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# **Teaching and learning with technology as enabler: A case study on flexible learning for postgraduate nurses**

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## **Abstract**

The aim of this study was to explore the practice of flexible learning for postgraduate nurses. Flexible learning is a contemporary approach to learning that utilises the benefits of technology. Flexible learning can be understood as a continuum, from fully on-line or web-based courses, to those that are on-campus and supported by technology. Internationally, the rise of flexible learning has been influenced by increased demand for higher education and competition among providers within the context of reduced education funding. The study population, New Zealand postgraduate nurses are accessing higher education in increasing numbers to advance their practice and to position themselves for new roles and opportunities. These are often experienced nurses yet inexperienced in higher university education, who combine study, work and other commitments.

The study employed a qualitative case study design because it enabled multiple perspectives to be gained. Data included documentation, participant observation, survey, students' assessed work and interviews with key stakeholders: student, teacher and the organisation. Data collection and analysis occurred simultaneously as an iterative process. Thematic analysis was conducted on reviewed documentation, participant observation and interviews. The survey was analysed using descriptive statistical analysis techniques. Finally, a rubric was constructed as a matrix for analysing assessed work.

The study identifies the elements that contribute to flexible learning and the interconnectedness between the elements within the dynamic context of a university to illustrate that effective flexible learning can be provided by using a student centred approach to ensure the learning needs of postgraduate nurses are met. Flexible learning was found to improve access, choice, and provide an emphasis on the student as central to learning. In response to these findings the weighting of recommendations are toward the organisation as it is at this level where greater change can be made to improve support for flexible learning provision.

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Some of these people, along with a number of postgraduate nursing students were participants in this research and certainly this study would not have happened without the generous sharing of their time and perspectives.

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This work is dedicated to the men in my life. To my father who saw this start, but sadly died before its completion; and my husband Craig, and sons, Grant and Brent, who continually sustain and ground me.

My love and gratitude to all of you.

Ephesians 3-20: God's power at work in us can do far more than we dare ask or imagine.

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# 1 Introduction

Nursing, claims Christine Hancock (2003) is rightly recognised as vital to a nation's health. As President of the International Council of Nurses, Hancock highlighted the pivotal role of nurses in meeting the health care challenges of the 21st century. However to achieve its full potential, advanced nursing education is essential for building on educational programmes that prepare people for registration to practice as nurses. Postgraduate education equips nurses for advanced clinical practice, supports safe and effective practice and, moreover, is key to retaining experienced nurses in the workforce.

Many societal changes impact on nursing and health service delivery. These include technological advancements, the increase in specialisation and demographic changes in the population, particularly ageing of the population. Technological advances, principally the increased access to information, have fundamentally changed society (J. S. Brown, 2000; J. S. Brown & Duguid, 2000). For example the World Wide Web has opened up a whole new source of health information, information that is also accessible to the health care consumer. However, there is concern about the reliability of that information and this places pressure on healthcare professionals, often nurses, to be discerning users of health information to be able to respond to patients' questions. The advances in technology within healthcare promise the benefits of "increasing longevity, improving health and functioning, and alleviating pain and suffering" (Institute of Medicine Committee on the Quality of Healthcare in America, 2001, p. 2). Healthcare advances occur rapidly and health care information is growing exponentially. These developments have resulted in care delivery becoming more specialised.

In New Zealand specialisation of the health workforce has developed in response to the need for increasingly skilled health professionals. The need for greater skills in turn reflects demands for healthcare to people with more complex health conditions, a higher prevalence of co-morbidities and a shift of care from hospital-based to primary and community settings (Ministry of Health, 2001b). The proportion of health care provided to older people will rise as the population ages (Davey & Gee, 2002). The ageing of the population compounded by demands for increasingly complex health delivered in community settings, highlights the importance of a well prepared nursing workforce to contribute to the growing requirements for health care services.

A major problem for the New Zealand health sector is the inability to retain its nursing workforce. One cause of the nursing shortage is the emigration of experienced nurses who can readily find work overseas in countries that offer more diverse career options and higher salaries (Ministry of Health, 2001a; Nursing Council of New Zealand, 2001c; Nursing Council of New Zealand & Ministry of Health, 2001). The development of new opportunities to provide a clinically based career path, such as the Nurse Practitioner role, is part of the solution to retain nurses. Advanced nursing roles require higher education and the preference in New Zealand is for higher nursing education to be provided by universities.

Faced with an increased demand for higher education for non-traditional student populations, universities contend with particular challenges related to decreased funding, constrained budgets and competition between education providers (Race, 1996b). Reduced funding creates the need for larger classes and servicing of new target groups, such as part-time and distance students. One development designed to meet these challenges is flexible learning. Alternative, more flexible ways to provide education evolved to meet the requirements of organisations, teachers, and students and to make better use of available technologies. Some see the move towards flexible learning that utilises technology as a response of the education sector to increased availability of communication and information systems (M. Freeman, 1998; George & Luke, 1995; Hewitt & Goodwin, 2000; Jensen, 1988; McNaught, Kenny, Kennedy, & Lord, 1999; Scott, 2000; Taylor, 1998).

According to the Centre for Flexible Learning, Macquarie University of Sydney (2000), Flexible learning aims, “to meet individual needs by providing choices that allow students to meet their own educational requirements in ways suiting their individual circumstances”. This can be broadly interpreted to include choices in place of study; time of study; approaches to learning; availability of courses (including on-line courses); pace of learning; access to teachers and other students; and modes of delivery. The argument for the educational value of flexible learning is based around the assertion that flexible delivery encourages deep learning (Nunan, 1996). Flexible learning also requires different approaches to teaching (Gunn, Lefoe, Graham, Left, & Smith, 1999; Gunn & Panko, 1998; Scott, 2000) and learning (Race, 1998b; Rigmor & Luke, 1995). Implications of flexible learning by teachers brings into focus teacher support and administrative matters for the organisation (Gunn, 1998b; Rigmor & Luke, 1995), including evaluating courses delivered in flexible modes (Gunn, 1998a, 1999). Flexible learning that relies on technology is relatively new and continually developing along with technological advancements. While there is research into aspects of flexible learning the

complexity of introducing flexible learning for a specific student population within an organisational context are not well understood.

An increasingly important student population, and a population with particular needs, is postgraduate nurses. Postgraduate nursing students in New Zealand are registered and experienced nurses. In light of nurse participation in the workforce, supporting postgraduate nurses' study by providing greater flexibility in education by offering higher education courses that run concurrent with professional practice can enhance access to learning. Technology can provide educational tools to support that flexibility. Nurses use technology as part of their professional practice in healthcare so it makes sense for technology use to be part of their ongoing education too. There are a number of options highlighted in the literature as possibilities to improve flexible access and delivery of higher education. These include offering courses on a part-time basis, a mix of on-campus and on-line learning, and totally on-line learning. Strategies to improve the learning experience for these postgraduate students are desirable to both strengthen the skills of the nursing workforce so as to meet the growing health service needs of society and to maintain and improve the reputation of the university as a provider of higher education.

This research investigates flexible learning as applied by a New Zealand university School of Nursing in its postgraduate programme. The newly established School of Nursing early recognised the need for flexible learning to allow nurses to design programmes of study appropriate for their personal learning goals and that were relevant to their areas of practice. Furthermore, flexible learning was seen as having the potential to improve the practicing nurses' experience of and accessibility to higher education. However, the impact on teachers and resources needed to establish and support an effective flexible learning environment were little understood at its inception.

## **1.1 Research question**

The research question was: "What does flexible learning mean in practice when applied to a population of nurses pursuing higher university education?" A case study approach was used to examine the introduction of flexible learning into postgraduate nursing education. Three cases were selected as exemplary courses offered by the postgraduate nursing programme in the School of Nursing. Data was collected from postgraduate nursing students, academic staff in the School of Nursing and other key staff of the Faculty and University. For the duration of

the study the researcher was employed as a lecturer in the School of Nursing. The research method and design are described in Chapter Three.

## **1.2 The Study Context**

The University that is the context for this study, is committed to advancing and disseminating knowledge through teaching, learning and research that is supported by high quality management and administration (University of Auckland, 2001). Higher education, within this university is intended to be student centred, focused on academic excellence, enjoyment of learning, critical reasoning and inquiry (University of Auckland, 2001). The University examined the place flexible learning has in both undergraduate and postgraduate education and has stated commitment to flexible learning in its mission, goals and strategies.

In 1999 when the School of Nursing was established, there was minimal flexibility and use of technology to support student learning. The University was, however, seeking to increase flexibility across all its offerings, and the Faculty and School of Nursing supported this University strategy. The issues around introducing flexibility into postgraduate nursing courses in a way that improved learning outcomes and was supported by the teachers within the particular organisational structures needed to be explored.

## **1.3 Explanation of terms**

As terms are used and understood in other countries in ways that may or may not be similar some commonly used expressions in the present study are now clarified.

### **1.3.1 Flexible learning**

The emphasis in the thesis is on learning, specifically flexible learning. Flexible learning has four characteristics: Flexible learning supports student choice in study modes and methods; access to course materials, students and staff at a range of times and locations; students being responsible for their own progress within a supportive environment and learning that makes use of the benefits of technology. For the purposes of this study the term ‘flexible learning’ includes modes of course delivery other than the traditional lecture format. Included are courses that are partially or fully on-line and also technologically supported on-campus courses. Flexible learning, as a concept, is described in Chapter Two.

### **1.3.2 Higher education**

Higher education refers to academic education provided by the tertiary, or post secondary, sector. It includes education to degree level and beyond. Historically higher education was provided only by universities, but regulatory changes in New Zealand have allowed other education providers, such as polytechnics to offer degrees and postgraduate qualifications. In the context of the present study postgraduate courses can lead to Postgraduate Certificates, Diplomas and Masters Degrees.

### **1.3.3 Postgraduate nurses**

Postgraduate nurses are registered nurses, having previously completed their initial nursing education leading to registration, who practice as nurses and study toward higher educational qualifications. Learning at the postgraduate level is concerned with preparing nurses for advanced nursing practice and nursing leadership.

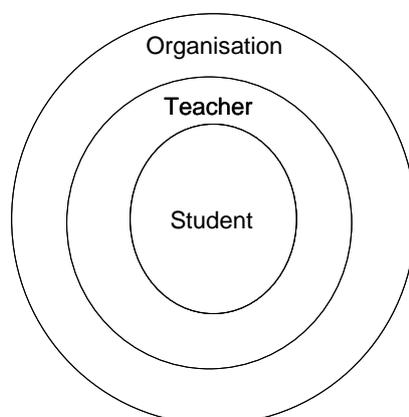
### **1.3.4 Teachers**

The term 'teacher' is used to denote nurse educators in a higher education setting. These teachers include university lecturers and clinical educators who teach and co-ordinate courses. Course co-ordinators are academic teachers with responsibility for co-ordinating and managing a specific course in addition to teaching.

## **1.4 Structure of thesis**

The thesis comprises ten chapters. Three stakeholder groups are discussed throughout the thesis: organisation (university), teacher and students (postgraduate nurses). Figure 1-1 sets out diagrammatically the Student-Centred Structural Model. The purpose of the model is to distinguish between the three stakeholder groups, acknowledging the student as central to considerations of flexible learning. Whilst teachers have a significant role in ensuring effective flexible learning through design and planning of learning, teaching, managing courses and working with students, and organisations, in this case the universities, enrol students and employ teachers, the student remains central. The location of student, teacher and organisation represent their relationship to each other. Student-centred learning places the student in the inner circle. The teacher is represented by the middle circle to show the position between supporting student learning, and being both supported and constrained by the organisation. The organisation is in the outer circle to signify the overarching influence the

organisation has for both the teacher and student. The organisation's understanding of flexible learning is influenced by both national and international factors, directing strategy, direction and ultimately allocation of resources.



**Figure 1-1: Student-Centred Structural Model**

The ten chapters are outlined below:

Chapter One, the introduction, establishes the context for understanding flexible learning, introduces key terms, and provides an overview of the thesis.

Chapter Two, reviews the literature related to learning in higher education from the theoretical understanding of constructivism, flexible learning and the research relating to effective flexible learning. Literature was sourced primarily from the Cumulative Index for Allied Health Literature (CINAHL), Medline, Educational Resources Information Centre (ERIC) and EBSCO Publishing electronic databases predominantly post 1995, using the search words 'nursing' 'education' 'flexible learning' and 'constructivism'. The American Psychological Association (APA) fifth edition standard for citation style has been used. Wider searches were made for authors recognised for their research and scholarship in flexible learning. The 'grey literature' of publications of newsletters, reports and other documents issued by governments and organisations were also utilised. However, there is an extensive and ever increasing range of relevant literature, therefore this literature review is not exhaustive, but rather reviews pertinent works.

Chapter Three, methodology and method, describes the philosophical approach to the research and case study design. Data were collected from multiple sources which include archival records, direct and participant observation, survey, assessed work and interviews. Data collection, analysis and ethical considerations are explained comprehensively.

Chapter Four, postgraduate nurses, provides the historical development of nursing in New Zealand with a focus on education. Recent changes in nursing practice with the growth of new roles and issues related to postgraduate study are outlined.

Chapter Five, profile of postgraduate nurse study population, illustrates the background in Chapter 4 in relation to the study population. Data profiling the postgraduate nursing population are presented with direct quotations from interviews, shown in italics, to illustrate important findings.

Chapters Six to Eight present findings and then discuss specific findings in light of relevant literature, demonstrating throughout how flexible learning is applied in practice in relation to each stakeholder group identified in Figure 1-1.

Chapter Six, the organisational context, is a consideration of the macro, meso and micro levels that illustrate the organisation's position, both nationally and internally.

Chapter Seven, the teachers' perspective, describes how teachers understand teaching and flexible learning, teaching practice, the development of teaching skills for flexible learning and also important issues related to copyright, intellectual property, workload, and support.

Chapter Eight, students' learning, focuses on the impact of flexible learning for the postgraduate nursing population by examining quality learning, the development of a learning community, and inhibiting factors.

Chapter Nine, flexible learning in practice, interprets the findings across and between all key stakeholder groups. The practice of flexible learning is reflected through consideration of the Student-Centred Structural Model.

Chapter Ten, the concluding chapter, offers reflective critique of the study and implications for the future, before providing a summary of recommendations and areas for further research.

## **2 Learning in Higher Education: A review of the literature**

Universities, as higher education providers, change in response to society's definition and understanding of learning and this tends to be reflected in the way teaching is organised and delivered (Biggs, 1999). It has been suggested that the post-modern view of knowledge, where knowledge is constructed and contextual, provides an approach to learning in higher education that is both effective and sustainable (Phillips, 2005). In this chapter flexible learning definitions are first considered before discussing theories of learning and focusing on constructivism. Educational concepts in relation to flexible learning consistent with a constructivist approach are then explored. Finally this chapter examines current thinking around effective flexible learning.

### **2.1 Defining flexible learning**

Higher education providers, including Universities, face significant challenges which include increased competition from private providers, decreased funding, increased accountability, a move towards a user-pays system and the pervasive increase in communication and information technology (Anderson & Elloumi, 2004; Biggs, 2003; Morrison & Spencer, 2001; Phillips, 2005; Scott, 2000). One of the responses to these challenges is flexible learning.

Flexible learning, and its synonyms, is defined in various ways internationally; however some key features are common. The literature includes the terms distance education or distance learning, extramural study, on-line learning, e-learning, blended learning, open learning and flexible delivery or flexible learning. The terminology that has developed over the years is thought to be indicative of the convergence of related concepts (Lundin, 1997). In view of the many definitions of flexible learning in the literature, many educational organisations have developed their own working definition.

In the Australian higher education sector the term 'flexible learning' is commonly used. For Griffith University, in Queensland, Australia, flexible learning is an educational approach using a variety of student-centred teaching and learning methods, resources and flexible administrative practices that respond to the needs of a diverse student population, enabling them to achieve their qualifications and the goals of a university education (Rickards, 2000). Alternatively, the University of Technology in Sydney uses the phrase 'creation of a more

flexible and responsive learning environment' instead of flexible learning to emphasise the total university experience, rather than what just happens in the classroom (Scott, 2003, p. 68). According to Scott (2000), on-line learning, as an example, is only one part of the complete university experience, just as distance education and on-campus educational boundaries allow for multiple approaches to learning. Each of these experiences needs to be responsive to the student as an individual, the key to a flexible learning environment.

In the United Kingdom the terms flexible learning and open learning tend to be used synonymously. Flexible or open learning courses may use e-mail, the World Wide Web or video-conferencing, as well as more traditional methods such as written, audio-visual materials, tutorials, posted material and telephone support or workshops. The main feature of flexible learning is meeting the student's needs so they can achieve their academic goals (The British Council, 2000). The United Kingdom demonstrated its early valuing of flexible learning by establishing the Open University in 1969. It is the United Kingdom's largest university, with over 200,000 students, representing 22% of all part-time higher education students in the United Kingdom (The Open University). A number of universities in the United Kingdom also provide their own organisational definitions of flexible learning. For example, Napier University in Edinburgh views flexible learning as combining an open attitude to learning with the best of distance learning techniques and more traditional face-to-face delivery (Educational Development Services, 2001).

Moving now to Europe, in Scandinavia the Mid Sweden University considers flexible learning as involving approaches to teaching and learning that are student-centred, free up the place, time and methods of learning and teaching, and use appropriate technologies in a networked environment (Moran, 1998). Collis and Moonen (2001) from the University of Twente in the Netherlands describe student choice in different aspects of the learning experience as the crucial feature of flexible learning. These authors have revised flexibility dimensions that were identified as a result of a multinational study supported by the European Union (Collis & Moonen, 2001). The five key flexibility dimensions relate to time, content, entry requirements, instructional approach and resources, and delivery and logistics. These key dimensions are each presented as a continuum, a helpful approach as it implies that flexible learning is not a fixed destination point. The description by Collis and Moonen (2001) demonstrates that flexible learning covers a number of dimensions and in a given programme and organisational context there may be some dimensions that are more flexible than others. There are many possible reasons for this, including specialty subject, content and organisational constraints.

Flexible learning is not a term commonly found in the United States. Instead the preferred terms are distance learning, on-line learning and the 'use of information technology in higher education'. For example, a working group representing seven higher education providers, decided on a definition of 'a formal learning activity which occurs when students and instructor are separated by geographic distance or by time, often supported by communications technology such as television, videotape, computers, Internet or mail' (Indiana Partnership for Statewide Education Working Group, 2000). Other electronic communication options commonly mentioned when discussing flexible learning include listservs and forums for the exchange of ideas, newsgroups, discussion forums both synchronous (real time) and asynchronous (not real time) and electronic meeting software (Carty & Phillip, 2001; Perry, Stine, & Heller, 1997). More recently Web 2.0 applications, such as wikis and blogs, to support social networking and collaboration have become more prevalent (Bandy, Bandy, Morris, & Naporano, 2004; Maag, 2005).

In Canada the terms 'flexible learning' and 'distance learning' are both commonly used, reflecting the size of the country and its geographically dispersed students. A partnership of Canadian universities working together as the Canadian Virtual University deliver programmes that can be accessed anywhere in Canada, or indeed internationally (Canadian Virtual University, 2002). Athabasca University advertises itself as Canada's Open University with the aim of removing barriers to access regardless of students geographical location (Athabasca University: Public Affairs & Communications Department, 2006).

In New Zealand all the terms used internationally relating to flexible learning can be found. New Zealand has a national association, The Distance Education Association of New Zealand (DEANZ), which is committed to fostering growth, development, research and good practice in distance education, open learning and flexible delivery systems for education (Distance Education Association of New Zealand, 2002). When DEANZ was established in the 1980s, one university, the correspondence school and one polytechnic, as providers of distance education, dominated. More recently the membership has become more diverse as other organisations have entered the flexible learning market. Distance education, open learning and flexible delivery systems are described as "using educational and telecommunications technology such as printed materials, video or teleconferencing, e-mail, Internet and television" with "the aim to give students as much control as possible over what, when, where and how they learn" (Distance Education Association of New Zealand, 2002). University level distance education has been available in New Zealand for more than 35 years from Massey University. Massey University uses the terms 'distance learning' and 'extramural

study’ while describing itself as an ‘open university’ (Massey University Extramural Open University Study, 2002).

The context for the present study is a leading New Zealand university and a recent entry to the flexible learning market that regards flexible learning as courses characterised by a mixed mode of delivery. Flexible learning was initially defined as having three main characteristics (Gunn, 2000), but a fourth characteristic has been added to produce the following definition:

- student choice in study modes and methods;
- access to course materials and staff at a range of times and locations;
- learners responsible for their own progress within a supportive environment; and
- making use of the benefits of technology.

This definition and understanding of flexible learning is used to inform the present study. While noting the differences in definitions of flexible learning there are common characteristics including flexibility of participation and access; flexibility with regard to student control and choice; flexibility of progression and assessment; use of a range of learning technologies and resources; and access to information and services, including student support.

It is argued however, that the number of terms related to flexible learning and the interchangeable use of terms can create confusion. There is clearly a case for a definitive definition of flexible learning that can “facilitate discussions on policy, implementation, and practice” throughout an organisation (Gunn, 2002, p. 32). By and large, descriptions and definitions of flexible learning omit an explicit link with educational theory, a further weakness in current definitions and terminology.

## **2.2 Principal theories of learning**

The last four decades or so have seen the psychology of learning shift from behaviourism, through cognitivism, to constructivism (Hannafin & Land, 1997). The pedagogical theory that underpins this study is constructivist. An overview of behaviourism and cognitivism provide context for the selection of a constructivist approach.

### **2.2.1 Behaviourism**

Behaviourist understanding of learning is based on the work of such key theorists as Skinner and focuses on the role of the stimulus-response mechanism with positive reinforcement (reward), negative reinforcement (withholding reward) and punishment in developing learning (A. Rogers, 1996). It is associated with the division of learning tasks into small, logically sequenced, components, which are separately mastered. The student is often seen as a passive recipient as it is the teacher who determines what knowledge is right and then provides the reward when learning is achieved. Knowledge is considered independent of the teacher and student and is the same for each student (A. Rogers, 1996). Learning is understood in terms of observable behaviours and measurable outcomes. In higher education behaviourist theories are seen in the traditional lecture format, where the teacher decides what students need to know, provides it to the passive recipients, then tests mastery (Laurillard, 2002; Phillips, 2005).

### **2.2.2 Cognitivism**

In the cognitive view, prominent in the 1980s, the emphasis was shifted to the processes of learning, for example the organisation of content and use of short and long-term memory (Driscoll, 2000). Learning was seen as an internal purposive process concerned with thinking, perception, organisation and insight (Ausubel, 1968; A. Rogers, 1996). The learner from the cognitive view is seen as active, rather than passive, as the learner is actively involved with problem solving, finding new information, and using past experience in order to gain understanding. Ausubel (1968) suggests that students learn more efficiently when they are presented with material in an organised, sequenced form that can be assimilated with previous knowledge. His idea of 'meaningful learning' is linked to the students' previous knowledge, and involves high levels of interaction between the teacher and the students. He suggests that meaningful learning is more efficient than rote learning, which is unlikely to be retained because it is not connected with existing knowledge (Ausubel, 1968). Examples of cognitive approaches in higher education include the use of frameworks or diagrams to assist students connect one aspect of content with another; questions to stimulate critical thinking; and also the use of multiple examples to enhance content retention in memory. Both behaviourism and cognitivism are still evident approaches to teaching in higher education.

### 2.2.3 Constructivism

A constructivist view sees learning as building upon the individual's initial understanding, skills and tendencies by incorporating new information and skills. Learning occurs where the information and experiences are meaningful and specific to the individual (Entwistle, 1992). Students are seen as not just responding in a behaviourist way to stimuli, but seeking to understand and find meaning in the stimulation of the learning experience. Bruner is one of the main constructivist theorists and he suggests that learning is an active process, stimulated by curiosity (Bruner, 1966). Knowledge is constructed by relating the incoming information to a previously acquired frame of reference. This frame of reference is a system of representation that gives meaning and organisation to knowledge and experience. Examples in higher education are when learning opportunities are provided that involve creativity and action as this encourages students to construct their own understanding (Strommen & Lincoln, 1992). The emphasis is on the individual as what they “construct from the learning encounter depends on their motives and intentions, on what they already know and on how they use their prior knowledge” (Biggs, 1999, p. 13).

The constructivist perspective suggests that students, postgraduate nurses in this instance, build up their knowledge and skills in interaction with their work environments or clinical practice. Learning is situated and this means that it occurs in real situations that are meaningful and representative for the context (J. S. Brown, Collins, & Duguid, 1989; Jonassen, Davidson, Collins, Campbell, & Haag, 1995). Since learning is a thoughtful and considered activity, deep learning occurs as students seek to construct new meaning and understanding in their knowledge (Biggs, 1999; Ramsden, 1992). Learning is therefore cumulative. Past knowledge and experience shape learning for the student (Strommen & Lincoln, 1992). Furthermore learning is co-operative and part of this is the social interaction with other students and the teacher (B. Harper & Hedberg, 1997; Tudge, 1990; Vygotsky, 1978). Therefore learning is a social process involving the active construction of new knowledge and understanding, utilising individual experience and both individual reflection and group interaction (Agostinho, Lefoe, & Hedberg, 1997; Haynes, 2002; Jonassen et al., 1995; Kreijns, Kirschner, & Jochems, 2003; Salmon, 2000; Scardamalia & Bereiter, 1994). Learning includes the teacher providing feedback to students so that they know their considerations toward new understanding are on track, though other students can also provide guidance (Bates & Poole, 2003; Billings, Connors, & Skiba, 2001; Carnwell, 2000; Higher Education Research and Development Society of Australasia, 1992; McLoughlin, Winnips, &

Oliver, 2000; Salmon, 2000; Strommen & Lincoln, 1992; The Institute for Higher Education Policy, 2000).

While constructivism attracts few criticisms it is helpful to consider some that are found or could apply in this study context. Matthews (Matthews, 2003) notes the lack of empirical evidence of the effectiveness of using constructivist teaching practices. While much of his critique of constructivism is towards its use in the school education of children, one issue relevant to adults is evaluating learning. He contends that constructivism based on the ideas of there being “no essential truths and no objective reality” is problematic when evaluating knowledge acquisition or learning among children (Matthews, 2003, p. 52). However, in the case of postgraduate nurses where assessments such as case studies are used, the concept of best practice for a particular patient in a specific health care context allows for more than one ‘right answer’. Indeed, there is no ‘objective reality’ and no one ‘right answer’ when it comes to understanding the context of nursing practice: providing a reasoned evidence base for nursing care assumes prominence.

Constructivism suggests that learning is built in interaction with the environment and learning is situated in real situations. When applied to adult learners, and specifically postgraduate nurses, this often means the work situation. However, this could be problematic for newly graduated nurses, or experienced nurses in new clinical settings, who do not have specific experience to build their knowledge on. Huang (2002) identifies the difficulty concerning a lack of real-life experience and the controversial use of ‘pre-authentication’ where learning materials relate to real situations prior to the students interaction with them. However, undergraduate nursing education includes clinical practice, so even a newly graduated nurse has some real-life clinical experience, though it may be limited, and nurses in a new clinical setting bring their previous clinical knowledge and experience with them. The use of a constructivist approach is considered to assist linking old knowledge or limited experience to new learning (Biggs, 2003), and therefore may bridge this issue related to lack of real experience.

Constructivism is presented here as the more recent of three principal learning theories, after behaviourism and cognitivism. However, constructivism is not an end point in theoretical understanding, nor does it negate all aspects of behaviourism and cognitivism, as both also contribute to a fuller understanding of pedagogical theory. Furthermore there is a small body of literature supporting yet another learning theory, connectivism, an emerging theory led by George Siemens (2005), which some consider useful when learning is related to technology

(Maag, 2006). However, for this study context with postgraduate nurses, as adult and professional people, constructivism was selected as a more relevant theory as it builds on and allows links to existing clinical knowledge and experience. Incorporated in an understanding of a constructivist approach to learning are some key educational philosophies, approaches and concepts that relate to flexible learning.

## **2.3 Educational philosophies and approaches**

It has been suggested that a revolution is taking place in education, one that deals with the philosophy of teaching, including the focus on the teacher and student (Skiba, 1997). This revolution includes social issues, the culture of the classroom, lifelong learning, and perhaps both last and not least, technology (Norman & Spohrer, 1996). Adoption of flexible learning without a fundamental shift in educational philosophy and approaches to education has attracted criticism. Flexible learning, at its best, looks to capitalise on the change of focus from teaching to student learning (Holloway, 2001). The teacher and student centred approaches are now compared and the place of the traditional lecture approach to higher education contrasted with more flexible learning options.

### **2.3.1 Teacher centred**

In the past much traditional teaching has taken place with a style where the students sat listening, trying to remember, perhaps taking notes, with the focus on what needed to be recalled for tests or for writing papers (Hewitt & Goodwin, 2000). The teacher lectured, in a manner described as 'the sage on the stage' (Hewitt & Goodwin, 2000). The teacher stood in front of the class, often on a raised dais so students could both hear the words of wisdom and see any examples held up or hand movements made to reinforce significant points. Teaching could be understood as an opportunity for the teacher to pour forth their knowledge, much as water from a jug, into the empty heads of the students, who waited quietly and receptively for knowledge. This focus on the teacher with the knowledge to pass to the passive learners has been pervasive and this model has remained since medieval times (Hewitt & Goodwin, 2000).

In a teacher-centric approach the teacher is central to the learning experience, and by using modes of transmission such as lectures, transmits information to the student. Adding technology to this model could merely enhance the existing approach (M. Freeman, 1998), with technology providing the teacher with alternative and more modern ways to transmit the information through such devices as data projectors, the World Wide Web or compact disc

(CD). Used in this way technology may be embraced as a cost effective and efficient method of transmitting information to more students, without necessarily being more educationally effective in terms of learning.

George and Luke (1995) argue that flexible delivery represents a potential shift away from the situation where large groups of students are taught together, as though in a system resembling mechanised efficiency in production. The outcome of mechanistic production, they contend, is depersonalised education, with little focus on the learning needs and context of the student (George & Luke, 1995).

### **2.3.2 Student centred**

In response to the criticisms of a teacher-centred approach it is suggested that a teacher who employs flexible learning with a student-centred model informed by constructivist principles, has every likelihood of achieving quality learning outcomes (M. Freeman, 1998). A student-centred approach to teaching aims to give the student as much control as possible over what, when, where and how they learn and it changes the role of teacher from a source of knowledge to a manager of learning and a facilitator (Australian National Training Authority, 2001; Chang, 1999; George & Luke, 1995).

Although there are many possibilities within flexible learning these are linked to implications for teachers. “Educators of yesteryear have faced transitions from stone tablet to paper, slate board to white board, lantern to electronic projector, live performance to film and video” (McGuinness & Hardy, 1999, p. 212). Each of these changes has presented both teachers and students with challenges. An alternative, that is consistent with constructivism, is a student-centred approach based on the skill needs and delivery requirements of students, rather than the interests of teachers or education providers (Australian National Training Authority, 2001; George & Luke, 1995). The teacher as facilitator uses their knowledge to assist students find the answers themselves. In doing this students have the opportunity to realise the power they have over their own ability to learn (B. Harper & Hedberg, 1997).

However, if students are used to a teacher-centred style they may find it difficult to change. Those students who have been exposed to teacher-centred learning such as the ‘sage on the stage’ lecture approach when encountering more student centred learning approaches have been heard to complain about the teacher making them ‘do all the work when they are paying for their education’ (Holloway, 2001). A benefit of student centred learning is the opportunity

for the student to learn beyond the current content and to gain understanding of learning skills, which can prepare them for lifelong learning.

One of the tenets of flexible learning is increasing students' access to education so students have the choice of where and when they study. Access includes admission to the course and programme itself and to course materials, learning resources and staff at a range of times and locations (Abel, 2005; Agostinho et al., 1997; Bates & Poole, 2003; Bell, 1997). Issues of access affect recruitment and retention of students who find attending on campus lectures or tutorials difficult (Billings, Connors et al., 2001; Draves, 2002; Jolliffe, Ritter, & Stevens, 2001). Flexible learning can introduce flexibility within courses and entire programmes of study. Departing from the traditional university mode of full-time, during-the-day study can provide flexibility as to when students learn (Thurmond, 2002). Courses may be part-time; lectures or tutorials may be scheduled during the evenings or on weekends and some or all contact may be replaced by electronic communication such as video-conferencing, telephone conferencing or asynchronous electronic tutorials (Draves, 2002; Gal-Ezer & Lanzberg, 2003; Howatson-Jones, 2004; Jolliffe et al., 2001; Kerka, 1996; Vrasidas & McIsaac, 2000). Providing flexibility as to where students learn could mean that students are anywhere in the world. Students can stay in contact with their teacher by phone, fax or email, rather than in person, and Web-based resources may provide students with readings and activities without having to physically visit a library (Damazo, Shovein, Huston, & Fox, 2002; Honey, 2004; Rena M Palloff & Pratt, 1999). Some or all face-to-face tutorials could be replaced with asynchronous electronic tutorials or synchronous computer-mediated chat (Draves, 2002; Jolliffe et al., 2001; Kerka, 1996; Naidu, Barrett, & Olsen, 1995). Courses could be delivered entirely at a distance, with learning materials distributed to students either by post or via the Internet or by a combination of both (Cornford & Pollock, 2003; Race, 1998a).

## **2.4 Constructing a flexible learning environment**

Flexible learning has been described as a mix of educational philosophy, pedagogical strategies, delivery modes and administrative structures which allow students maximum choice for their learning needs, approaches to learning, and personal circumstances (Lundin, 1997). This section reviews educational concepts applied to flexible learning, specifically examining students as individuals; social aspects of learning; and deep and active approaches to learning.

### **2.4.1 Individualised approach**

Student choice in study modes and methods provide the opportunity to utilise the learning style that best suits the individual for each learning situation (American Distance Education Consortium, 2001). Student choice in pace, time and place that learning occurs can provide a sense of control (Race, 1996a). This control assists the student to enjoy the learning experience while achieving the learning outcomes and assessments to meet course requirements. Furthermore, control in the learning experience empowers students, which has been linked to encouraging critical thinking (Jonassen et al., 1995).

Students approach learning with individual preferences and are affected by experiences from previous learning situations. Students with different learning styles are thought to be affected by particular teaching strategies (Entwistle, 1992; Hayes & Allinson, 1993; Laurillard, 1993). There are advantages for both students and teachers in recognising different approaches to learning. For students, this insight can be used to maximise learning, and by understanding individual preferences teachers can plan teaching strategies that provide choice and are more likely to suit individual students. Flexible learning can provide the means to cater to individual preferences as recognising individual differences related to flexible learning can be used to facilitate effective guidance and support (Carnwell, 2000; Thurmond, 2002; Wills & Stommel, 2002). Students may need assistance to adapt to different ways of learning and may even need to be socialised into the role of flexible learner and supported to develop the required skills (Holloway, 2001).

Learning style appears to have been largely ignored in the design and development of educational software, yet has been found useful in devising computer-based learning environments (Groat & Musson, 1995). A constructivist perspective is thought to be particularly applicable for the development of educational simulations (Jonassen, 1993) and to result in improved educational software and learning (J. S. Brown et al., 1989; Grabinger & Dunlap, 1995; Hannafin & Land, 1997).

Using technology in flexible learning has the potential to improve the student's sense of control in the learning process (Collis & Moonen, 2001). Stoney and Oliver (1997) suggest that both the cognitive and affective nature of computer-student interactions may exert an influence on the type and quality of learning. The concept of personal control and effectiveness over the computer yields psychological benefits, including improvements in self-concept, reduction of emotional dependence and self-management of behaviour and learning

(Jonassen, 1993). The sense of control over learning has been considered significant for promoting learning and also for satisfaction with the learning experience (Race, 1996a). A contrary view is that types of learning activities may end up being loathsome and frustrating for the student, and result in a loss of control when using technology (Laurillard, 1993). She gives examples of exasperating situations, such as looking for the back button on the keyboard rather than the screen, which serve to put the focus on technology, not learning. Regarding the place of technology in education, it is important to consider individual preferences and that learning with technology may not suit everyone (M. Burgess, 2000; Holloway, 2001), and that adequate support and orientation are needed in most cases (Bates & Poole, 2003; Cornford & Pollock, 2003; Cragg, Humbert, & Doucette, 2004).

#### **2.4.2 Social aspects of learning**

Vygotsky, (1962) using a social-dialogical perspective, stated that higher-level mental functions appeared first on the social plane and only later on the individual plane. This premise stresses the importance of social interaction in the learning environment and recognises the relationship between speech and action. Biggs (1999) identified likely outcomes of effective student to student learning interactions, including elaboration of known content by hearing other students' interpretations, deriving standards to judge those interpretations and metacognitive awareness when considering how both they and the other students arrived at their understanding. Vygotsky (1978) introduced the concept of a 'zone of proximal development'. He proposed that each person has an actual developmental level and an immediate potential for development and coined the term for the difference between the two levels as the 'zone of proximal development' defined as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p. 86). The zone of proximal development is considered an attribute of interaction among students jointly engaged in learning (Tudge, 1990). Learning is needed that builds on previous experience, links to the context of an individual's professional life, and fosters collaboration.

Flexible learning can support collaboration. For example, using computer-mediated communication, can enable student-to-student communication irrespective of the physical location of the students (Jolliffe et al., 2001). Furthermore the use of asynchronous communication removes the need for students to be communicating together at the same time. Initially, though, it has been found that students and teachers may be uncomfortable with the

degree of openness such computer-mediated communication allows (Naidu et al., 1995). Strategies that address the assumption that computer-mediated communication will be immediately effective, such as students getting to know each other first, establishing some ground rules, and allowing social as well as educational discussions, have been found helpful to overcome this discomfort (Kreijns et al., 2003; Salmon, 2000).

