic) and their effect on a patient’s postoperative recovery.

The ward group began discussing their initial topic of hypertension (high blood pressure) and its effect on surgery before moving towards a topic that they felt would

be of use to many colleagues in a wide variety of settings – post-operative bleeding. They began then to highlight 15 minute chunks of particular aspects related to this topic and what they wanted their learner to be able to do as seen in the comments, “Identify what’s going on” (Lockie, FG3005, p. 32), and “Do something about it” (James, FG3005, p. 32). Lockie suggested also including some pre-learning information, “anatomy and physiology” (FG3005, p. 32). Then David suggested the inclusion of varying types of surgery (FG3005, p. 33) and their respective effects on expected post-operative blood loss. This led onto a discussion of a Modified Early Warning Score (MEWS) algorithm that could be included as an adjunct resource to guide nurses in recognising a patient’s deteriorating condition.

We could put the MEWS into a set, if we thought that was helpful, so that they have a parameter to work on. That would be your [guide] ... If you get to that then you’d start doing MEWS very carefully. (Lockie, FG3005, p. 33)

The OR group had one member missing and, after reviewing their list of suggested topics, they decided on the topic of ‘anatomy and physiology of a specific condition and surgical solutions’ in relation to shoulder surgery. They began to identify resources already available to them and potential resources to include such as videos of the procedure and the operative instruments required.

Competency-based learning outcomes (Paradigm shift).

The specialty groups had included a number of learning outcomes that reflected traditional learning outcome phrasing and focused on what the teacher would be covering and what the student would learn about.

The nurse will be able to articulate his/her knowledge of the anatomy of the shoulder. (OR Wiki)

The student will be able to identify anaesthetic gases used and list their effects. Increase and retain knowledge of anaesthetic drugs used. (PACU Wiki)

During this third focus group meeting, we discussed changing these learning outcomes from traditional learning objective phrases, which typically focus on the information that the teacher would pass on to the students, to competency-based learning

outcomes which focus on behaviours that the learners would demonstrate in clinical practice to show their understanding. These outcomes confirm the veracity and transferability of the learning experience and lead to the demonstration of critical thinking skills (Lenburg, 1999). A key part of competency-based learning outcomes is deciding 'what' behaviour at the end of an activity a learner will actually demonstrate in their practice to show assimilation and application of the knowledge they have learnt. Then, the facilitator/learning designer works backwards from this endpoint to consider the elements that will contribute to a learner's journey to gain competence. The use of action verbs within these outcomes, such as integrate, implement, differentiate and apply, helps to focus on a learner's action. Bella perceived this as "just changing the wording" (Bella, FG3005, p. 7), however, the philosophical underpinnings of these types of learning outcomes are much more than mere semantic changes (Lenburg, 1999).

Maggie said that the desired outcome was to have a learner use the knowledge especially "if things aren't going to plan, you can work out why" (FG3005, p. 8). Bella agreed that, "you instinctively work it out because you've got that knowledge running through your head all the time" (FG3005, p. 8). In essence, they were beginning to realise that it was not just knowledge acquisition, it was the learner integrating new knowledge into their practice and then being able to apply it dependent on situational factors that they might encounter.

Implementing this concept into each of the learning activities proved quite time consuming as most participants were conversant with traditionally phrased learning objectives and struggled to clarify elements of competency-based learning outcomes. On realising this issue, I sent a post to each group's discussion forum outlining key elements to consider when forming these learning objectives. In hindsight, additional time prior to developing these learning outcomes would have been beneficial. This would have enabled the research participants to be fully conversant with the concept of competency-based learning outcomes prior to developing some specifically for their content area. As essential as this was to the development of the learning activities, this aspect proved to be a roadblock in the process and slowed down progress towards fashioning the actual online learning activities. The impact of introducing this concept

in this action research project will be examined more fully in the Discussion Chapter (p. 113).

Feeling safe.

During this cycle, as the participants started to put content into the wikis, I had a conversation with one of the participants who mentioned their reluctance to amend what another participant had put into the wiki. This person felt that the content that had been submitted had taken time to develop and it would be 'rude' to alter it (Annie, personal conversation, 27 January 2011). This aspect is discussed from the other participant's perspective at the end of this collaborative phase during the fifth focus group.

Consideration versus collaboration.

I discussed this reluctance to edit with the participant from the perspective of collaborations within a group of people enabling development and refining of ideas. In response to this situation, I wondered if other participants felt similarly. I sent a discussion forum message out to each of the participant groups in an effort to help them feel more comfortable about commenting on group members' work (see Appendix U). In it, I suggested that we could use each group's discussion forum as a way of encouraging what had been contributed and suggesting changes to be made. I also recommended that the group members take separate, 10-15 minute chunks of the topic to focus on in accordance with what I had proposed earlier about breaking up the topic and bring their findings to the fourth focus group meeting. I encouraged the participants to be in contact with their fellow group members using the discussion forums that I had set up for each group, however this was used sporadically within minimal ongoing discussion of any posting.

Increased anxiety.

During a conversation with Bella, it became apparent that the email alerts which were intended as a signal to participants to log on and go into the online site to look at whatever message had been added, instead of helping, had in fact led to increased worry and anxiety. For Bella these alerts had reinforced negative emotions regarding lack of interaction with the online site, the group participants, and the content. As a

consequence of her computer freezing, difficulty accessing the online site, or something going wrong, Bella expressed total frustration with adding information to the wiki, heightened anxiety, and decreased self-confidence (personal communication, 9 March, 2011). The paradox here is that Bella is able to expertly manage the clinical care of an unconscious patient with multiple complex needs but feels unable to get a computer to perform as she wants it to. I had been trying to include elements of Lockie's idea of the enjoyable known creating a pathway to the unknown. I had thought that working on a topic that was familiar to their work context might help participants to feel more comfortable in this 'new' online environment. However, for a competent adult, the problems encountered here can be, and were, an extremely difficult dissonance for participants to accommodate in order to work together collaboratively within the online environment. I managed this by meeting individually with those participants who expressed difficulties. During these meetings, I clarified what their key issues were and offered assistance specific to their situation.

Professional development.

For this third focus group meeting, I had taken along three computers so that each group would be able to have one connected to the internet to access the wiki and begin to collaborate in entering their learning activity planning. Interestingly, three participants had also brought along their own computers for this session. I had an extra associate with me to troubleshoot any technical issues that arose. David had brought an iPad and we found that, initially, he was unable to edit the wiki which was using an HTML platform. Fortunately, the IT specialist showed him how to work around this issue to enable editing. This raised the aspect of creating flexibility for the learner's use of multiple devices to access the online learning platform.

During one of the clinical group discussions, the conversation moved on to a document management system that the hospital network uses, Knowledge Base (KB). One of the participants was very familiar with it, how to access and use it, and introduced other participants to some of the resources found within it.

It's all about policies. If you know the keywords or know the document number eg. KB1045. But if you scroll down to the end of the page it's got Mimms online,

it's got, some other research bits. There are about four places that you can go to just by clicking on them. I mean Mimms online will come up and all you've got to do is put in 'Anaesthetic Gases' and it should come up with all sorts of information. (Maxwell, FG3005, p. 11)

The resources mentioned include MIMS – a medicines information database, EBSCO research database and other hyperlinked resources. The other members of this group were less familiar with these online resources and, thus, exposure to the resources available, and how to access them, would be of benefit to the group members as they developed their own online learning activity. There was discussion on resources that colleagues had uploaded into this database (KB) that may be useful to include in the learning activity. It was encouraging to see this discussion impacting the participants' own professional development as they learned about these resources currently available to them.

Impact on Next Iteration

There was one participant who was unable to join in this third focus group meeting. This was the reality of an action research project situated in a functioning, professional context and needing to be responsive to the demands of participants' changing clinical environments. As I proceeded, I needed to consider ways of supporting continued engagement around such workload requirements.

The participants appeared to struggle with understanding the revised focus on competency-based learning outcomes. As they left this third focus group, I was not convinced that many of them had shifted their thinking from traditional teacher-focused learning outcomes.

I was hopeful that in the two months between this meeting in December and our next focus group meeting, the participants would enter any content or resources they had found into their wiki so that I would be able to use the information they had added to begin to craft the learning modules. By February I hoped to have some learning activities that they could try out.

Focus Group Four

I think that you need to remove yourself from the work environment into a separate room or office to get any kind of focus happening, because you are constantly distracted otherwise. (Maggie, C4FG006, p. 4)

As we approached the fourth focus group meeting, each of the clinical groups had begun to populate their wiki with suggestions for topics, competency based learning outcomes, chunks of content, and possible assessments. I planned to get each group to develop an action plan for formulating their learning activity chunks outlining what would be developed by whom and by when in each of the chunks.

Data collection process.

As a warm up exercise for this meeting, I put up on the whiteboard the issues and barriers that the participants had identified at the first focus group meeting. I asked them to consider these in light of their experience so far with using the online environment for this research project. See table 3 for a summary of which aspects were salient for the six participants.

Table 3: Issues experienced as barriers to online learning

Issue / barrier to online learning	Number of participants identifying with this issue
Lack of confidence	5
Frustration at not being able to make it do what I want	4
Technical knowledge	3
Access to computers (work and home)	2
Fear	1
Keyboard skills	1

Bella's experience was that,

The frustration for me is the frustration at not being able to do something actually leads on to a huge amount of guilt and I feel incredibly guilty that I haven't participated in the way I thought I was going to participate. I thought I'd have a lot more involvement. (FG4006, p. 2)

This response created the potential for Bella to withdraw further which compounded her feelings and frustration. It was a testament to her determination that she continued with the research.

During this fourth focus group meeting, we moved on to discuss wikis and their function, highlighting the ability for many people to edit content held in a central place, the online site. This allows for collaboration and discussion about the content so long as the participants are willing to engage in this type of process. In this regard, I encouraged the research participants to go online and attempt to send a forum posting to their fellow group members.

I took along sufficient internet capable computers to enable each specialty group to connect to the online learning site to collaboratively access their wikis. We reviewed the wording of the learning outcomes so that they focused on the endpoint of competence for a learner using the knowledge they had learnt. Then each of the groups logged into the learning site and opened up their wiki to look at, and edit, their learning outcomes. Each group worked on their wiki site making changes by phrasing their learning outcomes into competency based items and clarifying the key aspects their learning module would cover.

The next aspect to look at was the details in each of the chunks including topic, learning activity, identifying which learning outcomes the activity related to, identifying the tools and resources to be used, clarifying what assessment strategy would be used (including how feedback would be given), and what length of time would be allocated to the activity.

Data analysis and emerging themes.

Within this collaborative phase the results of focus group four will be examined under the three emerging themes of access to resources, presentation of content, and feeling safe.

Access to resources.

Maggie:

I think for me access to computers has been quite difficult because at home, every time I turn around to think I'll do something there is someone else on it. And at work, it's either too busy, or if we have any down time, there's just other distractions and people don't, other people I'm working with just don't get it. They just think, 'What are you doing?' 'Oh, come and do this instead' you know? When you're using a computer at work, people think you're wasting time. And you kind of have this guilt thing about 'I should be doing something else, like restocking'. (FG4006, p. 3)

Maggie's solution to this was that it was important to remove herself from the work environment, "because you are constantly distracted otherwise" (FG4006, p. 4). However, lack of support from colleagues and erratic access to the computer continued to be issues for her for the remainder of this project.

Due to busyness at home, David had not accessed the online learning site since December and had forgotten his password. He also suggested I contact him via his personal email address as that was the most frequently accessed account (C4EML003). Providing sufficient and repeated support for basic but vital aspects such as logins, passwords and correct email addresses, is essential for any online learning experience to be beneficial. David's lack of interaction with the site meant that he had not received any notification or seen discussion forum postings by his group partners.

Presentation of content.

Manageable chunks.

The underlying premise of each of the clinical specialty groups developing their topic content was that they have a rich resource of content in their prior experiences and knowledge. Each group was considering what resources they would direct learners to, or would include in their chunk, and also what assessments they might use. There were suggestions of multiple choice questions, scenarios, puzzles and crosswords, drag and drop activities, and offline activities such as observation assessments. Then we

went through the wiki pages discussing the type of information that they would need to decide on in relation to each content chunk. Each group was beginning to put in ideas for the various segments within their chunks. However, they were thin on the details for these. For example, Maxwell devised a number of questions relevant to the induction agent Propofol but did not also provide the correct answers. As this group had chosen to have multiple choice questions, they also needed to provide distractor responses to each of their questions. I asked them to consider some appropriate distractor responses which are answers that are almost correct or completely wrong but are given alongside the correct response within a multiple choice question. These types of responses take time to develop and I think that they were unaware of the need for, and the size of, this aspect of multiple choice questions. Within the wikis we began to have the skeleton of the activities ready to be fleshed out during the remainder of the collaborative phase.

I used the whiteboard to show a potential framework for a learning activity as a way of pictorially showing the pathways that they would need to provide through the learning content which they would later populate with their group's content details using a flowchart (see Appendix X).

Paradigm shift learning outcomes.

With competency based learning outcomes, the focus is on the action that the learner will exhibit as a result of the learning activity. A paradigm shift in the research participant's view of learning objectives required a transition from traditional learning outcomes to the competencies the learner would demonstrate at the end of the learning activity. It was important to keep reminding the research participants to go back constantly to what they had stated for these outcomes so that they could situate any activity within a chunk in relation to the competency outcome their learner was working towards. In this way, we could deliberately plan the flow of activities whilst keeping the endpoint clearly in focus. The groups were able to formulate learning outcomes, such as these below, that were based on competence that were quite different to their initial learning outcomes (p. 81).

Integrate knowledge of shoulder anatomy and the planned surgical procedure so that patient safety is maintained (OR Group, see Appendix S).

Apply knowledge of the anaesthetic induction agents commonly used in the recovery room into their practice when recovering an unconscious patient (PACU Group, see Appendix S).

These statements clarify what the endpoint of the learning activity will be, are consistent with current nursing practice, and highlight the implementation of critical thinking during patient care (Lenburg, 1999).

Feeling safe.

Tosca put substantial amounts of information onto the wiki, possibly because she had been unable to attend the previous meeting and wanted to keep up with the other group members. However, she was disappointed that she "... actually put something on there and ... didn't get any replies!" (FG4006, p. 5). I am aware, through conversations with another group member, that they felt Tosca had uploaded comprehensive information and there was nothing extra to add to it. However, by not leaving a message to this effect on the discussion forum, Tosca was left wondering what to make of the silence and felt frustrated. The online environment can be seen in different situations to either facilitate communication between people who would otherwise be unable to meet in person, or to stifle communication. The lack of feedback here could have been interpreted as baffling, 'don't care', or rejective, leaving Tosca unable to interpret the silence and unsure if the uploaded wiki content was useful or not.

Two participants noted that their other group partner was further advanced in computer technology knowledge and they did not know what he was talking about. "He wants to do a blog with us on Sunday and we're both going, 'what does that mean?'" (FG4006, p. 5). This situation had the potential for either the more familiar person to assist their colleagues' development or for the less familiar participants' anxiety to be seen as they drew back from involvement to avoid embarrassment or their lack of knowledge being exposed. Nurses are very familiar with the precepting environment in which a more experienced nurse mentors and coaches a novice nurse.

Perhaps the key difference in this research situation is that the less experienced person is not a novice nurse but is, in fact, a highly competent expert nurse who for some reason feels unable to access online help from the more computer-experienced person. This situation seemed to heighten the participants' anxiety as they appeared to be intimidated by the circumstances. However, for this particular specialty group, they did use the blog function to discuss progress between focus groups four and five. So while there was voiced reluctance (Bella, personal conversation, 9 March 2011; Maggie, personal conversation, 22 March 2011) to engage with the online environment in some aspects, they were able to manage this facet.

When the groups were in the focus group meeting and were editing their content, the conversations showed that this type of coaching was occurring:

Lorraine : But you can change it

Tosca : How do I change it? Can I just drag it?

Lorraine : You put your cursor here

Tosca : Let me try

Lorraine : We can ...

Tosca : Oh ... too far! We also need to swap those two over as well, because we want to learn about surgical options before we learn about scrubbing skills (FG007, p.5).

The anxiety with opening up a page was overcome by a friend commenting and encouraging. Perhaps it 'feels' safer when there is a companion alongside.

To begin with, navigating around a site can be confusing. I showed the group how to go into the wiki to add some content using the edit function. This action involved opening up a larger window temporarily to add content and then minimising it before saving it. The following conversation ensued:

Maggie : Oh, here's the arrow I must have been... I couldn't find the save yesterday, But I hadn't, when I went up but I must have been in

the wrong screen. I wasn't in that screen yet. I hadn't arrowed up, it must have been down below,

Jenny : The save is ... actually isn't part of the screen it's down below it.

Maggie : Yeah, I know that now!

Professional development.

A key part of adding content to wikis is that the user must click on the EDIT tab, add in their content and then click on the SAVE tab. James (FG4006, p. 1) noted that, after entering content, he omitted to click on SAVE, lost everything and did not have time to re-enter all of the information. He noted that it was a process different to what he was familiar with and required conscious remembering.

James mentioned, also, the ability to review content that a learner was still unfamiliar with and wondered if, after a learner got a quiz question wrong, they could "go back from the quiz to number 2 and then refer on ... read something extra, because that obviously wasn't enough information" (James, FG4006, p. 18). Lorraine saw these flexible opportunities as a way to direct people to further resources "if you want to give recommendations onto like which website you can go or further information you know if there is not enough on the other pages" (FG4006, p. 18). The research participants were beginning to include some of the rich variety of content and resources that can be accessed via a learning activity.

Impact on Next Iteration

At the end of this fourth focus group, each of the clinical groups developed an action plan timeframe outlining who would focus on particular parts of the topic over the next few weeks. In this way, I hoped to be able to have some information from each of the groups so that I could develop it into a variety of learning activities using the 'Lesson Activity' function that was part of the LMS that we were using. I planned to have each group trial and evaluate their activities at the fifth focus group meeting.

As there was one participant absent from each of the clinical groups during this fourth focus group meeting, I sent out a discussion forum post, following the meeting,

summarising what we had covered and where we were aiming to go during this fourth cycle (Cycle4DF008). I hoped that this information would enable all research participants to keep pace with each other and know clearly where we were in our research journey and where we were headed. I included in this post a flowchart tool with details of how to use it to plan the flow of their learning activity (see Appendix V). This flowchart would allow research participants to plan out their learning activity, giving a visual overview of how each of the content elements worked together and the flow between them.

Throughout this cycle the research participants needed to engage with the online environment to a greater degree than had been evident previously. Using appropriate humour, encouragement, and regular contact within the online environment is vital to enhance such collaboration and learning (Macdonald, 2006). Within the online environment,

it is the relationships and interactions among people through which knowledge is primarily generated. The learning community takes on new proportions in this environment and consequently must be nurtured and developed so as to be an effective vehicle for education. (Palloff & Pratt, 2007, p. 15)

When I responded to the whole research group within the general discussion forum, I purposefully acknowledged one of the groups that was making great progress, I offered assistance to any other participants needing help, I suggested more experienced participants offer to help less experienced participants, and I used humorous images and encouragement to help maintain a positive online environment. It was pleasing to see that, as the learning activities began to take shape within the LMS, the participants were beginning to get more excited about the project and their created learning activities.

“If I wasn’t doing it, I’d want to!” (Maxwell, personal conversation, 19 March, 2011)

Focus Group Five

The fifth focus group meeting was an occasion to showcase to the participants the fruit of their intense labour. This meeting provided the opportunity to view the professional development activities that the participants had created, to discuss how the whole process had been overall, and to celebrate collectively our achievements thus far. At this stage in the research process, two participants had needed to withdraw for personal reasons but I was able to meet individually with one of these people. The remaining seven participants met for this fifth focus group meeting.

Data collection process.

From an overall perspective, the research project thus far had three distinct strata for the participants. Firstly there was their personal experience of the online environment for learning. A second stratum was their own professional development both in relation to new skills learned and knowledge enhancement around their chosen topic. Lastly, there was an awareness of the professional development of their colleagues as future users of these created online learning activities. During this fifth focus group meeting we touched on each of these layers through the discussion.

We began by reviewing each group's learning outcomes and then viewed aspects of each learning activity that had been created around their clinical specialty group's topic (see Appendices W, X and Y). Within these activities we had created pathways that the learner could take depending on their current level of knowledge. Some of these paths took them back to review what had just been covered, some to more in depth content, some to questions on the content, whilst others took them to websites with animations and further information if they chose to follow that route. In this way, we were creating resources with andragogical learning principles embedded in the way in which the activity functioned (Knowles, et al., 2011).