Building on the social learning aspects of Vygotsky's (1962) work, Lave and Wenger (1991) contend that learning is a function of the activity, context and culture in which it is situated or occurs. The principles behind their work are based on the notion that knowledge needs to be presented in an authentic context and that learning requires social interaction and collaboration. Social interaction is a critical component of situated learning as learners become involved in a community of practice, which exemplify certain beliefs and behaviours. Flexible learning has been shown to support the development of communities of practice (Billings, Vaughn, & Dell, 1998; Cornford & Pollock, 2003; J. Rogers, 2000; Wenger, 2000). Situated learning is described as the "whole person understanding in context, rather than receiving knowledge" (Lave & Wenger, 1991, p. 33). Situated learning and social learning has particular relevance to postgraduate nursing education. Situated learning for nurses can be understood to mean that learning occurs in the clinical situations that are meaningful and representative for the practice context of the nurse's professional life. While the courses may be offered by a higher education provider there is a strong clinical focus and it is recognised that the application of learning to the clinical area is where learning gains meaning and is consolidated. Learning is seen as having a strong social aspect so the interaction between students and between students and the teacher is important and can foster deep approaches to learning.

### **2.4.3 Deep and surface learning**

Two contrasting approaches to learning that have been identified are deep or surface approaches. Using a deep approach to learning the student processes 'holistically' looking for meaning, compared to a surface approach where the student focuses 'atomistically' looking for key words or phrases (Laurillard, 1993). A further differentiation between surface and deep approaches to learning is made by Biggs (1999). He describes a surface approach as the intention of getting the learning task done with minimal effort just to meet the requirements. In contrast a deep approach to learning is shown when the student engages with the learning task meaningfully and appropriately. The emphasis in the deep approach to learning is on understanding the underlying meaning, theory, or ideas. A comparison of surface and deep

approaches to learning is often presented as a dichotomy where a surface approach to learning is based on 'reproducing' information, and a deep approach to learning is concerned with 'transforming' information by understanding (Entwistle, 1992, p. 12). While a dichotomous view implies that learning is either deep or surface, yet within a learning experience both may be effectively used and choice may depend on the educational task or environment that students are responding to (Ramsden, 1992). For example, the same student may employ a deep approach in learning to drive a motor vehicle, and a surface approach to master the road code in order to pass the theory test.

Factors that are thought to encourage students to adopt a deep approach to learning include the intention or determination on the part of the student to understand, appropriate background knowledge and their learning preference to work conceptually (Biggs, 1999). These factors can be further strengthened by the teacher explicitly describing the structure of the topic, seeking responses from students, building on student's prior knowledge and emphasising depth of knowledge rather than breadth. Postgraduate education aims to encourage deep approaches to learning and to foster in students the seeking of ways to construct new meaning and understanding. Being responsible for their own progress within a supportive environment involves students being actively engaged in the learning process.

#### **2.4.4 Active learning**

Flexible learning that allows student choice and is based on student-centred learning involves seeing students as active learners (Holloway, 2001; Lundin, 1997; Race, 1996a). Students as active learners involves activity on several levels; engagement with the learning material, interaction with other students and interaction with teachers as facilitators (American Distance Education Consortium, 2001). Active learning has been shown to promote deep approaches to learning when the student engages with the learning task meaningfully and appropriately (Biggs, 1999). An important component of the facilitation role of teachers is the feedback provided to students that guides and supports further learning (Graham, Cagiltay, Lim, Craner, & Duffy, 2001; Laurillard, 1993). Kirschner, Sweller, & Clark (2006) suggest that without adequate guidance student learning can be less effective and less efficient. Part of student active interaction with learning material is the opportunity to relate learning to real-life experiences (American Distance Education Consortium, 2001). This means learning is built on experience and within context that has meaning for the student, linking back to situated learning (Biggs, 1999; J. S. Brown & Duguid, 2000; Laurillard, 1993).

The process of ‘learning how to learn’ or metacognition is important because it develops ability for learning beyond the present learning situation (Flavell, 1979). Skills associated with metacognition are self-evaluation, reflection, thinking about thinking, analysis and planning, self-regulation, checking, prediction, monitoring and reality testing (Ryba & Anderson, 1990). These cognitive skills are needed amongst nurses as they work in a challenging and changing health care service (DeBourgh, 2002; Ribbons, 1998). Papert (1980), one of the earliest proponents of metacognition, took a Piagetian learning perspective and described metacognition involving the self-exploration and the acquisition of knowledge about one’s own learning. Furthermore metacognition can also be fostered during the social interactions of learning. Clearly there are associations and overlap between metacognition with the constructivist concepts for flexible learning, and it is in the way these are merged that effective flexible learning occurs.

## **2.5 Effective flexible learning**

As for any educational approach, flexible learning is concerned with educational effectiveness. Educational effectiveness is described as having the components of solving personally relevant learning problems, providing learning experiences, supporting the curriculum and resulting in eventual financial gain for the organisation (Collis & Moonen, 2001). The literature reveals multiple efforts to assess effectiveness of flexible learning (Phipps & Merisotis, 1999), and brings into focus that the provision of effective flexible learning involves the student, teacher and organisation. Hence the selection of this structure (presented as a model, Figure 1-1: Student-Centred Structural Model) for the thesis.

A notable discussion on effective education was that of The American Association of Higher Education in 1987 that identified seven principles of good practice (Chickering & Gamson, 1987). As new and emerging technologies became available the original work was revised to include the most effective ways to advance those seven principles with technology, with a focus on computers, video and telecommunications (Chickering & Ehrmann, 1996). The “Seven Principles of Good Practice” have been used as a framework to evaluate flexible learning in four flexible courses in a large mid-western North American university, and provided a practical lens to evaluate the on-line courses (Graham et al., 2001). Although targeted at undergraduate education the principles are thought to equally apply to postgraduate education (Billings, 2000; Billings, Connors et al., 2001; Thurmond, 2002).

There have been a number of initiatives that have sought to provide guidance for the development of flexible learning (Center for Adult Learning and Educational Credentials, 2000; Indiana Partnership for Statewide Education Working Group, 2000; Scott, 2000; The National Education Association, 2000). The Indiana Partnership for Statewide Education (2000) identified a need for guiding principles that defined good practice and a benchmark as they pursued flexible learning from the faculty perspective of teaching and learning. This group developed a set of principles that cover designing, developing, delivering and assessing flexible courses. These authors found it useful to delineate between the responsibilities of the faculty and the organisation, but acknowledged that both are essential.

The Institute for Higher Education Policy, a non-profit, non-partisan United States organisation, published 24 benchmarks considered essential for success in flexible learning (2000). The study was based on six higher education providers with recognised experience in flexible learning and from this benchmarks developed were divided into seven categories of organisational support, course development, teaching and learning, course structure, student support, faculty support and evaluation and assessment. It is important to note, though, that this study was partially supported by a commercial company with vested interests in learning management systems (The Institute for Higher Education Policy, 2000).

A specific initiative to explore effective flexible learning in nursing was developed in the United States at the Indiana University School of Nursing (Billings, 2000). Billings developed a framework for assessing outcomes and practices for flexible learning which used five major concepts to provide a context for relating a variety of variables. The framework begins with outcomes that are enabled, either partially or fully by web-based technology. Outcomes, based on the seven principles of good practice using technology (Chickering & Ehrmann, 1996), include the learning outcomes being met, as well as recruitment and retention of students, access to courses, convenience, computer proficiency and satisfaction. Each of the above studies recognises that effective flexible learning is multi-faceted and a comprehensive understanding needs to include the perspective of the student, teacher and organisation.

### **2.5.1 Effectiveness for the organisation**

From an organisational perspective effective flexible learning needs to emphasise teaching and learning but this occurs within the constraints of limited resources. Cost is a factor to be considered (Bates, 2000; M. Freeman, 1998). While the increased use of technology primarily offers alternative ways to provide information and to support learning, the technology may be

seen by some as a method of providing cost effective education and efficiency of transmission to more students (Ruth & Giri, 2001). However, several North American universities have found to their detriment that flexible learning is not always cost effective (Hafner, 2002; Ruth & Giri, 2001). For example, some educational organisations found students expected to pay less if not attending traditional lectures, and the flexible courses were expensive to design and build. The number of students enrolled in a course has a direct impact on income generated (Campbell, 2001).

Typically earlier participants in flexible learning were adults seeking advanced education, training at home, on the job, or in the military, whose multiple responsibilities or physical circumstances prevented attendance at a traditional educational facility (Bates, 1995). The United States military has long compared cost effectiveness of flexible and more traditional face-to-face teaching and found flexible learning to be more cost effective, but this is primarily because the military had to factor in travel time and expenses (Means et al., 1993). Cost effectiveness has been measured when comparing flexible learning with traditional classroom teaching in the United Kingdom. Estimated savings for businesses whose employees participated in continuing education of between 12 and 90 percent were found using flexible learning approaches (Tucker, 1994). Benefits for the business included the ability for staff to use 'quiet time' for training to improve their knowledge and enable the business to meet regulatory requirements. However, cost analysis included some factors that are not incurred for higher education providers, such as the learner's salary and loss of productive work time, cost of replacement staff, travel and residential expenses. Difficulties in describing the actual costs of traditional education per student, however, impacts on discussions about the costs of technology relative to these (Ehrmann, 1995).

Canadian, Tony Bates (1995), devised a model for measuring costs and benefits in flexible learning. His model uses the anagram ACTIONS, which stands for Access, Costs, Teaching functions, Interaction and user-friendliness, Organisation, Novelty and Speed. Benefit assessment includes performance driven benefits, such as student outcomes and student and teacher satisfaction; while value driven benefits include increased access, flexibility and ease of use for students. The societal, what Bates calls the 'value-added', benefits include aspects such as reduced traffic and pollution from not having to travel to on-campus courses and the potential for new markets. The ACTIONS model was used to assess flexible learning within the University of British Columbia and found that flexible courses could be cost effective, especially when marketed internationally (Bartolic-Zlomislic & Bates, 1999).

Other writers caution that apparent cost effectiveness can mask cost shifting, such as moving costs from distribution of learning resources to maintenance of web resources (Means et al., 1993; Rumble, 2001; Tucker, 1994). Flexible learning provided by educational organisations could also be seen to shift costs that might otherwise fall on the employer or the education provider, to the student. Students study in their own time, relieving employers of replacement staff costs. Instead of providing written material, resources may be available on-line, therefore shifting the cost of photocopying or printing to the student if they want a printed copy (Rumble, 2001). At the same, though, the ideal of integrating learning resources, administrative systems and student support services seamlessly would provide some benefit to the student (Everhart, 2001).

Technology support is required and may be supplied at an organisational or faculty level to both teachers and students. Learning that makes use of the benefits of technology requires strategic support and resource decisions about the infrastructure, both within the faculty and the wider organisation, to assist and sustain the development and implementation of flexible learning (S. J. Marshall, 2004; Valcke, 2004). Implementation strategies involve the manner in which the teachers, as a group, implement flexible learning. Individual teachers may embrace technology or changes in their practice, but this activity, when it occurs in isolation, may be termed 'lone ranging' (Taylor, 1998). While these individuals can make a significant impact within an organisation, it is the implementation strategies that include the majority that provide the changes needed to make a programme, rather than just an individual course, available in more flexible modes. Aspects of organisational support include professional development in technology use and course management for the teacher (Abel, 2005; Billings et al., 1998; Cragg et al., 2004; Cravener, 1999) and also the support systems for increasing flexibility in courses (Cho & Berge, 2002). This could include web designers, instructional designers, graphic artists and others, as well as a robust network to ensure fast and reliable access. Recognition of workloads and the valuing of developments in teaching is another aspect of faculty support (Bates & Poole, 2003; Cravener, 1999; Draves, 2002; McNaught, 2001; Phillips, 2005).

The support services that contribute to effective learning are part of the organisational responsibilities to the student. This commences from the first enquiry to find out about available courses, through to programme enrolment, course selection, course delivery and notification of results (Everhart, 2001). Once enrolled then orientation to the organisational technology is required to assist in student use of course hardware and software (Jolliffe et al., 2001). Awareness about the full range of support services is essential and this information

needs to be readily available to students, teachers and support staff (Gunn et al., 1999). Regular evaluation of support services would ensure they remain adequate and effective (Higher Education Research and Development Society of Australasia, 1989). The significance of the provision of support services has been recognised by their inclusion in guidelines and benchmarks for quality education (American Distance Education Consortium, 2001; Billings, 2000; Griffith Flexible Learning Services, 2000; Indiana Partnership for Statewide Education Working Group, 2000; The Institute for Higher Education Policy, 2000).

Access to and use of library resources are critical parts of the teaching and learning process (George & Luke, 1995). A North American university library describes educational effectiveness goals for the service they provide and include educating users in the most effective and productive use of their services and building and maintaining high quality support that increases the productivity of the entire University (Office of Institutional Planning and Assessment, 2000). Information literacy is a recognised skill that is linked to the library services of searching for, locating and retrieving information (George & Luke, 1995; Kerka, 1996). This includes the use of technology to support search strategies and information literacy to sort, organise and differentiate between information resources.

Copyright laws govern the supply of learning resources. Electronic supply can be faster and more convenient but there is still a requirement to be mindful of copyright laws (Indiana Partnership for Statewide Education Working Group, 2000). Copyright clearance may be needed and services to facilitate this can be helpful, especially given the time this can take (Bartolic-Zlomislic & Bates, 1999). Obtaining copyright clearance has been identified as an often under-estimated expense. There are the more obvious charges for obtaining the right to copy and costs related to the time taken to complete clearance (Ling, Inglis, & Webster). Teachers who develop innovative content and learning resources may also be concerned with copyright to protect their intellectual ownership of content and intellectual property rights (Indiana Partnership for Statewide Education Working Group, 2000). The development of learning resources and issues around intellectual property need to be clarified and addressed at an organisational level (Gunn, 2002).

Organisational challenges for the future include the increased globalisation of education and increased competition, combined with increased need for continuing professional education and increased technological options (Lundin, 1997). The introduction of communication and information technology to support learning raises questions about the effectiveness of the learning experience. This concern is summarised by Billings (2000, p. 60) who says that "in

spite of the increasing use of the Internet to deliver courses and enhance learning, little is known about the outcomes, what teaching and learning practices contribute to positive outcomes, what supports need to be in place for students and faculty, or how Web technology and its learning tools contribute to teaching and learning".

### **2.5.2 Effectiveness for teachers**

In addition to flexible learning changing the role of the teacher towards being more of a facilitator, the teacher is also responsible for the organisation of the course. The smooth running of a course is widely perceived as the responsibility of the teacher, whether or not aspects of this fall under the direct control of the teacher (DeBourgh, 2002). Technology has been used to successfully support course management and aid the administrative aspects of running a course (Cravener, 1999; Sheridan, 1997). However, as technology use to support education increases there is a requirement for educators to be prepared to utilise these developments (Billings et al., 1998; Indiana Partnership for Statewide Education Working Group, 2000; Jones, Stewart, & Power, 1999; Laurillard, 1993; LeCornu & Ahern, 2001; Lewis, Watson, & Newfield, 1997). Teacher development needs to be considered within the constraints of the organisation, resources, available training and the way a course can be integrated within a programme of study (Ehrmann, 1995; Gunn et al., 1999). More importantly though is the need for teacher development to include teaching approaches and strategies to ensure effective learning for students (Ali, Hodson-Carlton, & Ryan, 2004; Bell, 1997; Elfrink et al., 2000; L. H. Freeman, Voignier, & Scott, 2002; Howatson-Jones, 2004).

A 1998 survey of nurse educators in North America found a need for professional development in the area of learning technologies, looking at how to develop and teach/facilitate learning outcomes in an on-line learning community. The solution for this group was the development of an on-line course about teaching in on-line communities (Billings et al., 1998). This provided staff development while modelling how it could be achieved on-line and provided the teachers with experience from the student perspective. In order for faculty development programs to be successful at integrating information technology into the curriculum, they must be sensitive to faculty interests and time limitations (Carty & Phillip, 2001). Integrating information technology into curriculum creates major change for teachers, schools, and has wider repercussions within an organisation.

While a university or school may wish to increase flexible learning and teachers may wish to facilitate teaching innovation this may be countered by concern about teacher workloads

(Collis & Moonen, 2001; Ruth & Giri, 2001). A review of the literature that summarised faculty reports of their experiences with flexible learning compared with traditional face-to-face teaching experiences indicated increased workload was one of the main areas of concern (Cravener, 1999). Reduction in teaching time during development of teaching innovation, plus the valuing of pedagogical research is one way to overcome this (Barrett, Daniels, Jasman, Martin, & Powell, 1997; Housego & Freeman, 2000). The lack of reward has been identified as one reason for teachers slow and continued adoption of curricula change (Ehrmann, 1995).

To summarise, a review of the literature suggests that effectiveness in teaching in higher education should be recognised and rewarded. The importance of effective teaching should be evident in relevant organisational policies that makes explicit the rewards and possible advantages to teachers (Gunn, 2002; Gunn et al., 1999; Indiana Partnership for Statewide Education Working Group, 2000). Effectiveness and innovation in teaching, including the implementation of teaching with technology, can be acknowledged during teacher appraisals (Laurillard, 1993). There are multiple ways to recognise and reward excellence in teaching. Flexible learning from the teacher's perspective includes concern about workload. This is a particular issue given the expectation that research, alongside excellence in teaching, is emphasised in academic settings. Workload includes the management and administration of a course, as well as development, preparation and teaching. Teachers must consider whether the amount of time and effort they invest is meeting students' and organisational requirements. In addition to course management, effective teachers are concerned with the design of the course, and the learning outcomes that build on the students' knowledge base.

### **2.5.3 Effectiveness for students**

From the perspective of the student, effective learning means passing or achieving the requirements of the course as part of meeting personal learning and professional goals. To enable the student to achieve course requirements access to resources and learning material associated with the course is critical. The student must then engage with the learning material in ways that facilitate deep learning and build on prior experience to develop new knowledge and understanding. Finally, in relation to postgraduate nurses, learning and new knowledge must impact on nursing practice (Dyson, Kilpatrick, & Lovell, 2004).

A review of literature published during the 1990s showed that three broad measures of effectiveness of flexible learning have usually been examined. These are student outcomes including grades and test scores; student attitudes about flexible learning; and overall student

satisfaction (Phipps & Merisotis, 1999). Their review of studies of flexible learning in a range of higher education settings and disciplines, found that most flexible learning courses compared favourably with traditionally taught classes and students had high satisfaction. Similar findings have been found in nursing (Billings, Ward, & Penton-Cooper, 2001; Block et al., 1999; Sole & Lindquist, 2001; Yucha & Princen, 2000). However, others have found “no significant difference” when considering student achievement and comparing traditional and on-line courses (Russell, 2001).

Student satisfaction is multifaceted. One source of student satisfaction is the organisational support services that are provided. These include support services and resources, which involves general, enrolment and course information, library, and other student services (Everhart, 2001; Perry et al., 1997). Another aspect of student satisfaction is student perception of effective teaching, which can be understood through using tools such as the Student’s Evaluation of Educational Quality (SEEQ), based on extensive statistical studies since the 1980s (Lawall, 2001). Using SEEQ the student rates teaching effectiveness on nine factors: learning, enthusiasm, organisation, group interaction, individual rapport, breadth, examinations, assignments and student workload. More recent is the development of web-based learning evaluation tools (Chang, 1999). However, many web-based evaluation tools do not have the same body of evidence behind them as the SEEQ and also assume the student is comfortable using this medium to complete the evaluation.

Flexible learning can provide advantages for the student. One of the major advantages cited about flexible learning is that it is student centred and has the possibility of allowing students to make decisions and choices about their learning. Flexibility in courses within a programme of learning is an advantage that students may appreciate where it can be offered (Clark, 1997). Flexible learning can improve student’s access to courses, when previously they would have to commute to attend classes on campus (Sole & Lindquist, 2001; Wade, 2001). There is increasing demand for education that acknowledges the various characteristics and circumstances of the student (George & Luke, 1995).

Potential disadvantages associated with flexible learning have also been noted. For example, possible distractions, in the form of home, family, social and work commitments, might reduce effective learning and make learning at a distance harder for the student to find time to focus on their study (Sole & Lindquist, 2001). Furthermore, some students prefer the regime of set lecturers as a method of allocating time for their study instead of, for example, self-paced on-line learning, (Thurmond, 2002).

Potential disadvantages can be moderated by teaching strategies and good use of technology to support learning. Sole and Lindquist (2001) suggest that flexible learning technologies can increase the effectiveness of learning and improve a student's academic performance, participation and attendance. Students who do not normally contribute to a class discussion can feel less threatened during on-line discussion, where gender, age and culture are less obvious. However, there is also the risk of isolation as some students have been shown to prefer face-to-face interaction with fellow students and teachers in the classroom (Yucha & Princen, 2000). While flexible learning can mean students work in isolation in their own homes, there can also be opportunities for collaboration (N. K. Holloway, 2000; Sole & Lindquist, 2001). The degree of isolation depends on the teaching strategies used within a course. Professional development of teaching staff is therefore needed to maximise the positive aspects of flexible learning (Billings et al., 1998; Jones et al., 1999; Lewis et al., 1997).

Flexible learning with a reliance on technology to support education depends on the student having sufficient skills to use the technology (Billings, Connors et al., 2001; Burbules & Callister, 2000). This is often assumed yet may be a significant barrier to access. With the increasing emphasis on technology to support education there remains an obvious barrier to student participation, which is access to technology, often a computer. Speed and ease of access to on-line learning environments is an essential element of access that needs to be considered if these are used (McNaught et al., 1999). In the United States the report, 'Falling Through the Net: Defining the Digital Divide' found that more Americans than ever have access to telephones, computers, and the Internet (US Department of Commerce, 2000). At the same time, however, it was also found that there was still a significant "digital divide" separating the information "haves" and "have nots". It was reported over 40 percent of American households owned computers, and one-quarter of all households had Internet access at the end of 1998 (US Department of Commerce, 2000). These figures have since been updated to over 50 percent of American households having Internet access (Cullen, 2003). Concern has been raised in the United States that despite the increase in households having computers and Internet access the digital divide continues to widen (Carvin, 2006). In New Zealand there has been considerable growth in the number of households with computers; from 32 percent in 1997, 47 percent in 2000, to 60.5 percent in 2006 (Statistics New Zealand, 2006). For students access to computers and the Internet may be available on-campus using university supplied resources, though access is questionable when there are queues.

## 2.6 Summary

A fundamental feature of flexible learning using constructivist concepts is a student-centred approach to learning that makes use of computer and information technologies within a supportive environment. Higher education providers recognise the increasingly important role of technology and aim to maximise that potential through developments such as the Internet, particularly World Wide Web technology. In addition flexible learning can provide greater access to learning and opportunities for students to be more actively involved in their learning. A significant outcome of flexible learning that is mediated by technology is the competence that students can develop with computer and information technology, which contributes a skill for lifelong learning.

Much of the literature reviewed tends to focus on discrete elements of flexible learning or on aspects relevant to one or two stakeholder groups, such as teachers or students. Many of these elements are included in the table 'Principles of Effective Learning' (Table 3-1), which is then tabulated to identify data sources, data collection methods and questions (Appendix 1). There is a lack of research that considers the whole; the elements of flexible learning, the perspectives of the student, teacher and organisation, within the context of one higher education provider, in relation to flexible learning provision for a specific student population. The present study aims to explore both these elements and the interconnectedness between the elements in relation to flexible learning provision for postgraduate nurses, who as students and practicing nurses have specific needs. Following explanation of the methodology in Chapter 3, Chapter 4 describes these students and provides the context of nursing education and practice in New Zealand.

### **3 Methodology and Method**

The literature reviewed in the previous chapter highlights the multiple perspectives and interests to be considered when examining the application of flexible learning. An investigation of the phenomena in their natural context, as the present study set out to do, requires that multiple methods and sources of data be used. This chapter provides an overview of the approach taken to address the research question concerning flexible learning for postgraduate nurses. The philosophical assumptions, case study design and details of the methods are included. Mixed methods, with a predominantly qualitative approach, have been used with an inductive process to explain the complex context of this study.

The chosen design is case study. Case studies have been described as being exploratory, descriptive or explanatory (Yin, 1989). In this research a pluralistic approach, encompassing all three was used. Flexible learning involves teachers, students, the Faculty and the University. Mixed methods of data collection including a survey and interviews with students, teachers and other University staff, provided multiple perspectives and sufficient description and explanation of the multifaceted nature of effective flexible learning for postgraduate students within a School of Nursing. Details of the research design, data collection, data analysis and issues of trustworthiness are provided and ethical concerns, especially the role of the researcher, are discussed.

#### **3.1 Research questions**

The research question that this study seeks to answer is:

“What does flexible learning mean in practice when applied to a population of nurses pursuing higher university education?”

Underpinning this is a series of study propositions derived from the literature:

- Flexible learning within the School of Nursing will support student centred learning and allow students more choice;
- Some flexible learning practices are more effective than others for postgraduate nursing courses;

- Flexible learning is best introduced slowly so that teachers can consider and accommodate changes in workload and teaching practice;
- Postgraduate nurses need assistance and support to use technology for learning; and
- Support from the organisation is required for effective flexible learning. This support begins with the students' first contact with the University, sourcing information about programmes available, admission and enrolment procedures, the library, other student services and computer and electronic networks.

For this research question the complexity of education and the position of the organisation, faculty, use of technology, teachers and students are better understood using a case study design (see 3.4).

### **3.2 Philosophical assumptions**

Underpinning the study are certain philosophical assumptions and this section makes these explicit, thereby clarifying the researcher's understanding of knowledge and stance in answering the research question. Constructivism is the school of thought used as the basis for the study, which is founded on the view that individuals seek understanding of their world and develop meanings through experiences in their work and wider lives. Rather than one meaning individuals may hold multiple meanings and these are often "negotiated socially and historically" (Cresswell, 2003, p. 8). Complexity is expected when individuals hold multiple meanings and the approach taken with this research is to understand these within the context of the study. Socially, participants may construct meanings together and data collection was geared to gather examples of shared experiences and understandings. From the position of different key stakeholders students and teachers bring their previous learning, work and life experiences with them and these historical elements are recognised as influential in the study and in the construction of meaning. In view of the social aspects of constructivism this study has explored the processes and interactions within the study context. The process of the research is chiefly inductive, with meaning being generated from data collected within the context of a university School of Nursing.

Crotty (1998), in discussing constructivism, describes the role of the researcher as seeking to understand the context through interaction with the study setting and participants. Therefore, personal involvement of the researcher is expected and was a feature of the study. The researcher makes an interpretation, which is shaped by prior experience and background;

however, the use of multiple methods of data collection and broad questions ensure the participants describe their experiences and the meanings they take from them. As the researcher was also an active participant in the study it is important to clarify the role of the researcher further.

### **3.3 Role of the researcher**

In qualitative research “the researcher is the primary instrument for data collection and analysis” (Merriam, 1998, p. 7), therefore the role of the researcher is paramount. The possible multiple roles of the case study researcher have been described as teacher, advocate, evaluator, biographer, interpreter, participant observer, interviewer, consultant and more (Stake, 1995). Throughout the research process different roles may be assumed and the emphasis on the role selected by the researcher may vary. One of the primary roles though is that of interpreter. Stake (1995, p. 99) suggests that this role, as “gatherer of interpretations” is central. Dependant on this role as interpreter is the relationship between the researcher and stakeholders from the organisation at central University and Faculty levels, teachers in the School of Nursing and postgraduate nursing students.

For the duration of the study the researcher was employed as a lecturer in the School of Nursing. This involved teaching as a colleague and co-worker in the School of Nursing with other nurse teachers, some of whom were course co-ordinators of the selected postgraduate courses. The principal advantage of working in the same organisation was the access to the research setting itself. This included access to documentation, identification of the courses, key informants, stakeholders and the participants. This position permitted a truly “emic, or insider’s perspective” (Merriam, 1998, p. 6).

The insider’s perspective provided by the researcher’s role as participant observer within the School of Nursing supported gaining “direct experiential and observational access to the insiders’ world of meaning” (Jorgensen, 1989, p. 15). Cornford & Pollock (2003) advocate the use of participant observation alongside other methods of data collection to gain an in-depth and full picture of phenomena, including the chaos and issues often found in real-life situations. As participant observer the researcher becomes “directly involved as a participant in peoples’ everyday lives”, yet needs to be mindful of the need to minimise disruption or intrusion (Jorgensen, 1989, p. 20). The relationship of the researcher with others in the study setting was linked to the teaching responsibilities and role of the researcher within the School of Nursing.

Teaching responsibilities for the researcher were solely in the nursing undergraduate degree, an important point in the context of the study that focused on postgraduate education, in which the researcher was not directly involved. An additional role for the researcher, agreed upon commencement of employment at the beginning of 2001, was to facilitate and co-ordinate the introduction of flexible learning to undergraduate and postgraduate programmes within the School of Nursing. This role was communicated to all academic staff at the School of Nursing Strategic Planning Day held in February 2002, when the role was described as a portfolio with the aim of providing a central person to link between the School of Nursing, Faculty and University and the resources that were available. It was also stated in that meeting that flexible learning would form the basis for the researcher's doctoral studies. The Head of School and staff supported both the role and the introduction of flexible learning.

The School of Nursing took the decision to move the postgraduate programme towards flexible learning so as to improve nurses' access to programs and because it reflected the University and Faculty strategic direction. The researcher made clear to colleagues the nature of the doctoral study and her role. Negotiation for the selection of exemplar courses occurred with the teachers of the courses and the Head of School. However, it was not only the teachers of the three selected courses who were involved in this study. All teachers in the School of Nursing were part of this research by default, as all were involved in some way with either increasing flexibility within the postgraduate courses or as co-workers. There was a natural sharing of ideas and experiences in the context of the School of Nursing.

The advantage of working in the same organisation was the access to the research setting. Working within the School of Nursing meant that direct observation was possible with teaching colleagues, administration staff and students. Staff knew that the School as a whole was the context for the study. The role of the researcher was therefore as a participant observer and interviewer. Much of the understanding of the context for flexible learning within the School was gained informally. For example teachers share their enjoyment and frustrations in the common room. It is typical for staff to work as a team and share their experience, so asking informally 'what did you do', or 'isn't this annoying' is part of the collegial context of the School.

Within the School of Nursing the researcher was the first to use the organisational Learning Management System (LMS). Having gained some experience with the LMS the researcher became a reference point and on-site resource person for LMS users within the School. This led to other, more general, computer help being sought related to specific applications like

Word, Excel and Endnote, and for equipment like data projectors. The researcher's role in this respect might also be considered as a LMS and flexible learning advocate. Another form of informal sharing was when other teachers asked for help using the LMS, or other technology and it was then possible to observe a colleague's approach, attitude and skill level with technology. Employment as a teacher within the School also framed relationships that formed within the Faculty and wider University and this was significant when people were interviewed as key informants with regard to their openness and willingness to be involved.

While there were advantages to being an 'insider' within the research context there were potential disadvantages also. The most significant disadvantage was the close working relationship between the researcher and the nurse teacher colleagues, which could involve potentially ethical and sensitive situations. However, in an attempt to avoid these and to foster a more positive relationship, an 'Appreciative Inquiry' lens was used to guide the approach between researcher and these participants. Appreciative inquiry has been described as a "way of thinking, seeing and acting for powerful, purposeful change in organisations" while working on the assumption that the solutions and answers already exist within the organisation (Hall & Hammond, 1998).

### **3.3.1 Appreciative inquiry**

The main developer of Appreciative Inquiry was David Cooperrider and his associates at Case Western Reserve University in the United States in the mid-seventies (Hammond, 1998). It was originally used in business as an alternative approach to change management. The traditional approach to change management puts the spotlight on problem identification and problem solving. Appreciative inquiry, in contrast, suggests looking for what works within an organisation and aims to build on these examples. It utilises the real experience of the people within the organisation to identify what has worked best and where the strengths are and that they will know how to build on their successes. The organisation is viewed as organic, which as Hammond explains indicates "all parts are defined by the whole; thus, you cannot take an organisation apart to study pieces" (Hammond, 1998, p. 7).

The assumptions underlying appreciative inquiry are described as:

1. In every society, organisation, or group, something works.
2. What we focus on becomes our reality.
3. Reality is created in the moment, resulting in multiple realities.

4. The act of asking questions of an organisation or group influences the group in some way.
5. People have more confidence and comfort to journey to the future (the unknown) when they carry forward parts of the past (the known).
6. If we carry parts of the past forward, they should be what is best about the past.
7. It is important to value differences.
8. The language we use creates our reality (Hammond, 1998).

These assumptions were reflected in interactions with teacher colleagues involved a number of strategies. Firstly was an awareness that the researcher is not just a neutral observer, and even being present affects the teachers (assumption four). Next it was acknowledged that language can have a powerful effect. The language used is very important and there are emotional meanings behind words that others may construe differently from what was intended (assumption eight). Assumption two, what we focus on becomes our reality, begins with the selection of what is being studied and is particularly significant when selecting guiding questions for interviews. It can also affect both a positive and negative approach to change. Teachers who focus more on flexible learning may find it becomes part of their reality; while those who focus on the ways things have been done in the past may, by focusing on that reality, find change more difficult. Appreciative inquiry as a lens that guides the approach between the researcher and the teachers provides a positive slant that seeks to focus on what has been going well, what aspects of the course the teacher feels is working best and it acknowledges the teacher's experience and their ability to recognise their own strengths. This provides the foundation for a relationship that provided rich data.

### **3.4 Case study design**

The case study has been defined as “a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence” (Robson, 2002, p. 178). The present study utilises a single case, the School of Nursing, with three exemplar courses as focus units of analysis to provide insight into the application of flexible learning to the School of Nursing postgraduate nursing courses. It was thought some similarities, or common characteristics might become apparent between the courses, as well as differences, and the case study design enables these to be recognised and analysed.

Furthermore, Yin (1994) uses the terms exploratory, descriptive and explanatory to describe case study strategies. The conditions governing the choice of case study strategy depend, he suggests, on the type of research question posed, the extent of control an investigator has over events and the degree of focus, for example whether a study is contemporary as opposed to more historical. The present study is based on predominantly ‘what’ questions, which indicates both an exploratory and explanatory study, as the central research question for this study is ‘What does flexible learning mean in practice when applied to a population of nurses pursuing higher university education?’ The context of a University-based School of Nursing will also be partially descriptive. The extent of control and access of the researcher is the second condition Yin describes. In the present study there is access, but minimal control over the courses. Current courses are studied, which allows direct observation and interviews. “The case study is preferred in examining contemporary events but when the relevant behaviours cannot be manipulated” (Yin, 1994, p. 8). The case study method was determined as the most useful approach to answer the research question. Exploratory, descriptive and explanatory strategies provide a more complete view of the case being studied.

One of the criticisms of the case study method is that it can be considered static in nature because it only describes one situation and the findings cannot be generalised to other situations. However, the case study does allow for generalisations to theoretical propositions, but not to populations (Stake, 1978; Yin, 1989). Sharp (1998) argues that denunciations about the usefulness of generalisations from case studies are based on confusion about the two distinct logical bases, empirical and theoretical, that underpins generalisations. He suggests that when it is understood that theoretical generalisations do not rely on representation, or typicality of the sample, for their validity, then the full value of case studies can be appreciated.

Case studies are considered to be both more flexible and more vulnerable to bias than many other research designs (Wilson, 1993). Attention is therefore needed to ensure that a sound design is prepared and the use of Yin’s (1989) approach assists this. According to Yin the case study design requires five components: the research question, its propositions, unit of analysis, a determination of how the data are linked to the propositions and criteria for interpreting the findings. Furthermore Yin (1994) emphasises the importance of maintaining a comprehensive chain of evidence which substantiates the associations between the components.

The research question and its propositions have been presented. The case in the present study was intended to be simultaneously exploratory, descriptive and explanatory. The unit of analysis is effective learning for postgraduate nurses when flexible learning is introduced, while the context is a University-based School of Nursing. The unit of analysis relates to some extent, to the selection of the case, and what is and what is not part of the case. The linking of data to the propositions and the criteria for interpreting the findings represent the data analysis stage in case study research.

### **3.4.1 Selection of the exemplar courses**

It is important to clarify the boundaries of what and what is not part of the case (Stake, 1978; Yin, 1989). Convenience sampling from the postgraduate nursing courses available was used to select the exemplar cases, in negotiation with the staff of the School of Nursing and the Head of School. The courses were selected for the variation they provided and the opportunities they offered for extensive study and learning, and these are the most important reasons for selecting cases (Stake, 2000). The rationale for deciding on three courses was that these would provide insight into flexible learning as it was introduced into the School of Nursing postgraduate programs. Consideration was also given to timing, given the constraints of this study, and the variety the cases offered which would allow comparisons and provide richer data. The three postgraduate courses were selected from the Master of Nursing schedule offered by the School of Nursing. To retain anonymity the courses are named One, Two and Three.

Two of the courses were established on-campus courses which were changed and modified for on-line delivery. The teacher of one course worked with the centralised Centre for Flexible Learning to modify the course, while the other worked in conjunction with other teachers. Course One and Two had both been taught previously using traditional pedagogical methods, so needed development and design changes to become more flexible. In contrast, Course Three was a new course prepared with on-line learning in mind from the outset. The teachers for the courses varied in their teaching experience and openness to considering ways their courses could be more flexible. As the three courses are offered by the School of Nursing the same enrolment criteria for admission apply to the students. It was possible for a student to be concurrently or successively enrolled in different courses that were part of this study.

In review, the three exemplar courses selected had both elements of similarity and difference. All were core postgraduate nursing courses offered by the School of Nursing. The

organisational and professional issues were the same for each course. Furthermore the three courses had the potential to have the same students. However, the content and focus of each course was different, and each had different teachers. These courses are believed to provide both a balance and variety from the postgraduate courses available at the time of the study.

### 3.4.2 Sources of data

Stake (1995, p. 49) claims that “There is no particular moment when data gathering begins. It begins before there is commitment to do the study: back-grounding, acquaintance with other cases, first impressions. A considerable proportion of all data is impressionistic, picked up informally as the researcher first becomes acquainted with the case”. Yet despite this view that data collection begins before the study itself has begun, there is also a need to decide what sources of data will be utilised in a study and how these are to be collected. The period of formal data collection for this study was from January 2002 through to December 2004.

The selection of data collection methods was based on a synthesis from wide reading of the literature that identified principles for flexible learning to be effective (Table 3-1). These principles were further tabulated to identify potential data sources, data collection methods, and questions (Appendix 1).

**Table 3-1: Principles of Effective Flexible Learning**

<p><b>Students:</b></p>	<ul style="list-style-type: none"> <li>• Students have access to learning materials</li> <li>• Students achieve the learning outcomes, assessments and meet the course requirements</li> <li>• Students use deep learning approaches</li> <li>• Students develop information literacy skills</li> <li>• Students enjoy and value the learning experience</li> <li>• Students utilise their previous knowledge and experience to build new knowledge which has meaning in the context of their sphere of practice</li> <li>• There is interaction between students, and between students and teachers to support co-operative learning</li> </ul>
<p><b>Teachers:</b></p>	<ul style="list-style-type: none"> <li>• The workload of teachers enables the development, preparation, management and teaching to the standard they wish to achieve</li> <li>• Flexible learning allows teachers to provide learning materials reliably and efficiently</li> <li>• Teachers design courses and set learning outcomes that build on the students’ knowledge base in ways that relate to their practice</li> <li>• Teachers plan for collaboration and interaction between students and between the students and themselves.</li> <li>• Teachers develop assessments that both encourage and require students to use deep learning approaches and show evidence of reflection, critical reasoning and inquiry, yet also measure the achievement of learning outcomes.</li> <li>• Teachers provide feedback that is timely and provides guidance for continued learning.</li> </ul>

<b>Organisation:</b>	<ul style="list-style-type: none"> <li>• Information about courses and programmes are available</li> <li>• Students can enrol in programmes and the enrolment procedure is clear</li> <li>• Support services, including the library are provided for students</li> <li>• Development and support is provided for teachers</li> <li>• The computer, electronic networks and infrastructure to support teaching and learning is provided</li> <li>• Teachers' workload is equitable and excellence in teaching innovation is recognised and rewarded.</li> </ul>
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Yin (1989) described six different sources of evidence on which case studies may be based: documentation, archival records, direct observation, participant observation, interviews and physical artefacts. In this study all of Yin's sources, except physical artefacts, were used, and in addition a survey was undertaken in the early stages of the study and student's assessed work was accessed. Each of these sources of data is described in detail.

### ***Documentation and archival records***

Documentation that informed the study includes internal reports, minutes of meetings, internal communication and administrative documents. Course outlines, course evaluations and end of course reports were also reviewed. Archival records used were previous surveys and a number of organisational records that provided background information.

### ***Direct and participant observation***

When the researcher is able to see what is happening in the research setting then direct observation is another appropriate method of data collection for case studies (Yin, 1989). While direct observations can range from formal to casual data collection activities, in this study a mixture of both was used. This was primarily because of the role of the researcher being employed within the organisation. Casual observation was possible during the working day because of the proximity of the researcher with the teachers as co-workers, seeing students and being part of the same school within the organisation. More formal observation was employed when this was thought to be helpful to add to the depth of the data being collected.

Participant observation has been described as when the researcher is not merely a passive observer, but instead may take "a variety of roles within the case study setting and actually participates in events" (Yin, 1989, p. 92). This exactly describes the situation for the researcher in this study. The researcher was actively involved in the introduction of flexible learning within the School of Nursing and all staff knew this. The ethical implications are discussed in Section 3.5.

### **Survey**

A survey was used as a data collection method as a means of establishing the students' characteristics and behaviours with computers and technology. All students enrolled in postgraduate nursing courses with the School at the beginning of semester, mid 2002, were invited to participate in the anonymous Postgraduate Nurse Survey. A total of 162 students enrolled in the semester, and 146 completed the survey, giving a response rate of 90%. The survey instrument, a predominantly closed-question questionnaire, was used to determine the student's access to computers and communication technology; computer proficiency (self rated using a 5 point Likert-type scale); computer skills; use of the University systems including the library; and obstacles to using the Internet (Appendix 2). A portion of the questionnaire was adapted from previous research (Lamdin & Wickham, 2001; Tippin, 2002; Wharrad, Clifford, Horsburgh, Ketefian, & Lee, 2002). The survey also provided some information on the student population, such as their hours of work.

### **Interviews**

Students, teachers, and key informants were invited to participate in interviews. The interviews with teachers, Head of School and other key informants were one-to-one, semi-structured, informal and audio-taped. Open-ended questions were used with an informal and conversational approach in an attempt to encourage rapport and fuller responses. However, there are limitations to interviews and one is that there may be differences between what people say they do and what they actually do. Lincoln and Guba (1985) have suggested this is because of a tendency to reinterpret experiences after the event. Another explanation is simply that people have difficulty in giving an accurate commentary on their activities (Argyris & Schon, 1974). Participant observation and other data assisted in verifying and understanding interview data.

Group interviews were offered to students. Interviewing similar people, such as students, in a group is thought to be supportive in that "the group processes can help people to explore and clarify their views in ways that would be less easily accessible in a one-to-one interview" (Kitzinger, 1994, p. 104). Instead of asking each person to respond to a question in turn, the students were encouraged to talk to one another, asking questions, exchanging anecdotes and commenting on each other's experiences and points of view. All students who had previously consented to an interview were contacted, but some then chose not to participate. Interviews were either individual or in a group, depending on the student's preference and some were completed via phone or email. Interviews were semi-structured and guided by an interview topic sheet (Appendix 3).

Interviews with teachers who were co-ordinators of the exemplar courses took place prior to or early in the semester, at mid semester and at the end or completion of each semester the course ran, over a period of two calendar years. Courses 1 and 2 were offered each semester, while Course 3 was offered on alternate semesters. Transcripts of previous interviews were provided to each teacher and formed part of the next interview so that course co-ordinators had the opportunity to further clarify, add to or correct anything from a previous interview.

Teacher key informants were other teachers within the School, though not co-ordinators of the three exemplar courses. These interviews reflected on their contribution to the development of flexible learning within the School of Nursing. Additional interviews were conducted when developments or issues were noted. This ensured the formal collection of data through interviews, to augment observations and informal conversations.

In total 64 interviews were undertaken involving 64 participants. The breakdown of the numbers of participants in each category of students, teachers or key informants and total number of interviews undertaken are shown in Table 3-2.

**Table 3-2: Participants in Interviews**

<b>Interviews</b>	<b>Total number of Participants</b>	<b>Total number of interviews</b>
Students	51	21
Teachers	3	30
Key Informants	10	13
<b>TOTAL</b>	<b>64</b>	<b>64</b>

***Students assessed work***

Assessed work was appraised for students’ use of deep learning approaches with evidence of reflection, critical reasoning and inquiry, and for information literacy shown by the use of a variety of appropriate supporting literature. In each of the three exemplar courses followed in this study over two full academic years student assessed work was also included. Each course had two or three assessment points over the semester. The assessment points were mostly essays, with one course also utilising journals and on-line discussion. Assessed work, from the consenting sample, was randomly selected based on convenience of when assignments were received, with the aim of being unobtrusive and causing minimal disruption to the normal handling and marking processes. Some students who originally consented to participate withdrew or did not complete the course. There was no personal bias in selecting students from the consenting group. However, there is a possible bias within the sample as participants

were self selecting. Only the student's identification number was recorded on assessed work and no names were used. Bias was unavoidable and hopefully minimal.

A summary, providing averages of students who participated across all semesters, either by interview or by giving permission for their assessed work to be examined is presented in Table 3-3. Students who withdrew from a course were counted in total class numbers but participation in the study terminated. The aim was to sample 10% of students in each course for both assessed work and interviews. The numbers of students enrolled, whether they were from Auckland or outside Auckland, withdrawing, consenting and participating for each course are detailed in Appendix 4. In fact the percentage achieved varied from 5.9 to 27.3% per course per semester, the researcher having no control over numbers as students self-selected.

**Table 3-3: Summary of Sources of Student Data**

Source	Number of semesters	Total number of students enrolled over all semesters	Students interviewed n and % of Total Students	Assessed work sampled n and % of Total Students
Course 1	4	136	17 (12.5%)	20 (14.7%)
Course 2	4	209	30 (14.4%)	23 (11%)
Course 3	2	31	4 (12.9%)	7 (22.6%)

### ***Multiple data sources***

The most significant advantage to using multiple information sources and multiple methods of data collection is that they form a type of triangulation and provide rigour (Cohen & Manion, 1989). Yin (1989) recommends three principles to guide data collection within case study research. These are using multiple sources of evidence, creating a case study database and maintaining a chain of evidence. The multiple sources of evidence utilised for this study are described above. Stake (1995) also emphasises the importance of developing a system, whether it is electronic, or paper-based, for managing the data collected and clearly achieving this can be a challenge. The use of the software application NVivo aided the organisation and management of the data collected for this study. The third principle is to maintain a chain of evidence by making the data collection process as explicit as possible to increase the reliability of the information and to assure quality control. However, using multiple sources of data increases the potential ethical issues, and this aspect is discussed next.

## **3.5 Ethics**

Stake (2000) considers that case study research has an intense interest in personal views and circumstances. The participants in this study who shared their personal views were in greatest need of having their rights protected. Ethical approval for the study was obtained from the University Human Subjects Ethics Committee (Appendix 5). Ethical considerations were taken seriously to ensure the participants' rights were protected.

The context for this study involves a School of Nursing in a university higher education setting. There were no ethical implications in terms of risk to any participants by the use of any documentation and archival records. No private or confidential records were utilised. All information supplied and data collected from participants remained confidential to the researcher. Participation was anonymous in that real names or other identifying data were not used on the interview transcripts or observation field notes, or in the report. Transcripts, consent forms, questionnaires, notes and tapes were stored under lock and key in the researcher's office. All data will be stored for six years from the completion of the study and will then be destroyed by fire, in compliance with the University Human Subjects Ethics Committee requirements. The material from interviews will not be used for any other purpose, but to inform this study and the reports and papers arising from it.

There were four groups of participants: all postgraduate nursing students, postgraduate nursing students enrolled in the three exemplar courses, teachers who were course co-ordinators for the exemplar courses and other key School of Nursing and University staff. Each of these is now discussed so that the separate ethical issues can be clarified.

### **3.5.1 Postgraduate nursing student survey**

All postgraduate nursing students enrolled in 2002 were invited to complete an anonymous survey (Appendix 2). There were approximately 180 postgraduate nursing students enrolled in 2002 who were therefore eligible to complete the survey. The survey included a brief written explanation outlining the rationale for the survey, as being to provide information about levels of computer use and access by postgraduate nursing students. The researcher verbally explained the reason for the survey at the beginning of an on-campus lecture for each course, then distributed the survey and asked that completed surveys be returned to a marked box at the School of Nursing reception area, which was close to the lecture rooms. The survey was anonymous with no names or other identifiers required and return of the completed

questionnaire was deemed as consent. It was estimated that completing the survey would take between ten and thirty minutes. Completed surveys, once returned could not be withdrawn as they were anonymous.

### **3.5.2 Postgraduate nursing students**

This section considers ethical issues related to postgraduate nursing students enrolled in the three exemplar courses. The researcher had no involvement in teaching postgraduate nursing students. Participation in the study was voluntary for eligible students and no financial incentives were offered. Participation, or non-participation, did not affect student grades or achievement of the course and this was explained to students. Postgraduate nursing students are adults, speak English to an advanced level and were able to understand and to give informed consent.

Students enrolled in any of the three exemplar courses in this study across the four semesters of data collection were invited to participate in an interview or agreeing to their assessed work being examined, or both. As there was a possibility of different experiences for those students who resided in Auckland and near the campus, and those who resided away from the main campus, an attempt was made to ensure that a range of students was represented. It was anticipated that there would be potentially 80 to 100 postgraduate nursing students across three courses. The researcher provided verbal explanation to the postgraduate nursing students about the selection of their course within the study at the beginning of each semester. Written explanation was also provided (Appendix 6). The explanation informed them that the course materials, course evaluations and other course information would be incorporated into the analysis, they would not be identified as individuals, and that the course co-ordinators were also participants in the study. It was explained that the purpose of the interview was to discuss their perception of the impact of increased flexibility on their learning.

As noted above, the postgraduate nursing student interview was offered either as a group interview involving students in the same course or on a one-to-one basis. It was suggested that if the course enabled students to study at a distance then the interview could be conducted by phone, either as a one-to-one interview, or as a group interview using telephone conferencing. Students were informed that the interview could take place, either on-campus, or at a place convenient for them. The interview was expected to take no more than one hour. Students were asked to consent to the interview being taped and were also informed that notes would be taken. A separate consent form for the interview was provided. Students willing to participate

were asked to contact the researcher by phone or email so that a meeting date and time could be arranged. Prior to the interview students were free to withdraw their consent without giving reasons. Once the interview had taken place it was not possible to remove comments from the general discussion that had been taped in the group. Due to the nature of group discussion anonymity could not be guaranteed as participants in the group would know each other. If a student selected a one-to-one interview, then they could withdraw their information at any time within three months of the interview without giving a reason. A copy of the transcript of the interview was available to students upon request.

A separate consent form requested students to consider giving permission for the inclusion of their assessed work completed as part of the course requirements. Students were informed that a sample would be selected for analysis from the work of those agreeing to participate. The University student identification number was the only identification on their work; therefore, names were not required. Consent also requested permission for the use of brief extracts of student written work to illustrate research findings.

### **3.5.3 Course co-ordinators**

Academic teachers were not in a dependant relationship to the researcher but were work colleagues. The three academic staff involved as course co-ordinators in the exemplar courses were requested to participate in three ways. Written explanation was provided in an information sheet (Appendix 7). Three aspects to participation were clarified.

Firstly, a request was made to interview course co-ordinators three times per semester in which the course ran during the study, to discuss their perception of the impact of increased flexibility in learning. Each interview was expected to take less than one hour. Course co-ordinators were asked if the interviews could be taped, and also informed that notes would be taken and that brief extracts from the interviews might be used to illustrate research findings. The interviews could take place either on-campus, or at a time and place convenient for the course co-ordinator. Transcripts of interviews were provided to the course co-ordinators and they had an opportunity to clarify or add to previous interviews.

Secondly, it was explained that the researcher would be a participant observer during some of the development, preparation, management and teaching of the course. The periods of observation were intermittent and at times convenient to the course co-ordinator. It was explained that the researcher would be keeping field notes about observations for later analysis. Thirdly access to course material was requested, including the course outline, written

reports, grades and the course evaluations. While teachers understood that their names and individually identifying data would not be used in the final report, they were also aware that their colleagues were likely to be able to identify their comments. Risks include the exposing of individual teaching practices and the beliefs that underpin them; potential embarrassment, loss of standing or self-esteem if teachers compare themselves to others, and the fact that the teachers may feel their employment or performance is under scrutiny.

#### **3.5.4 Other key School of Nursing and University staff**

Identification of other key informants arose from an analysis of organisational documentation and as the study progressed. Persons identified as key informants were sent an information sheet (Appendix 8) and consent form and were invited to participate in an interview that would take no more than one hour. It was explained that participation was voluntary and that prior to the interview or during the interview they were free to withdraw their consent or cancel the meeting without giving reasons. They could also withdraw their information at any time within three months of the interview, without giving a reason. A copy of the tape or transcript of the interview was made available to participants upon request.

### **3.6 Analysis and interpretation**

Data collection and analysis occur simultaneously and as an iterative process in case study research (Zucker, 2001). Collected data is analysed and then the results feed back into the data collection process. The process of identifying key University staff for interview particularly illustrates this. The Head of School and library staff were identified as key participants at an early stage. It was not until some of the interviews with postgraduate nursing students and teachers had been completed that it became apparent that further information was required from the Head of School and library staff and also from additional key informants. Even though an inductive process was used in this study it was important that each method of data collection was considered beforehand and a plan developed for the data analysis and interpretation. Each aspect of this is now described.

#### **3.6.1 Observation**

Observations and field notes were made throughout the study. These included notes of events, casual conversations, and also of observations of course co-ordinators as they developed,

prepared, managed and taught their courses. Sorting and categorising the data, and then regrouping it into themes, enabled analysis of field notes.

### **3.6.2 Survey**

The data from the postgraduate nursing student survey was analysed using descriptive statistical analytical techniques. The spreadsheet programme Excel, and the statistical data analysis programme SPSS, supported analysis.

### **3.6.3 Interviews**

All interviews were taped and later transcribed verbatim. The content of all interviews were both read and listened to repeatedly as part of analysis. Both reading and listening repeatedly facilitated immersion in the data and the emergence of themes. Connections were made in the data through identification of common words and descriptions of experiences, which linked each interview through thematic analysis. Key concepts were identified as sub themes from the transcripts, though these were not always expressed identically. Software (NVivo) was used to facilitate both the management and coding of interviews.

### **3.6.4 Assessed work**

To examine students' assessed work a rubric was developed to provide a means of consistent analysis. The process of development, including the testing and application of the rubric is now described. The rubric was designed as a matrix with levels of achievement across the top and criteria down the left column (Appendix 9). The achievement levels are beginning, developing, accomplished and exemplary. A 'Not Applicable' column was included. Criteria were listed in the left column under the headings 'Students develop information literacy skills', 'Deep learning approaches with evidence of reflection, critical reasoning and inquiry', and 'Students utilise their previous knowledge and experience to build new knowledge which has meaning in the context of their sphere of practice'. Under each heading more specific criteria were listed.

Multiple sources were used to develop the specific criteria of the rubric, starting with the School of Nursing generic grading guidelines as it was considered that the rubric needed to reflect the assessment requirements. Information literacy skills were broken down further to 'Evidence of reading and knowledge' and 'Citations and Referencing'. There is an expectation that all postgraduate nursing students utilise literature to support their essays,

hence the criteria related to evidence of reading. Others' work must also be acknowledged appropriately which relates to the 'citations and referencing' criteria.

The heading 'Deep learning approaches with evidence of reflection, critical reasoning and inquiry' was divided into five more specific criteria: 'reflection', 'critical reasoning', 'inquiry', 'depth of learning' based on Bloom's taxonomy (B. S. Bloom, 1956), and 'structural complexity' based on the SOLO (structure of observed learning outcomes) model (Biggs, 1999). Reflection is a constructivist concept based on the assumption that meaning exists and is created by students (Mezirow, 1998). There is an expectation of insight within students' work that demonstrates reflection on the essay topic. The criteria titled 'critical reasoning' and 'inquiry' are based on the rubric for Holistic Critical Thinking by Facione and Facione (1994). Attaining the exemplary level for 'critical reasoning' needed a comprehensive exploration of the topic or issue, while for 'inquiry' the essay needed to recognise relevant arguments, explain assumptions, or provide analysis of exceptions. Bloom's taxonomy (1956) was used to determine depth of learning by matching Bloom's terms to the four achievement levels of the rubric. This placed knowledge, comprehension and application with beginning ability; application and analysis with developing ability; analysis and synthesis with accomplished ability and finally synthesis and evaluation at the exemplary level. 'Structural complexity', based on the SOLO model (Biggs, 1999), describes levels of complexity as a hierarchy moving from "uni-structural", "multi-structural", "relational" to "extended abstract" (Biggs, 2003, p. 48). The SOLO model was considered a useful taxonomy for measuring higher order thinking (Boulton-Lewis, 1995; Hattie & Purdie, 1998). The SOLO model terms were matched to the four achievement levels of the rubric. The final section, 'Students utilise their previous knowledge and experience to build new knowledge which has meaning in the context of their sphere of practice' has only one criterion, titled 'Constructivist/authentic learning'. To demonstrate this assessed work had to relate to a patient, intervention, or clinical issue.

A series of iterations were involved in the rubric development. It was found that one rubric did not fit comfortably across six assessments for three different courses. Each course outline, assessment requirements, learning outcomes and guidelines for assessments were reviewed. The final rubric was customised for each course by completing some parts, such as items under exemplary and beginning achievement levels to provide anchors (Appendix 9). For example, concerning Course One the rubric reflection was marked 'Not applicable' and under 'Evidence of reading and knowledge' the beginner achievement level contained the note 'Uses standard physiology/pathophysiology texts. Minimum of 3 key studies.' The notes reflect directions to students from the course assessment guidelines. The final design created one

rubric per course, which provided a generic baseline against which to analyse written assessments to give summary data.

The rubric was tested after development using a small sample of students' assessed work. An independent peer, another experienced nurse teacher, not involved with the study context, used the rubric and applied it to the same sample of students' assessed work. Minor differences only were found, and the rubric was found to be easy to follow and apply. The rubric was not piloted because of the relatively small number of students' assessed work and concerns about bias within the study context from the sharing of information.

The rubric was also used with course co-ordinators during an interview as a tool for them to reflect on their course and to discuss their course design. Two found it easy to use, while one found it more difficult. The difficulty concerned interpreting the levels within the 'structural complexity' component based on the SOLO model (Biggs, 1999).

Application of the rubric to students' assessed work followed a set format. For consistency only one person, the researcher, applied the rubric. If there was bias in the use of the rubric then the bias was consistent across all pieces of assessed work. Assessed work was not graded or marked; rather the assessed work was read looking for evidence of the criteria, and then a judgement was made on the level of achievement. The level was either marked with a tick, and a brief comment or example could be written in the relevant matrix area. Students' assessed work was sorted into piles, by course and assessment. The course outline and assessment guidelines to students were reviewed just prior to applying the rubric to all samples of that assessment. While this involved blocks of time it ensured a mindset that was cognizant of the particular course and assessment, and these steps increased consistency in the use of the rubric.

Part of ensuring a consistent approach is the care taken with analysis. The development of the rubrics for looking at students' assessed work aided this by being both a summary and a guide to ensure the same criteria were looked for within assessments across semesters for each course.

### **3.7 Trustworthiness**

For high quality research, irrespective of the purpose, unit of analysis or design, rigor is the central concern (Feigin, Orum, & Sjoberg, 1991). Rigor traverses all parts of the research process including the selection of sources of data and data collection. Research tends to use

the standard expressions, validity and reliability when discussing rigour but “validity in qualitative research has to do with description and explanation and whether or not the explanation fits the description” (Janesick, 2000, p. 396). Many different terms have been used to describe the processes that contribute to rigour in qualitative research. Lincoln and Guba (1985) provide the term trustworthiness which has four criteria; credibility, transferability, dependability and confirmability. These will be used to discuss criteria that support and substantiate this study, including triangulation.

Credibility for qualitative research is described as the truth, value or believability of the findings as known by the people involved in the study (Leininger, 1994). The establishment of an honest and trusting relationship between the researcher and the participants assisted the disclosure of candid information and perceptions. A confirmation of credibility of findings is that participants recognise the findings to be true to their experiences (Sandelowski, 1986). The participants in this study were given the opportunity to receive the transcripts of interviews to validate the findings as a true representation of their experiences.

‘Transferability refers to the probability that the study findings have meaning to others in similar situations’ (Streubert & Carpenter, 1999). Transferability of this study means that another researcher could take this study design and transfer it to a similar context and come to similar conclusions (Lincoln & Guba, 1985). While recognising that the findings in this study relate to a specific context the extensive description of the context and the detail in the cases and report should aid another researcher to follow the research process.

Traditional scientific research from the positivist paradigm assumes an unchanging world and this view shapes the concept of reliability, where reliable research can be replicated. Alternatively, in qualitative approaches to research, the term dependability is based on the underlying assumption that the social world is constantly changing. Dependability, in this sense, is described as the researcher attempting to account for changing conditions in the phenomenon of the study as well as changes in the design created by increasingly refined understanding of the setting (C. Marshall & Rossman, 1989). While Lincoln and Guba (1985) suggest an auditor undertake an inquiry audit to assess the processes used in the research this study has selected not to do this. Instead full and detailed reports, explicit descriptions and maintaining a chain of evidence should make the processes followed apparent.

When addressing issues of rigour in qualitative nursing research confirmability is determined by an audit trail where signposts indicating research decisions and influences are present

throughout the study, so that another person can confirm the findings identified by the researcher (Koch, 1994). Patterns of response from the participants are presented in this study, with examples and direct quotes, and are accompanied by interpretations. The objective of this is to illustrate as clearly as possible the evidence and thought processes that led to any conclusions (Streubert & Carpenter, 1999).

Finally rigour in research can be improved by the use of triangulation. There are four basic possible types of triangulation: data, researcher, theory and method (Denzin, 1978). Two forms of triangulation were used in this study related to data and methods. Firstly there was data from three exemplar courses and the participants; teachers, students and key informants from the organisation, provided multiple perspectives. Secondly, multiple data collection methods were engaged. Triangulation occurred within each course and across courses. For example, within the case there was data from the teacher interviews along with observation of what the teacher was doing, and further insight was gained from the student perspectives from interviews and samples of assessed work. Triangulation enhanced the rigour and completeness of data.

### **3.8 Summary**

This chapter has described how the case study design was applied to the research question exploring the practice of flexible learning for postgraduate nurses within a higher education setting. The underpinning philosophical assumptions, constructivism, inform the researcher's stance and approach to the study. The role of the researcher, as participant observer was discussed and justification of the use of an appreciative inquiry lens to frame the approach of the researcher with the teachers provided. The chapter set out in detail the selection of courses, data collection methods, ethical concerns, data analysis, and issues of rigour. Using the methodology described, the findings are now reported. First, postgraduate nursing education is described before the profile of the study population is presented. The following three chapters then present the findings from the organisation, teacher perspective and the student.

## **4 Postgraduate Nursing Education**

This chapter describes the context in which the student population in focus in the present study become professional nurses and explains their diversity and motivation for pursuing postgraduate studies. The drivers that suggest flexible learning as a logical option to pursue in the provision of postgraduate education for nurses within this context are explored. These drivers include both extrinsic and intrinsic pressures and the historical and contemporary context of nursing in New Zealand. Major changes have taken place in undergraduate nursing education, including the location of nursing education and the credentials with which new nurses qualify. The impact of these changes on undergraduate nursing education and their flow-on effect to postgraduate education are described. Furthermore the changes in health service delivery in New Zealand and the establishment of new roles and career opportunities for nurses are also drivers for the increased demand for postgraduate nursing education. These new advanced nursing roles require postgraduate qualifications. Yet there are barriers to nurses accessing postgraduate education. Nurses are found throughout the country and the nature of nursing necessitates shift work. Nurses in New Zealand are predominantly women and there are gender issues that make access to postgraduate education problematic. Flexible learning may be an effective approach to meet nurses' demand for postgraduate nursing education.

### **4.1 Nursing in New Zealand**

The concept of a global village and the need for a global perspective in health care planning add credence to the necessity of considering trends in nursing education from an international perspective (K. Holloway, 2000). Nursing in New Zealand has followed broad changes that have occurred overseas and a reflection on the changes in New Zealand suggests there have been major milestones. The first, in 1904 was the introduction of nursing regulation that opened the possibility for nursing to develop as a profession with its own standards, training and registration procedures. Nursing education followed an apprenticeship model based in hospitals. Senior nurses and doctors provided the training, along with on-the-job experience supervised by qualified and more senior student nurses. Servicing the needs of hospitals, not the educational needs of the students, was the emphasis in the apprenticeship model of nursing education.

From the early 1970s nursing education started to be moved to the education sector. The focus shifted to student learning and understanding of nursing. Education that supported the development of nurses' decision-making power was introduced, accompanying a change from task oriented practice, from 'doing' to 'knowing' (Papps & Kilpatrick, 2002). These changes in New Zealand were paralleled by international developments in nursing and a term used to describe the paradigm shift that occurred in nursing education was 'curriculum revolution' (C. A. Tanner, 1990). Key themes of the 'revolution' included social responsibility, the centrality of caring in nursing, an interpretive stance, reflection, emancipation and critical thinking (Bevis, 1988; Bevis & Murray, 1990; Bevis & Watson, 1989; C. A. Tanner, 1990).

While there have been significant changes and improvements in nursing education over the last century there have also been concerns. One of these concerns is the need to prepare nurses for the future by the integration of theory and practice in undergraduate nursing education. In New Zealand recent moves have been made to foster closer links between education and clinical practice (KPMG Consulting & Nursing Council of New Zealand, 2001; Ministerial Taskforce on Nursing, 1998; Ministry of Health, 2001a; Nursing Council of New Zealand, 1999, 2001b).

Nursing education in New Zealand has faced many changes and challenges. Changes in the setting, entrance educational level, and qualification on completion of undergraduate nursing education have impacted on postgraduate education for nurses. Equally significant are the changes in society, health service delivery and the requirement for nurses to be adaptable, autonomous and able to work across various health care settings. Nurses have identified the need for clinically focussed educational programmes that support and advance practice. Access to such programmes is an important and multi-faceted issue and in particular must take account of the needs of women students. The potential number of students demanding postgraduate education in nursing is considerable.

Nursing education has changed significantly since New Zealand was colonised when the first nurses had gained their skills in Great Britain. As health and medical services evolved in response to needs in the new colony, the demand for nurses led to training programmes. The following one and half centuries brought continuous change in health services and society impacting on nursing education, both to prepare and advance nurses. These changes are briefly reviewed, with an emphasis on the more recent changes.

#### **4.1.1 Undergraduate education**

Women in the home traditionally supplied early health care in New Zealand. In the 1840s small hospitals were developing around settlements and nursing education within these hospitals developed from the 1880s (M. E. Burgess, 1984). The nurses who trained under the Nightingale system in Britain and who had served in the military guided early nursing education when they migrated to New Zealand (M. Brown, Masters, & Smith, 1994). This marked the beginning of the apprenticeship style of nurse training, which was based in hospitals. The Nurses Registration Act (1901) set national standards for training, evaluation and certification that differentiated between trained and untrained nurses and with this New Zealand became the first country to regulate nurses (M. Brown, Masters, & Smith, 1997; Nursing Council of New Zealand, 2001a). The apprenticeship style of nurse education remained unchallenged until the post-war years.

The 1960s proved to be a time for changes in nursing education. The impetus came from overseas, in the wake of the social changes after the Second World War and the ensuing shortage of nurses as women moved into a wider variety of careers. To ensure that nurses were better prepared for the changing societal expectations of health services, advances in health care and technology, the World Health Organisation recommended in 1966 that internationally the admission standards for nursing schools be raised. In New Zealand this resulted in School Certificate, the year 11 national examinations, becoming the minimum qualification for applicants wanting to enter nursing (M. Brown et al., 1997). There was increasing complexity of hospital services and growth of nursing services outside hospitals. This led to a need for nurses with more nursing knowledge, skill and an awareness of prevention of illness and health promotion (New Zealand Department of Education Committee, 1972). A true apprenticeship system of training, as had been provided in the past, could not continue because of the complexity and the supervision that students required (New Zealand Department of Health, 1986).

New Zealand sought advice and Canadian Nurse Consultant, Alma Reid, was invited to assess the desirability and feasibility of introducing university based nursing education in New Zealand (A. E. Reid, 1965). Reid stated in her report:

Nursing requires degree prepared people in its ranks for much the same reasons as any other profession, that is: to teach, to improve the quality of nursing care and to keep in tune with modern advances in social and health knowledge to formulate

policies in nursing, to co-ordinate nursing services with health services generally, to define nursing practice and to distinguish the roles of the various categories of nurses, to identify and study nursing problems in a changing society, to experiment, and to carry on research in nursing (A. E. Reid, 1965, p. 3).

Reid made brief mention of the educational system in schools of nursing and pointed out that while situated in a hospital, they served the staffing needs of the hospital and not the educational needs of the student nurse (A. E. Reid, 1965). “However, no university made a commitment to a nursing course during her visit” and no changes occurred at that time (M. Brown et al., 1994, p. 187). The findings by Reid (1965) were reiterated in 1971 in the report by fellow Canadian, Helen Carpenter, more fully titled, “An Improved System of Nursing Education for New Zealand” (Carpenter, 1971). This report recommended that nursing education be transferred from hospital based training to the education sector. However, instead of transferring nursing education to universities, it was moved to polytechnics or technical institutes, which are providers of higher education outside universities. It was thought that Carpenter influenced this decision, “since in Canada, nursing education programmes were being transferred from hospital-based training to community colleges in the 1970s” (Papps & Kilpatrick, 2002, p. 7). A further recommendation was that comprehensive nursing registration be introduced, to combine into a single educational programme and registration the existing separate programmes and registrations. Obstetric, psychiatric, psychopaedic, male and general nursing registrations were replaced by a new nursing registration known as the ‘Registered Comprehensive Nursing’ registration. The move of nurse education into the tertiary education sector therefore also heralded a new nursing qualification, one that was designed for nurses who would contribute to a comprehensive health focussed service, rather than a hospital based sickness service. The move from hospital to educational institution as the site for nurse education, which began in 1973, was vital for subsequent changes. By 1990 the transfer from hospital-based programmes to technical institutes was complete (M. Brown et al., 1997).

The hospital-based certificate level qualification was replaced by a diploma. Subsequently, the Education Amendment Act (1990) set down legislation that permitted degrees to be awarded by technical institutes or polytechnics, as well as by universities. As a result, by 1995 all fifteen New Zealand technical institutes with nursing programmes were offering bachelor degree programmes to prepare nurses for registration in either nursing or health sciences (M. Brown et al., 1997). This meant that nurse students emerged from the technical institutes with both registration and a bachelor’s degree.

#### **4.1.2 Post-registration nurse education**

There is a distinction between post-registration and postgraduate qualifications. Post-registration nursing qualifications are those education programmes which nurses have undertaken since their initial registration to enable practice in a new or extended registration category. In contrast, postgraduate qualifications are defined by the Nursing Council of New Zealand (2000) as those qualifications completed with a recognised higher educational provider for a postgraduate certificate, postgraduate diploma or a Masters degree.

The need for post-registration education was acknowledged in the 1970s, partly because of the problems encountered, especially within the larger hospitals, in both the recruitment and retention of nurses. Though motivated by the requirement for staff to be adequately utilised, there was also a need for nurses to be better prepared to meet the changing demands of the profession (New Zealand Nurses' Association, 1976). In a review of nursing services the majority of nursing staff were considered to need clinical staff-training programmes (New Zealand Committee on Nursing Services, 1974). Hospital Boards often ran their own courses for nurses, usually based on medical speciality areas, under the umbrella of nursing in-service education departments. In 1970 there were some forty-one of these courses available for registered nurses (Workforce Development Group, 1988).

The New Zealand Post Graduate School for Nurses, based at Victoria University in Wellington was established in the late 1920s and for many years provided the only postgraduate education for registered nurses by offering a nine-month diploma course aimed at preparing nurses for administrative, teaching, public health and leadership roles (New Zealand Department of Health, 1969). Prior to 1970, because higher tertiary-based education to study nursing was not available, apart from the Wellington-based diploma, if nurses wished to pursue this higher level of education they tended to take subjects in education, English, history, psychology and sociology (A. E. Reid, 1965). In 1973 'nursing studies' papers were made available within a Bachelor of Arts degree at Victoria University of Wellington and Massey University in Palmerston North (Workforce Development Group, 1988). As Massey University supported distance learning nursing studies papers were available throughout New Zealand, although compulsory attendance at on-campus weekend or vacation blocks precluded access for some nurses. To enrol in these nursing studies papers nurses already had to be registered. This meant nurses completed three years education to become a registered nurse, then at least another three years to gain a degree qualification, longer if they studied for their degree part-

time. This was considered to be inequitable compared to other vocational and professional groups (Horsburgh, 1991).

The Education Amendment Act 1990 allowing technical institutes to offer degrees led to the emergence of another option in nursing education for registered nurses. From that time some of the technical institutes introduced shortened programmes (commonly referred to as bridging programmes) allowing registered nurses who qualified with a certificate of diploma to proceed to a bachelor's degree. Many registered nurses have taken the opportunity to attain a degree this way, by studying either part or full time, realising that eventually it may be necessary for them to hold a degree and postgraduate qualifications for promotion within the profession (M. Brown et al., 1997).

#### **4.1.3 Postgraduate education**

Internationally postgraduate education, across all disciplines, is the most rapidly expanding area in education (LaPidus, 1997; Terrell, 1998) and this is equally true for nursing education in New Zealand. In 1999 the Nursing Council of New Zealand conducted a self-report survey involving 45,752 New Zealand nurses and midwives renewing their annual practising certificates. The survey identified that of the registered nurses with current annual practising certificates, 18.2% held a Bachelors degree, 0.7% a Masters degree and 0.1% a Doctorate degree (Nursing Council of New Zealand, 2000). The report went on to state "the nature of post-registration qualifications have changed over time with a large increase in qualifications being completed in the last five years" (Nursing Council of New Zealand, 2000, p. 8).

The New Zealand nursing workforce is currently in a transition phase as all newly registered nurses are graduates of a bachelors programme, and many experienced nurses have completed, or are in the process of completing, a conversion programme to a degree qualification. There are, however, many other experienced nurses who do not have a bachelors degree and some of these are studying towards a masters degree. Direct entry into masters programmes without first completing a bachelors degree for experienced nurses educated before a bachelors degree became available is considered a trend likely to continue (Ministerial Taskforce on Nursing, 1998).

In 1998 the Ministerial Taskforce on Nursing was established by the Minister of Health. The report identified enormous frustration among nurses at the paucity of postgraduate education, and specifically the lack of clinically focused postgraduate programmes (Ministerial Taskforce on Nursing, 1998). Additional problems described by nurses and cited in the report were

related to access. Access difficulties were identified as the high cost of postgraduate education, especially when there was unlikely to be any increase in pay after completing the postgraduate qualification, and the fact that programmes with clinical components were only available in one or two centres. However, the Taskforce found that there were nurses, despite the barriers, pursuing advanced education, often at great personal cost as they balanced demanding jobs, high workloads, and family responsibilities. The Taskforce felt that the reason those nurses continued in higher education programmes was because they understood the link between continuing education and the quality of the service they provided, and recognised the end result of providing positive health outcomes for clients as paramount.