Data analysis and emerging themes.

At this stage of the creative process, I did not have a lot of detailed content from the wikis to add to the learning activities. The participants had many headings and short notes in the wikis about what might be included but scant details. As the research group members were the subject matter experts (SME) for their topics, it was

important that they provided fuller details for each of these headings. Nevertheless, I set about developing the activity pages in line with the learning activity flowcharts and noting where additional information from the participants was required. As the participants saw the result of their involvement thus far, in essence 'coming to life' in these activities, I hoped that their interaction with the learning activity might spur them on in the direction of supplying me with the additional content details required to complete these professional development activities.

Access to resources.

Two main aspects that emerged in relation to accessing resources were support in accessing resources and the influence of collaboration on one's ability to interact with the resources. During this fifth focus group meeting, the aspect of how often participants had logged into the online site was discussed. Lockie felt that "If there was someone within each group who was a little more computer literate than perhaps the other people I think that that might be a help too" (FG5006, p. 20). This was an interesting comment because in each of the groups there was a person who had self-identified that they had a high affinity with using computers. James, who in the initial questionnaire was one of the highest users of the computer per week, seemed to sum it up in his comment:

And I thought that I was pretty cool on the computer, but I feel quite stupid. And it's just because I'm not familiar with the programme or the particular software. And there are a lot of people out there that have a lesser degree on computers than me. And a lot more that are. But you've got to have something that everybody can benefit to use.

The next person that comes along and can't get into it, they're going to say, 'flag that'. [And then there's] somebody like Maxwell, who gets in there and spends hours on it. (FG5006, p. 15)

When I examined the number of times participants had been into the site, Maxwell was five times more frequent than any other participant during this phase. As a result it is likely that he would have had greater comfort in navigating his way around the site which would become more familiar each time he interacted with it. In comparison,

Bella's interaction with the online site was one fifth of Maxwell's frequency which she attributed to her preference for learning in collaboration stating that, "I'm just the sort of person that needs somebody to help me with my computer skills. I've got the knowledge, I've got the want, I just can't get it all together" (FG5006, P. 20).

Annie agreed with the benefit of collaboration when meeting together:

It's actually meeting, just like you said, and I really would have loved it if we could have sat down at a computer together and all the ideas we had, just get them on there and do it, (*agreement from other participants*) rather than think, 'Okay we'll do it when we get home.' (FG5006, p. 21)

This sentiment was also noted by Tosca:

None of us had really ever met and I didn't know Lorraine or Annie so we didn't ever really have long enough to, we didn't ever become a team. It was impossible, so that did make it a bit harder. (FG5011, p. 6)

Completing any of her wiki involvement at work was impractical for Lorraine:

It's difficult to get out of the theatre ... you couldn't do it at work because well theatre is always busy. For one thing, theatre, one - there is no time to go to the computer and [two] we have that one computer at the end of the corridor but most of the time it's full. (FG5006, p. 21)

Lockie and Tosca noted that it would have been beneficial to have had a short tutorial on using the wiki (FG5006, p. 23). Although I had given an overview of how to use it during the third focus group meeting, Tosca was absent for this meeting and, by the time many of the other participants came on to use wiki, it was some weeks later. "I think it [the wiki] can work really well as long as everyone understands how to use it" (Tosca, FG5011, p. 6). In actual fact, despite her absence from the third focus group meeting, by using the online resources available on the site, Tosca was able to access and add content to the operating room wiki.

Presentation of content.

During this fifth focus group cycle there was a growing awareness in the participants of the opportunities to link learners to already existing online resources rather than needing to create these themselves. I met with Lorraine to work on adding some online video hyperlinks to her learning activity. During the course of this, it became apparent that a YouTube video they had selected to include as a linked resource was incorrectly labelled as a particular surgical procedure when in fact she recognised it as being another procedure. This highlights the importance of planning activities, such as this, with a subject matter expert who can manage the content to ensure that it is credible and accurate.

Tosca realised during this cycle that, rather than entering all of the content details personally, there was the flexibility to direct learners to pre-existing content from other sources.

I suppose it just expanded, you know, I hadn't thought of all the possible ways that you could ... or all the things you could use to put a learning package together. I suppose in my head I was just thinking of you typing stuff in ... yourself, without using other people's links to draw in. (FG5011, p. 5)

Feeling safe.

Throughout the research, there has been an element of anxiety related to being within the online environment and causing a major problem. Maggie said, "I was a bit scared I'd do something wrong. And you know, delete somebody else's work, or, I was a bit too scared to touch anything" (FG5006, p. 24). Coming into an online setting with this concern is counterproductive to adding, and experimenting with, content within the wiki.

After posting some suggested content to the wiki and not receiving any responses from her specialty group colleagues, Tosca wondered if "people were a bit frightened of it ... Once I got the hang of it, I found it really good, but then I was frustrated because no one replied. And obviously, I didn't know why they didn't reply" (FG5011, p. 3). In addition to acknowledging the impact of participant responses between each

other, there was also an imperative for me to acknowledge my accountability in orchestrating the research environment.

Lehmann and Chamberlin (2009) highlight the importance of the facilitator taking responsibility when things do not go well and apologising as soon as possible. This helps to remove any blame or shame that participants may feel in a very public forum. I addressed specifically my facilitation of the focus group meetings and the time pressure we were under. When I listened back on the transcripts, I noticed that I was cutting in on some very good conversations in order to ensure we covered aspects within the available time. I was acknowledging my role in reducing time for them to socially and professionally connect during the meeting. Secondly, I acknowledged that my attempts to help their group cohesion by having the wiki as a 'place' to collaborate, seemed to have been thwarted because there had been difficulties with their navigation around the site and using the wiki. Annie said that she had followed the instructions I had given to access and navigate around the site without any problem. However, "I found that, if I went on, I was too shy to write anything on the wiki, especially with Tosca there, she put so much on, it was fabulous, all her suggestions" (FG5006, p. 14). Yet Annie thought that it would be rude to comment on Tosca's input and suggest that it might be too much content to cover for this activity. What I noticed was that participants would add content to their group wiki but did not subsequently use the discussion forum to let their colleagues know about, or comment directly on, the wiki posting.

Professional development.

During this fifth focus group meeting we looked at the strata of professional development of our colleagues. Ease of access to these learning resources was identified as important with Maggie suggesting that it could be put into the hospital intranet (FG5006, p. 8). James thought that an icon on the desktop would be worthwhile as a direct link (FG5006, p. 10). The opportunity for choice in topics of interest was seen as positive because, "if you did have a table of content in there, they could see what they wanted to look up and it would.... Be fabulous" (Annie, FG5006, p. 9).

Participants' personal professional development.

When considering their own personal professional development through this research project, there were a variety of insights:

Challenging ... the wiki for me was a challenge. I found it really hard to work out ... to get it to work, to read the right things and to get around. Yeah to find my way around it. I just found ... block ... I don't know, probably just didn't do it enough. Probably didn't go in there enough and try and, but I also like ... I found the way that we had done it, the 3 of us coming from 3 different places and we never sat down, I missed that, sitting down as a group ... really. And having to be isolated. I don't know. I thought, I always thought online learning would be great, but actually, you have to be really self-motivated. (Maggie, FG5006, p. 12)

I got really fired up about it, I was, I came into it because I wanted something else to do. And Okay now what have I let myself in for? But I just got completely absorbed in it. So for me, I did the medicines management and I was fine, so I got..... going on... but for me, um, even I was going back and looking up questions and ticking the wrong ones and figuring how am I going to get back in to it. But I loved it, I thought that it was really spot on, very encouraging. (Maxwell, FG5006, p. 13)

James felt that he needed "more time to sit with it and go through it for half an hour or an hour at a time. I probably would have put more into it than what I did" (FG5006, p. 13). Maggie found that there was a "lot of resistance from colleagues" (FG5006, p. 13), and "a lack of understanding even when I tried to explain it several times" (FG5006, p. 15), particularly in terms of working on her activity during quiet moments. This lack of time and support contrasted with Maxwell whose manager, after seeing the progress being made, "got quite excited ... then she'd say, 'Right, it's quiet, go and disappear for an hour.' So I had really good support" (FG5006, p. 13).

Affinity continuum.

At the end of this fifth focus group meeting, I gave the participants the opportunity to revisit the affinity with computers continuum and to talk about where they would place themselves now in comparison to the beginning of this research project.

“I’m certainly more confident” (Lockie, FG5006, p.29).

I think I’ve come a step forward and then about 10 back! I thought I was getting good and then I’d be all fired up and enthusiastic and then there’d be a low...oh I can’t do it. But you know, I’ve learned some things! (Maggie, FG5006, p.28)

“After this and the wiki thing I feel that I have gone two steps up, I’m more confident”. (Annie, FG5006, p.29)

I’m on the same spot ... what I did was navigate through all the different discussion groups, and different like the PACU and the ward and try some stuff out ... I went through the different group activities and that helped me. (Lorraine, FG5006, p.30)

James had been ill for some weeks with a side effect that he could not look at the computer screen without feeling nauseous. However, he also was optimistic that “once I’m completely better again I know that I will get in there and try and conquer what I couldn’t conquer before” (FG5006, p.30).

Impact on Next Iteration

This collaborative phase encompassing focus groups three, four and five was marked by a number of key situational events. Just after the third focus group meeting, our hospitals had a very busy time in the lead up to the Christmas / New Year closure and holiday period, the latter of which, in a New Zealand context, is marked by a slow-down and often a cessation of workplace activities. Following on from this, just after the fourth focus group, the second major Christchurch earthquake occurred with many lives lost which directly impacted one of the participants. In addition, other participants had family members who were affected by the earthquake staying with them temporarily. Soon after this, there was an earthquake in Japan which led to a

massive tsunami and thousands killed. Again, another participant was directly affected by this event. The combination of these circumstances had potential and realised effects on both the psyche of participants and on their ability to engage with the research project during this phase.

During the closure phase of this research project I planned to meet with as many participants as chose to attend a final, sixth focus group meeting to review key findings from the research thus far. I hoped to ascertain if the conclusions that I had come to resonated with the participants and if they had further comments or suggestions on where the research was headed.

Closure Phase

Because I stepped forward, well I had to learn how to do that one, maybe it's time I sort of stopped this "You're getting old thing!" and stepped out a bit! ... So that's what I did. And you know, it was great, and having made the first step, it encourages you to take another step. (Lockie, FG6004, p. 18)

This closure phase encompasses the last focus group meeting and my observations on the process and discussion, and reflection on where our journey has led us which continues into the next chapter with suggestions for the future development of online professional development activities.

Focus Group Six

Our final focus group meeting took place six months after our previous one. During the intervening period, I had been collating and writing up our research. I became aware of a number of themes and questions that arose from the research. As a measure of validity, I took these emergent themes and questions back to the participants to gain their insights and perspectives on them, the research process, and on our outcomes.

Data collection process.

We met at a café nearby to where most of the participants were working. We arranged to meet at a time that was a day off for some and, for others, their workplace could release them for this final meeting. I noted down four key aspects that had arisen through my analysis of the previous months of the research project.

Discussion forum interactions

Competence and lack of competence

Engagement and trust within the online environment

Review of the literature with reference to frequency of engagement and affinity with the online environment

Their responses to these aspects are given in the following section under the themes of access, content, feeling safe, and professional development.

Data analysis and emerging themes

Within this closure phase of the research project, the data from the sixth focus group will be reviewed under the themes of access to resources, presentation of content, and feeling safe.

Access to resources.

During this last phase of the research project the focus group highlighted the importance of contextualising activities and the reality of accessing resources. They also reviewed influences on collaboration and differing styles of engagement with resources. An analysis of the data from this closure phase will now be presented.

Guidelines for future learning activities.

The research participants had lived experiences of endeavouring to access the learning resources available to them. This included attempting to navigate the realities of finding time, an available computer, a supportive collegial environment, and a supportive manager in order to work on this professional development activity. As a result, they suggested including a guide to learners in online courses of expected timeframes to complete any activity. They concluded that this would enable a staff member to go to their manager and say I “want to do ‘that’, that is approximately how long it’s going to take us, have we got that amount of time to be able to do that?” (FG6004, James, p. 1).

In addition to timeframes, Lockie added that, right from the outset, it is important for the learner to be aware of “the major concepts that they are going to have to deal with on the computer” (FG6004, p. 6). This aligns with Knowles et al.’s (2011) assertions regarding the characteristics of adult learners and also with Govindasamy’s (2001) view of the compatibility of the key concepts in the content with the learner’s perceived need. When adults recognise that the content of the learning activity is

embedded into their contextual requirements, they are more likely to engage with the learning and it is more liable to influence their subsequent clinical practice.

There are a myriad of factors influencing a participant's ability to engage with online components of professional development such as, "At work it's more difficult because I should be working" (FG6005, p.3). Maggie too raised this notion of what is considered 'real' clinical practice. When she was attempting to work on her specialty group's learning activity planning, "other people think [...] that I'm slacking off, when I'm not, I'm just trying to get this done... they've got a wall up" (FG5006, p. 14). This element of what is perceived as acceptable behaviour in a clinical environment warrants further discussion.

Organisations wanting to embrace online learning will need to address the aspect of gaining access to technology resources for learners. Lockie noted that the presence or absence of family members influences a person's ability to engage with online learning commenting that "I haven't had [the] access problems that a lot of the other people have had with families" (FG6004, p. 1). One participant, who had difficulty accessing a computer, was repeatedly offered the use of one during the project but did not take up the offer. There are a number of reasons why this might have eventuated: workload too great that they actually did not have the time to use it, an excuse not to engage, or it may be attributable to embarrassment at not knowing how to engage with the online learning site and reluctance to ask for help. The question raised by this is how best to assist a person with these types of underlying issues to benefit personally from what is offered with this 'new' medium for professional development ('new' because although online learning for professional development has been available for a number of years, it is new to this hospital network context).

Lack of response to discussion forum postings.

When asked about what aspects influenced interactions within the discussion forums, Maggie said, "I didn't reply [to the discussion forum] as I didn't know how to, but later on I just seemed too busy If I was more confident at using online discussion forums that would have helped" (FG6006, p. 2). The paradox is that, by asking for help initially and then joining in the forum more, Maggie's confidence would have increased. Whilst

the pace of a clinical setting does influence a person's ability to engage, perhaps at times 'busyness' can be a convenient reason for inaction rather than acknowledging lack of confidence or knowledge or resistance from colleagues and then seeking remedies. "I think that comments about access and lack of knowledge can be excuses for not setting time aside to persevere with the project. I wish now I had been more disciplined and set time aside to play around with the site more often and use the discussion forum more" (Maggie, FG6006, p. 3).

Lack of activity within the discussion forum for Annie had an entirely different aetiology. To be polite, Annie did not want to comment on the other groups' discussion forum as "I didn't believe my opinion was relevant to their subjects" (FG6005, p. 1). However, a different view of this situation could be that Annie's 'novice' status with other groups' content put her in the perfect position to comment, ask questions, and point out where there needed to be more information before a learner had sufficient content to move on. This reluctance to comment is unfortunate in terms of meaningful collaboration within this project.

In relation to Maxwell accessing the site five times more often than anyone else and appearing to feel the most confident of any participant, we discussed the factor that the more a person does something, the more confident they feel about it. Conversely, the less a person interacts with the site, the less confident they feel and "the more you don't want to go on it!" (FG6004, p. 10). Both have exponential effects in opposite directions.

Styles of engagement.

Annie's comment that "I read what other people wrote (and enjoyed it) but didn't have anything to add" (FG6005, p. 1) relates to the concept of 'passive lurkers', not with a negative connotation (Peacock & Hooper, 2007) but instead, as Carroll et al. (2009) asserted, as vital to a quiet, reserved person's learning as engagement is to another person who prefers to dialogue. A solution to this aspect suggested by James was to have the LMS note when a person had been in to view a post, how many views there had been, and the option to click on 'like', similar to what happens with YouTube videos and Facebook. In this way, the writer could see that there has or has not been

interest in what they have written. Another solution could be to include an initial element in any online course that requires accessing, writing, and responding to discussion forum posts. In this way, participants would be fulfilling the course requirements and, at the same time, becoming more proficient at using these forums. Instructions about this type of interaction on the LMS need to be given clearly to participants ahead of the course starting. It might be useful also to schedule in some synchronous discussion forums where as many as are able can come in together and have a typed in conversation about desired topics. “So I think that ... maybe actually doing it, in a group. So sending each other, or posting things and letting someone else pick them up” (Tosca, FG6004, p. 7) would help to develop a learner’s computer capability for the essential aspects that they will need to master in order to engage fully in the course.

Presentation of content.

Now that we had come to the end of the research project and could look back on what we had developed, there was an imperative for a paradigm shift in learning outcomes and in terms of how the content was presented. James saw the competency-based learning outcomes in a new light. “It’s almost like working backwards. You’re working to get there from here but in actual fact, you need to get there from this side ... working backwards, but moving forwards” (James, FG6004, p. 11).

Offering two or three choices for learners to follow content appropriate to their current level of knowledge and their learning style, was seen to be an important feature of online learning design. Lockie (FG6004, p. 13) suggested “So maybe two or three different ways, and say, if you are a ..., if you are a ..., if are a ..., but they have to come in through one of these portals.” Tosca noted that her preferred learning style was seeing and observing. “I’m a visual person, I love doing cryptic crosswords. But, if people call clues out to me, I can’t do them all. I have to see them in situ” (FG6004, p. 12).

In the very first focus group, Lockie had raised the concept of moving from the enjoyable known to an enjoyable unknown. James followed along with this in “it started with that familiar territory, you don’t mind taking that extra stepping stone

because you know that you can come back to that familiarity” (FG6004, p. 14). An extension of this is that “It’s given you that basic grounding to be able to go off and do something else and then come back to carry on” (Tosca, FG6004, p. 14). But, conversely, “It’s when you have to go from that familiar ground there to overboard and where do we go from here? Do we sink? Do we swim? Do we ... (James, FG6004, p. 14).

Feeling safe.

While other participants noted that they missed the opportunity to meet and discuss their learning activity planning, Annie found that “we did sit and talk with others ... we could have had discussions on line” (FG6005, p. 1) in the wiki and discussion forums. It is difficult to pinpoint the main reason for the lack of interaction on the discussion forums. Was its root in time and equipment constraints or another reason entirely?

For Maggie, who was looking forward initially to getting home and trying out the blog function, it was remoteness and technical issues that influenced her interactions because, as she stated, “I like to learn in a group setting so I thought I would enjoy being part of the forum. I enjoyed the meetings the most but did feel isolated at home in front of the computer when things weren’t working” (Maggie, FG6006, p. 1). Maggie revealed that “I never really got the hang of using the discussion forums and was a little embarrassed to admit this to my group” (FG6006, p. 1).

“I thought my computer skills to date were intermediate but I soon found out how little I knew. This was disappointing and having to admit to the others in my group I’m not that great after all was quite hard. Also, in my group one member was an expert at all of the computer skills so that was also daunting for the other members and for me as we felt outclassed by him”. (Maggie, FG6006, p. 3)

This is unfortunate because often the issues that a person may have with the online environment are common to others. Once a person is able to say they need help or are having a problem, often others also say, “Oh yeah, I’m feeling like that myself! In actual fact, you’re all feeling that way” (James, FG6004, p. 17). And then there can be a shared experience, support and, potentially, a solution found. James said that often

people are a little bit anxious about the online environment and, instead of asking someone and finding out a few simple steps, they begin to panic because “I have to do it, and I can’t do it. Who’s going to help me do it? ... It all sort of accrues and culminates and by the end of it all, they’re this one big mess of a person” (FG6004, p. 24). In contrast, when people do ask for, and get, timely assistance, “It gives you more confidence as well. It makes you feel like, oh I’ve got there! Never mind that she showed you how to get there, you did it! You got there by yourself so you carry on” (James, FG6004, p. 26).

The opportunity to chat with a friend can be significant. Annie noted that “I didn’t feel embarrassed asking for help ... however, I wanted to mainly discuss it with Jenny and/or Lorraine who I was familiar with” (FG6005, p. 2). Tosca agreed that working together with the same people over a period of time facilitates social cohesion through getting to know these people so that you become comfortable working with them. Annie felt that, “if the project carried on and people became friends they would post more comments online” (FG6005, p. 2). James thought that a tutorial would have been a good idea (FG6004, p. 9) and would have helped to develop connections between the participants.