The educational needs and preferred mode of study of nurses in one New Zealand hospital setting were assessed in a small study (Benipal, 1999). Out of 250 distributed questionnaires, 143 were returned and these indicated that a significant number of the participants would prefer to study part-time, rather than full time. There was also a preference for conferences, distance and block courses, rather than attending regular evening or weekend courses. The need “to ensure that the courses developed are responsive to the needs of nurses, and that the modes of delivery are flexible enough to encourage the participation of nurses” was one of the key recommendations (Benipal, 1999, p. 103). There is however a tension between convenience and quality in postgraduate nursing education. National consistency in the quality of postgraduate nursing education is seen as central to nurses expanding their roles and gaining the advanced or specialist skills needed for the health services of the future (Ministerial Taskforce on Nursing, 1998; Nursing Council of New Zealand, 1998, 1999).

## **4.2 New demands and opportunities in nursing**

Not only has the model of nursing education changed but the nature and context of nursing itself is undergoing rapid change. As argued above the demand for postgraduate nursing education has been driven by societal and professional expectations of high quality nursing. In addition new nursing roles have emerged and all nurses are required to work with technology in their day to day work. The degree and rapidity of changes as illustrated by these developments have brought into focus the need for an approach to education that cannot be met by a traditional content-focused approach; instead skills for lifelong learning can prepare nurses for future changes in healthcare.

### **4.2.1 Nursing in the technological age**

To gain a vision of the nurse for the future, an independent review of undergraduate nursing education was commissioned by the Nursing Council of New Zealand in 2000 (KPMG Consulting & Nursing Council of New Zealand, 2001). One of the key issues identified to impact on health care and nursing education in the future was technological advancements (KPMG Consulting & Nursing Council of New Zealand, 2001); similar to trends internationally (Ehnfors, Ehrenberg, & Rolf, 2006; K. J. Hannah, Hammell, & Nagle, 2006; Hovenga, Carr, Honey, & Westbrooke, 2006; Marin, 2006; Park, 2006). New Zealand nurses need to be prepared for increased use of technology in the health arena.

Nursing practice is seen as information-intensive (Carty & Phillip, 2001; K. Hannah, 2001). For example, nurses are thought to spend up to 50% of their time documenting patient information (Bowies, 1997). There are many advantages of increasing the use of technology for the profession because of the storage, processing, retrieval, display, processing, analysis and communication capabilities of computers (Thede, 1999). Furthermore, the increase in community-based health care and information technology are considered to be linked to each other (Schwirian, 1998), because of the availability of information and communication tools that are more mobile and able to be used at the point of care. “Bringing together information and communication technology and health care evidence can help both work more effectively than either one in isolation” (Strachan et al., 2001, p. 96).

McGuiness and Hardy (1999) distinguish between personal, professional and educational technology for health professionals. Personal technology includes the experiences that people bring with them that they have already gained, such as using audiovisual appliances and home computers. The common experiences of using Automatic Teller Machines, Internet banking and the use of household devices such as video and microwave ovens are further examples. Professional technology is that which the practitioner might use in their work, for example a nurse is expected to know how to use electronic equipment for monitoring blood pressure, pulse or blood sugar levels. Educational technology relates to technologies that facilitate education, and students undertaking higher education have an expectation of using technology as part of their study, just as they use technology in other aspects of their life (Everhart, 2001). However, there is a danger of techno-centric thinking, where the technology, often the computer, is thought to be at the centre of the learning process (Ribbons, 1998; Ryba, 1991). The focus needs to be on learning and how learning about technology in one sphere of life can be transferred to another. DeBourgh (2002) claims that technology is embedded in the day-to-

day work of many professions, including nursing and therefore technology is best integrated in the learning paradigm to ensure nurses are prepared to assume professional roles and develop skills for lifelong learning. Preparation to meet the changes in health care, including the increasing place of technology and new roles in nursing, can best be met by strategies for lifelong learning.

#### **4.2.2 New roles in nursing**

To improve the provision of health and disability services across the continuum of care different approaches to service delivery are surfacing. "With technological innovation and reorientation of the sector, traditional roles have begun to blur, new occupations have begun to emerge and multidisciplinary teamwork has started to become the norm" (Ministry of Health, 2001b, p. 6). The new roles emerging in nursing are part of a trend towards professionalisation, increased responsibility and the subsequent need for education to prepare for these roles (Reibel, 1994; Schwirian, 1998; Whyte, Lugton, & Fawcett, 2000). One of the new roles is that of the Nurse Practitioner. "The advanced practice and theoretical education of the nurse practitioner will enable independent or collaborative models of care to be developed in hospitals and the community, and between both environments" (Ministry of Health, 2002, p. 10). The establishment of Nurse Practitioner roles in New Zealand follows recognition internationally that nurse-led services have positive effects on health outcomes, and are also well accepted by users of the services and society (Carryer, 2002).

Following an extensive consultative process, the Minister of Health in 1998 announced the Medicines Act of 1981 would be amended to extend prescribing rights to other health professionals, including nurses. As a result of this decision, the Ministry of Health began developing policy for the introduction of limited prescribing rights for nurses working in specified areas. In order to gain prescribing rights, nurses would be required to demonstrate certain competencies. The Nursing Council of New Zealand released frameworks for post-registration nursing education that outlined a pathway of educational preparation for registered nurses from the first year of practice through to 'Nurse Practitioner', the highest clinical nursing level, with or without preparation for nurse prescribing (Nursing Council of New Zealand, 1999, 2001b, 2001c). In New Zealand the term 'Nurse Practitioner' as used by the Nursing Council of New Zealand, is defined as "a registered nurse practising at an advanced level in a specific scope of practice, who has been prepared at Master's level of education and has been recognised and approved by the Nursing Council as a Nurse Practitioner" (Nursing Council of New Zealand, 2001c, p. 9). The introduction of Nurse Practitioner roles and nurse

prescribing has increased the demand for further education at the postgraduate level (Nursing Council of New Zealand, 2001c).

### **4.2.3 The imperative for lifelong learning**

University education was once largely the domain of young people, fresh from school seeking preparation for a career; however, now there is a growing presence of the adult or lifelong learner (Everhart, 2001; George & Luke, 1995; Skiba, 1997). The adult learner may be participating in study for reasons of increasing skills, opportunities for career advancement, a change of career direction, or the personal enjoyment and achievement of learning. Lifelong learning brings into focus the need for education about 'how to learn', in addition to a focus on content, because this better prepares health professionals to deal with changes and opportunities in health services (Borthwick, 1999). The lifelong learning skills can then continue after initial professional preparation, and in the case of the nurse, provides preparation for future changes in health care (Borthwick, 1999; Higgs & Edwards, 1999).

Higher nursing education that provides for lifelong learning and career development needs to include critical thinking ability, communication skills, and information literacy (L. H. Freeman et al., 2002; Skiba, 1997; Whyte et al., 2000). Resulting in part from the information explosion and increased access to information through the Internet, there is less emphasis on what students need to learn as a finite body of knowledge and more on the process of learning (Higgs & Edwards, 1999). To assist the student to transfer knowledge about previous learning to a new situation the use of models within contexts have been suggested (Edmonds, 1999). An example would be to demonstrate links among the use of personal, professional and educational technology that McGuinness and Hardy (1999) describe. Learning based on experience gained with personal use of technology would then be transferable to the professional and educational context.

## **4.3 Nursing as a female workforce: Implications for postgraduate study**

Having established that nurses are under increasing pressure to engage in continued study, indeed with lifelong learning now being an expectation, not exception, the implications of the female dominance of nursing are now explored. Nursing has been typified as a woman's occupation (Warner, Black, & Parent, 1998), an international trend and a characteristic that has discouraged the entry of nursing into higher education where women were unwelcome into

what was historically a male dominated area (Bullough & Bullough, 1981). In New Zealand nurses make up the single largest group of health professionals in the health sector and represent 71 percent of the country's health and disability workforce (New Zealand Health Information Service, 2000). Nursing in New Zealand continues to be a female dominated profession with 90 percent of nurses being female (New Zealand Health Information Service, 2000), and these nurses have an average age of 42.6 years (Health Workforce Advisory Committee, 2002).

Research shows that issues women face that make flexibility in education essential for participation and success (Carlson, 1999; Hinds, Malenfant, & Home, 1995). Without flexibility, access to education may limit the recruitment of nurses into areas where higher education is required (Fagan & Williams, 1991). Increasing flexibility in education is one strategy to meet the demand from nurses who are busy with work and family responsibilities yet wish to pursue postgraduate education. Furthermore the provision of sound career advice to women can promote planning and the educational preparation needed for future career options (Davis, 1992; Fagan & Williams, 1991; Wiggins, 1996). Planning and flexibility for lifelong learning can provide the opportunity for experienced nurses to continue working within the health care system.

Women postgraduate nurses have multiple responsibilities that they need to balance in order to be successful in their pursuit of higher education. The term 'multiple roles' describes several discrete sets of role-associated responsibilities handled by one person (Green, 1987; Hinds et al., 1995). The impact of women's multiple roles in particular has been the focus of research (Carlson, 1999; Gorzka & Dri, 1988; Green, 1987; Hinds et al., 1995; Shiu, 1999), reflecting the significant increase over the last 40 years of the number of women with family responsibilities who also work at a paid job, a trend that is expected to continue (Hinds et al., 1995). Managing a home and family, a job and then undertaking further education involves managing complexity. Women nurses returning for further education have been identified as having between three and five active roles to manage (Gorzka & Dri, 1988). These roles included: homemaker, partner, mother, paid worker, friend, grandmother or volunteer and in addition the student role. The postgraduate nurse may also have multiple professional roles: expert practitioner, clinical teacher, researcher and innovator in their clinical work (Gorzka & Dri, 1988). Despite the difficulties experienced by 'multiple role nurses' there are also positive outcomes to their attempts to manage family, work and study, including a sense of self-fulfilment and of personal growth (Graeve, 1992; Hinds et al., 1995).

Literature shows that support assists nurses to cope with study alongside other commitments; support systems found to be invaluable for academic survival included partner support, childcare, library services, typing, employers, co-workers and other students (Graeve, 1992; Kluka, Clark, Mordoch, Martin, & Hyndman, 2001; Shiu, 1999). However, there can also be an absence of expected support from family, friends and colleagues, and at the extreme, actual sabotage of the nurse's effort to study (Glass, 1997; Pym, 1992). Some nurses face negative comments, criticism and lack of support in the workplace, sadly often from co-workers (Blackie, 2001; Carryer, 2002). Other nurses in the workplace who are not involved with study can find the presence of a colleague engaged in higher education quite threatening and this can be manifested by co-workers being punitive, such as sabotaging rosters so a nurse cannot get the time off to attend class (Pym, 1992). A not uncommon coping strategy for postgraduate nurses in those circumstances is to modify their course load by studying part time, and to seek flexibility in study options (Hinds et al., 1995).

#### **4.4 Summary**

The goal posts in nursing education in New Zealand have shifted over the years. Initially the training itself took place in hospitals where students provided the bulk of nursing services, and the end point of education was to register as a nurse. The shift of nursing education from hospital-based to the education sector in polytechnics or technical institutes, with graduates receiving a Diploma of Nursing and registration as nurses, increased the emphasis on educational quality. A subsequent change, brought about by the Education Amendment Act (1990), extended the awarding of degrees beyond the university sector to polytechnics and technical institutes. This heralded a new era where the student who undertook three years of study at a polytechnic or technical institute School of Nursing and successfully completed the programme gained both registration as a nurse and a baccalaureate degree. Nurses who had registered prior to the introduction of degree qualification for nurses have sought ways to upgrade either their hospital-based training qualification, or their diploma, to a degree. Most recently it has been possible for registered nurses to enrol directly into a postgraduate programme at universities based on recognising prior learning as equivalent to a bachelors degree. Recent developments in the health sector generally and nursing career structures specifically require higher qualifications for nurses seeking more advanced positions and leadership roles, hence the drive for higher education among this professional group.

## 5 Profile of Postgraduate Nurse Study Population

The information in this chapter links postgraduate education of nurses to the study population. With the ability of education to take advantage of new and emerging technology, and of nurses to be aware and conversant with technology in both practice and education, introducing more flexible learning into higher education is an attractive option. Fundamental to considering flexible learning is the need to identify the characteristics and abilities of the student group. The student population of postgraduate nurses in the present study undertaking higher education, and the School of Nursing response to identified issues, are now described. While the previous chapter about postgraduate nursing education has drawn on literature and policy documents, this chapter includes data from other sources. The Postgraduate Nurse Survey, interviews with School of Nursing administration staff, Head of School and teachers contribute to the picture of postgraduate students who participated in the study. Quotes from study participants are presented in italics.

### 5.1 Postgraduate nurses working and studying

Demographic information collected from enrolment data identifies that postgraduate nurses are predominantly female, with an average age of 37 years (Division of Nursing, 2001) showing that the study population reflects the profile of nurses in New Zealand. These nurses combine work and study, with a Postgraduate Nurse Survey, conducted in 2002 as a baseline for the present study, revealing that 84% work more than 31 hours per week (Table 5-1).

**Table 5-1: Postgraduate Nurses Hours of Work in Paid Employment**

<b>Hours of Work</b>	<b>Percent of Students (n = 146)</b>
0	0%
1-20	5.5%
21-30	10.3%
31-40	84.2%

As discussed in the previous chapter nurses who combine clinical work and study along with other commitments in their life are very busy. To support students in managing their study and work commitments nurses are advised to structure their Masters study programme in a stepwise structure by first enrolling in a Postgraduate Certificate, then Diploma and finally

Masters. The Postgraduate Administrator explained why: *“That gives them the option to take a break and come back. With the regulations now it’s very flexible for students and gives them the option to do one course per semester”*. The ability to take one course per semester or to have time out between the programmes is important for nurses who are fitting study in alongside their clinical practice and personal lives. The Postgraduate Administrator clarified the situation:

*They [the University] understand that work, family, and all the other commitments that students have mean they can often only manage one course per semester. When students are doing two courses a semester they can have their assignments due a week apart, and if they want to go on to their Masters they need to get a good grade point average. Sometimes one course per semester gives the best results.*

The nurses in this study work in a variety of roles ranging from those that are clinically focused, education-based and management. Clinical nursing often necessitates shift work. Furthermore clinical nurses work in many settings, including hospitals, clinics and in the community. These settings are distributed in both urban and rural areas and the diversity is reflected in the locations students come from.

Understanding its student population has flowed on to the School of Nursing being flexible in its delivery of postgraduate education. There was early recognition that clinical nurses, who often work shifts, found it difficult to attend courses run in the traditional mode of weekly lectures, but were able to get a complete day off. Instead courses were structured into study days, with four study days equal to the required lecture hours for a semester length course. The Head of School reflected on this change: *“The University didn’t like that initially, but it suited nurses who could get a day off”*, and went on to add: *“Students see us as very flexible as they get several options. We can give a nice mix – some up front teaching, some on-line and also utilising clinical staff.”* There was strong evidence from students supporting the full study days as being a positive move: *“Coming in for a whole day suits me, rather than coming in for a few hours every week”*: *“Yes me too. It’s much easier to arrange time off from work, and for all the other external factors, like family and so on”* and *“The four days suit me. No less and no more because I couldn’t get more time off.”*

While the face-to-face study days worked well there were still students who had difficulty getting days off, and students who missed a study day, perhaps due to sickness, were

disadvantaged. A teacher explained the impact of missing one out of four on-campus study days:

*If a student missed study day 2 I can't imagine how they could do the assignment. Although there are resources in the book of readings and there are resources on the Internet that could guide them through it (shakes her head). So I would have grave concerns about students who were not able to come to the study days.*

Students appreciated the flexibility in personal study: *"I enjoyed doing this course at home at night and work ahead or behind as I needed to".* Flexible options, such as on-line learning allowed students to pursue other commitments, *"Yes, and I'd do an on-line course again. I even continued this one while I was in Australia".* On-line learning offered a welcomed option for out of Auckland students who wanted to avoid travelling, *"And I hear [another course] is going to be totally on-line next semester so I can do that. I'd be happy to do it on-line as it sure beats driving down to and back from Auckland eight times a semester. So long as there is someone [I can contact] and if I have a question I can email then that's fine!"*

### **5.1.1 Location**

Increasing flexibility of delivery addressed issues such as access but new problems emerged. This section begins by illustrating how increased flexibility resulted in courses being taken up by growing numbers of students living a distance from the University. Specific new issues to emerge from these distance students are identified and how they are addressed discussed.

Most postgraduate nurse students live in the city where the University is situated, reflecting the employment opportunities in any of the five large public hospitals, a number of smaller private hospitals and community-based roles. A smaller proportion of students live in smaller towns 100-200 kilometres north and south of Auckland, with small numbers also from throughout New Zealand. On-line courses have the advantage of promoting "location independence", but do imply a reliance on Internet access (Jolliffe et al., 2001, p. 10).

Figure 5-1 illustrates the range of students residences of those students enrolled for Course 2 when it was offered on-line for the first time. Most students (85%) lived in the Auckland area, which includes Auckland, Waitemata and Counties Manukau District Health Board Regions, with the majority (46%) residing in central Auckland in close proximity to the campus. Only 15% lived outside the Auckland region, but travel for these students could range between two

and 30 hours driving time. With the introduction of flexible learning into the School of Nursing, over the duration of the study there was a trebling of student numbers, and the distribution of students' residential locations changed. From attracting students mainly from Auckland where the main campus is situated, the proportion of students living outside Auckland increased from 15% to 33%.



**Figure 5-1: Course 2 Student Residential Location Semester 1 2004 by District Health Board Regions**

Location and distance from the main campus had an impact on students. Some students residing outside Auckland felt “*really separate*” as although they may have been part of a cohort of students from a region, the individual nurses often worked in dispersed settings. For example a student described her situation where she is one of six nurses from an area outside

Auckland but *“Two are out of town, two work in Coronary Care, one works in orthopaedics and then there’s me.”* Some students outside Auckland reported feeling isolated and unsupported in courses offered flexibly. Quotes from student interviews demonstrate this, *“At times I have felt quite unsupported in this course, being a long distant student has its disadvantages”* and *“But I feel isolated being the only student in my area. I’ve got no one to talk to about the course.”*

Contact with other students was considered important. An on-line student described how she missed the contact with other students: *“I missed the student connection and at the study day really enjoyed putting faces and names together and communicating and collaborating. If you like email you’re probably fine, but I like talking to people.”* Some out-of-Auckland students used the travel time when driving to attend on-campus study days as an opportunity to discuss course work. *“I found contact with others difficult due to my distance from others, but usually we would discuss the course on the way home and maybe try and [arrange to] get together up North for study.”*

On-campus tutorials are provided for some courses but many students could not always or easily attend these. Attendance was an issue not only for students living outside Auckland as time of day, traffic and parking difficulties hindered those living closer too. A student explained: *“Some of us can’t come in for a tutorial. It’s the time to get in during the day, time off work, and parking and only for an hour [the duration of the tutorial].”* A teacher calculated from student feedback one semester that up to 30% of students had difficulty attending tutorials. To improve access to the material covered in tutorials a number of alternatives were tried including regional tutorials and increased email contact. For example one teacher used telephone conferencing with out-of-Auckland students that worked well for both the teacher and students, though was an added expense for the School of Nursing. Another example, as an adjunct to on-campus tutorials was providing questions and answers either by email or via the web-based learning management system (LMS). Students appreciated these efforts, reporting: *“Tutorials are good, even if you can’t go, because getting the lists of the question and answers was really useful.”*

An issue for students living outside Auckland included reduced access to University resources, such as student support services and the library. The library was valued as a resource by many, especially with improved on-line access to the catalogue, databases and electronic journals. However, students still found accessing books and journals difficult if they could not come in to the library and so alternatives were found. *“I haven’t used the University library.”*

*I'm not sure how to take books out when I live out of Auckland. I did use the on-line journals and that worked fine. I used my local library too, for books" and "I have limited resources to access from up here in the winterless north. I have had to interloan a lot of material, which hasn't always been successful".*

Another student explained about the University expectation that students are attending courses on-campus.

*Apart from the library I have used some of the support services with a mixed result. At times they have been extremely helpful and other times it was not such a good response. This was mainly from 'Student Support' who expected me to be in Auckland and able to pop on by and sort out my questions face to face. I wondered at the time if they had any idea about being a long distance learner and that being out of town was a bit of an issue, and as a working person I could not just 'pop down'.*

Being a student residing outside Auckland has additional associated cost. While the course fees are the same, the student incurs the additional expense of travel to study days, and communication such as telephone costs. While there is a free telephone number (0800 number) it is often slow with students reporting *"it takes like four people to get an answer"*, but students resented paying the toll charges. *"I resent paying for the phone call, so I use the 0800 number as I can't see why I should pay for the call when I already paid my fees"*.

Teachers were aware of the discontent of students outside Auckland. A teacher described a semester where she had a group of students from outside Auckland and, recognising that they felt disadvantaged, compared the grades of those students with the rest of the class. She found the more distant students achieved equally well. *"It seems the [North of Auckland] group felt disadvantaged but they achieved comparably to the Auckland group, and there were some top students from [North of Auckland]."*

Advantages of making a course available on-line were described by a teacher as threefold. Firstly that the on-line course provided absolute *"consistency for all students enrolled"*, there was *"less travel for students and myself"* and also that as a core course it would be equally accessible as *"a growing demand is anticipated"*. One of the advantages of on-line courses was the ability to better meet the needs of more remote students and ensure equity of access irrespective of student location, as the teacher explained:

*One big thing is we want to serve those who do not want to drive to Auckland and get parking and all the rest of it. So the whole [on-line learning] package is there and they know they are not going to be disadvantaged. But some might feel they do want to come in and see someone, but that's additional and not a requirement of the course.*

### **5.1.2 Experience with postgraduate study**

Students varied in their previous experience with university, postgraduate and flexible study. The student's need for teacher contact and ability to cope with flexible learning was associated with their familiarity with study at the postgraduate level. Though the students were experienced nurses many were relatively new to the University and to postgraduate study: *"I'm very new to the learning process after so many years! I need to revise how to do a bibliography and referencing even! Concepts make sense, but I'm a bit lost as to where to begin and what is required.* Many students identified they had not undertaken formal study for some years. Said one, *"It is the first time I have undertaken postgraduate study since registering in 1980 and I have been enthusiastic and motivated to attend classes and submit assignment work".* Those with prior experience in postgraduate education confirmed their study was easier for them, illustrated by a student, *"I've had no hassles at all, but I've studied before at the university".*

The impact of students' lack of experience with postgraduate study was recognised by teachers. Teachers were aware that more support might be required for those new to or returning to study. A teacher describes this saying, *"At least this course is not usually anyone's first, so they have all experienced success with the School of Nursing before, and are more used to studying with us, so it wouldn't be about not knowing the School, the 'rules' and basic expectations etc".* With the changes to more flexible delivery another teacher commented: *"The students have to get used to us being more flexible. Also with my students there weren't many where it was their first paper and that's a help ... They have done another paper and so have some experience of the university".* She accepted that teaching that varied from the traditional face-to-face approaches were more challenging for students who were getting used to the University and postgraduate study.

Students wanted to know the expectations of the teachers and School of Nursing. The teacher of Course 1 described how she changed to providing information about assessments in writing instead of talking about it in class. Providing detailed assignment guidelines in writing, in

addition to the essay topic, means students have the information and explicit expectations available to refer to when needed, and these can be either mailed to students or provided as an on-line resource.

A student's late reflections in a semester illustrate the negative effects of not knowing what was expected for a course. *"This course for me wasn't the easiest to tackle. It was interesting and I enjoyed it but at times felt a bit lost and perplexed. Until the first assignment was done and marked it was hard to judge what was needed for learning and the whole concept of doing a paper at this level was quite daunting"*. The importance of timely feedback from assessed work to confirm learning at the postgraduate level is shown.

Flexible learning where students are to some degree responsible for their own progress requires a degree of independence and self-direction. Students found this expectation demanding: *"The expectations of self-directed learning are much bigger than I thought they'd be"*; and *"It's really hard to do self-directed learning on your own when it's your first paper and you're not sure what's expected, the depth you need or if you're getting it or not, or if you're right or wrong"*. Another student explained, *"I'm worried about over or under studying"*.

Providing information early in the semester was helpful, especially for students new to postgraduate study as it assisted the students to prepare themselves, *"The folder arrived for the course with all the course materials and readings. I was quite surprised to receive anything so early (first week of semester), but on reflection it was a good idea, as I now know what is expected of me and how to approach the course"*.

### **5.1.3 Approaches to learning**

Students approach their learning in different ways, yet flexible learning can necessitate still other approaches. Postgraduate study can assist students to understand their personal style of learning, and this may then be used as the basis for broadening their approaches to learning. Examples of students recognising their own approaches to learning include: *"I think I spend a lot of time thinking about my work first, before I write anything"*; *"I enjoy discussions. I'm definitely a talker first and a reader second"*; and *"I do a lot of reading and talking before I actually get around to writing the assignment"*. There was also evidence of students engaged in thinking about their thinking, using metacognitive approaches in a reflective manner: *"I like to practice things before trying and in that respect I think I am perhaps a perfectionist. I would find it very hard to learn totally conceptually"*.

Some students showed they understood the expectations of students undertaking higher education: *“We need to be able to be independent learners at this stage or level of our education. This is where we should be at”*; and *“I like working individually, it suits me. I need quiet to focus. It depends how people learn best”*. Others preferred teachers to take more control, for example: *“We could have more regular tutorials. That would suit me. Say a 10 minute teleconference call and an article you need to have read. That would help keep me on track more”*. Several students described independent and self-directed study as difficult, but also valued developing more proficiency with this. *“It is a very self-directed course, which I found hard but it is also good in helping me develop my own learning needs and outcomes”*.

Teachers recognised the variation among students in their approaches to learning and tried to cater to them: *“I realise it doesn’t suit all the students but I’m hoping that with the pictures and the video it will be good”*. Catering to different approaches to learning flowed through to assessments, with teachers using a mix of assessments. When considering how to best meet student’s needs, library staff also noted different approaches to learning. Discussion about the use of an interactive library tutorial on CD provoked the following comment:

*But different nurses have got different learning styles so some might be quite happy with an interactive tutorial and not need anything else; others will need that and some personal contact. They need to go back through the tutorial again, maybe a number of times. It just depends on the person.*

While some students preferred face-to-face classes, *“I prefer to come into a class”*, others liked on-line learning: *“I enjoyed it and I enjoyed the flexibility of doing it on the Internet. I really got something out of this course”*. Students found on-line learning could be effective for them: *“I’ve had an initiation this semester on-line, so I’m ok about the thought of other courses on-line. You’re not wasting time with these courses; you sort of grow with them”*. Prior experience seemed to be a factor in enjoying this mode of delivery.

On-campus classes were popular because of the quality of speakers. A teacher explained, *“I am getting top staff from the Faculty coming in with their research and clinical focus. Many of them are really good speakers so it is worth catching them”*. The teacher referred to feedback from students:

*There’s a lot of positive feedback about the speakers. They’re very motivating and uplifting and students get the ‘wow’ experience too. Students have said they also just hang out for the next study day to happen...they*

*really like them. I think it's because they're working so hard at work and then they appreciate the specialist and clinical input.*

However, on-campus classes provided as full study days could also be intense and tiring, as a teacher commented: *"It's not ideal, not really. I think at the end the students come in and hear all of these sessions and they go away probably quite confused, tired and exhausted and then carry on working on their assignments"*.

The variety of individual students is matched by the varied approaches to learning they used. Evidence for and against every option was found. Some students enjoyed group discussions within on-campus classes: *"The class has been very much into group discussions and activities, which has been great. I get a lot from these sorts of discussions. I need that interaction, and so far all lecturers have been wonderful with this"*. Other students favoured lectures and disliked active participation: *"I did not particularly enjoy the group discussions within the classroom situation"*.

Differences in students' approaches to learning was evident in preference for assessments, for example some students preferred essays, others examinations. A student stated: *"I structured my essay in a way that it clarified issues for me and I focused it around my own learning needs"*, demonstrating that this student found essay writing helpful for learning. Comments from students of another course indicated both liking and hating examinations: *"Bit panicking about the exam. I don't function very well under exam conditions"* and *"I think the exam could be quite good to tie it all together"*. An older student shared her perspective towards exams:

*I find that 35 years on my attitude to exams is no different. I will go out of my way to not have an exam but rather do lots of research and then do assignments. As a result of this I also retain more and have the hard data to refer to for future use.*

Using a "diversity in evaluation methods" is thought to enrich the practice of assessments for both teachers and students and provide opportunities for students to demonstrate what they have learnt (Draves, 2002, p. 117). Assessments in the present study were both on and off-line and included essays, examinations, on-line timed multi choice questions and short answer questions, individual and group presentations, journaling, marked on-line discussion and case studies. One teacher successfully introduced a portfolio of small assessment activities

throughout the course, which demonstrated the student's accumulated learning and also reassured the teacher that all topics and key concepts were covered.

Students work at different paces, either by choice or necessity reflecting other life factors or personality. A teacher illustrated the effects of personality, saying: *“One student goes ahead, and she's already handed hers in. She's been ahead right the way through. She has enjoyed working at her pace. She seems quite an uptight person and she prefers to get everything done early”*. On-line courses require a different approach to learning and can accommodate different paces of learning too. A teacher described the difference having offered her course both on-campus and on-line, *“The pacing is different. Instead of having to cram for the final exam students have to pace themselves through the semester for the on-line version. It's probably the same amount of work overall, but the pacing is different”*. On-line learning made it easier for students to work at their own pace, though they need to be prepared, as a student explained about participating in an on-line discussion, *“I wish I had got into participating more early on and it needs to be made clear at the outset that you really should go on-line every couple of days”*.

#### **5.1.4 Motivation to study**

For postgraduate nurses the strongest motivator for postgraduate study is the opportunity to improve their clinical knowledge. Being able to relate study to their clinical practice was vital.

*If I hadn't been able to slant the assessments towards my clinical practice all the way through I would not have embarked on any study. It is this that gives me the drive to carry on despite huge workloads and travel. Suddenly you can think of many applications that the study has to your work and look at specific problems that need research on, and do something about it.*

Despite the difficulties of managing work, family and study commitments, students could see the *“relevance and usefulness”* of their study. This was helpful in motivating students to continue when aspects of studying at the postgraduate level were daunting.

These students are characterised as adult learners. Adult learners are recognised as being generally more motivated to succeed than students who have come directly from school (G. Harper & Kember, 1986). The need to achieve good grades, rather than just pass was recognised as a driver by students: *“I think it's something about mature students, you want to pass, but you want more than JUST a pass! You become your own worst enemy.”* The drive

to learn and succeed was also evident in students' reaction to feedback on written work as a student's comment illustrates: *"The second assignment was easier, but maybe the marker was more lenient, maybe I did better. I don't want lenient, I want to know what to do better"*.

As these students were driven by the need to succeed, marks and grades became important motivators. This was demonstrated within a course that introduced an on-line discussion. The teacher noted: *"In the last couple of weeks some students engaged on-line, others haven't. Because there is no grade attached or no assessment mark attached to the dialogue, I am concerned that some will not contribute."* The student viewpoint included:

*It was useful. It would be worth to do it again, but it's a time thing. And, I know it sounds terrible, but when it's not worth anything, and you're working, and have assignments and things, well I don't tend to do it. It gets prioritised lower. Even if it was worth 5% I'd probably do it.*

This incident prompted the teacher to reconsider the place of the on-line discussion within the course and its contribution to learning: *"I think that at the moment the students just haven't used the on-line discussion as a tool for learning and we need to work in the second half [of the course] to make sure they gain an understanding of its potential benefits"*. In this case the on-line discussion never became integrated into the course and was finally removed.

Some students indicated they were motivated by the opportunity to role model study skills to their children, *"My 16-year-old daughter has learnt a lot just being around me while I'm studying"*. Demonstrating discipline and perseverance to their children, as well as studying alongside them, encouraged students with their resolve to continue their study.

While the postgraduate nurse courses have a clinical focus there were also opportunities to develop skills for lifelong learning. Teachers recognised these and used examples to engage students and show the future relevance for their professional lives: *"They are transferable skills to different foci of clinical work, whether it is leadership, management, clinical practice or education"*. Students acknowledged the wider application of some knowledge, with one student saying, *"I felt better about this course, like I've taken away skills for the future. I'm not sure I've got it now, but I've got something to build on"*. This includes skills using technology. With the increased use of technology, from word processing an essay, using emailing or with on-line learning, students develop their computer skills as part of postgraduate study which adds to their skills of lifelong learning.

## 5.2 Computer use

With the increased use of computers and communication technology, computer skills are an essential requirement for contemporary nursing practice and for postgraduate study. Flexible learning is often dependent on technology as a means of improving access and supporting learning and although education is rarely at the leading edge, computer access and use can increasingly be taken for granted (Benseman, 1999). Therefore existing access to and skill levels with computers and communication technology were assessed as a basis for appropriate planning for increasing flexible learning. The Postgraduate Nurse Survey, undertaken with all enrolled students in 2002, provided much of the following information, while student interviews and excerpts demonstrate the perception of the students.

### 5.2.1 Access to technology

The Postgraduate Nurse Survey found 94% of students either owned or had convenient access to a computer for their study (Table 5-2). A high percentage of these computers had Internet access (87%), a compact disk (CD) drive (88%), and sound (83%).

**Table 5-2: Access to Computers & Information Communication Technology**

Question (n = 146)	YES		NO	
	N	%	N	%
Do you own or have convenient use of a personal computer for study purposes?	137	93.8	9	6.2
If yes, does your personal computer have Internet access?	127	87.0	19	13.0
If yes, does your personal computer have a CD drive?	129	88.4	17	11.6
If yes, does your personal computer have speakers or sound?	121	82.9	25	17.1
Do you own or have convenient use of a videocassette player (VCR) for study purposes?	123	84.2	23	15.8
Do you own or have convenient use of an audio cassette player (tape) for study purposes?	128	87.7	18	12.3

Some students purchased a computer prior to commencing postgraduate study: *“I bought a computer and have got email at home. Someone came up here and gave a talk and said having email was important. I didn’t mind buying it and paying. The email is good to keep in touch with my friends and family too”*. However some of these students may not have had a great deal of experience using the technology.

## 5.2.2 Computer proficiency

The Postgraduate Nurse Survey asked students to rate their overall level of proficiency in computer use. Most (60%) rated their proficiency as 'adequate'; with more than 80% rating their skills as either 'adequate' or better, and only 13% as beginners (Table 5-3).

**Table 5-3: Computer Proficiency**

(n=146)				
No knowledge	Beginner	Adequate	Good	Very Good
N = 0	N = 19	N = 87	N = 32	N = 8
% = 0	% = 13.0	% = 59.6	% = 21.9	% = 5.5

To gauge students' capability in computer use a series of questions were asked related to specific computer skills arranged under the headings of file management, word processing, email, using the Internet and World Wide Web (WWW) (Table 5-4).

**Table 5-4: Computer Skills**

(n=146)	YES		NO	
<b>File Management</b>	N	%	N	%
Can you change from the 'C' drive to the 'A' or 'D' drive	99	67.8	47	32.2
Can you organise your files into folders?	89	61.0	57	39.0
<b>Word Processing</b>				
Can you insert page numbers?	118	80.8	28	19.2
Can you check spelling and grammar?	139	95.2	7	4.8
Can you organise references using Endnote?	27	18.5	119	81.5
Can you print an individual page from a document?	136	93.2	10	6.8
Can you copy and paste in and between documents	113	77.4	33	22.6
<b>Email</b>				
Do you send messages to individuals?	139	95.2	7	4.8
Can you send attachments?	109	74.7	37	25.3
Can you open attachments?	136	93.2	10	6.8
<b>Using the Internet or World Wide Web (WWW)</b>				
Can you use the www to locate and use search engines?	128	87.7	18	12.3
Can you use the www for literature searching?	98	67.1	48	32.9

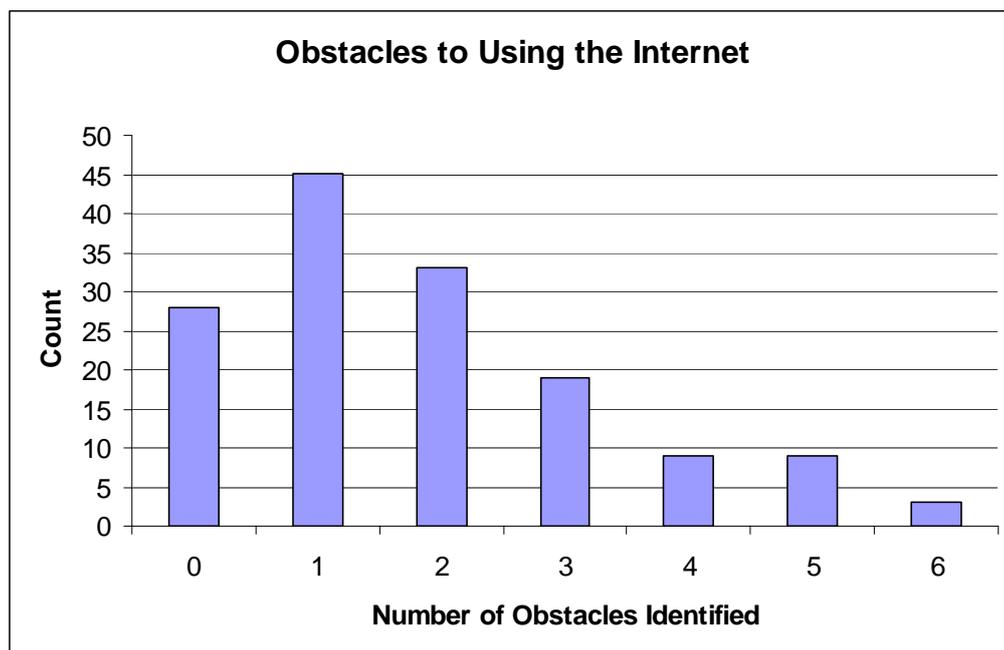
Flexible learning that includes use of a computer appears feasible when the majority of postgraduate nursing students (94%) can conveniently access a computer for study purposes and when 87% consider their skills to be adequate or better. However, in the interests of equity consideration must also be given to those students who do not have easy access to a computer. The appropriateness of providing totally web-based information or learning resources is uncertain when 13% of students do not have Internet access and 33% are not confident in their ability to use the web for literature searching. Depending on the specific computer and communication technology requirements of the course at least 40% of the students could benefit from some basic skills development to enable them to use computers more effectively for study purposes.