Tosca admitted that she has difficulty with people in social settings and she felt that it would have benefited her to “just have one purely social thing together ... where you just get to know each other a little bit better” (FG6004, p. 8) which may have enhanced social cohesion within the group of learners. The LMS has ways of assisting social cohesion to form (Mayne & Wu, 2011) by way of uploading a photo of oneself and adding in one’s interests, hobbies, and likes. The discussion forum and the wiki also provide opportunities to collaborate. Learning designers can consider also including synchronous chat sessions and a non-tutor café space, just for the course participants to meet in and chat.

There is a paradox here in that Tosca had expressed these feelings and need for social cohesion and did not feel like it was available within the research group online site. And, even though forums and wikis were available and the latter was being used by Tosca, he was contemporaneously saying that he would be interested in finding

someone else within the network who was interested in learning about the same topic and using email to contact each other, “just so that you’ve got someone else. Just ‘cos you might have different strengths that you could help each other out” (Tosca, FG6004, p. 26). The comparison of the research situation paralleling this statement did not have resonance for Tosca and yet, what he was describing was the actual and potential reality with the specialty groups focusing on their chosen topic using a communication medium that had more functionality and opportunity for collaboration than email correspondence. The difference, perhaps, is that one looks recognisable and the other does not.

The significance of help being available when and where it was needed was a key factor for Lockie.

I couldn’t even get my password ... it was certainly the weekend, and you were there, and that helped me tremendously, to feel that I wasn’t isolated and that there was somebody that I could ring who had an interest in helping me achieve it. It was somebody whom I knew had a crucial interest in helping me getting on and doing it. (Lockie, FG6004, p. 15)

Professional development.

After hearing of Maggie’s frustration and struggles with the discussion forum during the fifth focus group, I wondered if it would have made a difference if there had there been the opportunity to meet up for a tutorial for those that chose to come to it. When I discussed this with Maggie, she said, “I would have attended a small group session if available for those of us struggling with the site, i.e. discussion forum, and how to communicate with other group members via the internet” (Maggie, FG6006, p. 1). Such support to increase her competency could have enabled this barrier to become, instead, an enabler of her interactions with the LMS (Shuster & Pearl, 2011).

A feature of andragogy is the role of the learner’s prior experiences. Being sensitive to this, to their current level of knowledge, and their preferred learning style, is important for adult learners. Lockie noted that “there is this little delicacy about things, one does need to appreciate that people do need to learn and that what you ask for needs to be very specific” (FG6004, p. 5). However, James pointed out that the

tone of the help offered is critical. "It's not what's said, it's how it's said" (FG6004, p. 5).

Being involved in this project and becoming familiar with the online learning site activities gave Lockie the confidence to accept a challenge to create a poster for her colleagues.

It gave me the courage to do this poster thing. Because I stepped forward, "well I had to learn how to do that one", maybe it's time I sort of stopped this "You're getting old thing!" and stepped out a bit! ... So that's what I did. And you know, it was great, and having made the first step, it encourages you to take another step. (Lockie, FG6004, p. 18)

Lockie gave an example of another young professional with two small children who "makes superb efforts to make time for herself to keep up to date with things. I don't think as nurses a lot of us have the drive to do that" (FG6004, p. 19). Tosca noted that many of her colleagues consider the "yearly update of fire, health and safety and CPR" as adequate for ongoing professional development. "That's just the mandatory which almost anyone in any job should be doing.... They don't really want to bother learning anything else much" (FG6004, p. 19). These observations made me wonder how much the age and career stage of her colleagues might be responsible for this viewpoint. Currently, there is a marked surge in nurses enrolling in post-graduate study, particularly new graduates who, in their first professional year, are often completing a paper as part of their Nurse Entry to Practice (NEtP) year. Perhaps, as this generation ages, there will be a corresponding change in attitudes to ongoing professional development. It would be interesting to establish if these attitudes in one department towards ongoing professional development correspond to other locations or if they are influenced by other factors within the staffing mix of the department. Tosca noted that,

Theatre nurses can get very narrow in their outlook and I can probably include myself in that I don't know what the [*postoperative*] nursing care is for a lot of the things that I do in theatre. I don't know how long they are in hospital, how

they recover, things like that... Instead of this narrow thing of they come in, you do the procedure, they go out, that's it. (FG6004, p. 21)

James suggested that "it's what's relevant to your hospital" (FG6004, p. 19). If there is a particular type of surgery that is new to the hospital, then that will be of heightened interest to staff who will be caring for patients undergoing this procedure. Content that is available within the context, focused on the specific need and available when staff need it, aligns with Knowles et al.'s (2011) concept of adult learners' motivation to find solutions to real issues and learning needs. James felt that online professional development needed to be "simplified, straightforward and have it all ... [variety of levels] for everybody really because there's different levels of where people are at" (FG6004, p. 23). The key in deciding what is appropriate for online professional development content is its relevance to the learners, authenticity to the clinical context, and the needs of the organisation.

Summary

Showcasing what online professional development activities are available is important so that it moves people beyond a vague awareness of what is available to being able to engage with what is on offer. Such activities need to tap into an adult's innate curiosity because,

your interest has got to be kept up, it's got to be made fun really, or give you the idea that you want to do it... it's got some sort of aspect to it, you think, 'well I'd rather like to go and do that, so that when it comes up in another topic, I'm a bit more au fait with it'. (James, FG6004, P. 24)

Throughout this research project it has become clear that it is insufficient for an organisation to provide online learning content and assume that staff members will enrol and benefit from the learning experience. There are many factors that influence a person's ability to engage with the learning content for their professional development. These aspects will be discussed in detail in the following chapter. However, one aspect that appears to have a major influence on a person's initial

engagement, enjoyment, and ongoing success within the online environment is the human factor providing tangible support alongside the learning activity.

It's identifying a champion ... that also has the ability to out resource, so that she doesn't do all the work herself, she says, 'oh that's good, now I'll show you how to get on this' and she'll show you how to do it. So the load is not on her, she's wise enough to realise that she doesn't need that load and you'll actually learn something if you do it. But she points you in the right direction and shows you how to get in the right direction, which makes a big difference. And that kind of a person on the staff really encourages, and draws people to them. (Lockie, FG6004, p. 25)

Chapter Five: Discussion

Introduction

The educational strategies that will assist a multi-generational nursing workforce to flourish in an online environment for their PD need to be multifaceted. However, this research has shown that, in order for these strategies to be successful, deliberate planning and implementation by both online learning designers and instructors, and proactive enablement from the organisation, are required.

If educators and organisations continue to provide PD as it has been traditionally given, the content and delivery will increasingly become obsolete. In order for a change to occur, a complete review in our thinking and approach to LLL for PD is essential. This project set out to facilitate an action research spiral process of observation, reflection, planning, and action (McNiff & Whitehead, 2010; O'Leary, 2004) in order to provide an opportunity for construction of ideas and actions. The results of this research will now be discussed in terms of five conceptual elements that have an impact on the effective implementation of online PD within a clinical context.

The Reality of Work-Based Online Learning

Clearly, in order for online PD to be successful, easy access to the online environment is a fundamental element. One of the frequently espoused benefits of online learning is the concept of A4 – anytime, anyplace, any pace and any subject (Stiles & Ormond, 2002). However, in this project, the practicalities of research participants fitting online access around family and workplace requirements were an issue. Within the home environment, it was dependent on the availability of a computer, time free of other responsibilities, and time when other family members were not using the resource. In practical terms, access was only possible in workplaces that provided and supported time out of the clinical workload for online involvement.

Some participants found that attendance at the focus group meetings and ability to access the online learning site were heavily dependent on workload requirements in their clinical settings. Participants noted previous experiences of the busyness in a work environment necessitating cancellation of scheduled PD attendance. This underlies the unpredictable nature of this clinical context. These constraints, coupled with the necessity to maintain sufficient staffing levels to provide care for patients, can prove difficult for traditional PD. Indeed, it was challenging at times for managers to accommodate aspects of this research project that required staff to leave their workplace to join in with the focus group meetings. The contrasting benefit of being able to access online activities from anywhere does not address the underlying issue of staff needing to be absent from their department for some elements of their PD nor the fact that they still need to find time to complete online PD activities.

The distinct benefits of offering such activities online is that, for geographically isolated registered nurses, there will be a reduction of time from the clinical setting, and reduced cost of travel, accommodation, and childcare (Atack, 2003). There is also the benefit of having the same access to learning activities that is available to others from metropolitan areas.

Southernwood (2008) asserted that knowledge construction using online resources would be a hallmark of adult learners. This action research project was situated within the context of an authentic learning needs environment and, in addition to the face-to-face meetings, had the provision for ongoing interactions between co-researchers and myself using the online discussion forum and wiki. In line with Chen et al.'s (2009) view that the main purpose of online discussions is to promote relationships in order to enable collaboration and learning dialogue, I posted messages regularly to the participants in the discussion forums to initiate conversation and collaboration. However, whilst participants came into the site with increasing frequency as they became more familiar with the online environment, their interactions within the environment tended to be knowledge construction, in the form of information posting within the wiki, rather than dialogue and obvious collaboration.

Nevertheless, within the online environment of this research project, there was some degree of collaboration, discussion, and critical reflection occurring regarding the learning activities that the participants were developing. Although the discussion forums were used minimally, this aspect of connecting with others was mentioned as being important by the participants in the sixth focus group. Yet, although the desire to be in touch with each other was stated, the participants did not use the forums for this. Some, notably the PACU group, trialled using the blog function whilst the OR group emailed each other. The lack of interaction on the discussion forums is likely to have been influenced by unfamiliarity with both the concept and process of this activity in addition to limited ability to trial this aspect during the focus group meeting. It is recommended that future use of such forums could provide an incentive for accessing and using this type of activity.

Such incentives might be found at the beginning of a learning activity, where participants could be asked to find two resources that are relevant to the topic and to write a discussion forum post about what they have found and how it relates to the topic. Once there are some posted discussions, participants could be asked to comment on two other participants' postings. In this way, there is an implicit need to learn about, and become proficient with, how the medium works in tandem with the explicit need to fulfil the course requirements. There is considerable potential for online interactions within the learning management system that, unfortunately, within this research project were not actualised.

One aspect that can facilitate such interactions is a hyperlink portal icon that takes learners directly to an online learning site. The availability of an icon on the Intranet, mentioned within the fifth focus group, became a reality soon after. The action of clicking on the icon found on the front screen of this hospital network's intranet webpage, took staff members directly to the online learning site and the associated learning activities.

There is the potential for learning facilitators to assume that providing these linking elements and offering online learning activities will result in our staff rushing to access online PD resources. However, such uptake is dependent on a myriad of factors both in

terms of the learner actually successfully navigating and accessing the activities, and in terms of the milieu in which the learning activity is situated. It cannot be a forgone conclusion that merely offering online access to PD activities will automatically mean that staff will access and benefit from them.

It is important for organisations planning to deliver PD in an online format to consider how their staff will access the online environment. There will need to be IT resourcing in the form of sufficient computers and quiet workstations away from clinical distractions. The availability of wireless access to the online learning site would enable staff to use a variety of resources such as mobile phones, iPads and notebook computers to access the online learning site. In addition, consideration will need to be given to what support will be offered to facilitate this access including helpdesks, tutorial groups, and online video tutorials.

After focusing on the reality of work-based online PD and the impact that the clinical environment can have on its effectiveness, the discussion will now turn to elements that can contribute to an ideal online learning environment.

Ideal Online Learning Environment

Throughout this research project there has been a repetitive emphasis on the importance of dispelling the myth that merely transmitting PD activities using available technology will repair flawed pedagogy (Palloff & Pratt, 2007). What becomes evident is that, when one considers Knowles et al.'s (1990) work written over 20 years ago, little appears to have changed in the way much of the content of our current PD activities is presented. Staff continue to sign up for study days or complete 'Self-learning Packages' that are designed by educators who use a pedagogical frame of reference that is focused on transmission of content to manage the content, delivery, timing, and evaluation, and who, potentially, disregard the learner's prior knowledge or experience. These activities tend to be a one-size-fits-all approach. If learning participants are asked about prior knowledge, it can often have minimal bearing on content presented or delivery of the learning activity. Andragogical principles require a whole shift in focus so that the learners are actively managing their own learning which, as a result, is responsive to their unique learning requirements. Graduate study

within a tertiary context can provide this element of andragogy, however learning activity content within a clinical context can often lack this underlying foundation. Knowles et al. (Knowles, et al., 2011) note the importance of embedding sound andragogical principles into adult learning. This was seen as extremely important in the learning design of online PD activities.

In an ideal online learning environment, the digital immigrant generation may require content to be presented in a scaffolded framework to support their transition to this online environment. They have the potential to, at times, not feel like they are doing 'real' learning because it looks and feels different from what they may be used to. Frand (2000) noted that the changing characteristics of learners required subsequent changes in pedagogical practices. Within an ideal online environment, there can be a move away from the traditional transmission of information to a constructivist paradigm (D. G. Oblinger & Oblinger, 2005).

Differences can be seen in the scheduling of online PD which can take place at any available time and in any place, as well as the absence of a handful of notes in the hands of the learners at the conclusion of such a training event. What learners might count as 'valid' learning up to this point in time is likely to be based on how the content has been presented to them during previous experiences of PD. After a traditional PD event, when a participant goes away with handout notes, there may be an impression that they have undertaken some learning. However, this conclusion may be dubious in terms of what has actually been learnt, what new knowledge has been embedded in the long-term memory, reflected on and analysed, subsequently applied in a clinical environment, and resulted in a change in practice that can be evaluated. But this is precisely what many of clinical and education staff have been conditioned to view as valid learning. Changing these perceptions of how content is presented is going to be an important aspect in managing the transition to offering online PD.

Smith (2010), using a learning styles framework developed by Kolb (1984), noted that the learning style of most nurses in her study, with less than 20 years nursing experience, was "accommodators" (p. 50), that is, those learners who prefer hands-on learning within a social context. For this type of learner, it will be important for the

course content to involve learning activities that enable manipulation of knowledge content and include social elements such as forum discussions on case studies or clinical techniques. This type of activity allows an adult learner to think critically about a topic, use their intuitive knowledge, and use the social nature of a forum discussion to debate and clarify their understandings. In contrast, the learning style of nurses with over 20 years clinical experience was mostly “assimilators” (A. Smith, 2010, p. 50). This learner prefers concise and logical explanations with the opportunity to watch and think about the learning content. Given the variety of learning styles within any nursing population, it will be important to give further thought on which learning activities will capitalise on these variations.

Aspects that learning designers and educators might need to consider are that some learners may prefer to view a PowerPoint presentation and read accompanying information whilst others may prefer to undertake a database search and produce their own PowerPoint presentation to show what they have discovered. Other learners may have a preference for collaboration in the social context of a wiki and discussion forum and produce a number of wiki pages that include the topic content with links to related resources. For those learners who like to consider divergent views and information a webinar debate might provide a great environment for their learning, whilst others might learn best through manipulating content in a gaming format. As can be seen, offering limited styles of online PD activities not only ignores differing learning styles but will also fail to capitalise on the breadth of targeted, interactive learning experiences available for diverse learners in the Web 2.0 environment. In addition to offering varied learning experiences for PD, the learning designer must counter-intuitively begin by considering the endpoint for the learners before organising the content that will lead to it.

Designing the online learning activities for this research project involved the participants gaining an understanding of competency-based learning outcomes (Lenburg, 1999). Learning over a lifetime is a gradual process that evolves layer upon layer (Frاند, 2000). In terms of assisting the research participants to see the distinction between traditional and competency-based learning outcomes, there was a need to peel back some of these evolved layers and relay a new understanding about this type

of learning outcome and how such competency focused outcomes were fundamental to the planning of learning activities. This learning, unlearning, and relearning cycle took considerably more time than I had anticipated. Establishing competency-based learning outcomes, as opposed to traditional learning outcomes, proved quite challenging.

I became aware that I needed to begin further back in the process of deconstructing this concept rather than giving an explanation and assuming that the research participants would be able to transform their traditionally written outcomes into competency-based learning outcomes in line with Lenburg (1999). In an action research project without the time constraints imposed with completion within a Master's thesis timeframe, the benefit of additional time to discover participants' prior knowledge and grasp of concepts foundational to these learning outcomes would have been helpful. This would have enabled the research participants to be fully conversant with the concept of competency-based learning outcomes prior to developing some specifically for their content area. As essential as this was to the development of the learning activities, this aspect proved to be a roadblock in the process and slowed down progress towards fashioning the actual online learning activities.

The challenge for learning content designers in the online environment is to provide activities that are founded on these principles which deliberately allow a wide range of practitioners with varying prior experiences, varying motivations to learn, a desire to be self-directed and autonomous, an identified 'need to know' regarding their own contextual elements, and a readiness to learn, to move on to a new level of understanding (Knowles, et al., 2011). These learning activities could take the form of videos that either show, or include, an expert explaining key elements of the topic. Conversely, learners could assemble videos demonstrating what they are learning, using their mobile phones, and upload them to the online learning site. There could be the provision of an interactive frequently asked question (FAQ) section that learners can read and contribute to. These are just a few of the varied forms of interactive ability that Web 2.0 tools support. In response to Kordel's (2008) concern regarding limited functionality of some learning management systems (LMS), it can be seen that there are many ways in which a variety of learning tools can be included. The MOODLE

LMS used in this study enables many of these resources, with the exception of synchronous video tutorials. However, any of these tools are of no benefit if the learners do not see the point of their learning.

Knowles et al. (2011) asserted that adults need to know why they need to learn something before they will invest time and energy into the process. Therefore, the online PD activities need to offer adults the opportunity to consider what they want to learn about the topic and then provide pathways by which their learning can venture out through the content. This will start with their interest, and their specific learning needs and desires, and give them choices so that they can access material that is appropriate to their current level of knowledge and needs whilst allowing them to make these decisions in a supportive environment. During this research study, I reinforced the importance of asking questions and that there were no 'stupid' questions because, in any group, it can be guaranteed that, if one person has a question about something, there will be others who are thinking the same thing but have not asked it yet. Within the online learning environment, the benefit of having a FAQ section and ensuring that learners can contribute to and edit it, means that there are opportunities for both finding answers, asking questions, and offering answers in a collaborative, social environment. In these ways, there is the potential for a community of practice to begin to form within the participating learners.

Most of mine and my colleagues' previous experiences of learning have consisted of us being told what we will learn, how we will learn it, what is important, when we will learn it, and, at the conclusion, being told what we have learnt through the activity (Knowles, 1990). Thus, helping adults to feel comfortable changing from such a traditional method of teaching content to a learner focused and managed approach to learning content is vital. Learners need to see if and how this new way of learning will be more effective than traditional methods of "sage on the stage" (King, 1993, p. 30) and the pedagogical approach of what I consider as 'filling the empty brain'. In conjunction with this, online learners need to manage their time effectively and may require assistance in planning how they will sequence their learning to ensure that they complete aspects according to their relative significance.

Online Professional Development Facilitating Transformation

I had hoped that by the end of our research we would have produced some examples of online PD activities. The scope of this was perhaps overly optimistic given the time constraints and the requirements of my master's thesis completion timeframe.

Maggie's experience with her colleagues was that they did not want her to go off the floor to complete her involvement with this research project (FG4006, p. 3). Instead, even in quiet moments, there was an expectation that she would look like she was 'busy' with clinical aspects. The computer is a tool that is going to be used increasingly for clinical patient management and for PD. As such, there will have to be an adjustment in existing mindsets to accommodate this shift by either adopting it now willingly or by force later when there is no other option for accessing clinical data and engage in ongoing PD.

This aspect of changing perceptions of what valid PD behaviour within a clinical environment might look like will require a managed cultural change initiative to shift staff members' and managers' viewpoints. A proactive workplace might provide different ways for staff to develop themselves professionally. For example, as an alternative to what is currently offered, a workplace might follow the multi-national technology, manufacturing, and pharmaceutical company Minnesota Mining and Manufacturing's (3M) lead and initiate offering staff one afternoon a month to look into a topic of interest to them that will help their personal, clinical development, or that of their colleagues or of their workplace. 3M has a history of recognising innovative promise within their employees, giving them time and support to develop their ideas and creative thinking, with worldwide recognised innovations such as Post-it notes, Micropore tape, and reflective surfaces used in road signs (3M Company, 2002). This emphasis on supporting staff members' PD has the potential to enrich the staff member, enrich their workplace functions, and can result in innovations in patient care and improved performance outcomes for both staff and the organisation. And yet, there can be a prevailing mindset of being 'allowed' to do something by asking 'permission' which, I believe, goes back to the origins of the historical, hierarchical nature of nursing and is so ingrained in our ethos that it is difficult to

extricate ourselves from it. It could be more exciting if an organisation did for their staff what the world-wide internet search provider Google does for its technical employees (Iyer & Davenport, 2008). Google has innovation time off which is based on the 80:20 ratio – 80% of a person's work time is focused on their work role and job description, 20% is focused on their company-related personal interests and passions. The 20% is what the person assumes responsibility for that could benefit their workplace, their company, and the wider community. This opportunity could flow over into the 80% allowing employees to think differently about how something is currently done or consider possible solutions for identified problems. This has the potential to make the whole of the work experience more challenging, engaging, and, ultimately, more fulfilling. When these elements are combined with the capabilities of a Web 2.0 interactive environment the possibilities for providing a range of innovative PD learning experiences could be considerable.

There is the potential for a staff member to tap into their internal motivations for learning, personal pride, a willingness to pursue their own curiosity in clinical aspects, and to couple this with a sense of accomplishment and professional satisfaction in seeing the results implemented in a clinical context. The impact of such initiatives within an organisation cannot be underestimated.

This approach to learning, which is not only learner managed but, more significantly, learner driven, is what has been termed heutagogical (Hase & Kenyon, 2001). This learning approach recognises the autonomy of learners to decide what will develop their professional abilities best and prepare them for navigating through a dynamic body of knowledge (Blaschke, 2012). Given the predicted transformations in healthcare knowledge within the next 15 to 20 years (Stewart, et al., 2008), learners who are able to adapt and seek out their own knowledge acquisition opportunities will be prepared best for lifelong learning. Heutagogy is a step beyond the educator driven, learner managed process of andragogical learning. Given that many of our current PD activities are planned, offered, or funded by the organisation, orchestrated by educators within the organisation, and influenced by the presence or absence of support by colleagues, how much power does a registered nurse actually have to determine their own learning needs and outcomes? My thesis has been focused on

nurses taking control of their own learning however this is predicated on the basis of support and facilitation of potential learning experiences by both management and colleagues, and on the professional nurse having self-determination for their own development. This type of autonomy is less obvious in PD activities that are mandatory or required for a specific clinical role.

Gould et al. (2007) noted the contentious issue of PD activities that nurses were required to undertake, as part of service delivery improvements, within their own personal time or as part of their annual leave rather than during work time. This aspect was raised on a number of occasions throughout the focus groups. Given that one of the distinct benefits of online learning is that it can occur at any time of the day or night dependent only on the time that suits the learner, it will be imperative to make explicit the purpose of the PD activities. Hence, there is a need to clarify whether PD is considered mandatory for all staff, essential to the nurse's current role, or undertaken for personal, professional reasons. This will flow on to consideration and clarification of expectations regarding time off in lieu of time taken for an activity or whether it is considered personal development time.

Within this research project, a distinct difference could be seen in the level and outcomes of engagement between a research participant whose manager supported and showed active interest in the research progress, and the participant whose colleagues discouraged online activity by suggesting alternative clinical 'busy' work instead. Gould et al. (2007) noted the essential role of an active manager in encouraging staff to implement learning from their PD activities and facilitate a cascading of this knowledge through the department resulting in changed practice. In addition to the impact a manager can have on the implementation of PD learning, the influence of collaborative learning with an experienced mentor offers great potential.

A suggestion for online PD for night shift staff includes discussion forums with this collaborative aspect. These forums might involve novice RNs asking what the most important early indicators of post-operative bleeding are and what they would need to be aware of prior to observing a full drainage bottle. Then, either on that night, or later when the forum members are able to get online, anyone can contribute to the

discussion forum conversation thus giving experienced RNs the ability to share their expert knowledge beyond their immediate work colleagues (Mayes & Schott-Baer, 2010). This type of learning meets heutagogical principles (Blaschke, 2012) in that it is driven and managed by the learner, it is specific to their context, specific to the moment and to their perceived learning need, and has the potential to facilitate PD transformations. In order for these types of changes to occur within the PD learning environment, RNs will need to continually develop and refine their competence in information and communication technologies (ICT).

Developing ICT Competency in the Online Learning Environment

The literature reviewed during this research study has suggested a variety of aspects that will support the development of ICT competence (Atack, 2003; Gibson, et al., 2006; Sweeney, et al., 2008; Wilkinson, et al., 2004). Some of these factors, namely, a helpdesk, tutorial groups and online video tutorials, were not able to be included in this research study due to lack of resources. It is possible that, had there been the functionality to include some online tutorial sessions or the opportunity to offer face-to-face tutorial sessions in addition to our focus group meetings, this might have influenced both the confidence within the online medium and the collaboration within the wiki and discussion forums (Deneen, 2010). However, within the confines of concurrent clinical workloads, this would have been an additional commitment for the participants. A number of participants commented on their preference to get to know each other first in a social setting before feeling comfortable in the online realm. This could be a reflection of the number of women involved, their personality styles, or their generational characteristics. There is the potential that, as social networking becomes more prevalent, the need for, and format of, this type of interaction may change. In the absence of extended face-to-face contact and hands on support, providing different methods of support, such as a video tutorial showing how to navigate through aspects of the online environment, might have been beneficial to those unfamiliar with the online learning environment. It is my belief that this project would have benefited from some type of tutorial group, whether it be face-to-face or online and that, ideally, this should be considered for inclusion in future online learning activities for PD.

Offering tutorials as an integral part of any proposed online learning activity, especially at the beginning, would mean that those participants who desired or needed additional support could access it without having to specifically ask for additional assistance. This would minimise potential embarrassment at having to ask for help with something that they felt they 'should' already know how to do or, alternatively, address what learners may be unaware that they do not know and need specific help for. Such a supportive environment has the potential to provide supplementary benefits of improved group processes, social cohesion, and increased collaboration. Creating a positive environment includes not only practical help but also the manner and tone of dialogue within communication exchanges.

In this research project, I tried to ensure that my interactions online occurred soon after a participant posted anything and were always positive and supportive. In this way, I hoped to minimise any perceived distance or isolation and increase an interactive atmosphere. In order to mitigate the perceived isolation and frustrations that Bella was experiencing, I met with her to guide her through accessing and uploading content onto the site. Her engagement with the online learning site was thwarted primarily because of her computer freezing up or, at other times, resulted from a misstep in the process of uploading content. Her belief in the necessity of learning something correctly the first time coupled with her subsequent unsatisfactory experience online in this project, seemed to substantiate her view from the first focus group meeting about incorrect information learned causing future complications. This compounded Bella's view of the computer and online environment as a medium not to be trusted. My individual meeting with Bella enabled her to review the steps involved and to upload some information into her group's wiki. However, her experiences continued to affect her online involvement in developing her specialty group's learning activity. Given that the majority of our hospital network's registered nurses are "digital immigrants" (Prensky, 2001, p. 2), there is an imperative to provide tangible and flexible support as they access the online environment for their PD.

The initial lack of content for the PD activities may have been influenced by a lack of, or minimal, skills in database and online searching. Shuster and Pearl (2011) found that their research sample had the lowest average score for database enquiry and

highlighted that, “Because of the overwhelming amount of knowledge available today, this has become a critical skill. Finding relevant and timely information is difficult when there are so many sources and so much knowledge is being funnelled into databases” (Shuster & Pearl, 2011, p. 141). Rather than assuming that staff who use computers and technology regularly within their clinical practice are competent at finding and retrieving current best-practice information, it will be essential to enable staff to determine what their current level of skill is and what additional learning would assist their competency development. By doing this, Shuster and Pearl (2011) suggested that, once students develop competencies in these areas, then they become enablers within the online environment rather than barriers.

The benefit of having an experienced person collaborating with a novice in theory sounds excellent. However, in reality, there are a myriad of social dynamic aspects that influence its effectiveness. I had hoped that having one person in each group with a higher affinity to computers would have helped those in the group with less experience and confidence. However, their expertise appeared to intimidate others who, at times, appeared unwilling to admit incompetency or ask for help. This could potentially be attributed to competent adults not wanting to appear foolish or it could have been influenced by the lack of face-to-face contact between group members who then felt unwilling to expose their own inexperience. For some, this resulted in a tendency to withdraw rather than reach out for help.

Maxwell’s affinity with computers and potentially lower initial anxiety levels engaging in a new activity in what became a familiar online environment, is likely to have contributed to positive feelings about what he was doing. He visited the site five times more often than any other participant and attained a higher level of proficiency as a result. This outcome supports Campbell et al.’s (2008) findings of increased interaction positively influencing results. Maxwell’s interactions are likely to have been influenced by initial positive feelings about being online, the satisfaction of the achievement, the amount of time available to devote to this, and supportive colleagues and manager. This positive affirmation would act as an encouragement to continue coming into the environment.

In contrast, for a participant like Bella who had difficulty initially with her manager accommodating time to be involved and trouble getting into the environment and then navigating around it, the experience appears to have compounded her low self-confidence and higher anxiety levels and reduced her level of engagement with the online environment. These findings support Bandura's (1993) view that higher levels of self-efficacy result in determination when difficulties arise leading to higher achievement. Conversely, those with lower efficacious feelings tend to avoid engagement. As such, awareness of the influence of these various internal and environmental factors requires the provision of varying levels of support to suit each person's specific requirements.

From an organisational perspective, the provision of hardware and quiet spaces are important. From a management perspective, promoting, encouraging, and actively developing a culture of learning and ongoing PD will have clear influences on a person's engagement. And lastly, and perhaps of greatest importance, is the provision of the appropriate level of support required for each learner to participate thereby enhancing their self-efficacy toward this learning medium. Developing skills and subsequent belief in their own ability is what will enable RNs to push through beyond the moments when they are feeling unsure or ill at ease within the online environment. For some people, this may take the form of face-to-face tutorials whereas, for others, viewing a video tutorial will be sufficient whilst others, like Maxwell, will be willing and able to experiment on their own with the learning materials and the online environment.

I had thought that the developing group dynamics within the face-to-face focus group meetings would have enabled friendships and the supportive environment to bridge over into the online environment and into the discussion forums. Results from the World Internet Project (P. Smith, et al., 2011) suggest that 87% of millennials, those born between 1982 and 2002, are using social networking sites such as Facebook. In comparison, only 34% of baby boomers (1943 – 1960) currently do although rates are steadily rising. There were elements of social software included within this research project such as emails, wikis, blogs, forums, and internet messaging however the participants appeared to use primarily the face-to-face sessions, wikis, and email

correspondence in addition to reading the forums. When we consider the numbers of people who are actively involved in social networking sites and the perceived 'safety' in interacting with others online, there appears to be a dissonance between this and the comments from the fifth focus group about lack of relationship and contact leading to not feeling safe interacting online and preferring face-to-face interactions. It is hoped that this reluctance to communicate online will be lessened by the increasing trends towards social network interactions in all age groups (Joyce & Brown, 2009; P. Smith, et al., 2011).

In hindsight, feeling safe and developing ICT competency within the online learning site could have been facilitated to a greater extent by including a fortnightly online discussion forum session. This forum could have been synchronous for those able to attend with the option of the discussion postings being visible to those participants who might join the site asynchronously at a later date. This might have enabled higher levels of group cohesion as well as providing practice for each of the participants in navigating regularly within the learning site thus developing their affinity with the medium and belief in their own ability.

Although some participants were quite confident working within the online environment, the requirement to navigate through the wiki and have numerous browser windows open had the potential to be quite challenging. A learner needs to be fairly proficient at managing the online environment. It can be tempting to think that successful participation is merely about accessing the learning activities however, in order to capitalise on this technological modality, learners need to be reasonably sophisticated users. If an organisation is planning to use the online environment for andragogically or, more importantly, heutagogically predicated PD, then there is a concomitant obligation to ensure that staff already have, or are helped to acquire, the level of skill and sophistication required to access and manipulate the content. In addition to development of staff proficiency, there will be a need for IT support.

If institutions are planning on moving to an online environment, it must be recognised that this will affect many aspects of IT and subsequent access to the PD content. If there is an assumption that PD activities may be completed in the staff member's own

time, then there needs to be the provision of full, remote, secure access to the material. If content is stored on the organisation's intranet or requires access to databases, such as EBSCO, via a portal within the intranet site, then remote access to this will be required. For some organisations this will involve automatic registering of individual usernames, creation of company email addresses for all new staff members, and detailed instructions on how to remotely access the organisation's intranet.

Exacerbating factors

Developing confidence with online learning within the context of a clinical environment requires the learner to be able to negotiate the realities of the clinical setting, to have access to an ideal online learning environment, and to feel competent about what they are doing within the experience. However, if they lack the confidence, either socially, physically or clinically, within the workplace, then transformation is likely to be hindered.

The participants in this current research study found that some colleagues did not accept sitting at a computer as an integral part of PD and instead viewed such behaviour as irrelevant to a clinical context. Colleagues often assumed that the participant was engaged in personal, social activities rather than valid, ongoing PD. If the online environment is to become more prevalent for PD, this common misunderstanding will require a paradigm shift in clinical staff views with regard to the validity of online learning in a clinical context.

There was an interesting issue that arose during this study in relation to engagement, trust, and willingness to share knowledge. Tosca added content to the wiki and asked for responses from her group. Annie thought that what Tosca had written was substantial and, therefore, she felt that it would be rude to suggest alterations. In conversation with me about this, she had decided to wait until she saw Tosca in person to discuss this with her. For Tosca, however, the absence of response was puzzling, as mentioned in Chapter four. Given that the online environment removes some of the social and visible cues that exist in face-to-face communication, I addressed this situation by sending a message on collaborative practice via the discussion forum. The aspect of not feeling that there was anything more to contribute was noted by Hew

(2007) who found that participants were reluctant to merely repeat content that had already been posted unless they had something new to add. The ability to click on a 'like' button, similar to the functionality in Facebook and YouTube, would provide a further element of feedback and enable participants to gauge other users' interactions with the content. For future online learning situations, it will be important for the learners and facilitator to discuss expectations for interaction within the learning environment and, after such discussion, to set explicit group parameters regarding aspects such as giving affirmative and negative feedback, and general guidelines for etiquette within the online environment (netiquette).

A distinct issue that appeared during this research study which warrants further investigation is that of acknowledging lack of competence whilst simultaneously working in a setting in which competence is essential for patient safety. Throughout a RNs clinical career, they are continually aware of the imperative to maintain and demonstrate their clinical competence. This is enshrined in legal regulations from many places such as the Nursing Council of New Zealand, the Ministry of Health, Health and Disability Sector Standards, Patient Code of Rights, the hospital network's policies, and procedural guidelines. Consequently, RNs are immersed in an environment of maintaining patient safety through competent clinical practice. Within this study, some of the RNs found themselves in a situation of feeling incompetent with regard to ICT ability. There appeared to be an unwillingness to acknowledge this and reach out for help, even when it was offered. It seemed to me that some participants felt that they should be able to do this because they could expertly manage patients within their care and yet they felt unable to expertly navigate their way through this online learning environment. There is an element of acknowledgement of a lack of skills that is essential before one can reach out and accept assistance. Potentially, some of this aspect could be addressed prior to an RN beginning an online learning activity by including an initial ICT skills analysis that would highlight individual online learning needs. In this way, individual RNs could develop skills specific to their identified and acknowledged ICT learning requirements. Nevertheless, throughout this research process there were many additional facets that were brought in by the participants and their interactions with the study which have

contributed to the shape and pathway that we took in our discovery of what had relevance for online PD.

Research process

According to Walker (1985), “what is changed most by research is the researcher – it is almost always the researcher who learns most, changes most, has most commitment to the project and most at stake if it fails” (p. 28). There were moments throughout this study when I felt exhilarated by the way in which aspects were developing and other moments when I felt inept and unsure of how to proceed. That is the nature of learning and trying new things.

There were times when I had difficulty separating out the main point of this research, which was to facilitate participants’ learning to use, and collaborate within, the online environment, combined with the other hoped for outcome of developing PD learning activities. I found it challenging, at times, that my focus kept shifting between both of these aspects. I had to remind myself that the key part of my research project was to discover what would support our learners in this environment rather than producing a PD learning activity at the project’s conclusion.

One participant felt that there was not enough explanation about the amount of work involved prior to the first meeting and was surprised at the need for, or option of, involvement outside of the focus group meetings. I had wondered if this was related to initial perceptions as in the first focus group I had outlined the commitment involved. In hindsight, however, I realised that, by the first focus group meeting when I clarified the project to the participants, they may have felt obliged to stay in the research. I had overestimated the amount that we would achieve in each of the focus group meetings so the additional time required was a surprise to me also.

Throughout this research project I was learning not only about online PD but also about the process of facilitating an action research project. After the first focus group meeting, I realised that my expectations of what could be covered in one and a half hours needed to be fluid. It was important to pace the flow of the meeting to suit what was happening in our attempts to start and complete aspects rather than to try to

complete a predetermined agenda. In addition, I needed to accommodate the participants' varying degrees of ability so that the group as a whole moved forward. Interestingly, these aspects parallel, in part, those raised by Stiles and Orsmond (2002) in relation to the online learning environment and the benefits of being able to accommodate any time, any place, any pace, any subject.

The introduction of domains of nursing practice and competency assessments as part of the Nursing Council of New Zealand certification requirements has the potential to focus nursing's attention on ticking the competency boxes. In relation to PD however, competencies are more than what the learning activity is aiming to teach and more than merely tick boxes of completed tasks. They relate to "higher level skills that represent the professional's ability to demonstrate mastery over care management and that provide a foundation for decision-making skills under a variety of clinical situations" (Stokowski, 2011, *Competency-Based Learning*, para. 3). Thus, during this research study, it was vital to take whatever time was required in order for the research participants to create competency-based learning outcomes that would clarify what characteristics and behaviours the learner would need to demonstrate at the end of each learning activity. The additional time taken to reach consensus on this element delayed development of the learning content. Nevertheless, this process of discovery was as important as the outcomes achieved (Ladkin, 2004).

Validity.

A test of the validity and reliability of these research findings occurred throughout as I took back to each focus group the outcomes and we reviewed the discussions and progress we were making. A final review occurred during the sixth focus group when the research participants and I discussed the results and emergent themes. In this way, crystallisation of the varied aspects and experiences of currently practising RN research participants has enabled a fuller understanding of the realities of undertaking online PD. We have clarified what this knowledge means for us in a clinical context and have identified elements that will influence the effective use of this medium. These elements will influence the planning and development of current and future online PD activities. In accordance with action research theory and practice (Holly, et al., 2009; Ladkin, 2004; McNiff & Whitehead, 2010; Reason & Bradbury, 2008), criteria for

validity is the enduring consequence of changes in practice. From the findings of this research, an initiative already implemented is offering face-to-face tutorials to support participants enrolled in a fully online course currently offered within our network. Not all participants have required additional help and the level of help accessed is dependent on individual needs. This research project has focused on work-based elements and solutions to practical, clinical context-based learning needs. The findings will inform the development of future online PD learning activities within the network of hospitals. In this way, those who use the outcomes of this research will measure its external validity (Cronbach, 1982).

Situating this research study in real-life clinical contexts of the participants has maintained the value of authenticity. Throughout the project there has been consistent evidence of collaboration, maintenance of trust, and respect between co-researchers. This has resulted in opportunities for support and encouragement as we have experimented with creating new ways of offering PD. It is against these values that the validity of this research study can be measured.

Reflexivity.

Throughout this research study, within the cyclical process of action research methodology, I have opened myself to scrutiny by the participants and to self-examination of my role in the outcomes of this research. In addition, I have critically reflected on the way in which my research design has impacted on the research outcomes (Finlay & Gough, 2003; Willig, 2001). Reflexivity is about making judgements based on what has been observed within this study, proposing theoretical understandings, and applying these insights back into the clinical setting (Winter, 1989). This has occurred by way of observations and emergent ideas being documented, critically considered, and interrogated within both the focus group meetings and my own analysis of the data. Throughout each successive focus group meeting, emergent data has been revisited and questioned to construct meaning out of the participants' lived experiences. The insights from these deliberations have coalesced then to construct meaning and propose actions. The research study participants have considered the remarks and attitudes of their colleagues and have raised many elements that warrant further discussion and action. There are aspects

that have emerged that will need to be addressed at a management and organisational level in order to ensure there are no resulting negative ramifications on a personal level for the participants. The required organisational changes to support and facilitate online PD may necessitate changes in values and norms. There may need to be a reconsideration of IT policy, when and where online resources and hardware are available, and changes in managerial commitment to enable continuing online PD. These types of changes are what Argyris and Schön (1996) referred to as organisational double-loop learning. Other factors raised will have relevance to the support given to learners as they transition into the online environment for PD. Reflexivity offers the opportunity to judge the process of reaching research outcomes and question the validity of the claims made. It is important also to take into account factors that will have impinged on the research process.