Teachers commented on students' entry level computer skills: *"I don't think there's too many now who have never used a computer in their life before"*. The significant difference that teachers noted was the students' acceptance that computer skills were part of postgraduate study. *"That's a change, even from a couple of years ago. I used to be asked if students could do their assignments by hand. I haven't had that for a couple of years now ... The need is still there to teach many of them how to do a table. But the big change, and [another teacher] picked this up as well, was they don't say, "Why should we do that?"* Students' accepted they would need to use a table as a means of summarising information within a case study, as they also accepted submitting word processed essays. Email use has also become more established. While communication technology, such as email, has facilitated fast and convenient communication it also raised student's expectations of a prompt reply. Students *"want an answer fairly promptly"* and teachers reported receiving repeated emails from students when an email reply was not sent within a few hours.

To further clarify use of the Internet students were asked to identify obstacles to making more use of the Internet (Table 5-5). A list of 12 possible responses was provided and an open-ended option allowed further obstacles to be identified. Any number of the obstacles listed could be selected, and though 28 (19%) students identified no obstacles, 77 (53%) indicated either 1 or 2 obstacles, and the remainder more than two obstacles. The minimum selected was 0, and the maximum 6, from a possible 13 obstacles, which includes the category 'other'. The mean number of obstacles selected was 1.83 suggesting that overall this group of postgraduate nurses did experience obstacles though the number may be few (Figure 5-2).

**Table 5-5: Obstacles to using the Internet**

	<b>(n=146)</b>	
<b>Obstacle</b>	<b>N</b>	<b>%</b>
Can't find what I'm looking for on the website	45	30.8
Don't know how to use it properly	37	25.3
Having to share with other members of the household	36	24.7
Takes too long to download files	31	21.2
Difficulty in gaining access to a computer at University	23	15.8
Already overworked without the burden of Internet use	22	15.1
No access to a printer, or printing problems	18	12.3
Cost of connecting to the Internet	16	11.0
Fear or anxiety about using a computer	13	8.9
Don't have a computer where I live	12	8.2
Lack of keyboard or typing skills	9	6.2
Little of value on the Internet that relates to my courses	5	3.4
Other	18	12.3



**Figure 5-2: Number of Obstacles to Using the Internet**

The open-ended option to identify other obstacles than those already listed was completed by 18 participants. Lack of time was the most frequent obstacle identified in the open-ended question. Other time related issues were quality of telephone lines and increased download

time, the time it took to access the Internet, being timed out and problems connecting to the University resources from home.

While some of the obstacles were technology related or due to lack of skill, others occurred because of the personal circumstances of the student. Twenty-five percent of the students had to share a computer with other members of the household and regarded this as a barrier to using the Internet. The Postgraduate Nurse Survey identified that not all students have convenient access to technology for study purposes, nor are they at the same level in terms of using technology.

### **5.2.3 Getting started with on-line study**

Difficulties at the initial stages of contact with the University, including on-line enrolment, were a problem for students and were potentially de-motivating. This situation may have been aggravated by the fact that postgraduate nurse students are mature age learners. Issues around motivation and fear have been more commonly found in adults moving toward computer literacy than in youth (Martin, 1997). Evidence from student interviews includes, *“The enrolment process was horrendous. I thought if I can do this I can do the course!”* and *“I felt very close to giving up. I thought it was just too hard to enrol”*. Difficulties with technology at the early stages of the course meant that some students felt their study did not get off to a good start, *“I’m not particularly computer literate and I lost about three weeks at the beginning of the course. I felt like a real novice in the first month. Once you get used to going on-line it’s awesome”*. Students needed to develop confidence with using the technology, *“Once you get the hang of it, then it’s ok, but it took me up to the second week to feel ok about what I was doing”*. As a more computer proficient student stated, *“I’m reasonably computer literate, but the first part, when you start is scary”*.

On the contrary, it has been suggested that success in simple tasks can be motivating and empowering for students and can encourage them to further develop their computer skills and draw from prior experience with technology (I. Reid, 1997). In the present study, unfavourable impressions from on-line enrolling were found to adversely influence the reactions of students to technology supported flexible learning. For example, a student explained that her experience when trying to enrol deterred her from trying the optional on-line learning management system component of her course, *“I never used the [LMS], my experience of trying to enrol put me off totally”*. As a response to encourage early use of the LMS, all postgraduate nurses enrolled in the School of Nursing were mailed hardcopy information prior

to their course that includes a pamphlet about getting started on the LMS. Assistance, such as an optional orientation to on-line learning was introduced for some courses to ensure students could get started promptly. Literature supports student orientation to technology. "A student technology orientation will aid greatly in your student satisfaction, retention, and participation in your online course" (Draves, 2002, p. 28). Furthermore, in courses that relied more on the LMS, teachers asked students to go on to the LMS and introduce themselves in a preparatory discussion, a task designed as much to ensure they could access and use the system, as for them to get to know each other. Despite the resources available for support, students often still sought help from teachers. The first weeks of the semester, until students became familiar and confident with the LMS, are recognised by the teachers as being the busiest and most stressful. Providing practical help, as well as emotional support, for anxious students is an effort for teachers.

#### **5.2.4 Information literacy**

Information literacy is included in the skill set for all postgraduate students from the University and is detailed as a set of attributes within the profile of a graduate (The University of Auckland, 2003b). Amongst the attributes are general intellectual skills and capacities, including six that specifically relate to information literacy:

1. An ability to recognise when information is needed and a capacity to locate, evaluate and use this information effectively.
2. An ability to make appropriate use of advanced information and communication technologies.
3. A demonstrated capacity to initiate, design, conduct and report independent and original research from a defined project.
4. A willingness to seek continuous improvement in research skills and quality of research.
5. An advanced capacity for critical evaluation of relevant scholarly literature.
6. An ability to identify, define, analyse and solve problems in a flexible manner.

These attributes of the University Postgraduate Profile correspond to the understanding of information literacy proposed by Batchelor and Hanley (2002), who make a case for information literacy for nurses to be considered, not as a single concept, but as a process. With this view in mind they support a comprehensive definition of information literacy, originally suggested by the American Library Association in 1989, which includes recognising

when information is needed, knowing how information is organised as well as how to find and use information. This understanding of information literacy supports skills for lifelong learning (Cheek & Doskatsch, 1998). Moreover for nurses, information literacy skills obtained and developed during study for higher qualifications should be transferable to professional practice in the healthcare arena (Everhart, 2001; McGuinness & Hardy, 1999).

The library has a significant contribution to make to information literacy skill development. Students recognised the need to use the library to retrieve information, especially when this was linked to assessments. *“I need to make an appointment at the library for some assistance with my literature searches as I’m not familiar with this yet. I have tried to do some by myself, but without any great success.”* The recent development of a library on-line tutorial may make effective use of the library easier for students without the assistance of library staff. Assignment guidelines and marking criteria alert students to the need for supporting literature. There was evidence in students’ assessed work of improved use of supporting literature between their first and second pieces of assessment.

Students appreciated the skills in information literacy that they developed:

*I find searching for the relevant literature so much more an easier task now and I have been given the skills and tools to critically appraise articles quickly. It’s really helpful to be able to pull out the relevant details quickly, and to be able to assess if an article is going to be useful to me or not.*

Not only could students find, retrieve and use selected literature, but their assessed work demonstrated depth of learning, structural complexity where issues are integrated into arguments, clinical reasoning and the ideas formulated are related back to clinical practice. While not all students achieved these ideals in earlier pieces of assessment there tended to be an improvement over the semester.

It was clear that some courses supported the development of information literacy skills better than others: *“This particular course has been a real eye-opener; having to do literature searches and determine validity of articles found whilst relating it to a specific clinical question”*; and *“This course has made me more discerning, given me skills to question, and some really good tools to use to have a deeper look at the information should I wish to”*. While students acknowledged that developing information literacy skills was challenging they could see the benefits *“I really enjoyed it but it was hard. I feel a lot more confident reading a paper and that’s a powerful change”*.

The link between information literacy skills and technology was apparent with students using the Internet and remote access to the library, “*What on earth did we do before the Internet literature searches were available?*”; and “*This week I have done a huge Internet/web search and requested 12 journal articles and several books. I’m finding it difficult to get relevant resources within the local libraries, however liaising frequently with the librarians at the University library*”. Students recognised their need for information, understood how information was organised both in the library and in articles, and could find information. Using this information in their written work, including accurate citing and referencing, was a skill that took longer to perfect.

### **5.3 Summary**

The profile of a population of nurses pursuing higher university education indicate a predominantly female, mature group who are at a time in their life when family, relationships and professional work are all important roles. When study is added their lives become even busier. These are experienced nurses, yet novice postgraduate learners. The population includes nurses prepared in hospital-based apprentice-type programmes, and in diploma and degree programmes delivered at polytechnics and technical institutes, and hence their styles and preferences vary with regard to learning, assessments, pace and motivation for learning. They are also a varied population regarding their access and exposure to and proficiency with computer and information technology. A number of issues for the students were identified along with the School of Nursing responses to provide a picture of the context for the present study. The context is described more fully in the following chapter on the organisation, while more depth on the students’ experiences in flexible learning are explored in Chapter Eight.

## 6 Organisational Context

To understand what the practice of flexible learning means in higher education within a university setting it is necessary to consider the organisation, in this instance the university. This relates to the study proposition concerned with support from the organisation being required for effective flexible learning (see 3.1). The extrinsic and intrinsic pressures that make flexible learning a desirable strategy for the University will be examined. Research suggests that the extrinsic pressures of diminished funding, competition and technological developments are similar to those encountered by other universities internationally (Anderson & Elloumi, 2004; Biggs, 2003; Morrison & Spencer, 2001; Phillips, 2005; Scott, 2000). The extrinsic pressures and the strategic direction adopted by the University inevitably affect the Faculty and the School of Nursing. Intrinsic pressures include the position of the School of Nursing within the Faculty and university policy and resource issues. The development and growth of the School of Nursing will be reviewed. Further intrinsic factors are the teachers and students themselves.

Valcke (2004), in a keynote address concerning information and communication technology distinguishes between the macro, meso and micro levels within an organisation. The macro level includes the national aspects that impact on the organisation, while the meso level is intra organisational and therefore includes aspects such as policies and centralised support services. The micro level focuses on the teachers and students within an organisation. Using the three levels as described by Valcke (2004), this chapter describes the macro, meso and micro levels and is divided into four sections. The meso level is divided to distinguish between the University and Faculty. An aspect of the micro level, the School, will be described. The findings on teachers and students, which are also within the micro level, are discussed in subsequent chapters. Four main sections provide the structure for this chapter:

**6.1 Macro level: The national picture** describes the strategy, policy and funding for flexible learning in the higher education sector.

**6.2 Meso level: University wide** is concerned with the internal central organisational aspects.

**6.3 Meso level: Faculty response** details the actions to increase flexible learning of the Faculty where the School of Nursing is located.

**6.4 Micro level: School initiatives** describes the School of Nursing, including staff, the flexible learning champion and the approach taken to increase flexible learning.

## **6.1 Macro level: The national picture**

Higher education in New Zealand is directed by the government through the Ministry of Education. The Ministry of Education recognises the importance of creating a “high quality education system [as] critical to New Zealand’s place in a global knowledge economy and to its domestic social and economic wellbeing” (Ministry of Education, 2005, p. 4). However, the Ministry is not an education provider, but rather directs services through strategy and policy, as well as monitoring the effectiveness and performance of the higher education sector through national agencies.

In 2000 the process for developing a new strategic direction for New Zealand’s higher education system saw the establishment of the Tertiary Education Advisory Commission (TEAC) to provide advice to Government on how the future tertiary system could operate. The commission produced a series of reports containing recommendations and in response to these the government developed the Tertiary Education Strategy and established the Tertiary Education Commission (TEC) in 2003. The strategy is aligned with wider government goals of economic transformation, social development, Maori development, environmental sustainability, infrastructural development, and innovation (Ministry of Education, 2002). The reforms in higher education support a shift to increased collaboration and connection within the sector. Further incentives to increase collaboration and to support specific innovations are provided through funded projects, such as the Innovation and Development Fund and the e-Learning Collaborative Development Fund.

### **6.1.1 Tertiary information strategy**

To achieve greater collaboration and connection within the higher education sector the Tertiary Education Commission developed information technology related strategies, most notably the Tertiary Information Strategy (TIS). While the TIS was designed to maximise the potential of the Internet for learners and the tertiary sector, initially it focused on administrative needs. Two web portals have been developed. The Tertiary Education Portal (TED), at [www.ted.govt.nz](http://www.ted.govt.nz) provides access to all tertiary education information and services in New Zealand and the Tertiary e-Learning Portal (eLearn) at [www.elearn.govt.nz](http://www.elearn.govt.nz) provides access to information, services and organisations relevant to tertiary e-learning.

The Ministry of Education has a supportive role in the development of e-learning in higher education that includes strategy, stewardship, funding, knowledge management and relationship management (Ministry of Education, 2004). The understanding of e-learning that underpins the Ministry's efforts is:

e-Learning is learning that is enabled or supported by the use of digital tools and content. It typically involves some form of interactivity, which may include online interaction between the learner and their teacher or peers. e-Learning opportunities are usually accessed via the internet, though other technologies such as CD-ROM are also used in e-learning... We are seeing an increasing emphasis on information literacy, increased flexibility as to where, when and how people learn, and exploration of new ways in which learners can be empowered to structure and manage their own learning experiences (Ministry of Education, 2004, p. 1).

The Ministry of Education definition of e-learning is more focused on technology than the present study definition of flexible learning. However, there are also points of similarity as both are student-centred with students having choice in times and place of study and being responsible for their own progress.

A number of national organisations and projects support e-learning. Amongst these are the E-Learning Advisory Group, Tertiary (e)Learning Reference Group, the Distance Education Association of New Zealand (DEANZ) established in 1998, and the Flexible Learning Leaders in NZ (FLLinNZ).

### **6.1.2 Funding**

Along with universities in other countries where public funding has been the traditional source of revenue, New Zealand universities face a trend towards reduced public funding and a greater reliance on private funding, including student fees. This trend has become more marked since 1995 (The University of Auckland, 2005).

Funding is allocated to the higher education sector through the Tertiary Education Commission. Students pay a partial fee for each course that is subsidised by the government. The Government subsidy is paid to the organisation based on the number of fulltime-enrolled students (equivalent fulltime students or EFTS). This puts pressure on organisations to increase student numbers as much as possible.

A change to funding was signalled in 2001 with the planned introduction in 2003 of the Performance-Based Research Fund (PBRF), whereby research funds are allocated according to the quality of the research produced in each organisation. PBRF comprises three components: sixty percent is allocated to reward and encourage the quality of researchers; twenty-five percent is allocated for the completion of research degrees and the final fifteen percent is allocated on the basis of external research income. The new funding structure increases the pressure on teachers in the higher education sector to focus on research. The competing pressures of teaching and research intensify teacher workload issues, which are discussed further in Chapter 7.

### **6.1.3 Quality**

To enhance and uphold the international recognition of New Zealand qualifications a register of quality assured qualifications is maintained. The register publicly identifies qualifications that have been approved by any of the four national quality assurance agencies: New Zealand Qualifications Authority (NZQA), New Zealand Polytechnic Programmes Committee, Colleges of Education Accreditation Committee and the New Zealand Vice-Chancellors' Committee on University Academic Programmes (CUAP).

While the universities in New Zealand are independent organisations they collaborate to maintain standards. The primary mechanism for quality assurance of university programmes is through the inter-university Committee CUAP, which provides approval and accreditation functions, advice on academic policies and maintains relationships with the NZQA and Ministry of Education. Each university also has its own rigorous internal quality processes.

Moderation by CUAP is achieved through the Graduating Year Review process, which provides a follow-up after a new qualification has been introduced. The review takes place after the first student cohort graduate and is designed to ensure programmes are meeting an acceptable standard of delivery. The School of Nursing Postgraduate Certificate and Diploma programmes and the Masters of Nursing programme completed their Graduating Year Reviews in 2002 and 2003 respectively.

Academic approval from CUAP for a qualification in a professional practice discipline, such as nursing, must also be accompanied by approval from the appropriate professional body. For nursing programmes approval is required from the Nursing Council of New Zealand. The approval process by Nursing Council of New Zealand and the review process by CUAP are both required to gain Tertiary Education Commission funding.

#### **6.1.4 Nursing**

The Nursing Council of New Zealand is the statutory authority that governs the practice of nurses in New Zealand by the setting and monitoring of standards, in the interest of public safety and for the profession. In 2004 the Nurses Act of 1977, governing the Nursing Council and the profession, was replaced by the Health Practitioners Competence Assurance Act 2003 (HPCAA). The HPCAA repealed previous occupational statutes governing thirteen professions, including nursing. The HPCAA provides a legislative framework for the regulation of health practitioners in order to protect the public and is part of increasing accountability for the healthcare professions. Nursing Council continues the same core functions regarding the setting and maintaining of standards by auditing and approving higher education providers and nursing education programmes. The educational regulatory role of the Nursing Council includes providing guidelines for education, administering the registration examination after three years of undergraduate education, and processing applications for registration as a nurse in New Zealand.

The Nursing Council has a key role in both the original approval of programmes and also the auditing of nursing curricula and educational programmes. The approval process includes a review of documentation and resources to ensure the required facilities and quality management systems are in place, and a review of the curriculum to ensure it meets Nursing Council standards. An on-site visit is also required for advanced nursing practice programmes. Approval of programmes can be given for up to five years. Auditing ensures that an approved programme “continues to comply” with Nursing Council standards (Nursing Council of New Zealand, 2001b, p. 26). However, the Nursing Council does not stipulate the delivery manner of nursing education, and on-campus, on-line or mixed mode courses are subject to the same quality expectations. Nursing Council first approved the programmes in the School of Nursing including Undergraduate, Postgraduate Certificate, Diploma and Masters in 1999. In 2004, following an audit of the Postgraduate Diploma and the Masters of Nursing programme, the School of Nursing received approval for a further five years for both. Each higher education provider is also required to submit an annual report to the Nursing Council. This continuous cycle of approval, reporting and auditing ensures high standards are maintained.

To provide national direction to the development and recognition of postgraduate programmes Nursing Council has developed frameworks for post-registration nursing education (Nursing Council of New Zealand, 2001b). The framework applies to clinically focused programmes and stipulates that these programmes need to inform and advance nursing practice. The

programmes may lead to Postgraduate Certificates, Diplomas, Masters, and Nurse Practitioner, with or without prescribing. Nursing Council is the statutory body that approves and audits programmes which “aim to improve client care through the development of nursing practice” (Nursing Council of New Zealand, 2001b, p. 6). The framework is based on the assumption that nurses are accountable for their practice and for the maintenance and updating of their professional knowledge. Advanced nursing practice is understood to be founded on the integration of education with clinical practice.

## **6.2 Meso level: University wide**

There are eight government-funded universities in New Zealand, and the university central to this study is the largest and situated in the country’s major cosmopolitan city. The university comprises eight faculties and has a student population of over 40,000 students. The University is well established with an international reputation for research and research-led teaching. While the university is campus-based it also recognises that it “must respond to the global revolution which is transforming the way knowledge is stored, accessed, disseminated, analysed and presented” (The University of Auckland, 2005). The specific response to global information advancement is reflected in developments that affect the university as a whole, from the strategic direction through to the organisation of learning support services.

### **6.2.1 Strategy**

Increasing flexible learning is part of the ongoing strategic direction of the University. Recognising the important role of technology in education and professional practice, the University encourages increased flexibility in teaching and learning modes and states in its mission, goals and strategies that it aims “to become rapidly responsive to changing information systems and capture the benefits of technology for its staff and students” (The University of Auckland, 2001a, 2005). The strategic direction stated in the mission and goals of the University is reiterated in auxiliary policies and departmental strategies.

Strategic documents reveal a view of the student as having an active role in the learning process so they can become “independent and life-long learners” (The University of Auckland, 2003a, p. 8). Teaching is seen as student-focussed and research-based, and the learning environment is expected to foster “academic excellence, enjoyment of learning, critical reasoning and inquiry” (The University of Auckland, 2003a, p. 8).

The University recognises that “new teaching and learning technologies are transforming the educational experience of students worldwide” and as a response to this “encourages and promotes the development of flexible modes of teaching and learning, the use of new teaching and learning technologies, and computer assisted course management systems” (The University of Auckland, 2003a, p. 8). This indicates an organisational direction for flexible learning that involves both students and teachers.

### **6.2.2 Postgraduate profile**

The Postgraduate Profile articulates a set of attributes which postgraduates of the University are expected to attain. Alongside mastery of specialist knowledge and theory and a range of associated attributes there are some attributes that flexible learning is particularly well suited to develop (The University of Auckland, 2003b):

- A capacity for the transmission of information and understanding to others.
- A capacity for critical, conceptual and reflective thinking.
- An ability to recognise when information is needed and a capacity to locate, evaluate and use this information effectively.
- An ability to make appropriate use of advanced information and communication technologies.
- A love and enjoyment of ideas, discovery and learning.
- An ability to work independently and in collaboration with others.
- Self-discipline and an ability to plan and achieve personal and professional goals.

In conjunction with the University strategic direction, the Postgraduate Profile provides guidance for programmes and courses. By aligning the course learning outcomes and assessment methods the student achieves the specified attributes.

### **6.2.3 Centre for Flexible Learning**

A Centre for Flexible Learning was established in 2002 to provide a University-wide focused service offering consultation, design and development of digital learning resources. The Centre is responsible for: the ongoing development and refinement of the University's strategy for flexible learning in consultation with the University community; consultancy in learning design and multimedia resources, promoting the appropriate use of educational technology; coordinating projects for the design and development of asynchronous learning materials; and promoting organisational research into the efficacy of flexible learning and promoting innovation for new pedagogy (Centre for Flexible and Distance Learning, 2004).

To achieve a forum for consultation within the University an Advisory Group was set up with broad representation. People were employed with expertise in learning design, project management, multimedia design, photography, video production, graphic design and web development so that a range of services could be provided. The Centre commenced working on projects using a course team approach to provide project management support. The project team would include the teacher or content expert and a number of staff from the Centre with the expertise needed for the specific project. A project begins with a Faculty proposal after the Centre invites expressions of interest from the University. Once accepted the project goes through a cycle of distinct phases beginning with planning, design and development, implementation and revision. Progress is monitored according to a design plan, which is developed by the project team. A course discussed in the present study (Course 1) was a project undertaken by the Centre for Flexible Learning.

The establishment of a Centre for Flexible Learning was perceived as a way to operationalise the University strategy related to flexible learning. While the high-level strategy offered broad statements, there was a need for guidance to enable the persistent and sustained development of flexible learning. However, there was an early recognition of some embedded political issues that needed to be resolved. These included philosophical decisions such as the stance of the University towards providing distance education when it was traditionally campus-based, and also more pragmatic decisions concerning the learning management system, information technology and information systems support and resource allocation.

The move to centralising flexible learning services had an effect at Faculty level in which the study was located. For example a Faculty committee that had been established to consider strategic implications of flexible learning was disbanded when it was announced that a Director was being sought for the soon to be established university Centre for Flexible Learning. It was decided to adjourn any further deliberations until central direction was provided and it was hoped that some of the issues, such as coordination of information technology services, a clear definition of flexible learning, and resource allocation would be determined so developments at the Faculty level could proceed. With the centralisation of flexible learning services there was in addition to the hiatus in development, a reduction in Faculty level support.

The impression from the School of Nursing was that centralised services were less flexible to meet a teacher's needs. For example a Faculty video production service was disbanded and the central service was located on another campus. Booking time with the centralised service

was more difficult, and the video production team were sometimes unavailable, especially if the request did not come through a Centre for Flexible Learning project.

#### **6.2.4 Information technology services**

A number of administrative functions support the mission of the University and most of these utilise information technology (IT). The information technology infrastructure of the University provides core IT facilities and services to all campuses by providing telecommunications and networks, core information systems, computer support services and support of enterprise systems such as the library, learning management system and the financial, human resource and student administration applications. These are all managed centrally.

IT support is provided for both staff and students. The development of flexible learning was found to create an unanticipated increased demand for IT support roles (Gunn, McCormick, & Honey, 2002). Interviews with teachers indicated that sufficient resource allocation did not follow organisational strategic direction. The IT services provide a central Help Call Centre, which responds to phone and email, and there are also Help Desks situated in the library. Additionally on-line help is provided in many systems.

One particular IT issue for students has been the allocation of logins and passwords, as initially there were three separate passwords: for access to the enrolment system, the electronic library resources and the learning management system. Having three passwords caused considerable confusion. Authentication and passwords have since been rationalised so students are not using multiple logins and passwords for different systems, thereby reducing possible confusion and the barriers for less confident technology users.

#### **6.2.5 University web site**

The organisational web site provides an abundance of information on the University facilities, resources, faculties and events. It is designed for the public, with links to specific areas for staff and students. However, a belief widely shared among staff and students is that the website is difficult to navigate.

For example, the Postgraduate Nurse Survey indicated that full use was not made of the University web site for information about courses and programmes (Table 6-1). It was found that only 58% of postgraduate nurses had visited the University web site to find out about the

program or courses they were enrolling in. One student commented on her initial difficulties, and also on the personal assistance available:

*Being new to the environment I can say that I find things sometimes difficult to locate on the web page, on the site etc like not knowing where I am meant to go to find things. However, I am happy to ask for assistance and have received a great deal of very friendly advice.*

**Table 6-1: Postgraduate Nurses Use of University Systems**

N = 146 Question	YES		NO	
	N	%	N	%
Did you visit the University website to find out about the programme and/or course you are enrolled in?	85	58.2	61	41.8
Were you able to use the enrolment system without any assistance?	53	36.3	93	63.7
Do you have a University ID (identification) card?	118	80.8	28	19.2
Do you have a University Account Login & Password?	107	73.3	39	26.7

Administrative support staff are particularly concerned when services do not meet students' needs, often around programme and course information, enrolment and commencing their study. Administrative staff reported that "the greatest problems are in the initial enrolment stage and library access" (Gunn, McCormick et al., 2002, p. 235) and they expend considerable time and effort to bridge the shortfall and support students.

### 6.2.6 Enrolment

Students are encouraged to complete their enrolment on-line. In 2001 a University wide graduate student experience survey identified that "both the clarity and timeliness of the admission and enrolment process" was causing widespread student dissatisfaction (Tippin, 2002, p. 18). This was confirmed by the 2002 Postgraduate Nurse Survey when only 36% of students were able to use the on-line enrolment system without assistance (Table 6-1). Administrative staff in the School of Nursing estimated in 2003 85 to 90% of students had emailed or phoned for assistance related to enrolling and this level did not seem to have improved over the previous two to three years. The level of support administrators provided to students was justified as "what keeps the numbers up, making it as easy and simple as possible for the student". For new postgraduate nursing students, issues arose because all required documents have to be verified and if one item was missing the enrolment was put on hold. For

returning students the problems were related to adding specific courses of study in that semester.

Departments have developed their own ways to assist students. In the School of Nursing, apart from phone and email help from the administration staff, additional information is provided on-line and mailed out to each student. As the School of Nursing administrator explains:

*At the beginning of the semester I sent out a letter on the process of [enrolling] itself, actually giving the codes to put in, exactly where to go to...It tells you at each step what you need to do, and still students find it difficult to add in courses.*

The enrolment process is important as a University identification card, which also serves as the library card, is supplied on successful enrolment. The number on the identification card enables the student to establish a University Account for on-campus printing, Internet use and access to library electronic resources. Access to the library and to the University learning management system is denied until enrolment is complete. The 2002 Postgraduate Nurse Survey found that most students (81%) had received their University identification card, with 73% also having established a University Account (Table 6-1). Two weeks into the semester it was expected that all students would have an identification card so it was surprising to find that 28 of the students surveyed (19%) did not. Those students could therefore not borrow from the library, nor establish a University Account. The students (n=39; 27%) without a University Account may have chosen not to use those services, for example students who live further away and have convenient access to another library, computer printer or Internet services. While it was possible that the identification card was still being processed for some students, the resultant delay in accessing University resources is a worry, as explained below.

### **6.2.7 Library**

The University has a specific strategy related to the maintenance and development of quality collections, libraries, archives, technology and information services to support the teaching, learning, research and creative work of the University (The University of Auckland, 2005). Part of this strategy is realised by the library network that allows access to a broad range of electronic learning support resources at any time, and in addition print resources are available through campus libraries.

The electronic library resources require students to have access to computers and the Internet, and also to have computer and information literacy skills. According to the national census in

2001, close to the time of the Postgraduate Nurse Survey, New Zealand had one of the highest rates of Internet access in the world, with 37% of households having Internet access (Statistics New Zealand, 2002). This figure had increased to 60.5 percent of households in New Zealand have access to the Internet in the 2006 census (Statistics New Zealand, 2006). However, it cannot be assumed that students have easy and convenient access to either a computer or the Internet. To meet the need for on-campus access the University created 'Information Commons' facilities for students adjacent to libraries that provide access to computers. An Information Commons is defined as a "physical facility specifically designed to organise workspace and service delivery around the integrated digital environment" (Beagle, 1999, p. 82). Usage of the Information Commons is high and averages at 80% of capacity over the year (Internal Committee Minutes). A University librarian described use of the Information Commons area for students when saying, "*There's a nice social flow about it. The café, the seating, the computer area*" and students enjoy using the space. However, the on-campus facilities are used more by students who attend daily classes. As described in Chapter 5, postgraduate nurses are mostly studying part-time and may not attend the campus regularly. Remote access to library resources is therefore more important for this student population.

Flexible learning, where students are responsible for their own learning, is ideally provided within a supportive environment including the library and associated services (Gunn, 2000). The 2002 Postgraduate Nurse Survey considered nurses' use of the University library services by first asking if they used the library, then about their use of specific technology-based services, including remote access (Table 6-2). Just under half (43%) of the nurses reported they did not use the University library. The lack of use of the University library was higher for nurses than for other postgraduate students at the University, where 15% of students did not use the library (Tippin, 2002). Strategies to address the low usage of the library were addressed at the Faculty library level and are discussed later in section 5.3.3.

Off-campus access to the library can be achieved from a home computer. Difficulties related to using a home computer to access the library network remotely were well known and included issues of reliability, ease of access, and cost (Tippin, 2002). The same survey of postgraduate nurses showed that only 29.5% had accessed the University library from home (Table 6-2).

**Table 6-2: Postgraduate Nurses Use of Library and Information Services**

N = 146	YES		NO	
	N	%	N	%
Do you use the University library? If yes, have you used	83	56.8	63	43.2
• the on-line catalogue?	79	54.1	67	45.9
• e-journals available via the library system?	62	42.5	84	57.5
• databases available via the library system?	66	45.2	80	54.8
• the library services from your home computer?	43	29.5	103	70.5

Common technical problems with information technology compatibility and the need to load software and then configure a computer and browser have been resolved. Off-campus access is now a one step process that is fast and reliable. Some issues with download speed remain, as in New Zealand access to broadband is somewhat limited, although it is becoming increasingly available and more realistically priced. Modem speed is generally 56 kilobits per second and download time for some articles can be frustratingly slow. These problems are compounded by different Internet Service Providers (ISPs) level of service around the country, with some areas being better served than others.

The University library web site has been redesigned for easier navigation. Included are links to a range of resources and services, such as e-books, previous exams, and off campus services. Nursing students have found the addition of referencing guidelines, which includes how to avoid plagiarism, the use of a specialised database program (Endnote) for storing and managing references, in text citations and compiling a reference list particularly useful. This information has been tailored to meet the style, the American Psychological Association (APA) format that the School of Nursing requires.

### **6.2.8 Learning Management System**

To support flexible learning the University developed its own in-house web-based learning management system (LMS). Originally developed by information systems staff and students, the LMS grew to the point of being adopted as the University enterprise system. The LMS is designed to support student learning both with on-campus delivery and from a distance by providing electronic course-centred information, communication for students and teachers, and administrative services. The benefits of using the LMS include: on-line course material and

details accessible from any computer 24 hours a day; enhanced communication through announcements and discussion groups; and providing student course marks.

Before the in-house LMS was adopted as the centralised LMS a review to consider the range of options was undertaken. At the time of the review use of the LMS had started to grow significantly. From 2000 to 2001 there was a 39% increase in courses using the LMS across the University and in 2002 there were over 2.4 million student logins (Internal Committee Minutes). This rate of growth led on to concerns around speed with the increased number of users, and requests for improved functionality. These issues were put aside while the review was underway. The period of the review affected teaching staff who did not know which LMS would be adopted, and this was detrimental to advancing use of the LMS. Teachers were not motivated to use the in-house LMS until a decision was made in case their efforts were wasted, as a teacher stated:

*Then the University has had a whole period where we didn't know if we were going with [in-house LMS] or not. And people said 'Well I won't do anything until it's been decided which way the university is going'. So that was a 6 – 9 months hold up there.*

The decision to go with the in-house LMS caused some dissent among staff and unfavourable comparisons were made with other proprietary options. For example, initially the in-house LMS did not have an easy-to-use electronic discussion forum. In the interim period, before the in-house LMS was improved, some teachers in the School of Nursing used a freely available Internet based discussion forum. Feedback from teachers about student use of this application, compared with the University's LMS, indicated "*they enjoyed [the free discussion forum] because it was so easy*". Similarly a restricted licence for a proprietary LMS was used by one section of the School of Nursing and this LMS was very favourably received by teachers and students, who found it "*very user friendly, the best system ever*". The in-house LMS was found less than optimal when compared to other options. However the review and teaching staff were not using the same criterion for evaluation. For example, teachers were concerned with ease of use, while giving no consideration to the ability of an LMS to integrate with other enterprise systems. The criticisms by some teachers of the in-house LMS created antipathy among new or less experienced users and the negative image became a barrier to further use.

Early versions of the in-house LMS were not considered user friendly, although teachers with more computing experience who had overcome the associated learning curve found the LMS

less difficult. One teacher found the LMS challenging for herself and students saying, “*It’s a shame it’s not more user friendly for teaching staff as well as students*”. She extended strategies she used with other software to the LMS, as she described.

*I had similar problems with using PowerPoint because I forgot how to do things between uses. But I guess I’ve written down little recipes with PowerPoint, how to change colours and things. Maybe I need to write some recipes for [the LMS]. But I still don’t think it’s as user friendly as PowerPoint. The other one that’s a pain is that spreadsheet because I don’t use that a lot. So both of those are difficult, but [the LMS] is more so. With the others you can figure it out, use the things up the top [points to menus], but like trying to print out from [the LMS] the other day (sigh).*

This teacher also found the on-line help ineffective saying, “*I’ve tried using the help, but you just get general stuff*”. Help needed to be specific and related to the action that was being undertaken. However, teachers found the LMS easier to use for certain functions. For example, the LMS became a convenient repository for resources, as it was easy to upload files, although if file management was a problem, then time was spent trying to locate the file to be uploaded. Another teacher recognised that just using the LMS as a repository was not on-line learning: “*It’s different from on-line but it is flexible, and it goes onto [the LMS] as a resource*”.

Updates of the LMS heralded some improvements in usability and speed, and while teachers appreciated the enhancements, such as the introduction of ‘wizards’ to lead them through functions in a step-by-step manner, the LMS was still not ideal. Comments about the improved LMS included:

*I really like it...Really I haven’t had any problems. It was slow at the beginning but I’ve got used to it. The discussion can be quite slow but moving through the course outline is pretty fast.*

However the teachers’ dissatisfaction was used positively as leverage to create pressure to improve functionality of the in-house LMS. As one teacher described, “*It was us pushing for something more like [proprietary LMS] ... that created [the new version of the in-house LMS].*”

As an outcome of the review the University decided to proceed with its in-house LMS. Communication around the process and reasons for this decision were not adequate. Although

there was resistance to the announcement to stay with and further develop the in-house LMS, there was no University support for other options, such as teacher help and education, support for the maintenance of the server and other IT functions, and help for students. In contrast, the decision to stay with the in-house LMS resulted in a number of significant changes in how the LMS was managed. The maintenance of the LMS servers was passed to IT services; a central support for all IT functions was introduced; development to improve the in-house LMS so that additional functionality was available commenced and better information on how to use the LMS was provided through manuals, on-line help and courses. Some of the earlier resistance faded as the LMS improved and support was widely available.

### **6.2.9 Professional development**

The University aims to provide “high quality professional development advice and support to assist all staff to enhance the quality of the University’s teaching and the links between teaching and research” (The University of Auckland, 2005, p. 9). Professional development is a centrally provided service for all University staff.

To enhance teaching a number of initiatives have been introduced. One of the initiatives of the centralised Professional Development service was the introduction in 2003 of a Certificate in University Learning and Teaching, which is targeted at new and less experienced teachers. The Certificate programme provides structured education and support, plus a qualification.

A wide array of workshops and seminars on teaching and learning are available through the Professional Development service. Most are free and reservations can be easily made by phone, email or fax. Popular options are repeated so seminars are accessible but on the whole they are offered on the main campus in the offices of the Professional Development service. This is therefore less convenient for staff on other campuses. When considering topics for seminars and workshops, examples of best practice from national and international visitors, as well as University staff, are included. Involving University staff serves to highlight existing internal best practice and innovation, as does the annual teaching and learning conference. More recently there has been a change from providing one-off sessions towards providing consultancy and development work relating to learning and teaching at the departmental level.

Teachers are encouraged to maintain teaching portfolios that collate evidence of their teaching practice and workshops are provided to guide the process. Teaching portfolios are required when applying for promotion or teaching awards. Reflections on classroom practice, peer

evaluation, consideration of ways teaching expertise impacts on student learning, and evidence that supports observations can all be included in a teaching portfolio.