Challenges.

While, at its best, action research can have many positive outcomes, the approach is time intensive. The reality of conducting this project with professional clinicians in a busy surgical hospital environment presented some challenges to the process and outcomes. Some were workplace organisational issues such as releasing participants for the focus group sessions. Others were political issues that threatened the norm by challenging 'the way it is always done' in terms of participants', and their colleagues', expectations of PD. Whilst change can be exciting and give a glimpse of potential opportunities, it can be simultaneously threatening, creating fear and uncertainty. At the outset, and through the research process, it was important to remind the group participants that a journey of this nature can be very challenging and, at times, difficult and we endeavoured to maintain a supportive environment throughout the research period (Bellman, et al., 2003).

In line with Koch and Kralik's (2006) suggestion for mitigating these challenges, we initiated a process of regular reflection throughout all phases of this project. This gave participants the opportunity to acknowledge and increase their knowledge and awareness of these challenging aspects. It also created an environment in which participants could have informed discussions and begin to unpack some of the beliefs held previously about PD in a clinical context. Such deconstruction must occur in a safe

atmosphere and may elicit surprising ideas that result in reconstruction of practices (Koch & Kralik, 2006).

There were also a number of other challenges during this action research project. Not all participants were able to attend all meetings and the recordings of meetings were, at times, indistinct which tested the transcriber's ability. In addition, cycles of action and reflection did not always lead to a clearer view of the issues – findings that are supported by Ladkin (2004). There were times when it seemed too difficult to make any significant change or difference to current practices and PD preconceptions.

O'Leary (2005) said that action researchers may need to delve into change management theory in order to do some of the 'action' in Action Research. It will be important going forward to follow a cyclical process of observing what online learning is currently offered, critically reflecting on its nature and characteristics, strategically planning what endorsements or modifications are required in order to move forward, implementing the process and following this up by continuing the iterative cycle of review.

Limitations

Given that the sample for this research study included just nine participants who came from one geographical region and one hospital network, there is potential for the findings of this project to have limited generalisability to other contexts. However, other than the lack of a millennial participant, it appears that the demographic aspects are likely to be present within the New Zealand nursing population in terms of age, IT abilities, workplace constraints, and PD learning requirements. In this regard, it is suggested that the conclusions and recommendations are likely to have some transferability to other RN contexts and locations.

There are a number of limitations that impose qualifications on the findings of this research project. The size and contextual location of this study will influence its generalisability to other contexts. However, a tenet of action research methodology is the practitioner with 'local' knowledge in tandem with the researcher co-generating knowledge that will facilitate change within that context (Greenwood & Levin, 2008).

So, in this regard, generalisability to other contexts is not a priority. The reality of three participants withdrawing prior to completion of the project further limits the breadth of experience, insight and reflection on the research topic and outcomes. Although there was not a comparison group from another setting or geographical location this is not a significant issue in action research. The author's current role as an online learning designer has the potential for research bias. However, the action research process of ongoing action, reflection, idea generation, and planning leading on to further cycles of action and reflection, allows participants to interrogate emergent aspects, including bias, as they present.

During the focus group meeting cycles, it became apparent that more time would have been beneficial to include opportunities to interact with the online learning activities within the LMS context and to be able to collaborate within the specialty groups in a face-to-face environment. This would have enabled the research participants to gain higher levels of confidence within the group setting prior to undertaking it later on their own. It is acknowledged that the time constraints required for submitting this thesis have impacted on what might have been ideal time availability.

The potential power that current educators may have exerted on both the participants and on the outcomes led to my decision to exclude them. This power could be a factor also in my role within this research project. I planned to minimise any undue personal influence by employing the established values and principles guiding this research that were enunciated in my methodology chapter. By taking my final analysis of the emerging themes back to the sixth focus group, my researcher effect could be balanced by the other research participants. While I have sought to mitigate elements of power exerted by me over this research, it is an aspect to be mindful of.

In terms of access to online learning PD activities, there are a number of aspects that have been raised during this research study. The availability of access to professional journals needs attention. Whilst there may be the provision of database search capabilities on the organisation's intranet, if remote access outside of working hours is not possible, this will negate some of the "anytime, anyplace, anywhere, any pace" (Stiles & Orsmond, 2002, p. 48) capabilities of online PD.

This section has highlighted a number of aspects that potentially limited the findings. Nevertheless, this action research project has set about to improve clinical practice through collaborative learning focused on the impact that the online environment can have on PD activities (McNiff & Whitehead, 2010).

Chapter Six: Conclusion

This research project has used an action research methodology to explore the use of the online environment for PD specifically for Registered Nurses. The reality of using work-based online PD highlighted issues that learning designers need to consider when planning and offering learning activities. Learners must have access that accommodates the competing aspects of both workplace and family requirements. They need to be able to successfully navigate within the online environment and be supported by the organisation in order to achieve this effectively. Therefore, ways to assess current technology skills and training in areas of need must be provided as well as tangible support appropriate to the individual learner. The breadth of available PD opportunities will only be useful to RNs who have developed skills that enable them to capitalise on the resources offered.

Learning designers must consider the presentation of the content in a form that is both andragogically sound and offers heutagogical freedoms for learning. Embedding andragogical principles within learning activities – recognition of prior experience, internal motivations to learn, autonomy and self-direction, and acknowledging a readiness to learn contextually relevant content with immediate application to practice – will be essential. When these aspects are not only managed but also driven by the learner, then heutagogical learning can be realised. In these ways RNs will be enabled to exploit fully existing opportunities for ongoing online PD.

In order to facilitate a transformation in online PD, there must be a change in mindset in which staff and organisations view the use of technology and computers as integral, valid, and necessary in everyday clinical situations. This transformation can be assisted by providing tangible support to staff that enables them to develop ICT competency. Activities, such as tutorial groups, can influence confidence and group cohesion positively, decrease embarrassment, and facilitate the development of a community of practice. In this way a learner's confidence and ICT capabilities can be enhanced. In addition, asynchronous opportunities for online interaction in the form of discussion

forums and wiki collaboration along with synchronous activity in the online environment, using planned meetings in a “Chatroom” or a “live” discussion forum, may ameliorate the sense of isolation between the focus group meetings and enhance social presence and group cohesion within this online environment. It is possible that some of the findings of this research study about ICT competency relate specifically to a generational or timing issue that will lessen as the RN population either retires or become more familiar with online interactions and social networking.

One of my initial aims was for the participants to create some online PD activities that were relevant to their own specialty contexts. We did make significant progress towards this however we were not able to complete each of the group’s PD activities. It is my intention at the completion of this thesis project to continue to refine these so that they will be usable within our organisation.

Recommendations

1. RNs’ apparent proficiency with ICT skills in a clinical setting may belie their actual competency in the variety of skills required to thrive in the online environment. Thus, a questionnaire prior to any online course could highlight both ICT efficacy and potential learning needs and give the opportunity for remedial up-skilling relevant to the online PD resources used within the activity.
2. On employment, a personal, organisational email account should be created for each employee rather than using a generic login for the entire department.
3. Course facilitators should provide face-to-face support, primarily at the beginning of a course, for those who need it and want it so that they can access it without any embarrassment.
4. Course facilitators should undertake a standardised, post-online course survey after each learning activity to gather data and responses that can be used for iterative reviews of both the course and the online environment.

5. Given the desire by participants to have more face-to-face elements to enhance social cohesion, include activities that enable this prior to an online course starting. This may be an element that is most appropriate for those new to using the online environment for PD as those who are experienced with online PD or are *au fait* with social networking may not require this additional feature.
6. Educators should offer regular face-to-face tutorial groups focusing on a variety of general topics through the year. The frequency of this will enable them to be seen as a normal part of ongoing PD and staff can access them when they need them. Topics could include how to navigate around our online learning site, how to complete a database search, pick a topic of your choice and let us investigate it together, how to gather evidence-based information to guide practice.
7. Of necessity this research has focused on the PD of nurses but future research will be useful on how such an approach to PD might improve patient safety and wellbeing.

Concluding Statement

“What is changed most by research is the researcher - it is almost always the researcher who learns most, changes most, has most commitment to the project and most at stake if it fails.” (Walker, 1985, p. 28)

I embarked on this Master of Philosophy journey using an action research methodology because I became aware of an opportunity for investigating an aspect of PD that has great potential whilst simultaneously being fraught with many potential pitfalls. I hoped that, while navigating the new territory of leading an action research project, I would be able not only to manage and lead the project successfully but also enable my colleagues to come on the journey with me that could result in vital insights that would impact on the future development of online learning resources for PD.

It is my hope that the findings of this research will result in a change in practice in relation to how online PD activities are prepared and how the realities of the various potential participants are taken into account during the planning stages. Ultimately, I would like to see heutagogical practices underpinning all of the PD activities that are offered to RNs within our organisation.

Appendices

Appendix A: Andragogy in Practice

ANDRAGOGY IN PRACTICE

(Knowles, Holton & Swanson, 1998)

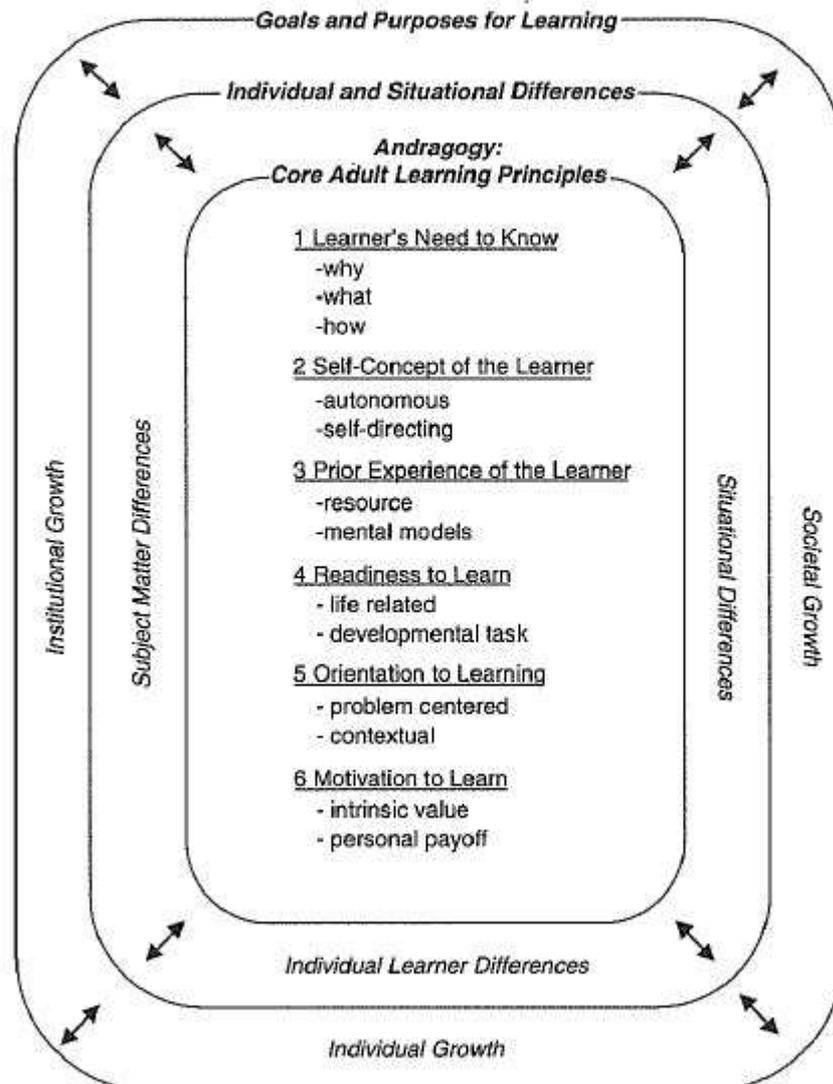
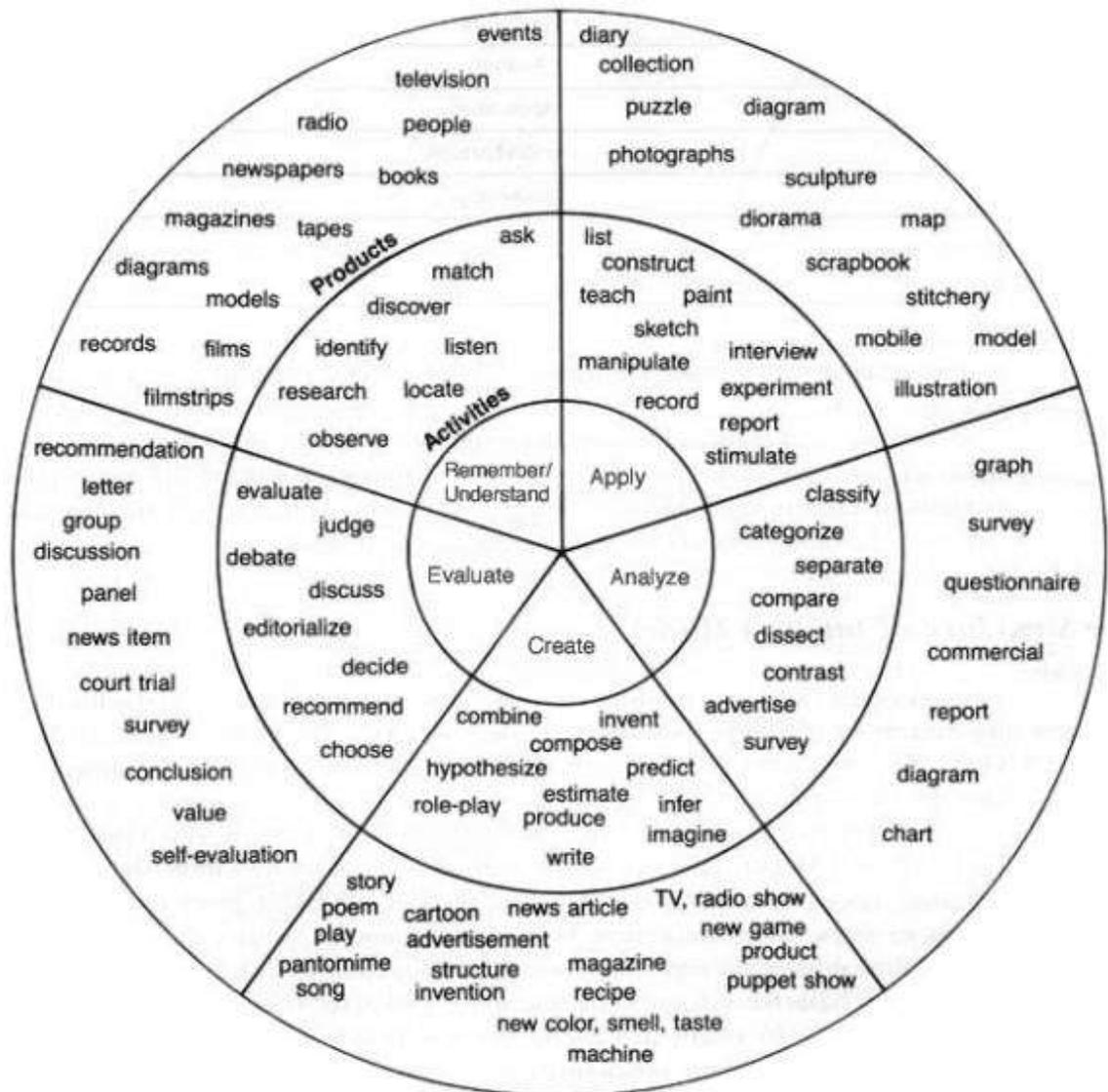


Figure 7-1. *Andragogy in practice model (from Knowles, Holton, and Swanson, 1998).*

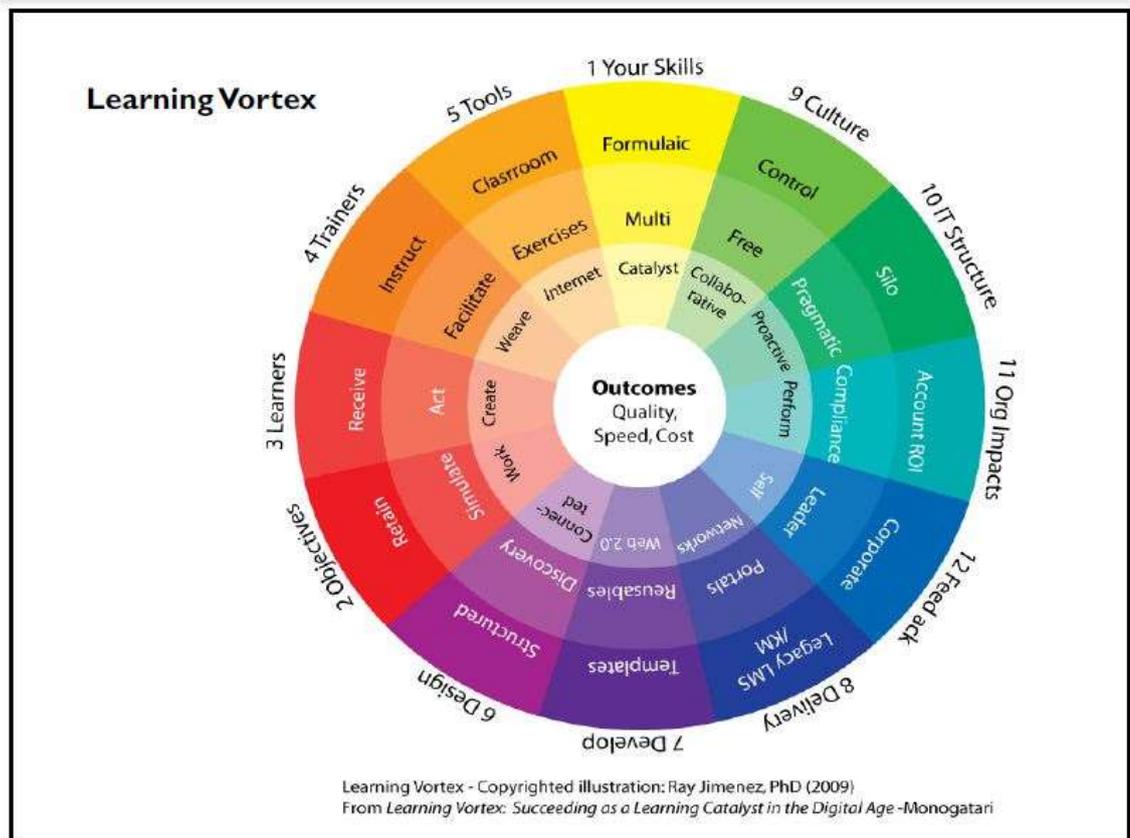
From: Knowles, Holton III, and Swanson chart of “Andragogy in practice” (see page 147 in the 2011 book) but originally from the 1998 *The Adult Learner* 5th Ed

Appendix B: Adaptation of Bloom's Taxonomy



Retrieved from: <http://www.cobbk12.org/sites/alt/training/Blooms/circle.GIF> (on 28 April 2012)

Appendix C: Learning Vortex Jimenez (2011)



Jimenez, R. (2011). How to succeed as a do-it-yourself (DIY) e-learning developer [Presentation]. Retrieved from http://www.trainingconference.com/2011/client_uploads/handouts/RayJimenez_DoitYourselfElearning_Feb92011F.pdf

Appendix D: MUHEC Approval



MASSEY UNIVERSITY
ALBANY

19 July 2010

Jennifer Green
c/- Dr A Huntington
College of Humanities and Social Sciences
Massey University
Albany

Dear Jennifer:

HUMAN ETHICS APPROVAL APPLICATION – MUHECN 10/044
"The registered nurse's experience of online professional learning"

Thank you for your application. It has been fully considered, and approved by the Massey University Human Ethics Committee: Northern.