The above discusses general professional development for teachers, but the University Academic Plan also calls for “the development of initiatives to increase academic staff IT literacy and the effective use of [the LMS] as a teaching tool (The University of Auckland, 2004, p. 6). Computer training courses at various levels are provided and range from file management, using the email system, through to application specific workshops, such as spreadsheet, presentation tools and database use. Library related information courses are provided by library staff, for example database searching.

Workshops, seminars and consultations on flexible learning and the use of multimedia and information technology in teaching and learning are available along with specific courses on the LMS. The courses provided for teachers using the LMS are at introductory, intermediate and advanced levels and these are now delivered on all campuses. A review of LMS-related professional development provision noted that “because of strong Faculty ‘cultures’, there can be a perception that [open] courses will not be relevant to [Faculty teachers], and that [the Professional Development service] is ‘too far away’” (Left, 2002, p. 5). One Faculty noted that when short, focused LMS sessions were offered on their campus attendance was excellent and sessions were fully subscribed.

A teacher in the School of Nursing commented that to be most effective, sessions to provide knowledge and or skills on using the LMS would need to be immediately applicable. She described a course she had taken on running an on-line discussion forum some time previously: *“That was fine, and it was a beginning introduction, but its like being shown a bike, having a go, but then not having access. I don’t remember much about that session.”* With time at a premium, time spent attending professional development sessions is balanced against other commitments and that teacher preferred investing time in gaining specific skills that would have immediate benefit to her teaching and course management.

### **6.2.10 Rewarding teaching**

While the University is research-led, it also aims to encourage best teaching practice evidenced in the recognition and reward systems of the University for excellence and innovation in teaching and curriculum development (The University of Auckland, 2005). Recognising and rewarding teaching excellence is part of the academic plan of the University. Raising staff awareness that promotion is based on teaching as well as research, and also to

strengthen the profile of teaching awards is important to the University (The University of Auckland, 2004).

The University teaching awards are aligned to the national annual Tertiary Teaching Excellence Awards provided by the Government. The national awards look to recognise sustained excellence in teaching and excellence in collaboration and innovation, while the University awards also include excellence in research supervision. The prestigious University awards are available annually and carry with them a monetary prize and a medal, presented at a graduation ceremony. As an example, one recipient of the award had the citation for adopting the LMS in a subject that resulted in “not only streamlined course management, but had a major impact on student access to constructive feedback, the mode of course delivery, and the extent of resources that could be easily made available to students” (Wilford, 2002, p. 5).

To support improvements in teaching targeted grants are available, in addition to specific funding for flexible learning initiatives. The University has realised that these options need to be highly profiled so more applications are received and the results highlighted, especially the resultant improvements in teaching and learning.

A further University initiative is the introduction of an annual one day conference on teaching and learning. The aim of the conference is to enhance the quality of teaching and learning within the University by promoting research-based teaching practice and to provide a forum for sharing a range of perspectives on effective teaching. This internal conference requires abstracts to be submitted that are subjected to peer review. One of the criteria for acceptance of abstracts is evidence of a scholarly, reflective approach to teaching and learning. The focus on a scholarly approach to teaching raises the academic standing of the conference. Furthermore this conference counts as a research output for academic staff, signalling that educational research is acceptable for discipline-based educational research journals, and recognised, though of lesser value, for Performance-Based Research Fund.

### **6.2.11 Evaluation of teaching**

University policy requires that teaching be reviewed and evaluated regularly to ensure maintenance of high standards. Evaluation can be both formative and summative and a range of approaches are used. A centralised evaluation service within the University is provided as part of meeting the University strategy of “evaluating, in appropriate and dependable ways, the

effectiveness of teaching and assessment practices in order to monitor, report on, and improve student learning” (The University of Auckland, 2005, p. 9).

The University promotes the use of student surveys as one way of evaluating the effectiveness of courses and teaching. The centralised evaluation service provides student surveys as standardised tools that are used across the University for summative evidence of student satisfaction. There is recognition, however, that judgment of teaching performance cannot be made solely on the basis of these questionnaires. A recent development is the ability to administer the standard surveys through the LMS. The surveys can be ordered, delivered to students via the LMS, returned to an independent office, the results collated and the report provided to teachers electronically. These are used for course and teacher evaluation.

The development of a teaching portfolio, as mentioned above, is another method of evaluating teaching. Self and peer review of teaching practice are considered important aspects. The Professional Development service can assist with formative evaluation of teaching by customising student questionnaires, undertaking peer observation of teaching practice or by facilitating a focus group for feedback.

### **6.2.12 Copyright and intellectual property**

Issues associated with copyright and intellectual property concern the legal use of published and patented resources and also the sharing of resources. The issues are described as “complex and challenging” and form one of the top concerns in flexible learning, yet to date “there are no clear answers or consensus” (Draves, 2002, p. 55).

With the increased use of technology in teaching and the easy availability of the Internet teachers have sought web-based resources to support their learning materials. One teacher acknowledged the usefulness of web-based resources noting, “*There are a lot of resources available on the Internet, so just providing students with web addresses and steering them to places they can go to find things can be helpful*”. The teacher also pointed out the time needed to assess the usefulness and appropriateness of those resources for the course related to the learning objectives.

With the common use of presentation tools, such as PowerPoint, or while preparing on-line course material, teachers often looked for graphics or diagrams to support a topic. There is a common misconception that information published on the World Wide Web is copyright free (C. Haigh & Jones, 2005). Furthermore with the Internet it is easier to locate and copy

resources without considering the copyright implications. The Centre for Flexible Learning worked closely with the teacher of Course 1 to convert an on-campus course for on-line delivery, a process that heightened her awareness of copyright issues. When asked by the Centre for Flexible Learning staff to show some existing learning resources the teacher produced diagrams that had been copied from the Internet. During the re-development of the course, and with supporting resources including a graphic designer, she was able to create diagrams exactly suited to her course, thereby improving the learning resources and at the same time avoiding infringement of copyright. This illustrates a tension between not re-creating learning material that already exists, yet working within the constraints of copyright law.

The University has a stated position on ownership of intellectual property related to teaching material: “resources developed by employees of the University belong to the University”. While commonly teachers shared resources within the School of Nursing, it was harder for teachers to access resources from other departments, indicating that the University’s policy of ownership of intellectual property did not translate into these resources being accessible to all staff. There were known silos of resources that nursing teachers would have liked access to. For example, a teacher described finding software that she wanted to use that another department had, but was informed that a significant cost would be incurred. The teacher recognising that the potential for sharing resources would increase as flexible learning became widespread stated: “*We should have shared flexible learning resources. But it’s so early yet, but it should be done*”. The advent of sharing learning resources, often referred to in the literature as ‘reusable learning objects’ indicates a trend towards sharing resources, and there are international and national initiatives aimed at producing repositories of such learning resources (Mackintosh, 2005).

Another related concern was about resources being made available openly through the Internet. An instance of this was the collaborative flexible learning effort involving three universities in different countries that a teacher was involved in. When it came to confirming how students could access the course technical issues around housing the course and access from another organisation’s server raised the option of the course being open on the World Wide Web. The teacher’s response was definite.

*She got back to me that the best option was to leave the course in [other organisation location] and students would access it from here as a totally open site. But neither [collaborator] nor I were particularly happy about that because that meant if anyone*

*searching around, like on Google, could find it, it could come up. Yes OK it's learning and everyone should have access to it and they can't get credit for it unless they're enrolled and it's marked work etc etc, BUT we thought blow it. No, we actually put a lot of work into it. There was a sense of copyright around that.*

A previous study of staff in the organisation found teachers' had a sense of ownership of learning material, with one stating being "surprised somewhat at the different attitudes that people have towards material on the web site. Some feel sort of proprietary and that access should be restricted to students in their courses simply through the fact that they have created" the material used (Gunn, McCormick et al., 2002, p. 235).

### **6.3 Meso level: Faculty response**

The Faculty of Medical and Health Sciences is one of eight faculties in the University. The Faculty has been the largest educational provider of health professional education in the country since 2000 when it expanded to include nursing, pharmacy, health, and biomedical science. While the University had developed a mission statement and goals towards increasing flexible learning the translation of these goals into practice was partially devolved down to the faculties. The Faculty recognised that in flexible learning there were potential benefits to both teachers and students "in terms of convenience, access and enhanced educational processes... However, these benefits would not be easily or quickly achieved and that the organisation as a whole had a long way to go in facilitating and supporting achievement of its strategic goals" (Gunn, McCormick et al., 2002, p. 232). The specific response to opportunities to increase flexible learning by the Faculty is described with reference to the relevant committees, the flexible learning unit, the library and finally LMS use by the three main Schools in the Faculty.

#### **6.3.1 Committees that support flexible learning**

A number of new and existing boards or committees in Schools and the Faculty are associated with developments in flexible learning, often because of the nature of the relationship of flexible learning to teaching and learning, and information systems. Each of the Schools within the Faculty has discipline-related committees to oversee the quality of programmes and consider student admissions, receive students' results and to deal with curriculum matters that concern the quality of programmes. Proposals for changing modes of delivery of courses are initially presented to a School Curriculum Committee. There are Faculty-wide committees

that deal with overarching issues around regulations and proposals for new programmes, as well as more specific support services, such as the library and IT.

The Faculty Teaching and Learning Quality Committee provide strategic advice to the Dean and Heads of Schools on curriculum, teaching, learning and related issues such as educational resources. The terms of reference for this committee include advising on teaching and learning methods, professional development related to teaching, and providing an academic interface for issues related to IT, campus planning and academic student support. Furthermore this committee provides an academic interface for other Faculty units, such as the Education Unit and Flexible Learning Unit, which report to it. It was the Teaching and Learning Quality Committee that recommended the establishment of a Flexible Learning sub committee, to consider Faculty wide flexible learning developments and issues. Faculty discussion was launched in early 2001 with wide representation at a strategic planning meeting.

The Flexible Learning sub committee struggled with determining its terms of reference and sphere of influence to impact positively on flexible learning developments. One of the reasons was lack of guidance at the University level, with a Faculty staff member observing, “*There is no point having a direction for the Faculty that is counter to what the University is wanting to do.*” Explicit University strategy and leadership would have assisted the understanding of University goals. The person employed to provide Faculty academic support for flexible learning described the resulting situation:

*One of the issues really is that the Faculty has not decided what it wants from flexible learning, and it's become reactive to people sticking their hands up and saying 'I want to do this, is there any support?' Which is back to front, it should be the other way around. It should decide what is its business about and therefore what does it want to deliver in flexible or distance mode, and then it should make the systems fit that vision and need.*

A number of iterations of the Flexible Learning sub committee transpired over the years, with a changing emphasis each time, often driven by the interests of the chairperson. However, the committee in its many phases never quite provided the guidance and leadership that was hoped for. As part of seeking leadership in flexible learning, the considerably experienced Professor Tony Bates, from the University of British Columbia, was funded to visit the Faculty in 2001. He provided both Faculty open forums and facilitated School based discussions to raise awareness and support forward movement in the development of flexible learning.

### 6.3.2 Faculty Flexible Learning Unit

Up until 2001 the Faculty ran a local unit for Flexible Learning. The Unit primarily provided video production facilities, initially on VHS, then CDs and DVDs, but was also exploring more interactive teaching options using Microsoft Producer and Director. This Unit was disestablished just prior to the launch in 2002 of the centralised University service. However, the loss of a conveniently situated local flexible learning unit had a negative impact on initiatives in the School of Nursing.

The Flexible Learning Unit had been physically close to the School of Nursing and the proximity allowed ready collaboration between teachers and technical staff. Technical staff were known personally and this aided working relationships. Examples of descriptions of technical staff by the teachers include: “[x], for all his faults, would actually respond to what we wanted and was quite proactive”, and “We didn’t find that with [y] as he was quite bogged down getting things done. Technology dependent initiatives involving video were halted with the dissolution of the Flexible Learning Unit. Some teachers in the School of Nursing were disillusioned, as it seemed that their efforts in creating video-based learning material were not recognised. They felt they had wasted their time as new material could not be easily created, nor existing videos updated, so existing resources now had limited currency.

A significant issue was not just the lack of accessible technical support, but the absence of educational designers. While technical staff in the Flexible Learning Unit thought they provided educational design, teachers recognised the service was more limited: “They don’t have an educational background. So you need someone with the educational background to fill that educational design role”.

With the local Flexible Learning Unit being suspended and centralised services not yet extended, access to technical support for flexible learning developments was limited and, being based on another campus, not easily accessed. In addition there was a lag between the decision to expand use of the in-house LMS throughout the University, and the infrastructure providing fuller functionality and support services which impacted on teaching developments. During that period innovation was stifled. Though some individuals managed simple developments using the existing LMS, overall this was not a period of growth of flexible learning.

In response to the lack of growth of flexible learning a Faculty academic support position in flexible learning was established to provide an educational perspective, and the person

recruited was a health professional and experienced in flexible learning. One of the difficulties she encountered was her expectation of joining a team with direction, but finding this was not the situation.

*My experience is when you do have a flexible learning strategy that is closely aligned to your teaching and learning strategy, you have goals and missions and objectives so it's very much easier to implement. That has been a really good lesson from having come from a place that had it. I used to think it was a bit constraining, but now being in a place that is so completely disorganised I would every time go back to having a strategy and direction.*

She identified the need for an equitable and transparent process approach to flexible learning developments within the Faculty:

*You have a system that is clear, transparent and the flexible learning team then have their agenda set for the coming year. It's clear-cut. There won't be any of this 'he who shouts loudest gets the support' and it will follow the direction the Faculty wants to go, the programmes want to go. The programmes are in a catch-22 at the moment because they don't know how much support is available and what can that support do for them, so then they're unable to plan ahead.*

After just over a year in the role she described the progress, *"I think the biggest thing has been raising the awareness within the Faculty of the need to get organised."*

Part of seeking an organised approach and ensuring the effective use of information technology in education programmes in the Faculty, an external review of flexible learning was undertaken in 2003. This review, commissioned by the Faculty directorate, was undertaken by Professor Peter Harris, Assistant Dean (IT and Multimedia), Faculty of Medicine, Dentistry and Health Sciences from the University of Melbourne, Australia (Harris, 2003). As a result of the review a local unit for Flexible Learning was re-established.

The purpose of the new unit was to support the Faculty in its flexible learning resource needs. A difference in the new Flexible Learning Unit is the teaching and learning framework that underpins its work. A Faculty strategy was developed in 2004, grounded in a five-level approach based on the work of van der Craats, McGovern, and Pannan (2002). The Unit decided on the use of a "constructivist learning model" and from this the following instructional design principles were derived (Doherty, 2005, p. 2):

- Learning should be meaningful for the individual
- Learning should be organised around core concepts in the field and material should be organised in such a manner that it can be cross referenced
- Learning tasks should simulate or replicate real world problems
- Learning should involve collaborative construction of knowledge through social negotiation
- Learning should be reinforced through appropriate summaries and testing
- Learning tasks should help learners to develop meta-cognitive and reflective abilities.

A project management strategy, with reference to centralised projects and processes, guides the work of the Unit and is based upon bi-annual expressions of interest from the Faculty. These expressions of interest are then assessed and prioritised before the Unit Director meets with representatives from the different Schools to seek agreement concerning prioritisation. Finally, prioritised submissions are taken before the Teaching and Learning Quality Committee for approval. The Flexible Learning Unit has approximately fifteen projects in process at any one time and these are managed according to a project management lifecycle. There is considerable variation in the nature of the projects ranging from providing advice to authoring solutions using multimedia software. The final stage of each project is evaluation and this occurs by assessment of the service provided, as well as student evaluation of the final product.

Concurrently with the flexible learning projects, the unit aims to be proactive in offering learning technology support, to undertake research and to advise teachers of technological and theoretical developments in the field of flexible learning. The Faculty Flexible Learning Unit has functional relationships with all of the Schools in the Faculty, relevant academic committees, the Faculty IT manager, and the centralised LMS development team, Professional Development Centre and Centre for Flexible Learning. These relationships sandwich the Flexible Learning Unit between the teachers and the central flexible learning related services. The Flexible Learning Unit was charged with working with the central Centre for Flexible Learning “*to ensure synergy between Faculty and University strategies*”.

In addition to centralised generic support, the Flexible Learning Unit recognised “*the need for ‘School specific’ help*”. To address the need for teacher support related to using the LMS the Flexible Learning Unit has a staff member experienced with the LMS. This person works on

LMS related projects, provides on site LMS training and liaises with the central LMS help to ensure concerns and suggestions from the Faculty are heard.

### **6.3.3 Faculty library**

While section 6.2.7 focused on the University wide library services this section describes the Faculty library. Two aspects of the Faculty library are discussed, firstly the physical premises are outlined, and then the important collaborative educational work between the Faculty library staff and the School of Nursing is considered.

In 2004 the work to upgrade the Faculty library and create an Information Commons was completed. There are 106 fixed computers and a total of 144 work spaces. Library staff acknowledge that, *“the Information Commons downstairs that includes the Helpdesk where you can get your password and the Student Support Services next door, where you can check yourself on the enrolment system and talk to someone are a vast improvement”*. The Faculty Information Commons provides small rooms for students’ discussion, tables for group work, individual study space, both with and without computers, and a café. The library and adjacent Information Commons provides a pleasant environment for learning for those students who come onto the campus.

The Faculty library staff offer a wide range of information and instructional services for different user groups. As well as these general services library staff are available to work with academic staff to meet student’s information literacy needs. This moves the work of the library beyond the narrow understanding of the library as just a physical repository for resources, to where library staff actively contribute to teaching and learning (Peacock, 2001).

Information literacy education can be considered on three levels: extra, inter and intra curricula. The general information the library provides, such as orientation, brochures and tutorials, fall under extra-curricula education. To address the low usage of the library by nurses, found in the 2002 Postgraduate Nurse Survey, a range of approaches was developed. The need to increase awareness of the available services was addressed by adding a Faculty library visit to the Postgraduate Nurse orientation at the beginning of the semester. This targeted orientation was in addition to the general University orientation. The Faculty library visit includes an introduction to the Subject Librarian and a brief tour. This is helpful for on-campus students, or those able to attend the orientation. To provide information for students unable to attend orientation a booklet that outlines pertinent resources for nurses has been created and is distributed to postgraduate nurse students. The brochure contains examples

from nursing, including where to find nursing texts, well known nursing journals and some useful web sites. Included is information on library tutorials, courses, worksheets, on-line information and the subject librarian's name, phone, and email contact details. The School of Nursing mails the library brochure, along with information about the University learning management system, to all newly enrolled students when confirming courses.

Inter-curricula education is provided when the subject librarian is invited to present a session as part of a course for nurses. These sessions often include generic information literacy skills but also target resources specific to the discipline. When information literacy is embedded within a course, then the education can be considered intra-curricular. Intra-curricular information literacy education is essential for the course, is subject or discipline related and is integrated into the curriculum's content and structure and may also link to assessment (Association of College and Research Libraries, 2000). While the extra and inter-curricula education are helpful, library staff were clear that they wanted more saying: "*One of the key things is integrating information literacy skills into curriculum*".

As an example of intra-curricula information literacy the subject librarian has created a small number of course specific web-based library resource pages that permit direct access through the electronic databases to readings and articles. These have been housed separately, on the library server, or linked through the university learning management system. A further example of intra-curricula education is seen in a course where the content relies on evidence-based practice. In this course the information literacy skills are an essential part of the course and directly linked to an assessment. The intra-curricula education has been sporadic within the School of Nursing programmes and this is an area for improvement. In the view of the librarians:

*It's actually quite an issue for us, especially at the postgraduate level. We're actually sitting here saying we think its quite important that people can come out with the skills of knowing their information needs, and finding the appropriate sources to get the information from.*

The library staff would like the embedding of information literacy to be addressed more comprehensively and consistently across programmes. However, a constraint is the time required in planning for flexible learning developments and this means any new developments need to be signalled well in advance.

### 6.3.4 Faculty use of Learning Management System

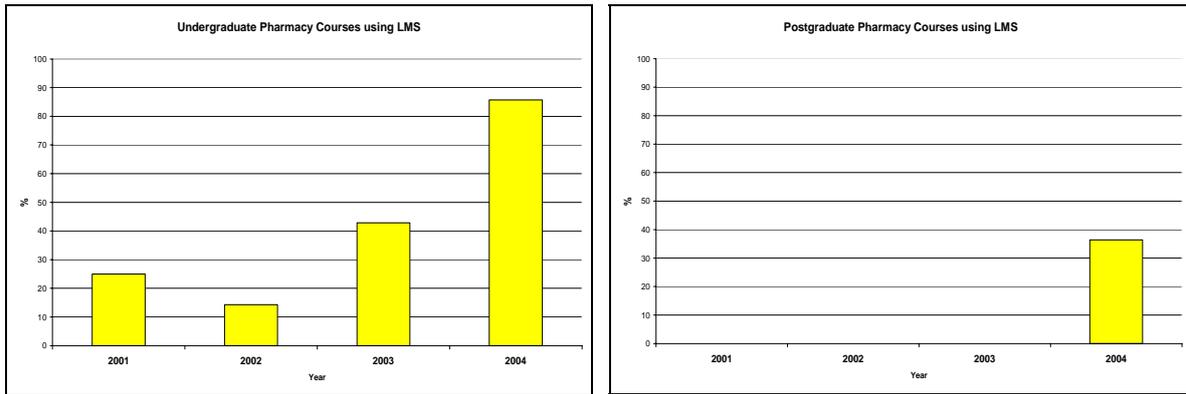
The level of usage of the university learning management system (LMS) has increased across the Faculty. Usage figures released by the LMS team indicate that the proportion of Faculty courses making active use of the LMS rose from 30% in 2003 to 51% in Semester 1, 2004. However, due to the way in which the LMS has been developed, that is progressively, usage is not as straightforward as it might be. A course can be considered LMS-active by meeting simple criteria, such as just providing resources, or assessment marks. This means, for example that a PowerPoint file used in a lecture can be provided through the LMS and the course will be shown as active; there need not be any consideration of flexible learning or instructional design principles.

Figures collected across the three professional Schools of Pharmacy, Medicine and Nursing demonstrate different patterns of uptake. The Schools of Pharmacy and Nursing were newly established and started with fewer courses, but Figure 6-1 indicates the growth of LMS usage, both in those schools and also Medicine. The pattern of usage partly reflects the lack of accessible technical support for flexible learning. For example, in the School of Pharmacy there was a reduction in LMS usage in undergraduate courses in 2002, and no postgraduate course used the LMS until 2004. In contrast the Schools of Medicine and Nursing show a steady increase in LMS use, although even there the introduction of flexible learning may have been easier and more rapid with greater support.

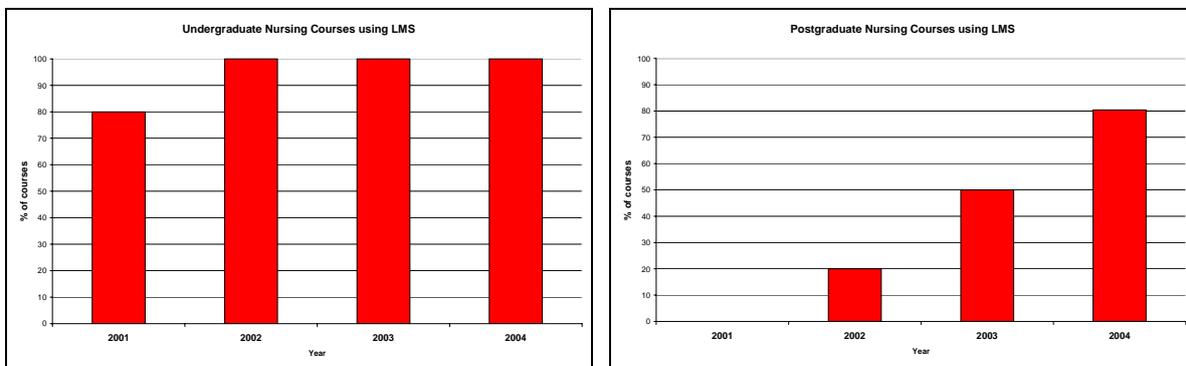
Furthermore, a break down of LMS usage by course within the Faculty for Semester One and Semester Two, 2004 revealed that the LMS is used in different ways across the courses within the various Schools. For example, the School of Nursing makes use of a range of LMS features across a number of different courses for information delivery, communication between students and between students and lecturers. “This reflects the fact that the School of Nursing was an early adopter of [flexible] learning” (Doherty, 2005, p. 3).

Flexible learning is considered to have “improved academic service delivery within the faculty” and also “the competitiveness of the Faculty; and the competence level and skills of graduate and postgraduate nursing, pharmacy and medical students” (Doherty & Honey, 2005, p. 67).

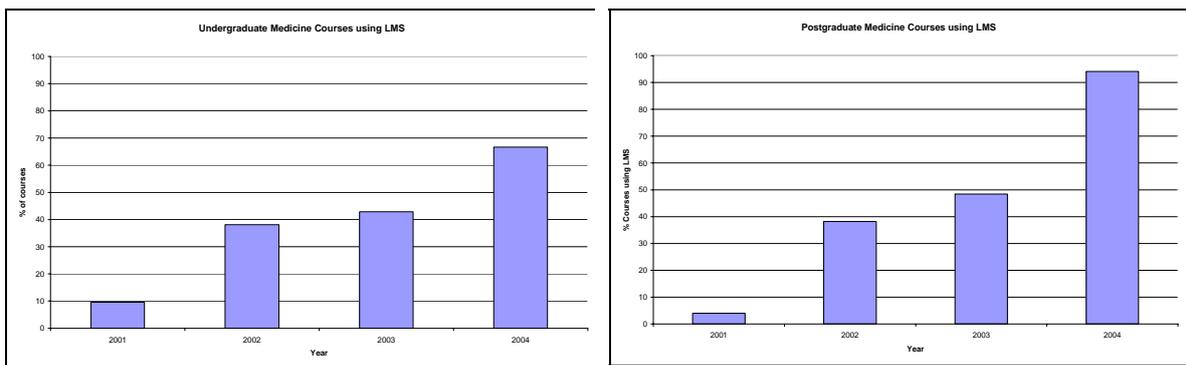
## LMS Usage School of Pharmacy



## LMS Usage School of Nursing



## LMS Usage School of Medicine



**Figure 6-1: Faculty Learning Management System Usage by School 2001-2004**

## **6.4 Micro level: School initiatives**

In New Zealand there is only one School of Nursing based in a university faculty alongside a Medical School. The School of Nursing was committed to improving flexible learning opportunities for its postgraduate nursing students as part of the University strategy, which also followed international trends towards increased access opportunities and educational innovations based on the effective use of technology for learning (Leahey, 1999; Race, 1996a; Roberts & Peters, 1998; Scott, 2000).

This School of Nursing, which is the context for this study, has developed a range of programmes to meet the needs of contemporary nursing practice, from Undergraduate, Honours, Masters through to Doctoral level. The postgraduate nursing programmes all have a clinical focus and stepping through certificate and diploma levels, culminate in a Master of Nursing qualification. Each programme is made up of courses and while some are core courses, there are also options of courses so that students have the opportunity “to design programmes of study that are appropriate for the learning goals they wish to achieve and are relevant for their practice needs” (The University of Auckland, 2001b, p. 1). This includes opportunities for nurses to develop the competencies defined by the Nursing Council of New Zealand (2001b) for advanced nursing practice roles, including nurse practitioner, with or without prescribing. In 2006 only three universities in New Zealand have been given approval by Nursing Council of New Zealand to offer the core papers for nurse prescribing. This has made postgraduate nurse education at this School of Nursing more popular and sought after by nurses throughout the country and in turn, has been a major impetus in the development of flexible learning related to core and prescribing courses.

### **6.4.1 School staff**

Each individual course has a course co-ordinator who manages and is responsible for the organisation and running of the course. The course co-ordinator may invite other staff from the wider Faculty to teach components and this ability to have teachers from other disciplines is a strength because of where the School of Nursing is situated in the Faculty.

Academic teachers in the School of Nursing are employed in a number of ways. This includes either as fulltime or proportional lecturers, and if proportional the lecturer may also be employed in a joint arrangement with a healthcare provider. Clinical speciality nurse specialists are often involved with teaching in courses in their speciality area. Many of these

clinical specialists are employed by a healthcare provider, but are sub-contracted to teach and “contribute to teaching in order to provide expert clinical knowledge and practice advice, and to ensure relevance” (The University of Auckland, 2001b, p. 32).

The effort and innovation of individual nurse teachers has been crucial for the development of flexible learning in the School of Nursing. Taylor (1998) uses the term ‘lone ranger’ to describe an innovative teacher who works alone. Lone rangers have been considered “essential for getting innovation started, demonstrating the potential of technology for teaching, and ensuring technology is used when there is no systematic support from the organisation” (Bates & Poole, 2003, p. 139). The following describes innovative teachers who have been important to the development of flexible learning in the School in their own courses and have also been role models for other teachers.

One teacher had technical expertise and a vision for flexible learning ahead of his time. This innovator began by running on-campus classes and videoing the lectures at the same time, including the students’ questions and any discussion. These videos were then sent to students who were unable to attend. This approach grew to meet the need of a student population of health professionals, including nurses, who worked shifts or lived at a distance from the campus. However, the teacher described it as not being ideal.

*A course has 10 to 30 or so students...The first time we ran each course was on-campus, so we had students here and we videoed their sessions, then sent the videos and material out. There was a two-week delay for off-campus students...So that’s how we did it the first time, but it actually isn’t a very good way to deliver the course. Also we found that students didn’t like having videos.*

One of the reasons for experimenting with videos was the teacher did not see available alternatives at that time. The next innovation this teacher tried was adding an on-line discussion, so that after viewing the video interactive discussion between the students could take place. Also videos of lectures were changed to videos of interviews with leaders in the discipline. Supplementary workbooks were also provided, but while students appreciated these resources the teacher explained that developing and keeping them up to date “took a long time; it’s a lot of work”. Innovation was about trying new things, seeing if they worked and learning from the experience and being open to trying again. A colleague described this teacher as a “trailblazer”, but went on to say, “Yes, [that teacher] was too far ahead for others to think, ‘Oh yes I can do that’...but they’d see he was enthusiastic!” However, despite

the teacher having enormous energy and enthusiasm and using innovative approaches, this teacher was also described as a “*huge distracter*”, in that flexible learning strategies of the organisation, Faculty and School were disregarded. This teacher demonstrates the innovative, yet often isolated approach of the ‘lone ranger’, and illustrates that lone ranger efforts do not necessarily promote widespread development of flexible learning. As Schon (1967) and Taylor (1998) suggest, someone who is a lone-ranger does not make others think they can follow their example. However, “Lone rangers are essential for getting innovation started, demonstrating the potential of technology for teaching, and ensuring technology is used” (Bates & Poole, 2003, p. 139).

A teacher who might be best described as an early adopter, a person who embraces new technology before most other people, provides a further example of innovation. The course this teacher developed was described by a colleague as “*Fascinating because students can elect to do the course either on-line or on-campus and it’s about a fifty/fifty split.*” The teacher designed the course so students could enrol in their preferred mode with the expectation that they would select the method that best suited their learning style and personal circumstances. The schedules for the on-line and on-campus modes of delivery were the same. While students enrolled in either option, having the two schedules match gave students the opportunity to change between groups if necessary. The teacher explained: “*The timetables for on-line and on-campus are the same. There are four days on-campus and there are four modules on-line. Each day represents one module.*” A few students used this flexibility, a key factor in the success and positive evaluations received for the course. “Three students who enrolled for the on-campus mode choose to complete one module on-line to accommodate personal and professional responsibilities. None of the on-line students chose to change to the on-campus mode, but they were aware that this was possible. Feedback from the students indicated that doing one module on-line worked in well with their whole on-campus course and that the learning was complementary and sequential to their other modules” (Lim & Honey, 2003, p. 311).

Administrative staff support both students and academic teachers of the School of Nursing. Support for students commences with their first enquiries to the School, and continues through enrolment to subsequent administrative matters during the time of their programme of study. Most students have ongoing communication and develop a relationship with the School of Nursing Postgraduate Administrator. The Postgraduate Administrator extends this service by, for example, following up students who have not submitted work. She explains:

*I tend to ring them up and ask, 'Are you still in the course?' 'Are you going to complete the course?' If they genuinely have a problem they can get an extension. They may have posted it and we haven't received it.*

Over that semester she may have called up to fifty students across all courses out of a possible 600 enrolled students, though recognised that some students are repeatedly chased up: “*You get to know them. I know it's bad when I can remember their middle names!*” While this relationship is appreciated the Postgraduate Administrator also often receives complaints. Common complaints include parking, finding lecture rooms on-campus and not receiving information or returned assessments. She described instances saying, “*Well if they don't change their details on [University enrolment system], like their address and then I send out correspondence or assignments they get sent to the wrong place and the student never finds them*”. The Postgraduate Administrator provides a named and friendly contact person across all courses.

Administrative support for academic staff includes room bookings, photocopying, typing, preparation of reports, maintenance of student and academic committee records and coordination of the little things that keep the School running smoothly. An example of supporting staff and the smooth running of the School, which is not within the official job description, is the way Administrative staff set up and help with audio-visual equipment.

#### **6.4.2 School champion for flexible learning**

Postgraduate nursing education in the School of Nursing commenced in 2000 and student numbers have grown rapidly. The Head of School discussed achieving student targets ahead of expectations:

*We do not want to be a national school, but certainly a leader in the upper [regions] and that has happened more quickly than we expected, especially in [two regions]. So how do we service those students especially in a flexible way that they still get the benefits of the University? It did require a different view.*

Drivers of flexible learning included the strategic direction of the University, and more immediately the expansion of the School necessitating ways to meet the learning needs of a widely dispersed and large student population. The Head of School sees flexible learning driven by educational reasoning: “*It really is a teaching/learning thing. For example, is on-*

*line the right teaching and learning method? We have to be careful that we're providing for every style of learner."*

One of the strategies to assist the introduction of flexible learning in the School was the promotion of a school-based champion. The decision to appoint an academic staff member as the champion, by giving her the responsibility to coordinate and facilitate flexible learning is described by the Head of School as, "*opportunistic*". This is because "*It was nice that IT and flexible learning was [the champion's] bag, but it wasn't a driver.*" However, the advantage of having a nominated facilitator was that this person understood the curriculum and programmes, the nurse teachers and the student body and could combine this contextual knowledge with strategies that supported curriculum and instructional design. Being a flexible learning champion, this role facilitated and lead development, while also providing valued support to others.

The champion first explored ways to introduce flexible learning in her teaching and developed some skill with the LMS. That experience was shared with other teachers beginning to use the LMS, and from a slow start flexible learning expanded more rapidly. When considering early resistance to use of the LMS, the Head of School commented, "*But in fact some of the teachers weren't ready. Now [the champion] has turned that around by working one on one with teachers, and that is such a non-issue that you almost wonder why it ever was.*" With more experience and confidence than others the champion was able to offer practical education and support with the LMS. This provided support at the exact time it was needed, and the close proximity of staff offices made it possible to call for assistance right there and then. Readily available support was important to supplement that provided by the University services, especially in the period when there was limited Faculty support.

### **6.4.3 Planned introduction of flexible learning**

In 2001 the School champion introduced a plan for increasing the level of flexible learning. It was estimated, at that time, to be a three-year project, which would start with an assessment of students' needs and technological options. The Postgraduate Nurse Survey gathered the information for this assessment and provided a basis for considering which approaches to flexible learning would be most appropriate.

The plan for introducing flexible learning aligned with the University goals and supported the progressive uptake of flexible learning across all postgraduate courses. The plan, presented to the School at a strategic planning day in 2001, consisted of five stages, with clearly outlined

actions for each stage alongside the advantages for teachers and students (Appendix 10). Crucially, flexible learning was not presented as an all or nothing option, but rather as a continuum, where courses can be electronically supported on-campus courses, or partial or fully on-line courses.

The plan provoked much discussion amongst the School and it was evident “*there was quite a lot of resistance*”, some of which was due to the state of the University LMS. A number of issues were raised (Table 6-3), often in the form of questions. It is interesting to note that the issues are mainly technical and practical, rather than pedagogical. As the Head of School explained, “*That was the climate and it was the climate that had to change*”, though in fact all the questions and concerns were valid issues that needed to be addressed. These issues and how they were resolved are discussed in Chapters 7 and 8.

**Table 6-3: Flexible Learning Related Issues**

- |   |
|---|
| <ol style="list-style-type: none"><li>1. Web – what is for public to see and what is for students to see?</li><li>2. Help line for students – who do they call?</li><li>3. Minimum technical specifications of computers that students need access to.</li><li>4. Enrolment systems sorted – so student is enrolled from day 1!</li><li>5. What is the effect of flexibility on student learning?</li><li>6. There needs to be evaluation of each stage and also for each course.</li><li>7. There is a need to measure flexible learning against itself, not against other teaching modes.</li><li>8. Will marks be available on-line? What security will be available to protect privacy?</li><li>9. Which LMS is to be used by Faculty?</li><li>10. Will the LMS be available for all courses and students? E.g. Will we be able to access the LMS from our offices or home, and students both on and off-campus.</li><li>11. Student access to computers. Are there enough computers on the University campus, and also within the Faculty and School?</li><li>12. Do students have the necessary skills?</li></ol> |
|---|

The consensus from the School of Nursing was to support of Stage 1 of the plan, with acceptance in principle, of furthering flexibility of courses offered when there were some clear answers to the above issues.

#### **6.4.4 Use of the LMS in nursing courses**

The significant increase of uptake of flexible learning throughout the School of Nursing by 2004 is a major accomplishment. Flexible learning, supported by the LMS, was by then a feature of most courses, as shown graphically in Figure 6-1.