Approval is for three years. If this project has not been completed within three years from the date of this letter, a reapproval must be requested.

If the nature, content, location, procedures or personnel of your approved application change, please advise the Secretary of the Committee.

Yours sincerely

Dr Ralph Bathurst
Chair
Human Ethics Committee: Northern

cc: Dr A Huntington
College of Humanities and Social Sciences

Te Kōwhiri
ki Pōrehuroa

Office of the Assistant to the Vice-Chancellor (Research Ethics)
Private Bag 102 904, North Shore City 0745, Auckland, New Zealand Telephone +64 9 414 0800 ex 9539
humanethicsnorth@massey.ac.nz

Appendix E: SCHL Approval



Treating you well

18 June 2010

Jenny Green
Perioperative Nursing Course Co-ordinator
Southern Cross Hospital North Harbour
PO Box 101-488
NORTH SHORE MAIL CENTRE

Dear Jenny

Research Application: Study towards Master of Philosophy in Nursing degree 'Online Professional Development' through Massey University Wellington (SCHL Ref #43)

The National Clinical Medical Committee (NCMC) has considered and approved your application to conduct 'Online Professional Development' research at 

Once you have received the Ethics Committee approval, could you please forward this to Dr Julie Yallop.

Best wishes with your study.

Yours sincerely

A handwritten signature in blue ink that reads "Tony Baird".

Mr M.A.H. (Tony) Baird O.N.Z.M., F.R.C.O.G., F.R.A.N.Z.C.O.G.
Chairman
National Clinical Medical Committee

Copy: Jeanette Kini, Hospital Manager, North Harbour
Ian Malone, COO Northern region, Southern Cross Hospitals
Dr Julie Yallop, Research Advisor, Southern Cross Hospitals
Carey Campbell, Chief Nurse Advisor

Appendix F: Hospital/Department Manager Information Sheet



COLLEGE OF HUMANITIES
AND SOCIAL SCIENCES
TE KURA PŪLIKENGA TANGATA

Online professional development

INFORMATION SHEET FOR MANAGERS

Introduction

My name is Jenny Green. I am a nurse working in operating rooms, and I coordinate a perioperative nursing course (PNC) for //. I am undertaking a research study as part of my Masters degree through Massey University and I am requesting that you consider allowing a staff member to take part in this project. During 2010 I have been conducting a pilot of the Perioperative Nursing Course offering this course in blended-delivery – the course has consisted of block courses and online (e-learning) components. I have begun developing content for a // online learning site on the internet. In the near future, we hope to be offering a variety of professional development activities on this new website.

Purpose

The purpose of this research project is to find out what e-learning content is relevant, and which styles of educational packages and strategies will support // nurses moving into an online environment for their professional development. Up till now professional development has commonly been offered in either self-directed learning packages or study days. The former allow nurses to work at a pace that suits them, but confines their learning primarily to the document's content. In addition, study days necessitate additional costs; e.g. transport, back-filling of their position with agency staff, whilst removing the participants from the clinical environment during the training. The e-learning environment necessitates that staff have access to a computer with internet access. They would be able to access it via any internet connected computer.

The online environment enables motivated nurses to choose the time, place, pace and pathways through the content. Nurses with prior knowledge and expertise are able to demonstrate such knowledge without needing to work laboriously through familiar content. The online course format can provide a variety of pathways through the content so that those participants who require or prefer revision or extension can choose those options as they go through the online content. The online environment provides a way for participants to get immediate feedback on their responses to the content.

Online Learning for Professional Development – Overview of Research Proposal

Benefits to Southern Cross

- Imminent transition to an online environment for Southern Cross staff professional development
- Targeted research findings can influence Southern Cross online professional development modules
- Anticipated reduction in associated costs of induction and professional development
- Flexibility in how professional development is offered
- Increase in staff computer literacy skills
- Formation of guidelines for creation of online professional development resources

Costs

- Initial individual interview – outside of work hours (no cost)
- Attendance at focus group meetings x 5 (once every two months from August 2010)
 - 2.5 hours training and education
 - Back-filling of their position
 - If available, use of the hospital car for transport to and from the venue
- Some access, in the latter stages, to computer with internet connection

Participants

- [REDACTED] Hospitals)
- A total of eight to ten research participants
- A mixture of computer skill ability (little or none to daily computer use)
- Action research process in which participants collaborate, develop knowledge, generate theory and enhance their professional development skills
- Timing of focus groups to occur before morning shift staff leave and after afternoon shift staff have begun their shift, potentially minimizing staffing disruptions

Participant Identification and Recruitment

- Information posters and pamphlets at each of the four hospitals
- Respondents given an initial computer skills and demographics questionnaire
- Research participants chosen to represent a variety of computer skills, clinical areas and hospitals

Online Learning for Professional Development – Details of Research Proposal

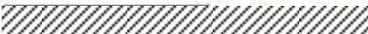
Benefits to

The main benefit to Southern Cross is that research outcomes have the potential to influence how professional development is offered to  employees within the network. As staff will be able to access professional development online – where and when they choose, the current costs of staff going offsite for study days will be reduced as will the resultant cost of back-filling their positions. In addition, participants in this research project will assist in the formation of online professional development frameworks and enhance their own computer literacy skills.

Participants

Registered nurses from surgical ward and operating rooms are invited to participate in this study with a total of eight to ten participants chosen. The use of computers both in life and in the workplace is continually developing. Computers may seem like an unknown frontier for some, or it may be a familiar environment to chat with friends, find out information or to buy/ sell items. I am interested in bringing together a diverse group of registered nurses with a variety of preferences and experiences. This is an action research project and as such the group members will be collaborating, developing knowledge, enhancing their skills and supporting each other. They will discover which aspects will enable them to thrive in an online environment for their professional development.

Participant Identification and Recruitment

Information posters will be placed in  Hospitals asking to interested participants to contact Jenny Green – 

Knowledge gained through this research project will be used to enhance the professional development of all employees of Southern Cross Hospitals. For the purpose of focusing on registered nurses only is to enable this research to be achievable in the given research parameters and timeframe.

I am asking that you would please allow your staff member(s) to have paid education leave and to be available for 2 ½ hours once every two months for five focus group sessions. I would like to suggest that you consider allowing your staff member to be available from 1.30pm on a Thursday afternoon. This will allow them 30 minutes travelling time to the venue followed by 1 ½ hours for the focus group sessions. This will be followed by 30 minutes return travelling time which will complete their shift for that day at 4pm.

Chosen participants will have a variety of previous experience with computers ranging from minimal previous experience to participants who routinely use computers in their professional, educational and home lives.

Participants will meet in the focus group sessions to discuss and discover what aspects are important to them for online professional development. During subsequent focus group sessions, the participants will trial, in a supportive environment, a variety of ideas that will be generated by the research group. Participants will be given the option to trial, in their own time, resources developed during this project.

Participants will be required to leave their workplace, once every second month, to meet at Birkenhead Public Library for a 90 minute focus group session. The venue is close to the Auckland Harbour Bridge to allow for ease of access. Refreshments will be provided during these focus group sessions.

The initial individual meeting will enable the participant's to tell their story, to raise their issues and to decide where they are on a continuum of comfort in using the online environment for professional development. From this initial meeting, general themes will be developed which will be explored later in the focus group sessions. Each participant will sign a confidentiality agreement for this research project.

Throughout this research project, participants will be encouraged to document their reflections on the research process. These along with the research findings and a certificate of involvement, can be included in their Professional Development and Recognition Programme (PDRP) portfolio.

Do you have any questions?

I will be happy to answer any question you have about this study. If you have further questions about this project or if you have a research-related problem, you may contact the principal investigator, Jenny Green, by telephone. *[mobile and email supplied]*

If you have any other questions concerning this project you may contact my supervisor, Dr. Annette Huntington, Associate Professor and Director of Nursing, School of Health and Social Services, Massey University. By telephone: *[phone number and email supplied]*

If you have any questions concerning this project and your staff member's participation as a  staff member, you may contact the  Research Advisor, *[Name supplied]*.
By telephone: *[phone number and email supplied]*

Committee Approval Statement

This project has been reviewed and approved by the Massey University Human Ethics Committee: Northern, Application 10/044. If you have any concerns about the conduct of this research, please contact Dr Ralph Bathurst, Chair, Massey University Human Ethics Committee: Northern, telephone 09 414 0800 x 9570, email humanethicsnorth@massey.ac.nz.

Appendix G: Confidentiality Pledge



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AND SOCIAL SCIENCES
TE KURA PUKIANGA TANGATA

CONFIDENTIALITY PLEDGE FOR RESEARCH PERSONNEL ONLINE PROFESSIONAL DEVELOPMENT

ASSURANCE: Jennifer Green, Master's candidate at Massey University School of Health and Social Services has assured all study participants that their responses to any questions, and information that they allow to be released, are strictly confidential and that no information obtained in the course of this study will be disclosed except to persons directly connected with this study, on a need-to-know basis. Once information is gathered, it will be maintained in anonymous form, using a letter of the alphabet for each participant.

AGREEMENT BY RESEARCH STAFF

I have carefully read and understand the assurance that pertains to the confidential nature of identities, records, and information to which I may have access as part of this study. I understand that contacting study participants for personal reasons or for reasons not related to the study constitutes a violation of confidentiality. I agree that should I encounter a study participant with whom I am personally acquainted, I will immediately cease activity and contact Jennifer Green for further instructions. As a research staff member on this project, I understand that I am prohibited from disclosing any names or information obtained in this project. I pledge to be diligent in maintaining the confidentiality of all study participants. I will not discuss, disclose, disseminate, or provide access to any project information. I acknowledge and agree that all files, forms, records, documents, correspondence, and all other information relating to this project, whether prepared by me or otherwise coming into my possession, are and shall remain project property.

I have read and understand and agree to abide by this confidentiality pledge, and have received a copy of it for my records.

Signature of Research Staff

Date

Printed Name of Research Staff

Signature of Jennifer Green

Date

Appendix H: Informational Poster

Online learning for professional development - a nursing research project

"I never go near a computer?"

Join a 1 year project and be part of finding out what works best for you and other nurses for online professional development.

"I use Trademe and Facebook all the time!"

"I 'm looking for some extra education hours for my PDRP"

iphone
time
podcast
powerpoint
youtube
flash
moodle
twitter
facebook

"I'd like to be involved in finding out the best way forward in online education for us."

To find out more, call Jenny -
Email



Massey University

Appendix I: Brochure - Outside

Why online learning?

- You choose where and when you access it
- Professional development can fit around your life and schedule
- You can choose which pathway you want to take through the content
- Increase your confidence and skills in using computers
- Take control of your professional development



For further information

Please contact –

Jenny Green

MOB: [REDACTED]

Email: [REDACTED]

[REDACTED]

DDI: [REDACTED]

PO Box [REDACTED]

[REDACTED]

Online professional development - a nursing research project

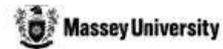
I never go near a computer?

I use Trideme and Facebook all the time!

Join a 1 year project and be part of finding out what works best for you and other nurses for online professional development.

I'm looking for some extra education hours for my PDRP

I'd like to be involved in finding out the best way forward in online education for us.



Appendix I: Brochure - Inside

You are invited to take part in this study, which is looking at ways to support you with professional development using the internet. The use of computers, both in life and in the workplace, is continually developing. The computer may seem like an unknown frontier for you, or it may be a familiar environment to chat with friends, find out information or to buy/sell items. I am interested in bringing together a diverse group of registered nurses with a variety of preferences and experiences. This is an action research project and, as such, the group members will be collaborating, developing knowledge, enhancing our skills and supporting each other. We will discover what aspects will enable you to thrive in an online environment for your professional development.



Second-Life powerpoint vodcast moodle
twitter
youtube facebook
flash google
web2.0

What does it involve?

- Initial chat to find out how you use computers currently
- Group discussion once every 2nd month (x 5)
- Trial the group ideas and give feedback for changes
- Participation in an ongoing research project that can be included in your PDRP folder
- Help to shape the basis for our nursing professional development

Appendix J: Questionnaire



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Online Professional Development – Questionnaire October 12

Name: _____

Anonymity

From this point forward in the research process, to preserve your anonymity, your name will not be used in any of the summary documentation. A letter of the alphabet will be given to your contributions

Area you work in:

Surgical Ward Operating Rooms

Computer use

Do you have a computer at home?

- a. Yes
b. No

Do you use the internet?

- a. Yes
b. No

Do you use the internet at home?

- a. Yes
b. No

How much time per week would you usually spend on the internet?

- a. Less than 1 hour
b. 1 to 5 hours
c. 6 to 10 hours
d. 11 to 15 hours
e. 16 to 20 hours
f. 21 to 25 hours
g. More than 26 hours

At home, do you have dial up or broadband or no internet?

On a continuum line, where would you place yourself in your use of computers generally? (place an X on the line below)

| _____ |
Unfamiliar Very familiar

Education

What is the highest year of school you have completed? (Please tick one)

1. 5th form (Year 11)
2. 6th form (Year 12)
3. 7th form (Year 13)

What is your highest level of education? (Please tick one)

1. Diploma of nursing (Hospital training)
2. Diploma of nursing (Polytechnic / Tertiary institute)
3. A Bachelor's degree (e.g., B.N., B Hlth Sci.)
4. A graduate degree (e.g., PGCert, PGDip, Master's)

What qualification did you receive?

Where did you undertake your nursing qualification? (tick all that apply):

- a. A polytechnic / technical institute
- b. A hospital training programme
- c. A university
- c. Another educational institution – Please name: _____

During your nursing training were you taught how to use computer technology to conduct research / find professional journal articles? (please tick one box):

- a. Yes
- b. No

Have you subsequently learnt how to use computer technology to conduct research / find professional journal articles? (please tick one box):

- a. Yes
- b. No

If you answered yes to the previous question - where did you learn how to search for journal articles?

Gender

Are you male or female?

1. Male
2. Female

Age

How old are you? (Please tick one):

1. Under 25
2. 25 to 30
3. 31 to 40
4. 41 to 50
5. 51 to 60
6. 61 or older

Thank you very much for completing this questionnaire; please post it in the stamped addressed envelope provided.

Appendix K: Questionnaire Summary

Respondent Summary	Totals
Area you work in:	
Surgical Ward	5
Operating Rooms	10
<hr/>	
Computer use	
Do you have a computer at home?	
a Yes	15
b No	
<hr/>	
Do you use the internet?	
a Yes	15
b No	
<hr/>	
Do you use the internet at home?	
a Yes	15
b No	
<hr/>	
How much time per week would you usually spend on the internet?	
a Less than 1 hour	1
b 1 to 5 hours	9
c 6 to 10 hours	2
d 11 to 15 hours	1
e 16 to 20 hours	
f 21 to 25 hours	1
g More than 26 hours	1
<hr/>	
At home, do you have	
dial up	1
broadband	14
no internet	
<hr/>	
On a continuum line, where would you place yourself in your use of	

Unfamiliar	
Unfamiliar	1
	2
	3
	4
Very familiar	5
	3
	8
	4

Education

What is the highest year of school you have completed? (Please tick one)

1.	5th form (Year 11)	1
2.	6th form (Year 12)	7
3.	7th form (Year 13)	7

What is your highest level of education? (Please tick one)

1.	Diploma of nursing (Hospital training)	4
2.	Diploma of nursing (Polytechnic / Tertiary institute)	4
3.	A Bachelor's degree (e.g., B.N., B.Hlth.Sci.)	7
4.	A graduate degree (e.g., PGCert, PGDip, Master's)	
	Other:	

What qualification did you receive?

Dip Nsg	6
EN	1
BHlthSci	3
PGCert	
PGDip	
MN	
Other:	
RN	3
BSc in Nsg	1
BSocSci - Anthropology/sociolo	1
BSc in Hlth and Social Care	1

Where did you undertake your nursing qualification? (tick all that apply):

a.	A polytechnic / technical institut	4
b.	A hospital training programme	8
c.	A university	7
c.	Another educational institution:	

During your nursing training were you taught how to use computer technology		
a.	Yes	4
b.	No	11

Have you subsequently learnt how to use computer technology to conduct		
a.	Yes	8
b.	No	6

If you answered yes to the previous question - where did you learn how to		
	Self-taught	1
	From colleagues	1
	At University	2
	At work	3
	At college	1
	Friends	1

Gender		
Are you male or female?		
1.	Male	1
2.	Female	14

Age		
How old are you? (Please tick one):		
1.	Under 25	
2.	25 to 30	
3.	31 to 40	2
4.	41 to 50	6
5.	51 to 60	6
6.	61 or older	1

Appendix L: Participant Information Sheet



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AND SOCIAL SCIENCES
TE KURA PŪLKENGA, TANGATA

Online professional development – a research project

PARTICIPANT INFORMATION SHEET

Introduction

My name is Jenny Green. I am a nurse working in operating rooms, and I coordinate a perioperative nursing course for //. I am doing a research study as part of my Master's degree through Massey University and I am inviting you to take part in it.

Invitation to participate

You are invited to participate in this study, which is interested in finding ways to support you with an online format for professional development. The use of computers both in life and in the workplace is continually developing. Computers may seem like an unknown frontier for you, or it may be a familiar environment to chat with friends, find out information or to buy/ sell items. I am interested in bringing together a diverse group of registered nurses with a variety of preferences and experiences. This is an action research project and as such the group members will be collaborating, developing knowledge, enhancing our skills and supporting each other. We will discover what aspects will enable you to thrive in an online environment for your professional development.

Purpose

The purpose of this research project is to find out what content is relevant, and which styles of educational packages and strategies will support you and other // nurses moving into an online environment for professional development. Up till now professional development has commonly been offered in either self-directed learning packages or study days. The former allows nurses to work at a pace that suits them, but confines their learning primarily to the document's content. Feedback and results may take days or weeks. In addition, study days necessitate additional costs; e.g. transport, replacement staff, whilst removing the participants from the clinical environment during the training.

The online environment enables a nurse to choose the time, place, pace and pathways through the content. Nurses with prior knowledge and expertise are able to demonstrate knowledge without needing to work laboriously through familiar content. The online course format can provide a variety of pathways through the content so that those participants who require or prefer revision or extension can choose those options as they go through the online content. The online environment provides a way for you to get immediate feedback on your responses to the content. We will be looking at what support and environment would be ideal to assist nurses, like yourself, in this new learning environment.

Participant Identification and Recruitment

Information posters have been placed in four of the // asking interested participants to contact Jenny Green. Brochures giving details are available. [Mobile and email given]

The small group (eight to ten) of research participants will be from a variety of // hospitals and from both ward and operating room clinical areas. The focus of this research project is deliberately narrowed to registered nurses, however, knowledge gained through this research project will be used to enhance the professional development for all employees of Southern Cross Hospitals.

Participants will have a mixture of previous experience with computers ranging from minimal use to using computers every day.

There will be an initial questionnaire along with focus group meetings to give participants a chance to tell their story, to raise their issues and to discuss where they are on a continuum of using computers. From these initial meetings, general themes (not identifying individuals) will be developed which will be explored later in the focus group sessions.

Participants will meet together once every two months for a total of five focus group sessions. During these sessions we will discuss and discover what aspects are important to you for online professional development. Over the following study period participants will trial, in a supportive environment, a variety of ideas that will be generated by the research group.

Participants will be required to leave their workplace, once every second month on a Thursday afternoon, to meet in Birkenhead, close to the Harbour Bridge, for a 90 minute focus group session. Refreshments will be provided during these focus group sessions. The dates for 2010 are: Thursday 26 August, Thursday 7 October and Thursday 2 December. The dates for 2011 will be confirmed later, but will be in February and April. If you know that you are unable to be available for any of these sessions, please let me know now, as this will influence your involvement with this research project.

If you are travelling from your workplace, I have asked your managers to allow you to be available from 1.30pm on a Thursday afternoon. This will allow for 30 minutes travelling time to the venue followed by 1 ½ hours for the focus group sessions. This will be followed by 30 minutes return travelling time finishing at 4pm. The focus group session will be from 2pm – 3.30pm.

Throughout this research project, participants will be encouraged to document their own reflections on the research process. These along with the research findings can be included in your Professional Development and Recognition Programme (PDRP) portfolio.

Data Management

Focus group sessions will be sound recorded. This will enable the researcher to focus on the topics and discussion during sessions without needed to be writing simultaneously. After each focus group session, a transcript of the audio discussion will be made to enable the researcher to find the themes that are arising and to clarify the direction that the group would like the research to go in. These themes will then form the basis of the following focus group session. Would you please complete the enclosed consent forms to allow for this?

Confidentiality

The confidentiality of your descriptions of your experiences using the online environment will be protected in a number of ways. Your informed consent that you signed will be kept separate from data collected during this research project and will be stored in a secure cabinet for the duration of this research project. If any identifying names are included in your discussions, the researcher will delete them. The hard copy of focus group transcripts will be kept in a locked file cabinet in the researcher's office at //. The researcher's computer is password protected. In any research reports written concerning this study, participant's names will never be used unless permission is given in writing. Research data will be retained for five years and then destroyed by my supervisor.

You should also know that the Massey University Human Ethics Committee (MUHEC) and // have assessed this research proposal to ensure it meets ethical standards and provides safety for participants.

Participant's Rights

You do not have to be in this study if you do not want to. There are no penalties or consequences of any kind if you decide that you do not want to participate. If you agree to be in the study, but later change your mind, you may leave prior to the first focus group meeting. Once you have begun meeting in the focus group sessions it is expected that you will continue your involvement until completion of the research project in May 2011. You may ask for the recording to be stopped at any point during any session. Upon conclusion of this research project you will be given a summary of the findings and a certificate, acknowledging your involvement in this action research process, to include in your PDRP folder and annual performance review process.

Do you have any questions?

I will be happy to answer any question you have about this study. If you have further questions about this project or if you have a research-related problem, you may contact the principal investigator, Jenny Green, *[mobile and email given]*

If you have any questions concerning this project and your rights as a research subject, you may contact my supervisor, Dr. Annette Huntington, Associate Professor and Director of Nursing, School of Health and Social Services, Massey University. By telephone: *[number given]*. By email: *[email given]*

If you have any questions concerning this project and your participation as a // staff member, you may contact the // Research Advisor, *[Name given]*. By telephone: *[number given]*. By email: *[email given]*

MUHEC Northern Committee Approval Statement

This project has been reviewed and approved by the Massey University Human Ethics Committee: Northern, Application 10/044. If you have any concerns about the conduct of this research, please contact Dr. Ralph Bathurst, Chair, Massey University Human Ethics Committee: Northern, telephone 09 414 0800 x 9570, email humanethicsnorth@massey.ac.nz.

Appendix M: Participant Consent Form



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AND SOCIAL SCIENCES
TE KURA PUKENGĀ TĀNGATA

Online professional development – a research project

PARTICIPANT CONSENT FORM

I have read the Participant Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

(Please circle your answers below)

I agree do not agree to participate in this study under the conditions set out in the Participant Information Sheet.

I agree do not agree to an audio of group sessions being recorded.

Signature: Date:

Full Name - printed

Appendix N: Focus Group Consent Form



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AND SOCIAL SCIENCES
TE KURA, PŪKENGĀ, TĀNGATA

Online professional development – a research project

FOCUS GROUP PARTICIPANT CONSENT FORM

I have read the Participant Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I guarantee confidentiality of information and agree not to disclose the identities of other participants in the Focus Group unless this is agreed to by the individual group members.

I agree to participate in this study under the conditions set out in the Participant Information Sheet.

Signature: Date:

Full Name - printed

Appendix O: Cover Letter



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TE KURA PUUNGA TANGATA

Online professional development – a research project

Dear *[Name]*,

Thank you for your willingness to be involved in this research project. Please find enclosed a participant information sheet which outlines the project. If you have any questions regarding any of this, please give me a call – *[mobile given]*, and I would be very happy to answer them.

You will also find enclosed to consent forms. One is confirming your agreement to be part of this project and your acknowledgement that audio recordings will be made. The second one is confirming your involvement with, and agreement, to confidentiality within the focus groups.

I have also enclosed a map to guide you to the *[Location]* Public Library, I will contact you in the next few days to confirm that you have received this and to answer any questions that you may have about this research.

If you have a preference for how you would like me to contact you, please let me know either by text or calling to *[mobile given]*, or by email to *[email address given]*.

Once again, thank you very much for your assistance with this project. I am sure that we are in for a really interesting and enjoyable time.

Best wishes,

Jenny Green

PS. Please put your completed consent forms in the enclosed stamped addressed envelope and post before Sunday 22 August morning.

Appendix P: Semi-structured Individual Interview Guide

Participant individual interview questions

Sept 2010

Online Professional Development – Semi-structured Individual Interview

Participant identifying letter: _____

Review responses to online professional development questionnaire:

Thank you very much for your involvement with this research project.

Representative sample

Not looking for consensus, divergent voices

Overall purpose: discuss exper & ideas, develop some activities, evaluate them

Principles of Qualitative cf Quantitative

Action Research and Focus group method: co-constructors of knowledge, collabrtn

Remind them of confidentiality, any time uncomfortable – turn recorder off

On your questionnaire you considered where you would place yourself on a line indicating your use of computers generally. Tell me about what influenced where you put yourself.

Please describe your experiences using computers; you could include situations, circumstances, thoughts, and feelings that reflect your experience.

Thoughts about the current prof dev activities that are offered.

Our hospitals will be moving to an online environment for some of our professional development activities. What issues will staff face in using these resources?

Have a look at the issues raised during the first focus group session. Out of all of these, including yours, which would you rate as the top 5 issues staff will face?

How we might help our staff to overcome some of these issues you've raised?

Thank you for your time, our second focus group meeting will be on:

Thursday 7 October, 2 – 3.30pm

[Location] Public Library Meeting Room

Next time:

Begin to consider that topics might be useful for your clinical area, discuss with colleagues, come back with some ideas.

Summary of previous meeting's content and discussion.

Benefits of online learning

Reflection on Dumchin 2010 AORN article – online learning – issues and benefits

Appendix Q: Focus Group 1 – Session Outline

Focus Group Session #1

(August 26, 2010)

I. Introduction (10 Minutes)

A. Moderator Introduction

- Welcome – you represent variety.depts, BN/Dips, Ages, Comp exper and abilities
- Meeting 5 in all, every 2nd month – Oct / Dec / Feb / Apr
- Purpose - given that each of you represent characteristics that all of our staff have, we want to find out what online PD are going to meet the variety of needs our colleagues have.
- Goal – Look at barriers and benefits, come up with some PD activities and trial them
- Opportunity to discuss ideas, experiences, develop some PD activities, evaluate them, assemble some guidelines for developing other PD activities
- Introduce Assistant – taking notes to help me with the transcript of our discussions (will photograph the whiteboard notes) but no photos of people or activities in FG.

B. Description of the Focus Group Methodology

- A focus group is a method used in qualitative research to bring together a community of inquiry, focus on topics of relevance and interest to us, generate ideas, try them out (might need to describe the 2 types of research: quant / qual)
- Based on an ongoing cyclical process of:
action → generating knowledge and information → reflection
We have an overall goal of investigating online learning for health professionals to find out what works best for us. We will decide how we discover this and will determine where to head as our discussions develop. We are all co-researchers together.
- We will be interacting on an ongoing basis, deepening our knowledge for our clinical area and also in using the online environment, developing our own skills with online technology.
- Grounded in principles of teamwork and collaboration

C. Introductory Warm-up Exercise

- Find someone who doesn't work at your hospital, as you introduce yourselves, tell the person:
 - Name
 - What do you like to do in your spare time?
 - What is your favourite food?
 - Where were you born?
 - If you were on a desert island, with a choice of only 1 fast food restaurant, what would you choose: BK, KFC, McD, or Wendy's

Adapted from: Polit, D. F., & Beck, C. T. (2008). *Nursing research: Generating and assessing evidence for nursing practice. Resource Manual CD-ROM* (8th ed.). Philadelphia, PA: Wolters Kluwer Health / Lippincott Williams & Wilkins. (And from McNiff & Whitshead, 2010 p. 164)

- *(Get the group back and have each person introduce the person they met to the group and tell us what they learnt about them)*
- Outline of how a Focus Group works
- Informality, but group discussion is an important work session in which everyone must participate
 - Reasons for audiorecording (Meeting is being recorded so that I don't have to write lots of notes and to help with writing the report)
 - Promise of anonymity (Your name will not be associated with your comments)
 - Sensitivity of recording (No side conversations, no tapping on the table, etc.)
 - Everyone's opinion needs to be included
 - Honest, open opinions
 - Agree to disagree (Not striving for consensus)
 - Accepting silence – give us space to gather thoughts and harness courage
 - Stay on topic (Have a lot of material to get through)
 - Role of the moderator like a sports team captain - Helping to keep us on track and focused but not dominating
 - Post-it notes – for Questions that might pop up that are off topic so that we can follow up on those later
 - Questions?

II. Topic of the Discussion for the Focus Group (Specific Questions in Topic Guide) (1 hr)

Check I've covered – What are we concerned about? What is the situation like? What can/will we do about it? How will we measure it/see evidence of it? What explanation do we have for what we see? Are our assumptions/conclusions valid, fair, and accurate?

- A. On your questionnaire you considered where you would place yourself on a line indicating how familiar you felt about using computers. I'd like you to imagine that we have a line down this area of the room. At this end of the line is "I feel very unfamiliar" and at this end of the line is "I feel very familiar using computers" (*Jen, walk along the line while talking*). I'd like you to come up and place yourself somewhere along this line, in terms of how you feel about using computers. (*Jen make sure that you are standing with them facing towards the digital recorder*)
What things influenced where you put yourself?
- B. Now I'd like you to find someone that's further away from you on this line and tell them about some of the experiences that you have had using computers.

Adapted from: Polit, D. F., & Beck, C. T. (2008). *Nursing research: Generating and assessing evidence for nursing practice. Resource Manual CD-ROM* (8th ed.). Philadelphia, PA: Wolters Kluwer Health / Lippincott Williams & Wilkins. (And from McNiff & Whitehead, 2010 p. 164)

Consider: situations, circumstances, thoughts, and feelings that reflect your experience.

Report back: what are some of the things that have come up in discussion?
(~~assistant~~ to record key points on running summary sheet)

- C. (Sit down around table / post-it notes & feltpens/ each person with A4 sheet for own postits / Need A3 large sheet for Top 5 issues/ bluetack or bulldog clips)
Our hospitals will be moving to an online environment for some of our professional development activities. Use post-it notes to jot down some of the issues that might hinder someone from being involved with these activities?
(Use a separate postit for each issue)
- i. Talk with your neighbor about the issues you have noted down and what lead you to raise them.
 - ii. In your pair, meet up with another pair and discuss the issues that you have raised. As a group, come up with your top 5 issues and write them onto a sheet of paper (A3) - (will have 3 pairs in one group).
 - iii. Put up each group's top 5 sheet onto the whiteboard (Bluetak or Bulldog) "Top Issues" – NB will have 10 in all from both groups).
Ask each group to talk to their top 5.
Are there some common issues between the 2 groups?
These are the issues that we will need to keep in mind as we proceed through this research, and as we talk about what will work best for us, and for our colleagues.

Key aspects - issues / barriers

- i. Ask clarifying questions "Can I check that I understand what you're saying?"
 - ii. Ask context-specific questions, to check participant is at ease with us discussing the topic, understands the question and is comfortable with our interpretation of what they are meaning.
- D. What are our current types of PD? What are some of the issues that exist with these methods of professional development?
(Use whiteboard to note these issues as they are mentioned- may have already written heading on back of whiteboard – assistant to record on running summary sheet)
- E. Now, in relation to these key issues that you've identified, let's think about what could we do about them? I'd like you to think about what aspects would assist a person in using these being involved in these activities? (Get into a group with 3 or 4 people who you have been in a group with yet. Note down on some new post-its, aspects that might assist you and your colleagues to work around these

Adapted from: Polit, D. F., & Beck, C. T. (2008). *Nursing research: Generating and assessing evidence for nursing practice. Resource Manual CD-ROM* (8th ed.). Philadelphia, PA: Wolters Kluwer Health / Lippincott Williams & Wilkins. (And from McNiff & Whitehead, 2010 p. 164)

issues)

Discuss as a whole group.

Afternoon tea

- F. Icebreaker: Just to help us get to know each other a bit better, let's quickly go around and tell us your least favourite food. – mine is boiled intestines
- G. What are some of the benefits to us in moving to an online environment for some of our professional development? (*As a whole group, Jen note down these on the whiteboard – assistant to record on running summary sheet*)
- H. From the literature review:
 - Distinct advantages with online PD
 - Comparison of traditional and online
 - Clear issues that need to be addressed
- I. Useful Professional Development Topic
 - Grab a felt pen and some post-it notes
 - On separate post-its, put down some PD topics that you think would be worthwhile for someone working in your area.
 - (*Get into groups based on the departments you work in e.g. PACU, Ward OR*)
 - Discuss the topics that you've put down, why are these important, what situations do you and your colleagues face that these may be helpful for?
 - Which topic do you think is of most need or of most interest?
 - Put them into an order of priority.
 - Choose one that we can focus on for our next session.
- J. Report back from each group to the rest of the group
 - i. Topic
 - ii. Why it's important?
 - iii. How it will help you and your colleagues?

III. Wrap-Up (10 mins)

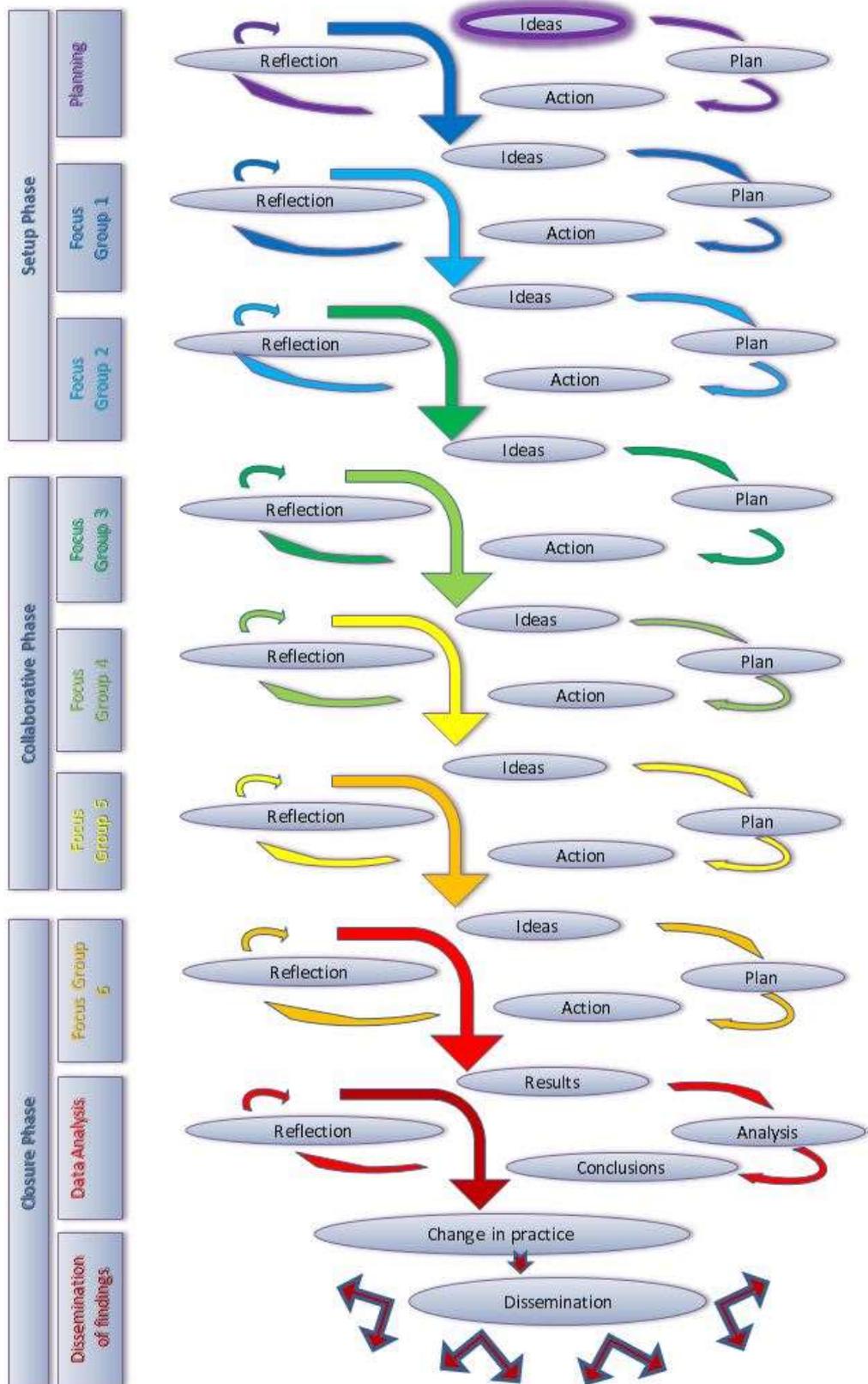
- A. Summary of Discussion
- B. Further Comments and Clarification
- C. Article from AORN July 2010 Dumchin – outlines where we are aiming.
- D. Final Thank You
- E. Next meeting – Thursday 7 October
- F. Questions: Venue? Time?

Ideas:

See Focus group ideas.doc – done – using post-it notes will allow hesitant voices to be heard.

Adapted from: Polit, D. F., & Beck, C. T. (2008). *Nursing research: Generating and assessing evidence for nursing practice. Resource Manual CD-ROM* (8th ed.). Philadelphia, PA: Wolters Kluwer Health / Lippincott Williams & Wilkins. (And from McNiff & Whitehead, 2010 p. 164)

Appendix R: Action Research Spiral



Appendix S: Online Learning Module Planning Template

ONLINE LEARNING MODULE Template

Adapted from Granic, Mifsud and Cukusic (2009)

1. Curriculum area

a. Subject / Discipline

"This subject area/ topic aims to answer the following questions....."

b. Context / Level of study

This learning activity is aimed at: (age/profession/group of people).
Its purpose is to: (for example)

- Introduce ECG reading
- Review anatomy of the heart and its electrical impulse pathways
- Develop skills in reading ECGs
- Teach participants to recognize various heart rhythms
- Relate what is seen to what is happening within the heart

c. Topics / Domain

The following topics are integrated in the learning activity:

d. Pre-requisite skills / knowledge

Willingness to develop skills in ECG reading
Completed "navigating through this site" module

e. Learning approach (Teacher led or Learner controlled)

May differ at different times in the course depending on content. May begin with teacher led, then participant led, group project, experiential, exploratory, field trips, workshops, scenarios related to real situations.

The participant completes the various components of this course as they decide – self-directed
The content offers feedback during assessments so that participants get the correct information at the time of the assessment – or are redirected back to the content relevant to their incorrect response.

2. Learning activity and approach

a. Learning task / activity: (see next page)

The learning scenario should describe a sequence of activities (narrative) including information about what different participants are doing in each step and the way in which each aspect addresses the learning objectives.

It should describe the activity, identify the objectives and assessment techniques

b. Context / Level of study

From: Lehmann & Chamberlin, 2009

Learning Module	
Core knowledge or skills to be learnt	
Ordering of this knowledge or these skills - from basic to complex	
General list of learning outcomes	
Assessments - <i>what evidence would you accept to show the participant had reached the desired level of skill or knowledge acquisition?</i>	
Divide topic into discrete blocks of content = chunking	
Chunk 1	
Chunk 2	
Chunk 3	
Chunk 4	
Chunk 5	

If we want the participants to be critically thinking during this learning module we need to remember a few things:

1. Confucius summed up interactions between the learner and the content: *"Tell me and I will forget, Show me and I will remember, Involve me and I will understand"*. We need to consider activities that are not just reading the content (passive) but engages the participant in critical thinking while they interact with the content.
2. EASy Critical Thinking:
 - Evaluate – gathering information from a number of sources
 - Analyse – deciding which information is relevant, valid, useful and how it relates to the rest of the information.
 - Synthesise – looking at the combination of all the information gathered to create something new, a coherent whole.
3. Content: Scenarios and case studies provide authentic contexts for the content. These are useful for professionals to make real judgments about what to do.

Chunk 1: _____

Learning task / Activity	
Learning objectives / Outcomes	
Tools / Resources	
Assessment strategy (feedback &/or evidence)	
Time allocated	

Chunk 2: _____

Learning task / Activity	
Learning objectives / Outcomes	
Tools / Resources	
Assessment strategy (feedback &/or evidence)	
Time allocated	

Appendix T: Online Research Group: Front Screen

Massey University Online Research Group

The purpose of this research project is to find out what content is relevant, and which styles of educational packages and strategies will support you and other Southern Cross Hospital nurses moving into an online environment for professional development.