Undergraduate courses are predominantly on-campus and supported by flexible learning. With undergraduate nursing including both hands-on practical skill and theoretical components, both of which need to be developed in the novice, there is no plan to do away with face-to-face teaching. Undergraduate students have readily accepted a supported flexible learning approach and now expect and request information, learning resources and their assessment marks on the LMS. Of particular note for undergraduate students has been the success of the on-line multi-choice questions related to and supporting their inquiry-based learning case studies (Honey & Marshall, 2003). The early acceptance of flexible learning within the undergraduate programme by students and the demonstrated proficiency and increased confidence of teachers in the undergraduate programme had a flow on effect to the teachers of postgraduate courses.

Postgraduate courses are supported by flexible learning approaches, with some core courses now partially or fully on-line. A strategic decision was made allowing nurses to complete a programme of study at a distance. The soundness of this stance is supported by the literature where a 2005 North American study with 21 higher education organisations found those that focused on ensuring full programmes were on-line, rather than concentrating on individual courses, were four times more likely to perceive that they had achieved overwhelming success (Abel, 2005). Reflecting those experiences, the School of Nursing decided that rather than just limit flexible learning design to a few individual courses, a selection of core postgraduate courses would be offered fully on-line.

Use of the LMS has varied between courses, with undergraduate courses making the most consistent use of the LMS (Table 6-4). All undergraduate courses use the LMS to provide an electronic version of the course outline, announcements, activities, learning resources and marks, and three of the seven courses also utilise on-line multi choice questions (MCQ). In contrast, postgraduate courses that used the LMS, tended to provide an electronic version of the course outline and some learning resources. Table 6-4 provides an indication of functions supported by the LMS by the seven postgraduate courses sampled. On-line multi choice questions were not commonly used, while on-line discussions forums are found. In the second

semester of 2004, out of 28 postgraduate courses offered, 5 were fully on-line using the LMS, a further 8 utilised the LMS and are described as partially on-line, and 15 did not use the LMS.

**Table 6-4: Sample of Nursing Courses Use of LMS**

Course	No. Students	Course Description	Announcements	Discussion	Activities	MCQ	Resources	Marks
<b>Undergraduate Courses</b>								
1 01	65		Y		Y		Y	Y
1 02	62		Y		Y		Y	Y
1 04	58		Y		Y		Y	Y
2 01	54	Y	Y		Y	Y	Y	Y
2 02	45		Y		Y	Y	Y	Y
3 01	41	Y	Y		Y		Y	Y
3 02	39		Y		Y	Y	Y	Y
<b>Postgraduate Courses</b>								
01	33	Y	Y	Y	Y		Y	
02	46	Y	Y				Y	
03	54	Y						
04	8	Y	Y		Y			
06	13	Y	Y	Y	Y		Y	Y
07	14	Y	Y	Y	Y	Y	Y	Y

The differences between use of the LMS across courses depends on many factors, including subject and content focus, assessment types and teacher preference. Teacher choice is considered important, conveyed by the Head of School:

*Different teachers have been able to express or do their teaching in a way they'd like to. We're not rule bound, or tied down. Teachers can do what they like if it meets the quality control, the assessment measures and the students like it.*

When contemplating the development of flexible learning the Head of School described the impetus as being due to a few key individual teachers:

*I think it's been the enthusiasm of key individuals. People like [the School champion for flexible learning] and a few other teachers have come in and solidly worked away. They've made things happen and shown others who were resistant. I think it is all about individuals.*

There is also recognition of the progress made despite the lack of support and incentives from central University services.

## 6.5 Summary

This chapter sets the context for the study by describing the socio-political and practical environment. Describing the national macro picture, the meso level of the University and Faculty, and the micro level of the School of Nursing, highlights a number of issues. For example, the strategies from the national Tertiary Information Strategy impact on the University mission and goals, and the concern is how these are operationalised at the University level to provide direction, guidance and support to teachers. The importance of operations being guided by strategy and the relationship between infrastructure and the development of flexible learning are emphasised. Most significant is the need for coherence among the macro, meso and micro elements that comprise the organisational context. The following chapter provides detail of the teacher perspective and further describes a number of the issues raised in this chapter and how these impact on the teacher and teaching in relation to flexible learning.

## 7 The Teacher Perspective

The organisational context, described in the preceding chapter, is critical to flexible learning particularly for strategic direction and infrastructure. While students and their learning are a focus of organisational endeavours, it is the teachers that are the visible face of the organisation for students. This chapter examines the findings from the perspectives of the teachers and seeks to address the study propositions: Some flexible learning practices are more effective than others for postgraduate nursing courses; Flexible learning is best introduced slowly so that teachers can consider and accommodate changes in workload and teaching practice; and Support from the organisation is required for effective flexible learning (see 3.1).

The interviews of teachers who were co-ordinators of the exemplar courses, as well as other teachers who were key informants, along with supporting course and school documentation provided insight into challenges and issues. Examples of course documentation were the course outline, report to academic committees after completion of the course, student results and evaluations. Pseudonyms have been used for all teachers, and are deliberately not linked to specific courses to protect the identity of participants. Quotes from teachers are in italics.

Four main sections provide the structure for this chapter:

- 7.1 Understanding of teaching** describes how the teachers saw teaching and flexible learning.
- 7.2 Good teaching practice for flexible learning** focuses on the practice of teaching.
- 7.3 Developing teaching skills for flexible learning** covers how teachers developed skills as flexible learning was increased.
- 7.4 Workload** discusses the important issues related to workload and how they impacted on teachers.

### 7.1 Understanding of teaching

Teachers' understandings of teaching, first generally, then specifically related to flexible learning are explored. Finally philosophical differences related to teaching are discussed.

The teacher co-ordinators, and teacher key informants in this study were all experienced, each with more than ten years' teaching practice though not all of that experience had been gained in the School of Nursing, the context of the present study. Most teaching experience had been gained in undergraduate as well as some postgraduate teaching, in classroom settings, and in institutions that were primarily teaching, not research focused. When asked how their view of teaching had changed since they first started teaching and as they introduced more flexible options in their courses, a move from a teacher-centred 'sage on the stage' to a more facilitative and student-centred approach was indicated.

*Bella: Well it's certainly changed, and if you'd asked me that 10 years ago I'd have said standing up and imparting information. However, 10 years later, you realise that you can do that but very little gets imparted. So now I think I've changed to more facilitating, but there is still a lot of tradition about imparting knowledge. So I think it's now more about facilitating and boosting up students...that they can do it, they can learn, they can find information, they can take it in.*

Another teacher describes it as:

*Amy: Well there's that usual shift from when you're a new teacher you think you have to know everything and teaching involves telling everyone else what it is that you know, to a complete movement away from yourself to the learner and having a complete focus in terms of what is happening for the learner. And rather than being the 'sage on the stage' you're the 'guide on the side'. Your role is actually to support and encourage and provide opportunities, resources and guidance towards learning. That would be the major shift.*

A change in teaching practice was described. When asked specifically what the changed view of teaching meant to them as a teacher, responses included that of Bella:

*Bella: A more interesting way of helping students learn really...more dynamic. So before the hard work was organising the days and content teaching and making sure my lectures were up to date and now what I'm doing is more facilitating, answering phone calls, email and giving feedback.*

### 7.1.1 Teachers' considerations of flexible learning

In an earlier study when 21 members of the Faculty where the School of Nursing is located were asked about their understanding of the concept of flexible learning, many described it by explaining what it was not (Gunn, McCormick et al., 2002). The participants of that study were identified as being actively involved in flexible learning initiatives, and their understanding of flexible learning was summed up: "For the majority of the participants learning is flexible if it 'doesn't take place traditionally', that is if learning is taking place 'outside the lecture theatre' (Gunn, McCormick et al., 2002, p. 234)."

To further clarify how their understanding of teaching related to flexible learning in the present study teachers were specifically asked what they thought flexible learning meant. All comments reflect a student centred approach:

*Bella: I feel I'm on a huge learning curve there. I'm being swept up by it, but I want to go with it. I feel it's offering them any sort of medium and then it's up to them to learn through that medium.*

Amy begins by describing her understanding of what flexible learning means for students.

*Amy: Well it's part of that whole learner-focused paradigm in that it means that students have got flexibility in terms of the time that they do something and the venue that they do their learning in, although there are requirements around assessment points, and there may be requirements around contributing to discussion groups and tutorials. It's about choices. It's about having sufficient support, but also about students having quite a good sense of influence and control about what's happening for them.*

Then Amy considered what this understanding of flexible learning meant for her teaching.

*Amy: It means flexible for the students, but it also means flexibility on my part. Instead of having all the students in a room, for a day, covering x amount of content, knowing that they have had that delivered at them, ticking that box... its about needing to trust the process that students have enrolled in the course, they do want to do it, they are more likely, I believe, to have deep learning when they are doing the components of the course at their own pace, as it suits them, than having to turn up and sit on a chair all day, while they might be worried about another commitment that they have had to walk away from. Because they're all really busy. They are hugely over-stretched you know, full*

*time nursing work, doing shifts, managing families, doing study. To me the flexibility would work well for them, but it means letting go on my part.*

Roger described his teacher role as being a guide and a coach:

*Roger: My role, especially with the distance element, is more of a guide or a coach. I don't do any sit-down (face-to-face) teaching... so my role is around the on-line tutorials, guiding and supporting students.*

Gill explained flexible learning as being more than putting lecture notes on-line for students, indicating a student-centred approach recognises individual learning styles.

*Gill: Students can read lecture notes, some students can follow that, but a lot of students can't. It depends on what kind of learner they are. A lot of nurses are visual learners. So you can tell them about cell membrane... But if you show them the cell membrane, that stays in their minds a lot more. So that's how it's different from just putting lectures on. You cut it down into little pieces, and guide them to learn about this first – read this, then do this activity, then that stays in their mind. Or go to the on-line discussion and talk to us about this concept. So you focus on what they are supposed to learn.*

Through her response Gill indicated an awareness of engaging the student and also of scaffolding learning in a planned and thoughtful way. Oliver and Herrington (2003) support the approach to learning design, such as Gill describes, as promoting knowledge construction.

The change to flexible learning does cause some anxiety for teachers, and Liz and Nina identified one specific concern as the lack of feedback from students that can be gained during face-to-face classes.

*Liz: That's quite different because when they come back in for another day you can work with them and strengthen that and have a look and check and get different sorts of feedback, observe how they are going. While it may happen to some extent on-line I don't know its going to happen. I have some anxiety it's not going to happen as well as it does in a group session.*

*Nina: Because we've been in education a while, you can be in a classroom, you can see where people are at. We're going to miss that to some extent.*

Gill, in a subsequent interview, differentiated between distance and on-line learning.

*I tell my students this is not a distance course, but an on-line learning course, which for me is different because you can access and interact with the teacher. If there are difficult concepts you should be able to ring the teacher, or email or make contact some way. Distance learning is good, but on-line is superior because you still maintain that interaction with the teacher at a time when the student needs it.*

Gill's comments demonstrated an understanding of flexible learning that includes interaction with the teacher and a focus on meeting students' learning needs.

In summary, the present study found teachers' understanding of flexible learning was predominantly student centred with the teachers' role as facilitator of learning.

### **7.1.2 Philosophical differences in approaches to teaching**

Teachers approach their flexible learning teaching practice in a manner that reflects their philosophy of teaching and learning. Often the teacher's personal philosophy is not expressed and may not even be recognised by the teacher. Some of the teachers in this study were able to articulate aspects of their philosophy of teaching. Roger indicated that his philosophy of teaching has not changed with increasing flexibility of courses, but rather his ideal for teaching was being achieved.

*Roger: My basic philosophy has remained the same, but is increasingly now being realised, as I don't have to see the students around the content, but around providing aids to support them to write or to learn.*

One instance where philosophical differences in approaches to teaching became evident was when Course Two was being developed for flexible learning in collaboration with teachers from two different internationally based organisations.

*Amy: I was very concerned that the [Organisation A] guy appeared to be coming from a different pedagogical and paradigmatic point of view than me. I didn't sense that with the [Organisation B] person. I felt we were more on track. So I thought the best thing to do was to talk. So we had a phone meeting, which confirmed for me where the [Organisation A] guy was coming from.*

Philosophical differences between teachers can always occur, but when asked about the likelihood of such differences in a shared classroom or face-to-face teaching situation Amy pointed out that "in the classroom you'd have to have a working relationship first".

Collaboration among three people from three organisations who had not met and developed a working relationship first would seem to have been a factor in the differing philosophical approaches and related issues that arose. Amy explained that the entire approach to the subject seemed to be different and she cited examples of topic order as indicative of the divergent views of the centrality of nursing practice to the subject. Amy finally stated, “*so for me that was too much of a philosophical difference*”. The difference in the approach of the person from Organisation A proved insurmountable and Organisation A withdrew eventually leaving Amy and the person from Organisation B to work together. When asked why she thought the two of them could collaborate successfully she said,

*Amy: I think the reason that [person from Organisation B] and I are completely on the same wavelength is because we are both experienced teachers of the subject and I suspect we have a similar philosophy of teaching and learning.*

Gill spoke about philosophical differences in relation to student assessment and the place of a final examination as the culminating assessment point. The existing on-campus course had an examination but Gill did not see the necessity of retaining the examination, especially for the on-line option, but a senior member of Faculty did:

*Gill: There's a lot of similarity between on-campus and on-line. The Head of School would rather they were both the same with no exam, but [senior Faculty member] was hard to convince. He thinks there has to be an exam to make them study the traditional way. I don't think that's the only way to assess the students. My discussion groups will tell me if they are studying or not studying. There are big questions and the answer may be one line, but you have to understand the whole concept to understand the question. So we married the two, on-line and on-campus this way, but that's the frustration...working with someone who has different values.*

This episode illustrated two members of faculty with opposing views of assessment, one with a more traditional view of learning who saw the final examination as the true test of learning, in contrast to Gill who, with the support of the Head of School, had another understanding of measuring learning.

## **7.2 Good teaching practice for flexible learning**

Following analysis of the data the seven principles of good teaching practice identified by Chickering and Ehrman (1996), and previously mentioned in Chapter 2, were selected as a

framework to scrutinise teaching practice. Chickering and Gamson (1987) identified principles for good teaching practice in undergraduate education. These were revised nearly a decade later because of advancements in communication and information technology and the use of these as resources for teaching and learning (Chickering & Ehrmann, 1996). The seven principles, as listed, provide a framework to focus on teaching practice.

- Good practice encourages contacts between students and faculty
- Good practice develops reciprocity and cooperation among students
- Good practice uses active learning techniques
- Good practice gives prompt feedback
- Good practice emphasises time on task
- Good practice communicates high expectations
- Good practice respects diverse talents and ways of learning.

### **7.2.1 Principle 1: Good practice encourages contacts between students and faculty**

Chickering and Ehrman (1996) assert that technology based time-delayed, or asynchronous communication, has been a great success in promoting contact between students and teachers. This is because contact could change from traditional time-delayed communication provided through such things as the exchange of homework, either in class or by mail, to opportunities to converse and exchange work faster, more thoughtfully and safely than confronting each other in the classroom. The contact between students and teachers can occur in many ways.

#### ***Communication tools for contact***

The School of Nursing initiated communicating with students by sending out a letter to all enrolled students so that first contact with faculty was before the semester started. The letter identified the course coordinator and other key faculty members, information about orientation and advice on using the organisation's LMS and library.

The LMS was used to facilitate communication through announcements and group email as well as asynchronous on-line discussion forums. Earlier versions of the LMS did not support these communication functions well and teachers found alternative ways to ensure contact was maintained with students. Email directly to students was found to be easy to manage, possibly because emailing used existing skills.

*Bella: I'm doing more emailing this semester I've found. Remember last semester I put a lot of effort into using the LMS? Well, this year I'm just doing email.*

Amy also commented on using email,

*Amy: I've got their emails in a [spreadsheet] file, I highlight them and just whack that in with my message. ... It's about what I think is going to work given the state of play.*

As an alternative to using the early version of the poorly functioning LMS for on-line discussion forums Roger started using freely available web based discussion software. He perceived that students away from the main campus were potentially isolated and disadvantaged.

*Roger: Then, around the end of 2001 we started using [free web-based discussion forum software]. And that was because the distance students were disadvantaged more than the local students. So the distance students got the videos, the workbook and [free web-based discussion forum software] for on-line discussions and posting their assignments. And they loved it.*

### **Student need for personal contact**

Teachers identified that students needed personal contact and support and saw providing it as an important part of their role. The nurturing and support was thought essential for those students returning to study and or new to higher education.

*Bella: I started off being very nurturing, very nice with the feedback...I've found this through years of teaching, you have to be more nurturing, even though they're mature students, some older than myself. They can be devastated when they haven't done well in an assignment; they've been too shallow and they haven't even known that they had to go into more depth, they don't even know what the depth is. So I do feel that there's some nurturing involved as well.*

*Amy: I know these students, they're very, very .... Oh they're fabulous, but they don't have a lot of confidence in their own ability and they don't have the sense... they need reassurance.*

A concern was expressed that a move to more flexible learning could mean a loss of the personal support from teachers. Yet Barone (2005a) contends that personal contact does not have to be provided in person. In fact flexible learning can provide students more interaction

with the teacher. “Contrary to common opinion today, online learning is more personal and interactive than traditional classroom courses” (Draves, 2002, p. 9). The evidence from Bella and Amy demonstrated personal support was provided by teachers to students without face-to-face contact. Further support for students was provided by their peers and this added to the student’s enjoyment of the learning experience.

### ***Teacher to students (one to many) communication***

While students needed supportive one-to-one personal contact there was also a place for communication from the teacher to many students at once. For example, Bella commented that while setting up non-assessed on-line discussions within the LMS for questions from students, many also contacted her directly by phone or email. She explained:

*Bella: They’re not getting on the non-assessed discussions to ask me questions. They still tend to email those. I’m going on to the non-assessed discussion and I say “I’m picking up a lot of people saying this or that, and this is what to do etc.” They do read them so it is sort of working out. I’m getting less of the continuous emailing about little things. I still get a few phone calls but that tends to be the students who are struggling a bit getting things in on time, so they phone and tell me why and make sure they won’t be penalised for being late.*

Her action of responding to a common or recurring question using the on-line discussion meant the whole class could see the question and her response. This new method of communicating with students reduced teacher workload of responding to similar questions repeatedly, but also provided contact with students and minimised students asking the same question individually.

### **7.2.2 Principle 2: Good practice develops reciprocity and cooperation among students**

Good practice goes beyond contact between teacher and students to also embrace cooperation and reciprocity among students. Furthermore nurses working cooperatively in the education context paralleled clinical practice where cooperation is essential. Gill recognised this and therefore strived to include opportunities for students to cooperate and interact in her on-line course.

*Gill: What I get on-campus is class interaction, and that is what I’m still trying to mimic on-line. The interaction between practitioners is critical.*

To ensure cooperation occurred it needed to be planned and included as a learning strategy. Within Course 2, for example, group work was integrated, both when the course was on-campus and as it was developed for on-line delivery. Amy described constructing opportunities for students to learn from each other in designing the course.

*Amy: They'll learn from each other, rather than the teacher as font of all knowledge. The students will be in tutorial groups of 6 to 8. That's what my reading and talking to others suggests. I think the best thing is to make sure you're not trying to communicate with too many students. And have on-line discussion within the tutorial groups and with the teacher.*

Amy divided the whole class into seven groups and had three teachers, so each teacher had two or three smaller groups. Each group of students engaged in weekly activities and posted their answers onto the on-line discussion, before they responded to specific questions around the activities. Smaller groups were used so that students could get to know each other better and it would ensure more effective sharing and communication.

The most significant example of reciprocity and cooperation among students occurred in Course 3 when a learning community was established (Honey, Gunn, & North, 2004). “The defining quality of a learning community is a culture of learning in which everyone is involved in a collective effort of understanding” (Bielaczyc & Collins, 1999, p. 4). Course design strategies that created the learning community included a two-day on-campus workshop so that students could meet each other. Within the workshop was an assessment, worth five percent, where students were asked to speak about their practice knowledge development. This further ensured students knew each other. Five on-line discussion forums were used, two non-assessed and three worth five percent each. One of the non-assessed discussions was an ‘Introductions’ forum for students to briefly introduce themselves to the group, while another was an informal area, called the ‘Coffee Group’ for questions and comments. The benefits of a learning community from the students’ perspective in terms of reducing isolation and supporting learning are discussed in the following chapter (8.2). While none of the three exemplar courses included group projects the learning design, such as the use of the discussion forums, encouraged reciprocity and cooperation.

### **7.2.3 Principle 3: Good practice uses active learning techniques**

Chickering and Ehrmann (1996) suggest that students should talk about what they are learning, write reflectively about it, relate it to past experiences, and apply it to their daily lives. In fact

they suggest that students must engage actively in their learning so that what they learn becomes part of them. Opportunities for active learning need to be planned within the course, but teacher experience was thought to make it easier to see learning from the student's perspective.

*Amy: I've discovered you've got to be an experienced teacher to have the imagination to put together material for on-line learning, because you have to imagine how the student is actually going to interact with the material. You've got to really understand how learning takes place to track through activities that will build concepts and build application.*

However, experience alone is not always enough and another teacher indicated the usefulness of testing learning material to ensure that it does engage students. For example a teacher integrated active learning techniques by using critical questions. An independent content expert was asked to review the proposed topic content prepared by the teacher. This proved to be a very good way of knowing the material would engage students as the expert didn't just check the content but engaged fully with the learning material.

*Bella: Well I haven't been through all her comments yet. She said 'thanks for asking me', or something like that... Yes, she'd answered the questions! She got quite engaged with it! She engaged with those critical questions. They worked! We weren't expecting her to answer those, but to respond if they weren't clear enough whatever... It's just great!*

Teachers also found that on-line discussions actively engaged students. Gill supported the use of on-line discussions as making students think and included them in her course for this reason. Gill went on to describe how she planned active learning within her course.

*Gill: I plan for visual learning, introducing resources, and focus the learning on concepts they need to remember. And those concepts I ask in multi choice quizzes and short answer questions.*

The careful selection of a supporting textbook was another strategy used.

*Gill: So I chose this textbook...it has Internet support the students can access and it has nursing case studies. It shows why this is relevant to nursing and what they are supposed to look at. It has simple pictures.*

Active learning techniques supported learning and there was evidence from students for this, as for example when Gill reported about one of her students who had to repeat a course.

*Gill: One student who had to withdraw came back and chose to do the course on-line and her feedback to me was that she found the on-line activities helped her learning much more than doing one essay. I was pleased with that feedback.*

Gill reflected on the place of active learning integrated into her on-line course compared to the same course offered on-campus.

*Gill: Students are learning just as much and even more. Some students have told me they have learnt even more on-line than when they were on-campus because they have to read about it, explore it and understand it to do the activities. Where students on-campus can sit in class and hear it once, but it might go out of their heads.*

#### **7.2.4 Principle 4: Good practice gives prompt feedback**

Feedback can be either formative or summative. Formative feedback, feedback on work in progress, aids students' learning without affecting final marks or grades (Bell, 1997). For example, in the present study the Course One essay introduction was submitted for formative feedback. The introduction was not marked but feedback provided guidance for the tone, language and expectations for the essay and was found particularly useful to develop skills in novice students. However, providing the feedback was time consuming for the teacher. Draves (2002) suggests the alternative of using on-line self-assessment exercises to provide ongoing formative feedback throughout a course.

Feedback assists students discover what they know and don't know and therefore helps to focus learning (Chickering & Ehrmann, 1996). When returning to study or starting a new course, students may need help in assessing their existing knowledge and competence so they can then extend themselves. One teacher eloquently described how she used feedback, both to assess student's progress and the design of her course.

*Gill: It tells me where my students at, what level they're working at and how my on-line design is working too. I need to give them feedback about which are the most important concepts, reinforce that they got it. The only way to do justice to their work is to give excellent feedback. That's what I do with my on-line courses. I really clearly indicate, person-by-person, how they're doing and what they could do to improve it. That detail*

*guides their learning. I have had a lot of good feedback from students about the way I'm doing it.*

While initially Gill provided a lot of feedback she felt that later less was then required. She also intentionally used feedback to reinforce important concepts.

On-line discussions offer a means of providing formative feedback. The role of the teacher is to facilitate and encourage students to engage in the on-line discussion and one strategy suggested is to use questions to maintain the discussion and deepen the dialogue (J. Haigh, 2004). Feedback on discussions can inform students they are on the right track with suitable depth and critical analysis within their postings. Further, feedback is advised to remain focused on such content issues, rather than the number or length of postings (Graham et al., 2001). Haigh (2004) implies that more feedback is needed at the beginning of an on-line discussion, but once the discussion is established less feedback is required. However, this notion has been criticised, suggesting that ongoing feedback is better (Graham et al., 2001). Feedback can come from students too. Flexible learning, with on-line components, can allow and encourage student peer feedback. DeBourgh (2002) found students' on-line shared reflections provided opportunities for insightful peer feedback about the depth and accuracy of understanding, as well as adding fresh perspectives.

### ***Feedback on assessed work***

Feedback on learning progress was uniformly important to students. The need for good quality feedback related to formally assessed work was well recognised by teachers. Feedback could commence before the assessment was due, around topic selection, as Bella illustrated with her use of an on-line discussion.

*Bella: What I perceive the greatest needs of the students throughout the course are assignment-writing skills. My intention is, with the on-line forum, to start with 'what ideas have you got for our assignment?' and then I can reply 'that's a really good topic' and why, or 'it's not a good topic' and why, and then 'has anyone started yet and run into a specific problem?'*

Most feedback on learning came “*from the marks and comments on assessments*”. One student described the nature of the feedback saying, “*You usually get quite good comments in the margin and then they make an overall summary at the end of where you could have done more, what was lacking and what you did good. It's more personal and helpful, and it needs*

*to be that constructive and personalised*". Comments on the assessments were found to be particularly helpful, with students describing the feedback as "*useful*" and "*brilliant*". More detailed responses included: "*It's criticism in a constructive way*" and "*The extra effort that's put into marking is great. I know what I did wrong*".

Once assessed work is submitted then the focus is on marking and returning student's work. Bella discussed the need for positive as well as critical feedback, while Amy showed her awareness of the need for timely feedback to inform the student's preparation for their next assessment.

*Bella: Yes, I give good feedback; I give all the feedback I can that will help. Especially with their writing skills, as often they go through the painful birth of writing their first assignment, sometimes their first for many years. I give lots of feedback and often I'm very critical, which I feel awful about, but I try and give one or two positive statements.*

*Amy: The first assignment is in, marked and back. But the thing that worries me is the students who ask for extensions seem to be unlikely to be the stronger students. They are more likely to be students who tend to struggle and the assignments are only about 5 weeks apart. The due date was 2 weeks ago so I've done really well to get them marked and out. But my concern with extensions is, that though these students will get feedback before the next one is due, the ones with extensions won't.*

The literature supports the timing of feedback as being beneficial to learning (Ali et al., 2004; Bartolic-Zlomislic & Bates, 1999; Chickering & Gamson, 1987; Sly, 1999). On-line tests, such as multi choice quizzes, provide an avenue for immediate feedback. The provision of immediate feedback is one of the strengths of on-line testing, as students are informed of their progress, and can reinforce learning (Anna, 1998). A common occurrence with computer-based tests in which students are provided with the answers and an explanation immediately subsequent to the test, is a reduced level of students requesting feedback from teachers (Anna, 1998; Kathaleen C. Bloom & Trice, 1997). Therefore advantages of on-line quizzes for the teacher include the administration, marking, and feedback to students can all occur electronically (Draves, 2002). The time to develop the quizzes remains, but the management time in their administration is reduced (Anna, 1998; Sheridan, 1997). Timing of feedback from written assessments is also important. Slow feedback, long after assessments have been submitted is not helpful (Haynes, 2002), especially if another assessment is due and feedback from the previous work might guide a subsequent assessment. More importantly though, it is

purported that students want consistent feedback with every piece of assessment (Frey & Alman, 2003).

Amy used a strategy of breaking down one assessment into sections, which enabled interim feedback before the full assessment was submitted.

*Amy: They have all handed in a small part of the first assignment (Assessment 1a). That was designed to get them going and for me to know where they were. That covered weeks 1,2 and 3. I figured if I got them to do a small piece of work and hand it in after 3 weeks at least I would know they had made a start. It was more for me. And it was good for them! Yes they did all do it, and hand it in, and they did all pass.*

In contrast Bella asked her students to submit a 300-word introduction for an essay. She provided lots of feedback to students, but did not give a grade. Bella reported that giving the feedback improved the quality of the work in the essay when it was submitted. She stated, *“It didn’t help with the content, but it did help with their writing”*. Feedback was found to be effective in improving students’ subsequent assessed work, as Amy describes:

*Amy: Well you look [indicating class results]. All have gone up at least a whole grade point. Most went up. What we did for assignment 1 was put in a lot of effort to give them explicit feedback. You can see there is a trend. We like to think it’s a function of good feedback.*

Students saw the assessments as a learning opportunity: *“I see the first assignment as a learning opportunity for me. I was really happy to hear we’d get it back before our second one was due in”*, which meant a fast turn around on marked work is important. One teacher described planning for faster feedback to students in her on-line course which would free students to study at own pace: *“I want interaction that’s built into the course so the students get fast feedback ... The students can move forward faster, at their pace, instead of having to wait”*. Beneficial feedback helped students improve: *“I’ve had prompt feedback, and it’s been the kind that helps me to develop further”*. Positive student evaluations indicated their appreciation of good feedback, especially the quick turn around on assignments so that one assignment was returned well before the next was due. A further strategy after the class had completed the assessment was used by Amy who collated a summary of what was and wasn’t done well, and distributed the summary to the class electronically to inform subsequent work.

The type or nature of feedback given is also important. Advice to teachers planning feedback is to try for a neutral, non-judgemental tone and avoid any negative comments (Draves, 2002). Studies have found that students prefer specific feedback (Frey & Alman, 2003; Honey & Marshall, 2003). While personalised specific feedback is preferred there is a place for group feedback as an effective way to inform students about patterns and trends without pin-pointing individuals (Graham et al., 2001). Written, verbal, individual and group feedback are all helpful for student learning (Bell, 1997). As a strategy for supporting student learning the key point is to include feedback, have as much as possible, and incorporate multiple forms of feedback into a course (Frey & Alman, 2003). Comprehensive and constructive feedback was important to all students, even those achieving well, *“Even with an A you get lots of feedback written all over the assignment. It’s good feedback because I don’t feel awful when I read their comments. I think oh, yeah, ok, I could have added that”*.

### ***Formative feedback***

While feedback can be directly related to assessed work it can also be linked to assisting and supporting students to ensure they can complete assessed work. For example, Bella provides problems related to course topics for students to answer. Students are expected to complete the problems themselves, but later in the course the answers are provided via the LMS. In another course teachers are assigned to smaller groups for on-line discussions and each teacher is responsible for providing comments and regular feedback throughout the semester.

A strategy that teachers used, and that feedback from students indicated was useful, was when a face-to-face tutorial was held and either the teacher or a student would note the questions asked. The teacher would later prepare the questions, along with the answers that were then distributed to the whole class.

*Amy: I share the questions and answers from the tutorials with everyone. It takes the pressure off students attending a tutorial that they just can’t get to. They have such busy lives and it just takes the pressure off.*

This strategy also had a benefit for the teacher as emails and phone calls from students reduced. Amy explains,

*Amy: I sometimes ask in tutorial, ‘just for my information how many of you would have asked that question?’ and other hands come out. Sometimes 25% of the group, and then*

*there's all those at home. And there's those who didn't think of it as a question, but when they read it think 'oh yes' and they learn from it anyway. It helps them.*

Feedback from students was that they found it reassuring to see the questions of other groups, and to realise how similar their questions were.

### **Technology for faster feedback**

Technology offers the means to provide faster feedback. One example of rapid feedback for students is the use of on-line multi choice questions (MCQ). A study in the School of Nursing that examined how undergraduate nurses used on-line MCQ to support their learning found that immediate feedback, directly after each question, was found to be helpful or most helpful for 93% of students. While the timeliness of feedback received positive comments, the type of feedback was also important and students wanted more than indicating whether they were right or wrong (Honey & Marshall, 2003). MCQ were used in a limited way in the postgraduate nursing courses. Gill described how she used them to assess her students' progress, but also how the questions provided guidance and direction for further learning.

*Gill: With those MCQ on-line I can see their progress, the marks they're getting. They can see how to build themselves up too.*

Taking advantage of the opportunities that technology can provide required more technological support than was available. Amy considered an ideal future and explained that she wanted feedback built into the learning design of the course. She envisaged multimedia applications that would support student learning and provide immediate individualised feedback to students when different options were selected.

### **7.2.5 Principle 5: Good practice emphasises time on task**

As postgraduate nurses are busy people making effective use of study time assists organising a multi faceted life. Preparation before the course starts can enhance time on task. The University offers general orientation for all students and there is an orientation for postgraduate nurses run in conjunction with the library and student learning support service. The faculty library has worked with the School on a range of initiatives to improve nurses' awareness and use of library and other support services (Honey, North, & Gunn, 2006). Information is sent out to all students confirming their enrolment, welcoming them to the course and providing some initial information about the library and information about the LMS. A number of courses have also added a hands-on computer session early in the

semester. As described for Course 3, “A hands-on computer session ensures that students can access the on-line learning management system (LMS), change their personal settings, access resources and contribute to an online discussion” (Honey et al., 2004, p. 413). The steps outlined above provided students with the opportunity to prepare themselves to begin learning when the course commenced.

Providing course folders with printed copies of the course outline, assessment schedule and key readings was appreciated by students. Supplying the material in hardcopy reduced the need to download and print documents from the LMS; saved time searching for required readings and enabled students to promptly commence study. *“I found the folders, with everything altogether very positive and helpful. That’s important when you’re a postgraduate student with the amount of reading expected and the majority of us are doing other things in our lives as well. It’s about us learning the concepts, rather than wasting time chasing readings.”*

Another aspect of helping students focus their study time involved the teacher designing the course to use the LMS effectively. The plan was to design the course to be well structured and organised so it is easy to follow and students would not waste time finding their way around. Gill identified this clearly after her course was moved from one LMS to another. A proprietary LMS was first used for the course and was well received by students; however the course was then transferred to the organisation’s LMS. The moving and setting up of the course on the organisation’s LMS was undertaken by technical support staff and proved problematic:

*Gill: I designed it for [one LMS] so I knew where everything was. I didn’t have time to transfer the course myself. But when [technical staff] transferred the course he changed some of the design. I guess because he wasn’t the content expert he put it the way he saw it should be. I had a mix of content and activity before but when he moved it he couldn’t match the activities to the content. I’ve fixed it now, but even going in and doing that was hard. Students got confused about what they were supposed to be doing.*

On consideration, this problem could have been avoided if the teacher had not relied on technical support, or if there had been better communication between the technical support staff and the teacher. An example of miscommunication occurred when the technical support staff indicated that the course modules would be available on time, and the teacher expected that meant the entire course would be available before the semester started, while he meant he

would prepare and release one module at a time. This created problems because the teacher had planned that students could work at their own speed, recognising that modules would take some students longer than others. Despite planning for her course to be available the teacher was thwarted in her attempts to assist students to maximise their learning time. Gill explained her frustration:

*Gill: That was a big issue! It was very stressful. The problem was I couldn't communicate that to him. He assured me it would be ready, up and ready and running. I assumed he meant the four modules because that's what on-line flexible learning is all about, but I got a module at a time. As a consequence there were some students who were upset.*

Teachers also advise students and emphasise the aspects of the course where time and energy should be focussed. Bella, for example, uses a portfolio as an assessment in her course. Identified items were collected throughout the semester and compiled in the portfolio, which is submitted for grading at the end of semester. She explained the advice she gave to students:

*Bella What I've advised students to do is to get everything in there, even if it's just a rough draft, then at the end they'll have time to edit and tidy it up, and by then they'll have learnt a lot and it will be easier. They'll know the language to use and how to support their statements.*

This advice, along with being generally supportive, was intended to make it easier for the student to keep up by making the portfolio seem less onerous and also to reduce students' stress. Clear direction for students enables them to plan for effective allocation of their time and energy. Amy articulated this:

*I think there's far deeper learning if the student is very clear about what they have to do. And then they can get on and do it.*

## **7.2.6 Principle 6: Good practice communicates high expectations**

Teachers who inform students about their expectations are likely to see students meet them (Chickering & Ehrmann, 1996). Bella provided students with a booklet that gave direction for essay writing as an example of clearly communicating expectations. She commented on how useful students found this,

*Bella: 'Guidelines for writing' is the title. The students who used it have told me that it's absolutely, really very useful.*

She explained in the booklet that she was looking for a student's ability to critically analyse and relate an aspect of the content to a clinical situation in essays. Students needed to select three key studies and then conclude with the benefits of the intervention discussed in the studies they selected.

Expectations can also be conveyed through less formal means such as feedback and support, though less directly. An example of indirectly communicating expectations was when Roger involved the librarian in face-to-face tutorials for students. The tutorial provided information on searching electronic databases, referencing, writing assignments and the use of a bibliographic software programme was in the tutorial. The teacher and librarian collaboratively reinforced the expectation of using electronic databases to locate supporting literature and to use correct referencing format.

A further example of communicating expectations can be found in the course content itself. A case in point was where the teacher communicated what students were expected to learn using learning objectives, focusing on concepts, critical questions and then application of those concepts to case scenarios. By providing examples of how a case scenario was answered the teacher demonstrated the detail and expected depth expected in student responses.

### **7.2.7 Principle 7: Good practice respects diverse talents and ways of learning**

The last of Chickering and Ehrmann's (1996) seven principles of good teaching practice concerns respecting student's differences, including their learning styles. Examples of teachers trying to accommodate students' different learning styles and respecting their talents can be found in earlier sections, such as Gill who provided examples of course content that assisted students who were visual learners. Gill further described student diversity and how this affected her teaching role.

*Gill: The problem is you don't know what they can understand or can't. They pick up something and some say that looks really easy and others say that looks good. We are all different learners and that's a problem. When you're a teacher on-line you need to represent everyone's needs. You've got a focus or theory you want them to learn, you get an activity sorted out, get the hyperlinks and those with electronic abilities just love that.*

Roger described his students as having vast clinical experience that influenced the role he took. Roger respected his students' expertise and clinical experience, yet was also secure in his specialist knowledge and ability to provide learning resources related to his subject area.