 [News forum](#)

 [Online Research Group General Discussion Forum](#)

1 A wiki space for us to collaborate - what is a wiki?

 [What is a Wiki? Wikis in Plain English](#)

2 Online Learning Examples

 [An example from Royal Perth Hospital](#)

 [Online learning examples from other industries](#)

 [Surgical hand scrub technique](#)

 [R4- Hand hygiene quiz](#)

 [Orthopaedic overview - Bones & Fractures](#)

3 Ward Group

 [Ward Group Discussion Forum](#)

 [Ward Group Planning Wiki](#)

 [Course Planning Mindmap](#)

 [Flowchart for Ward activity](#)

Post-Operative Bleeding

At the end of this learning activity the participant will be able to:

- Integrate knowledge of the anatomy and physiology of haemostasis
 - Medical and chemical clotting processes
- Integrate knowledge of the pathophysiology of haemorrhage in the management of post-surgical patients
 - Assessment skills
 - Medical & chemical clotting pathology
 - Recognition of signs of overt and occult post-operative bleeding
- Implement nursing treatment when managing deteriorating patients
 - Differentiate between expected and abnormal monitoring parameters
 - Perform a nursing assessment incorporating resources from the clinical pathway
ie mews, pews, sbat.
- Access appropriate resources, including: members of the multi disciplinary team, computer resources, Knowledge Base (KB) information files

 [Ward Activity - Bleeding Anatomy, Physiology and Pathophysiology](#)

 [Ward Activity - Factors influencing post-operative bleeding](#)

 [Ward Activity - Post-operative bleeding](#)

4 **PACU Group**

-  PACU Group Discussion Forum
-  PACU Group Planning Wiki
-  Course Planning Mindmap
-  Flowchart for PACU activity
-  AORN Medication Learning Activity

Anaesthetic Induction Agents

At the end of these learning activities you will be able to:

- Apply knowledge of anaesthetic induction agents commonly used in the recovery room into your practice when recovering an unconscious patient
- Integrate knowledge of the potential hazards associated with these agents so that you can recognise and anticipate potential problems associated with these drugs in the PACU setting
- Apply a systematic process for managing patient discharge from PACU

-  PACU Activity - Anaesthetic Induction
-  PACU Activity - Anaesthetic Agent Side Effects
-  PACU Activity - Discharge from PACU

5 **OR Group**

-  OR Group Discussion Forum
-  OR Group Planning Wiki
-  Course Planning Mindmap
-  Flowchart for OR activity

Shoulder Surgery

At the end of these learning activities you will be able to:

- Integrate knowledge of shoulder anatomy and the planned surgical procedure so that patient safety is maintained
- Apply knowledge of shoulder surgery when working in the scrub role in order to facilitate optimal surgical outcomes
- Manage surgical instruments in order to provide the correct items during shoulder procedures

-  OR Activity- Shoulder Anatomy and Pathophysiology
-  OR Activity - Rotator Cuff Repair
-  OR Activity - Labral tears and treatment
-  OR Activity- Shoulder Surgery Instrumentation

6 **Articles**

-  Lenburg (1999) Competency based assessments

Appendix U: Focus Group 3 – Pre-meeting Email FG3001

FG3001

Pre-meeting_email
101129

Hi everyone,

I hope that you have all been keeping well over the last couple of months. I'm looking forward to seeing you again and moving our project forwards.

In an effort to keep our time on track, this next meeting will begin with refreshments which you can help yourselves to during the entire time and we won't have a formal break during the remaining time.

As you consider your chosen topic, bear in mind that we will need to narrow our focus for the purpose of this research project due to the time available. So while your overall topic may be "abdominal procedures" you may want to focus specifically on procedures to manage gastric reflux.

In preparation for our focus group meeting on Thursday 2 December I have set up our website for this research project on the Southern Cross Online Learning site.

To access it, hover your mouse over the http address line ... *[URL address given]* – hold "Ctrl" down and left click your mouse on this address line.

This will automatically open up your internet browser programme and take you to the internet site.

Alternatively, you could open up your internet browser and type in: ... *[URL address given]*

Your username is: *[Format given]*

Your password is: *[Format given]*

- that is: *[Format given]*

NB: if you have already been on this site for another activity, you may have already changed your password. Just use your own one rather than the initial one I've given here.

You may be asked to change your password to something easier for you to remember. It will need a capital letter, a digit, a symbol and be 8 or more characters.

Click on "Enrol me in this course" and the access key is: *[password given]*

On this site, you will find a link to some online learning examples from Australia and a video explaining what a WIKI is. We will be using a WIKI to collaborate online as we develop our learning activities.

Pop into the website, have a click around and see where it takes you. Don't worry, you won't be able to "break" anything.

Please don't hesitate to contact me if you need some help getting into our site.

Cheers,

Jenny

Appendix V: Collaborating Online in the WIKI

From: Jenny Green

Sent: Friday, 28 January 2011 5:50 p.m.

To: Jenny Green

Subject: OLRG: Collaborating online in the WIKI

[OLRG](#) » [Forums](#) » [OR Group Discussion Forum](#) » [Collaborating online in the WIKI](#)



Collaborating online in the WIKI

by [Jenny Green](#) - Friday, 28 January 2011, 04:55 PM

Hi Lorraine, Tosca and Annie,

I thought that it might be helpful to talk about editing on the WIKIs as you may be feeling reluctant to change or disagree with what your colleague has written.

One of the really important aspects of this research project is the conversations that we have that lead us to a point of shared understanding.

Often in a decision making situation it can be one person who is heard - they may be the first person to talk, or the loudest voice or the most eloquent. However, if our conversation stops there, then we don't have the opportunity to hear other opinions, clarify what each other meant, consider alternatives and subsequently arrive at a group-derived, expanded view that can be far richer than what we had initially.

That's why it's really important for you to read your colleagues' suggestions and comment on them. Click on the EDIT tab, don't delete what they have said, instead add your thoughts about what they have put, other things that would be worth considering, or questions that arise out of what has been written.

Remember to put your name beside your comment so that will help in the follow up discussions. These conversations are essential for us to arrive at great decisions about what we eventually put into the learning modules.

As you are thinking about what to put in, keep in mind one of your colleagues or a new RN in your department, and what would be of benefit to them.

Thank you for being part of this journey!

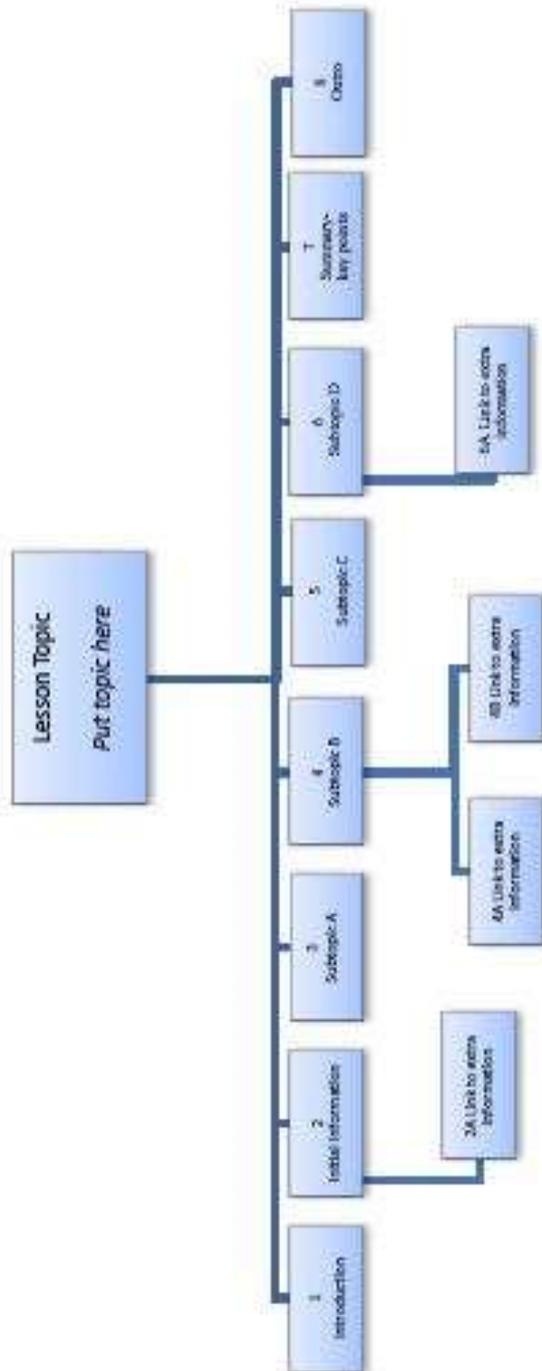
All the best, Jenny

[Reply](#)

[See this post in context](#)

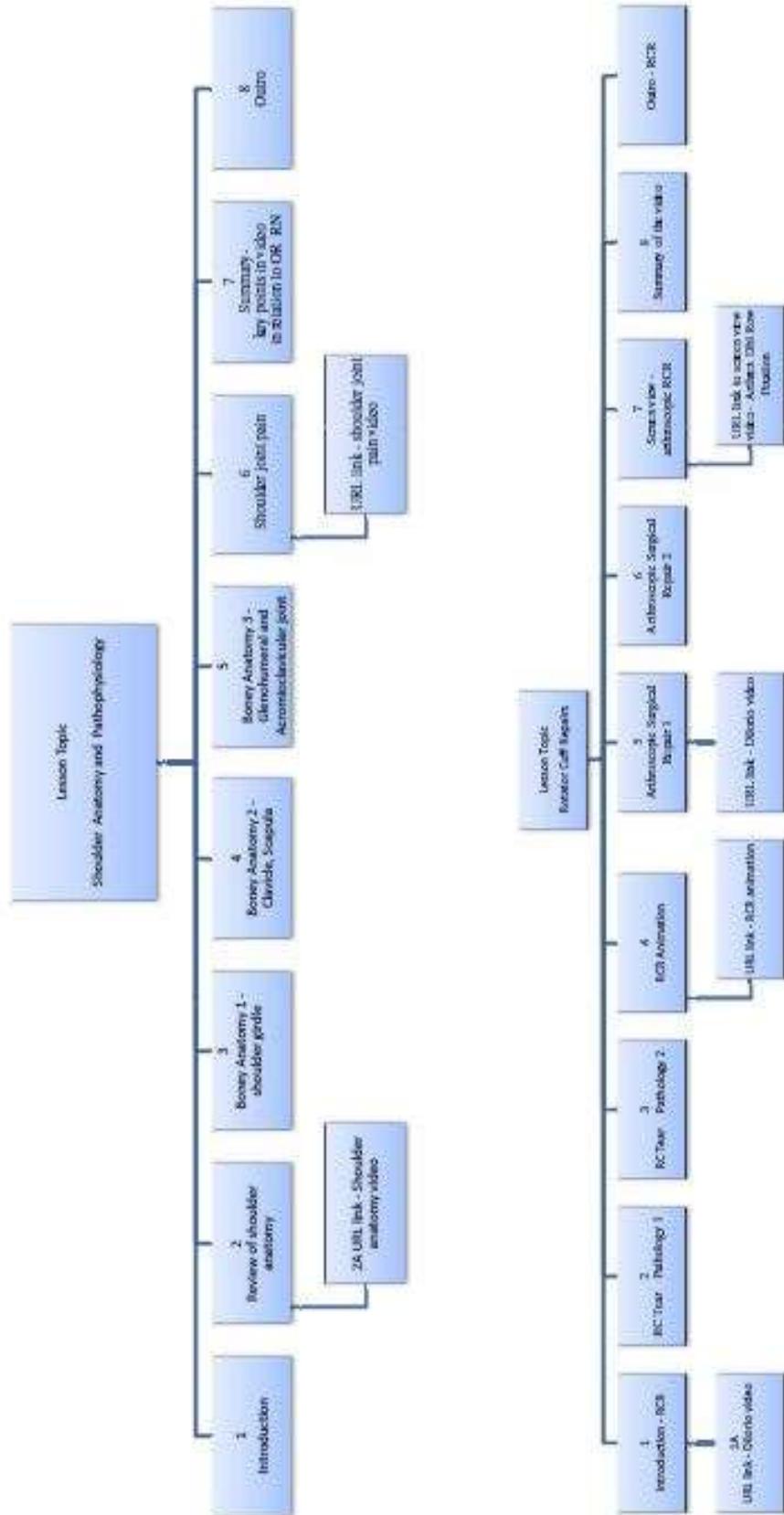
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Appendix W: Flowchart Tool for Online Activities

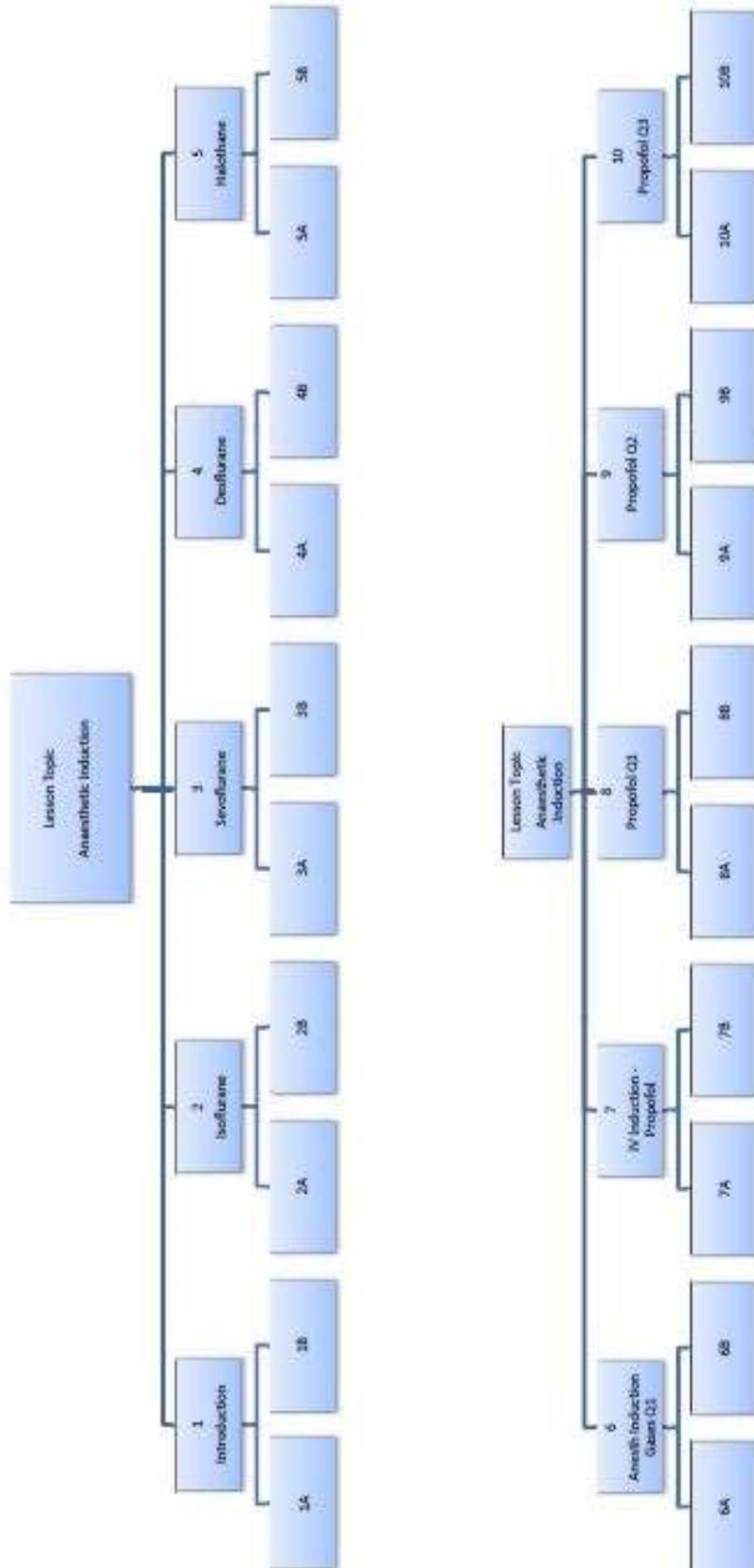


NB: Any number of branches can come off the lesson topic or the subtopics.

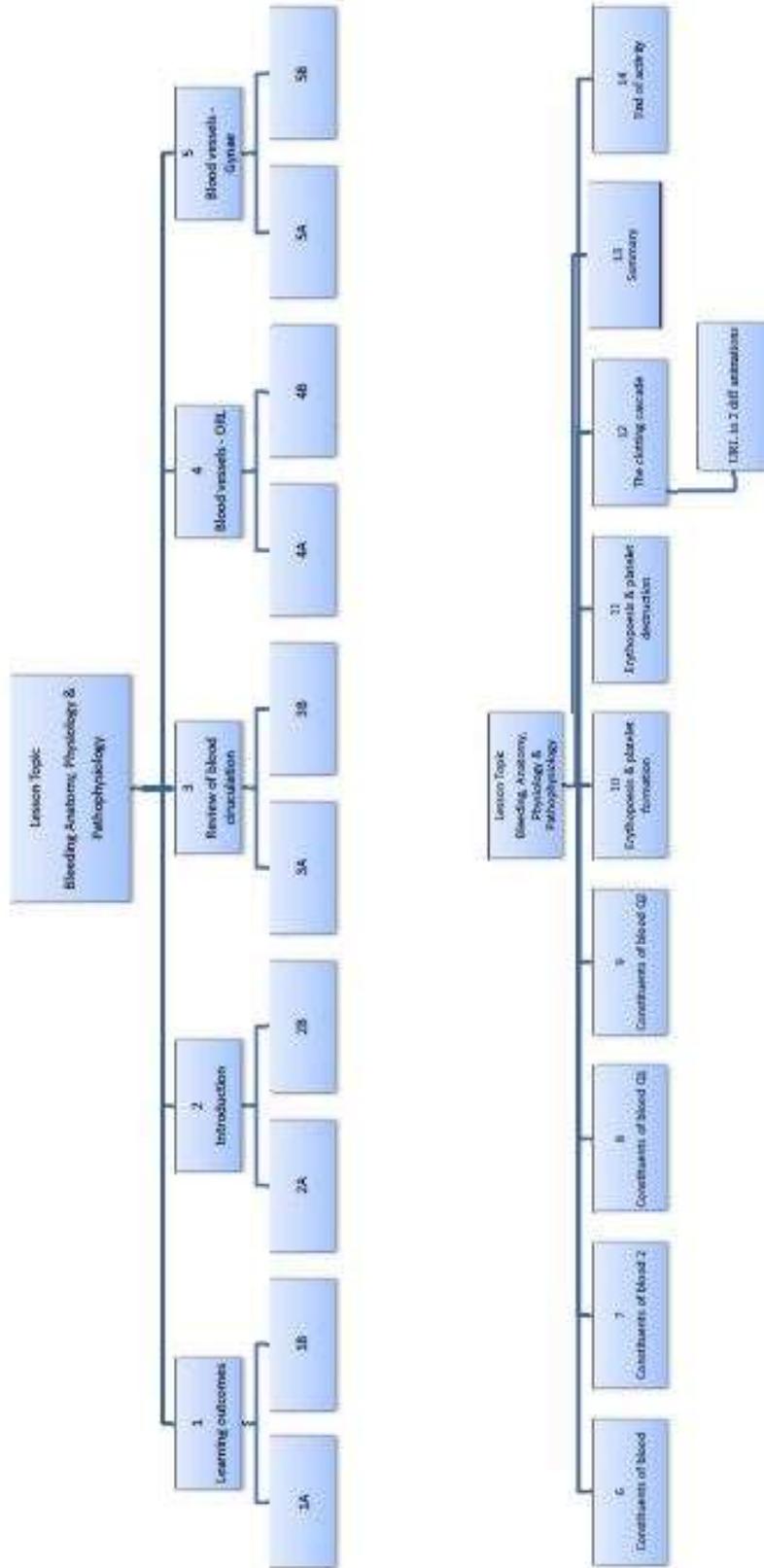
Appendix X: Flowchart for Online Activity - OR Lesson flowchart



Appendix Y: Flowchart for Online Activity - PACU Lesson flowchart



Appendix Z: Flowchart for Online Activity - Ward Lesson flowchart



Ward Lesson flowchart

Version 2

4/04/11

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