*Roger: The people doing these courses have significant more experience and expertise than me in most areas. It's inappropriate for me to actually assume that I can know more than them, however, I know where the information is, so I act as a conduit. Whether that's pre-recorded, on-line discussion, or readings, that's my role.*

Teachers being student centred, and seeing students as individuals show another aspect of respecting students' talents and ways of learning. On-line teaching improved teachers' knowledge of students as individuals with different talents and interests.

*Bella: I have a real sense of who these students are. With my on-campus course I would only know the ones who come in for my weekly tutorial, or the ones who did extremely well or those struggling. Now I could probably tell you one or two things about every one of them. That probably became clear to me about halfway through the course though.*

The use of student on-campus and on-line introductions assisted both students and the teacher in knowing each person as an individual with different clinical expertise, work setting and life experience. The introductions promoted respect among the class. The teacher explained:

*Mae: ...they KNEW each other and had developed respect for each other's personal learning journey before the on-line discussion. I think that was a factor in the on-line discussion being so successful. Despite their different clinical practice areas, throughout the country, they had developed into a group.*

Whilst evidence was found for each of the seven principles of good teaching practice (Chickering & Ehrmann, 1996) all principles were not uniformly found amongst all teachers. Knowledge and skill in teaching needs to be cultivated particularly in a changing learning environment as with increasing flexible learning. Therefore the next section considers the development of teaching skills specific to flexible learning.

### **7.3 Developing teaching skills for flexible learning**

A strong theme from the data concerned teachers developing the necessary teaching and technical skills for flexible learning. The findings and discussion are presented in six themes:

flexible learning developments related to experience; critical reflection on teaching; diffusion of flexible learning innovation; the learning curve; support for a new teaching strategy and general teacher support.

### **7.3.1 Related to experience**

The development of flexible learning within nursing courses was often based on the experience of the teacher. The present study found experience in flexible learning teaching could be gained in three ways. One option was professional development for academic staff provided by the University. This was available in a range of formats and covered aspects of teaching, learning, use of technology, LMS use and flexible learning. Another option was when flexible learning course development was assisted by flexible learning specialists either centrally, or from the Faculty, and teachers picked up a wealth of knowledge and advice by working with the specialists. The final way to gain experience was 'on the job', through trial and error and building on general teaching experience as a basis for adding flexible learning teaching techniques. More commonly the latter option was found in the present study, although employed in combination or separately with both professional development and specialist assistance. The support for teachers to develop their teaching skills is discussed further below. The 'on the job' incremental development of teachers' flexible learning skills was dependent on their prior skills and experience as teachers.

Amy drew from previous teaching experience to develop on-line learning material. Amy went on to describe modifications and improvements made in her on-line course based on her experience.

*Amy: What I did was use my teaching and education experience, gut feeling and theory to guide the changes that I made. I guess it's my experience as a teacher that has been what I was trusting. I mean the fact that it was on-line doesn't make it any different. Teaching is teaching. So I used what I knew about teaching to make the adjustments, even though it was a new medium for me.*

In a similar vein, Gill acknowledged the value of her experience in teaching both on-campus and on-line courses. Discussing an evaluation of her course that was offered in both modes in a single semester Gill observed:

*Gill: I think this has proven to me that on-line courses can have similar results. I think it's important for the course co-coordinator to be familiar with both and to design both.*

In contrast to the teachers who built on prior teaching practice to develop flexible teaching skills, Bella conveyed that a lack of experience in flexible learning constrained flexible learning developments in her course.

*Bella: It would be good to make the course material more accessible, but I don't really know enough. I have ideas, but I don't really know what's possible. It's hard to think outside the present reality and my technical know-how.*

For example, when considering how to provide feedback about a question she wanted to pose to the class she said:

*Bella: I'm just thinking, as we talk about it, that one improvement, but I'm not sure we could do this, is to put the question up, and hide the answers initially, so you get more answers coming in. Then thank them all and put them all up at once. Then maybe have a period of feedback on them all. Then if there are still questions, answering them could be a final step. But I don't know if you can do that.*

Bella understood the educational strategy of having students contribute their answer individually before revealing everyone's response, but she was not sure if the technology could support that. Her lack of experience is further demonstrated when she considered using on-line chat.

*Bella: What I would like to do for next semester is to try and set up a weekly chat session with the [more remote] students. I've never done it, but I've heard that you can. So presumably if I left a slot at a particular time one day and got on my computer then they could get on and we could all get together and talk.*

When questioned about why she was considering synchronous on-line chat over other options her reply exposed a lack of understanding about technology and the difference between synchronous and asynchronous communication. After taking into account her student population, nurses who worked shifts and were scattered around the country, she selected asynchronous on-line discussion to support the learning within her course. Later Bella was able to report that increased experience with flexible learning improved her confidence and enjoyment:

*Bella: I think I'm feeling more positive about it than at our last meeting. I can see more uses for it and I'm using it more ... I'm enjoying the environment now that I can find my way around. It's cool, it really is.*

Previous experience in on-line learning influenced Roger's rejection of an LMS that he perceived as below the standard he had used in another educational setting. He and his colleagues "*refused to use dodgy gear really*". Roger went on to identify how his earlier experience made him aware of what was available and what criteria a LMS should reflect for easy and effective use by teachers and students.

### **7.3.2 Critical reflection on teaching**

In the context of the study, teachers introducing flexible learning reflected on their teaching practice, possibly stimulated and focused by the nature of the questions put to them. For example, a teacher recognised that students were responsible for their own learning.

*Nina: That was good learning for me. There was a lot of self-learning in that course and there was really good quality in the work that came out of it. It was thoughtful, insightful and they did the work. I guess that's what I'm saying, that I thought maybe the lecturer, my personal input could have been greater. But in terms of what they learnt from this course, it went well.*

Bella agreed she had become more reflective about her teaching practice as a result of redesigning her course for on-line mode, but was unable to identify issues related to improved student experiences.

*Bella: I can't articulate it. I'm not conscious of what may have changed. I think I've become more reflective over time, and made the course a better learning experience for students and became more aware of how they learn. I think the on-line development has been better for my students, but I can't actually tell you how and why.*

Changing from traditional classroom teaching forced teachers to consider more thoughtfully their teaching practice and this enhanced reflection. Active inquiry into what works and what is less effective is known to promote reflection (Argyris & Schon, 1974; Senge, 1990), and in the present study the introduction of flexible learning became a trigger for critical reflection on teaching.

Interviews with teachers revealed that their personal experiences as students impacted on their view and preferences for teaching, for example Gill:

*Gill: I'm a visual learner; I like to see things move around. I learn better if I can see it; it stays better in my mind, so I use that with students as well.*

More commonly the underlying preference teachers favoured was face-to-face because that was what they knew best. Bella demonstrates this when reflecting on her teaching practice and describing how she values face-to-face teaching. Her comments also demonstrate the impact of the present study in promoting reflection.

*Bella: I do value face-to-face contact. I give backup material and get students to review things but generally I like to say, "These are the important issues" and put more emphasis on that. And I guess perhaps thinking about that has furthered my development in teaching. Sometimes it helps to step back.*

But starting with a preference for face-to-face teaching may have limited teachers' ideas for flexible learning developments within their courses. Amy describes her need to continue face-to-face contact with students,

*Amy: I think it's just me. ... Not wanting to totally let go. And it's probably quite good as a safety net for students, if they can't interact with the material in the way that I have planned. It will give me an opportunity to adapt and develop it.*

When asked what was needed to be an effective flexible learning teacher two different types of answers were found. One considered teaching was similar in either flexible or traditional mode, but experience was important.

*Amy: I think what flexible learning does is throw up whether or not you are a good teacher. It doesn't make a bad teacher. But I think as a good teacher I can flip into conceptualising a plan for a session and what might be student interaction that is around experience to meet the learning outcomes. So it might be a philosophy, it might be an approach; but it's also about experience and skill.*

The other type of answer focused on different skills and attributes the teacher needed. For example, Gill thought you needed to be more organised with flexible learning.

*Gill: I think to be an on-line teacher you do have to be organised. You have to be organised and plan ahead of time. See my calendar here [indicates]. I know when things are due, or overdue. I catch up with students when I haven't had work and make sure they're all right. This calendar also helps me plan my marking. So organisation – YES, a lot of it!*

Bella agreed when sharing her experience of managing her on-line course where she used a grid (Student Assessment Record) with the students' names and columns for ticking when they had completed different activities. She also recommended to peers to keep a hardcopy of course material as a ready reference.

*Bella: I find it so helpful. It works for me to help me keep track of everyone. I'd recommend it to anybody running any course! It is so helpful. I call it my 'Student Assessment Record', and it matches my timetable. This would be helpful for anyone else running an on-line course. Also having a really organised folder makes things easy to find when someone is on the phone and you can direct them specifically to where information is.*

While it was noted that teachers' personal experiences as students, or lack of experience in teaching and more specifically in flexible learning, limited their consideration of options for flexible learning, the effect of other teachers' efforts with flexible learning were significant in expanding perspectives.

### **7.3.3 Diffusion of flexible learning innovation**

The significant increase of flexible learning within the School of Nursing over a short period of time was a major accomplishment. A leading contributor to the increase was the contagious effect of success by teachers. Seeing success in flexible learning initiatives encouraged other teachers.

The early acceptance of flexible learning within the undergraduate programme by students and the demonstrated proficiency and increased confidence of undergraduate nurse teachers had a flow-on effect to postgraduate teachers. For example, the introduction of on-line multi-choice quizzes for one undergraduate class extended to another and then into third year classes. Postgraduate teachers started considering how the quiz functions of the LMS that the undergraduate teachers employed might be used for their courses. Advantages of the use of quizzes was backed by research into the undergraduate student use of MCQ to support learning (Honey & Marshall, 2003), research findings that were communicated to academic staff.

Teachers shared with colleagues their experiences of using the LMS for such purposes as providing class notices, course documentation and assessment marks for students. Outcomes, such as reduced phone calls, improved communication and more satisfied students reinforced

the benefits of flexible learning. Teachers experimenting with flexible learning then supported their peers who were less experienced. Amy described how she assisted another teacher.

*Amy: I've been showing [x] how to do it for her course because she's been totally hamstrung by [technical staff]. She's just had a hell of a time. She's not very good at asking for help so she's working with me, by-passing them and she's just feeling a whole lot better.*

Amy felt that peer teaching was well accepted and in this instance was preferable to working with technical staff. This may have been because of the collegial nature of peer teaching and also because of the timing and being immediately available when assistance was needed. As a teacher Amy had the ability to see the situation from a teacher's, rather than a technician's perspective. When asked about the effort it took to support a colleague Amy responded:

*Amy: One thing that has happened through all of this is that I've now got really excellent hands-on skill to help others. And in my co-ordination role and with on-line learning it wouldn't be the same without the experience.*

In Amy's view, supporting a colleague reinforced the skills and expertise that she had developed. Teachers commented about learning from colleagues and acknowledged their expertise and enthusiasm. However, a consequence of increased flexible learning was that more of the teacher's work was visible to others and this was a concern for some. The difference between face-to-face and on-line classes is described; "An online course is a digitally-fixed or permanent entity, unlike face-to-face classes which were transient and 'disappeared' after being offered" (Draves, 2002, p. 54). In face-to-face classes when lectures and discussions occur no record is kept, except for handouts that might be provided or notes students take. In a closed LMS, such as the University uses, only enrolled students can access the course, though learning resources are visible beyond the course students, to administrators and other teachers. Learning material is available to be read and scrutinised again and again. Even a discussion, such as an asynchronous on-line discussion, is visible beyond the moment. "Students can read, consider material in depth and then challenge the teacher in ways not possible within a face-to-face class" (Honey, 2006, p. 203). The exposed nature and visibility of teaching practice, to students and colleagues, initially made some teachers feel vulnerable. The sharing supportive collegial relationships amongst teachers assisted to minimise this vulnerability.

The School celebrated flexible learning successes by holding a seminar where teachers shared their experiences. The celebration served the purpose of recognising the efforts of teachers, acknowledging their achievements and it promoted flexible learning. Teachers were asked to address three questions: what motivated you to get started on-line; what were some of the significant issues or experiences you found and what new learning that occurred for you do you want to pass on to others. The seminar highlighted the variety of approaches taken with flexible learning and the innovative strategies teachers develop to overcome hurdles. Approaches with flexible learning included fully on-line and mixed mode courses that had on-campus study days and some on-line components, while strategies included on-line discussions, portfolios, orientation to the LMS, and ideas for class management. Discussion on these developments is found throughout this and earlier chapters. While there was much to celebrate and ideas to share common areas for improvements were also identified.

News of the expertise developed by teachers and the high quality of the flexible courses spread through the Faculty, University and the profession. For example, when the national nursing body audited the school and its programmes the specific laudatory comments about several of the on-line courses were reported throughout the School and Faculty. External recognition of the expertise of nurse teachers emerged when teachers were invited to provide consultancy services to other departments as they developed their flexible learning initiatives.

### **7.3.4 The learning curve**

Teachers experienced a steep learning curve with mastering new technology, though the literature suggests that the learning curve may have also been associated with flexible learning methods (Bartolic-Zlomislic & Bates, 1999). The time frame and slope of the learning curve is hard to pin point, and seemed to vary significantly between individual teachers. Gill thought that one way to get used to new technology was to have time to play with it.

*Gill: I think any teacher who is trying to use a new medium needs about 4 weeks of playing and constant supervision and help in those 4 weeks. Once you learn the medium it's no problem. It's that frustration time when you're learning it. People think you can learn just like that (clicks fingers) but you can't. You need the time to learn and do.*

Practice was identified as an important component of learning to use new technology, the amount of practice required varied between teachers. For example, Bella described why she had difficulty with some LMS functions: *“the main reason being I don't do it enough and I*

forget". Amy demonstrated an understanding that practice would aid her learning with technology use:

*Amy: My technology know-how? It's ok. I just need to practice things, which is what learning is about. It's not a think-about-it thing, it's a get on and do it thing with technology.*

Bella mentioned frustration, though linked it to her previous experience and lack of confidence with technical equipment.

*Bella: I don't know, but even at school I was nervous to do things in labs and with technology, even though I help my students [with technology] all the time. Maybe it's about confidence and then I run into frustration.*

Prior experience was an important factor. For example, Bella recognised a student's behaviour and frustration with technology as matching her own former behaviour when technology did not work as she expected. She explained how powerless she would feel:

*Bella: I'd feel powerless, because you can't fix it and you're dependent on someone else fixing it. So I can see where the student is coming from. So intense powerlessness; this isn't working, why isn't it working and you find ANYBODY who you might possibly be able to blame or scapegoat. However, I would like to say I am improving, because before this course started I had a problem with my computer. I was much calmer but it was a real nuisance. In the end it took all day, but it was sorted out, but the whole thing was, 'well that's the computer, it's not working, chill out, do something else until we get the expert to fix it'. I was much calmer.*

It was noted that teachers who had difficulty with computer basics, like file management, found it harder to learn to use new technology. They had a steeper learning curve, and this was linked to a general lack of computing experience. For example, a teacher reported 'losing some files' and spent an afternoon looking for them on her computer. Ignorance of how to "bookmark" Internet sites and organise "favourites" was another example, which resulted in frustration and wasted time for the teacher. Experience, even if not at the level of expertise, at least reduced anxiety and the approach of teachers towards flexible learning.

*Gill: But you and I are electronic people...we use and play with our computers. I think that's probably a strength when you look at flexible learning.*

Experience was built by practice and was often hard won, involving mistakes and disappointments along the way.

*Bella: Although I got some of my course outline on last semester with help, this semester I thought as a beginner I could do it but wasn't exactly sure and made a mistake.*

Bella described a progressive approach to learning, with one skill building on a previously learnt skill. Success was very encouraging, as Nina reported.

*Nina: Oh I'll definitely feel more comfortable with the on-line component next time. It was fun, going on and seeing who had added comments and things.*

### **7.3.5 Support for a new teaching strategy: On-line discussion**

While the previous section has focused on the learning curve related to using new technology flexible learning that utilises technology can involve new teaching strategies. On-line discussions are an example of a teaching strategy that some teachers did not have previous experience with and where specific teaching support was required.

A staff development session for all School of Nursing teachers in 2001 on on-line discussions that covered both the educational rationale as well as practical hands-on experience was at the time well received. The session was considered useful, with Amy later stating, *"I've done the training course, so I know the principles of discussion groups and threads and that sort of thing"*. However, when teachers came to contemplate on-line discussions and actually introducing them into their courses feedback was that the previous session had been too long ago and did not relate directly enough to their situation. Mae explained that despite her experience using the LMS she did not feel prepared to run an on-line discussion.

*Mae: I've been using [the LMS] for a while now, like over 2 years. I've already set the course up, the course outline is up and I put an announcement on so students know their folders are coming out this week. My only concern is the discussion. I haven't run an on-line discussion before using [this LMS]. I know others did last year, but they had some hassles, which I would hope to avoid.*

Preparing for on-line discussion included considering how the discussion would fit educationally. Some teachers did not recognise the effort that went into preparing a stimulating discussion. One teacher said, *"I thought we would pose some questions, then add*

*to that, then just follow the debate through and the students would just run with that. But that hasn't happened".* Time was required to prepare for the on-line discussion, as well as time related to setting up the on-line discussion for students to contribute to.

*Bella: With help it was about ½ hour to develop a good question for the on-line discussion forum. So we did the first one in probably ½ hour; and I would have spent another 30 - 40 minutes getting the second one on.*

Bella did recognise that the development time was not wasted as a good question could be used again. Some technical skills were needed to manage the on-line discussion. These related to teachers wanting to view or print a discussion, perhaps for marking, in either student or date order. Also if a discussion was available for certain time periods then dates needed to be set, and in some discussions the number of contributions allowed were pre-determined. The options selected depended on the educational aims for the on-line discussion within the course.

Some of the first questions used for on-line discussion did not work well. An example was an on-line question posed to a class where students were asked to find an example of a high or low specific blood test reading from their clinical practice and then explain why the abnormal reading had occurred. Bella reported,

*Bella: Well that was good. I think we got 3 replies, out of a possible 27, so not many. It would have been good to have more. But everyone saw the answers, so while only 3 wrote responded others may have seen it too and processed the information.*

However, though Bella recognised the educational benefits of students 'lurking' or reading other's responses while not contributing (Nonnecke & Preece, 2001), she still wanted greater interaction. Nina thought that teachers should work harder to engage students, saying, "*We are really going to have to work harder and encourage people to actively engage in the debate. I don't think it's going to happen without that*". Consideration was also given to whether marks being associated with the on-line discussion would encourage participation.

*Amy: Students started off contributing to discussion groups and then they fizzled out by week 6. So they haven't been answering those questions that were posed that they were supposed to contribute to within their group. There's no mark assigned to it, and that's maybe why.*

Even in a course where marks were assigned to the on-line discussion getting student participation was an issue. At one stage Bella responded to each and every student posting. She found this was very time consuming, increasing her workload considerably, and also brought the focus back to her, that is teacher centred. She decided to try other tactics, such as replying fully to the students' first posting, then to only occasionally comment. Ideas on how to better manage an on-line discussion, rather than a trial and error approach which increased her workload, may have supported Bella as she considered her role in the on-line discussion.

Nina perceived her role in an on-line discussion was *"to support students to participate and to value whatever the contributions have been so far"*. Other teachers contemplated their role in the on-line discussions as a factor that might help or hinder student participation. Some thought they should *'facilitate more participation'*, others wanted more actively to *'provoke them into discussion'*. Mae wondered if her *"comments back were a bit too 'know-it-all' which cut down interaction rather than encouraged more"*. There was evidence that the way the teacher interacted with students in the on-line discussion related to their confidence.

*Mae: Well when I look at it I think I needed to be more visible in the discussion. I was there but hardly 'spoke'. The discussion was running very well. Just when I was thinking it was getting boring another thread developed. I did a summary after the first discussion (the first month), but that was all. Actually I felt a bit unsure what to contribute and that's really about my own confidence and experience in on-line discussion.*

The example of an on-line discussion as a novel teaching strategy highlights where further teaching support was needed. Providing initial staff development around the technology and use of an on-line discussion was not sufficient for teachers to develop the confidence to manage both the technical and educational aspects of their course on-line discussions.

### **7.3.6 Teacher support**

A variety of strategies developed to support the teachers, some from the organisation and Faculty, and others from within the School of Nursing. There was a need for instructional design, administrative and technical support. One of the longer standing constraints was not the lack of support, but rather for teachers to know the systems and where to access resources and support (Gunn, McCormick et al., 2002).

The LMS is run centrally and is available throughout the organisation. Many teachers realised the LMS was not reliable, fast nor user-friendly. However, the phone help-line was excellent and provided timely, accessible and friendly assistance. On-line help, as previously mentioned was available, but teachers found this less useful. Training for teachers on the practical and educational aspects of the LMS were initially provided by the “LMS help” team, but later moved to the centrally based professional development centre. Later still staff development in using the LMS was provided on-site, rather than centrally, which made attendance more convenient for teachers. Teachers preferred short, specific courses so they could learn what they wanted to know and have the opportunity to practice the skills before attending the next session. While support for the LMS has increased teachers indicated it would be preferable if the system was easier to use and less assistance was needed. Others like Liz, expected more, *“I would have expected a little bit more from a leading educational provider, which we are. I’ve felt frustrated for us working here, so what is it like for students?”* The “LMS help” team has also supported teachers by running student hands-on LMS orientation sessions. Amy describes requesting a LMS orientation session and why she needed help.

*Amy: Well I said I was not in a position to answer questions about bugs, and glitches and it needs a computer lab. It’s not what I’m comfortable with; it’s outside my comfort zone.*

A further organisational initiative was the establishment of a central Flexible Learning Centre to provide direction and leadership within the organisation. This unit took on a small number of projects, one of which was included in the present study. The Flexible Learning Centre guided the teacher through re-development of her course so that it could be offered on-line. Resources provided were an instructional designer, graphic artist, web developer, as well as access to crew for creating short supporting videos. A concern raised by other teachers was the lack of information about organisation-wide resources, such as the Flexible Learning Centre, including exactly what support was available, how to access it and who to contact.

Faculty resources seemed more accessible than those available centrally in the organisation. Faculty information technology support staff became more available with the increasing reliance of technology within the faculty, although finding the right person at the right time remained an issue. At one stage a faculty academic staff member was appointed with the responsibility for supporting flexible learning and she worked with some nursing teachers. Over time individuals within the Faculty Flexible Learning Unit became known and identified as reliable and helpful.

*Amy: [Named person from Faculty flexible learning unit] is fantastic in terms of adjusting my on-line material stuff. It's not pretty or beautiful. We didn't have time for the aesthetics of it. But having it on time is more important and its clear and logical and students know exactly what they have to do.*

Amy considered that the Faculty Flexible Learning Unit seemed to be changing and “becoming more functional over time. And more and more people are avoiding the gate-keeping behaviours that prevent us having control of our learning materials”. Teachers maintaining control of their course while receiving support was important. In Gill’s view technical support was wanted at the time she needed it, but not when it meant relinquishing control over her course. She was prepared to put in time to learn how to use the LMS and explained,

*Gill: For me, it's much better to do it that way. I think it's better for a content expert to design the course. The more that you know the LMS the less hard it is to do. I ran the course last semester and it was brilliant. I had control, I ran it, students were happy with the design. There were no problems.*

Technical expertise was important but a more significant issue was that teachers wanted to be able to access the support they needed, “*To actually feel that someone is there*”. The type of support required included instructional design advice, graphic and web development.

The Faculty library proved to be a vital support for teachers, especially the nursing subject librarian. The library developed a range of services to develop information literacy skills in undergraduate and postgraduate students, including face-to-face, on-line and workbook supported tutorials. The subject librarian supported nursing students and teachers to ensure course specific electronic resources were easily accessible.

At the School level there was already strong administrative support for teachers. A teacher with an interest in flexible learning, who was given the responsibility of facilitating and coordinating efforts within the School, provided technical and educational support. This teacher, who became the champion of flexible learning, began using flexible learning in her teaching and developed some skill with the LMS. She became a School-based resource person and because of her close proximity to colleagues was available for timely assistance. Sometimes just having a supportive person around enabled teachers, “*Just having her sitting beside me, I could do it*”, which may have had more to do with allaying anxiety than practical measures. Teachers appreciated her availability and assistance, both with technical aspects,

but also in providing personal support. However, an anomaly noted was that resources were not readily available to support the organisation's strategy of increasing flexible learning.

*Roger: It's all really strange as the University has a strategy of wanting to become more flexible but the facilities and resources aren't there to support what you want to do.*

A result of the perception of insufficient support being available is encapsulated by a staff member who said, "I've had encouragement rather than support" (Gunn, McCormick et al., 2002, p. 235).

## **7.4 Workload**

Increased workload for teachers has been an under recognised impact of increasing flexible learning that utilises technology (Valcke, 2004). Workload and lack of time had been identified as significant issues in the organisation previously (Gunn, McCormick et al., 2002). The present study found a number of workload related issues, from trying to produce research outputs along with delivering quality teaching and in relation to time constraints for the development of flexible learning and running courses on-line. Although the concerns are explored below some strategies for managing workload and benefits, such as flexibility of place of work, are also identified.

### **7.4.1 Time for research**

There is continual tension for nurse teachers working in a university-based school of nursing balancing the demands of teaching, practice and research. A recent change in the government's mechanism of funding to higher education providers, from one that rewards enrolments to one based on research, further focused the organisation on research. However, Amy viewed the change of funding positively, as a means of maintaining quality, yet at the same time recognised that teaching took priority over research.

*Amy: Research based funding is only a driver to get things peer reviewed. It's about quality. I am accepting of it. Perhaps my reservations are around the division between teaching and research. The perception is that there are more research-intensive positions. And for those of us with a teaching focus it is quite difficult to tick away at research because, for me, it's hard to manage research in a ticking-away sort of mode. But as a teacher/researcher it is more difficult to succeed as a researcher. Teaching*

*deadlines and tasks have a way of being more in your face, because it's a student [who is a priority].*

Bella also identified that research took second place to teaching and other commitments.

*Bella: Well I'd like some time to write my paper and for my own research, but that comes at the end. After everything else.*

The courses that were selected as exemplar cases for in depth consideration in this study used different approaches for moving to flexible delivery. Despite the different starting places and approaches used for preparing courses for flexible learning, all teachers experienced increases in workload as courses became more flexible. The finding that flexible learning increased rather than reduced workload is not uncommon (Cravener, 1999; Race, 1996b). Other writers suggest more that the teaching workload is different (Bates & Poole, 2003; Draves, 2002), for example Draves (2002, p. 71) points out that "unlike face-to-face classes, online courses are completely developed before the course starts", indicating that the workload is distributed differently, rather than being less or more.

#### **7.4.2 Course development**

Issues regarding workload for flexible learning course development often came back to a lack of time. Preparing courses for flexible learning almost always took longer than expected, partly because preparing the whole course at once was required.

*Bella: The issues for me were around time and I think there is more organisation involved. Normally I'd prepare a lecture then deliver it, and I could go over it, and even during the lecture I can fix and edit it, but here I have to be much more careful with my words. Does that make sense? I'm using a slightly different way of organising things so there's a different approach.*

An experienced teacher's account of changing an existing course for flexible learning within the School of Nursing was that it took four months of intensive work, and this was despite already having determined the course aims, learning outcomes, assessments and having much of the learning material ready (Lim & Honey, 2003). Overall existing courses took between 12 and 18 months to prepare for flexible learning, partially because the efforts of teachers were constrained by simultaneously running the course on-campus. Bella described the process of

converting her course from on-campus to on-line as taking longer and being more work than she expected:

*Bella: When we started to develop it on line I hadn't imagined the process would take so long or be so intense. It took a lot more effort to detail all the content because on line it has to be prepared ahead of time.*

Developing a new course directly for flexible delivery was also time consuming with teachers identifying that flexible learning added another dimension to the development.

*Nina: So there was quite a bit of time invested in the new course. But every time we thought about the new material we had to think about what sorts of things were appropriate to use on-line. It probably did treble our thoughts around assessment points, workshops, just the nature of the delivery and what would be effective... Yes at least trebled it. There was so much time and discussion around the right sorts of things to include in the paper and then the best way to actually deliver that material.*

The centralised Flexible Learning Centre led the teacher for Course 1 through the process of converting her on-campus course for on-line delivery. One of the methods used during the development was a template, where the teacher was guided through identifying the topic learning objectives, resources and content. After some initial difficulty using the template the tactic was recognised as helpful in encouraging a systematic and consistent approach to developing course material. A similar tactic was found useful for other course development work, especially in an instance where multiple teachers were contributing to one course. Despite the specialist and professional leadership, working with the Flexible Learning Centre was a lengthy time consuming process.

The development of learning materials was found to take a considerable amount of time and effort. Bella identified that while she had many resources for one topic, there was insufficient for other topics. She advised planning ahead to aid the development process.

*Bella: I've got a box of useful readings at home, but that's only for [one topic]. I'm not as well resourced for other topics. What I've already learnt from today, and again it's time, is if I get something else finished I'll remember what I need to find for next time and I'll go and do a search before we meet. So that's what I've learnt already.*

Flexible learning often meant more learning resources for students. For example, when Course 1 was on-campus students had to select either the adult or paediatric option to attend, but on-line students could access both.

*Bella: I think most read through both anyway. So students get more on-line, than before. Doing it on-campus, one of the complaints I've had is that some of the paediatric students would have liked to sit in on some of the adult sessions because they're interested.*

The process of developing on-line learning resources was thorough and more closely scrutinised than on-campus teaching sessions. However, while the quality of learning resources may have been improved there was additional workload involved. In relation to Course 1, draft work was checked by content experts, as well as by educational support staff, to ensure the learning resources were of high quality before they were published on the web for students. This process of checking was considered more rigorous and time consuming than that required for classroom teaching:

*Bella: You're more assured that your content is spot on. No one has ever checked my lectures are up-to-date. Word has got back [previously] that my lectures are ok, and I've had emails from students, but that's about the only checks.*

### **7.4.3 Running the course**

The teacher's workload did not decrease when the course was offered flexibly. The initial time the course ran often took more time; the first few weeks of every semester were busy supporting students as they settled in; and managing the ongoing course work used different strategies.

The initial time a course was offered was uniformly recognised as being more work for the teacher. This included extra time learning how to set up and upload files ready to commence the course and check that everything was as planned. Bella described feelings of frustration about the extra time it took her to set up her course on the LMS. Frustration was also the emotion that Liz described when explaining that simultaneously running a course for the first time and having that course on-line felt like a “double whammy”. Identifying herself as “*technically challenged*”, the demands were particularly high. Both Bella and Liz blamed themselves and doubted their technical competence. This reflects the view in some literature (Cole & Kelsey, 2004; Salmon, 2000) that women are less comfortable with technology than

men. However, this is a contested view (Gunn, French, McLeod, McSporran, & Conole, 2002).

The first few weeks of a semester involved high levels of contact from students wanting assistance. This was common until students became familiar and confident using the LMS. Teachers provided practical help as well as emotional support for anxious students, as Gill described:

*Gill: They'll get help from me and that's why I was so particular about the numbers enrolled. I can only deal with 20 students maximum. I've already had 5 students emailing me – 'help I can't bring the web page up'. But I've talked them through it and they are all able to now.*

However, a consequence of providing this level of support for students meant limiting her class size. Gill also identified her contingency plans for students who had serious or ongoing technical problems. She had files that could be emailed or posted, although she stressed the disadvantages saying, “*They will miss out on the hyperlinks [and the convenience when the hyperlinks work with a click of a mouse in the paper version] that you can learn a lot from and they're extra resources and so I encourage them to keep trying.*” Having a “*Plan B all ready*” for dealing with student catastrophes, such as their computer crashing, seemed to assist Gill manage her workload as she was always prepared for the worst.

The need to monitor and evaluate the course was also identified as a necessary aspect for the initial run of a course. Amy described the workload as constant and intense.

*Amy: It's quite constant. It's hard to know because this is the first time I have coordinated the course and it is very intense.*

Once the course was running the workload could reduce. Nina described the workload as “*manageable*”, while Bella thought being on-line hadn't greatly increased her workload. Bella was mindful of the time it used to take her to organise study days and confirm guest speakers and she enjoyed the difference. She also found the workload lighter compared to the previous eighteen months when simultaneously developing the on-line version and running the course on-campus:

*Bella: But I'm doing less, because for the last 18 months I've been doing the on-line development as well. So I have no on-line development and no study days to organise.*

#### 7.4.4 Managing workload

Strategies that teachers identified to manage the on-line management of a course include booking specific times for dealing with emails and on-line discussions.

*Gill: See what I've done, I've booked myself for Thursday and Fridays...I'm teaching on-line. It's like I'm having another class. It's not reducing your class load, it's actually increasing it.*

Teachers commonly identified that a minimum of an hour per week on-line was needed to manage the course, although another teacher noted that there were busy times when longer was needed. For example, at the beginning of a discussion she preferred to check more often, and the first discussion of a course took “*quite a bit longer*”. There was no one right way to manage workload, rather each teacher needed to develop a system that worked for them. For example, while some teachers, like Gill, preferred set times, other teachers tried to manage emails daily:

*Mae: I just tend to keep up with my emails, and always respond promptly to these students (like within that day, if not within hours). I'm a regular on-line/email user, so haven't gone for the regular time/date thing. I guess it just suits me better.*

The increase in student numbers over the duration of this study impacted on teacher workload. The courses this affected the most were the core courses that students needed to complete first, before moving on to more specialised options. Course numbers more than doubled for some courses and the predictions were for even greater numbers. Some teachers were concerned about managing large numbers of students on-line and whether teaching support would be provided.

*Amy: This is where flexible learning really comes into its own, I think. But the concern that I have about flexible learning is that it doesn't decrease your workload, that's not the idea of it; the idea is that it is flexible delivery for students, while maintaining the quality that's needed in the programme. I'm just concerned about the numbers.*

One teacher indicated that she was not concerned about the increase in numbers, as she expected to have no extra preparation to do with the course on-line, but that marking help would be needed. However, scaling up student numbers might lead to more unanticipated consequences as moving to flexible learning did.

Benefits from increasing flexible learning included the opportunity for teachers to manage their workload differently. There was evidence that the prospect of not feeling tied to the office was positive.

*Bella: I'll have to put the marks on myself won't I. Hey I can do that at home now! I think I'll take all the assignments home with me.*

Other teachers appreciated the convenience of being able to check on their groups from wherever they had Internet access, and home was a common option mentioned. Bella described how she had changed her working days around to suit her personal circumstances, as there was no longer an imperative to be in the office or classroom on set days.

*Bella: I like the flexibility too. I've swapped my working days around, and when I come in I tend to do more of the discussion and emails. It's almost like not real hard work!*

Strategies such as using group feedback and communication to students were found to reduce workload. Individual emails took too long and the LMS provided opportunities to communicate in ways that were thought to be easier to manage.

*Amy: And that my thoughts are that if they ask me a question, a particularly relevant question that everyone else might benefit from the answer, then I would reply to the whole class with my answer to that question, unless in the question they specifically said please reply to me only. So I'd have their agreement in principle with that as an idea.*

Enthusiasm was evident from the teachers, yet tempered by the reality of a significant workload. Bella described this saying,

*Bella: You realise I feel a bit pulled at the moment because I'm really keen on getting this on-line. But I've only got a certain amount of energy. So I want to work smart, and I want a lot of that energy going into the on-line stuff.*

While some advantages for teachers were identified, largely the impetus for teachers to implement flexible learning came from their personal commitment to improving quality education.

*Amy: There are advantages in terms of feeling like you have better resources for the students. I guess it takes the pressure off what students need to pay attention to on each of the study days, as everything is actually there on-line. It also means they don't have*

*to come to study days either, they could just do it purely online. It's truly flexible learning. So for me, well I get to offer a much, much better 'product', for want of a better word, for students. But the workload involved in that is quite high.*

Teacher workload, including also the competing demands of research, administration, service and teaching, has been described as one of the barriers to flexible learning (Bates & Poole, 2003). Allocating time for each aspect of a teacher's work is difficult. Calculating teaching workload based on the traditional lecture contact hours needs to be reassessed when flexible learning is introduced as most teaching does not occur in this manner (Phillips, 2005). McNaught (2001) found that flexible learning adds to already stretched teacher workloads. The development of flexible learning courses was an added burden for teachers in this study. The successes in flexible learning were achieved not because of significant extra time allocation or reduction in other workload, but because of a genuine interest on the part of teachers in the educational needs of the students.

## **7.5 Summary**

Increased flexible learning brought both challenges and opportunities for teachers while shifting the focus to the place of the student in learning and how to provide better ways to meet their learning needs. As experienced teachers in classroom settings the teachers were new to flexible learning but demonstrated an ability to transfer many good teaching practices as well as rising to the challenges of developing and mastering new skills for the flexible learning environment. The teachers perceived their role to have changed from the 'sage on the stage' towards the 'guide on the side' (Draves, 2002; J. Haigh, 2004). Yet this change had to take place on top of managing a full workload, as no relief was available to design and develop flexible courses and to master new skills. Teachers' workload was further constrained by dual expectations of teaching and research. Teachers showed a sense of ownership of and desire for control over their courses. Consideration of course design and preparing learning materials gave control in the educational side, but knowing that resources would be available to students in a reliable and timely manner required control over technical aspects.

The teachers' increased competence in flexible learning has been dramatic. Mastery of technology brought into focus teaching skills and underlying philosophy of teaching. The awareness of alternative approaches to teaching has heightened and teaching has become more student-focused. The students' experiences in flexible learning are the described in the following chapter.

## 8 Students' Experiences in Flexible Learning

Building on the previous chapters that have described the organisational context for the study and the teacher perspective this chapter returns the focus to the student. While Chapter 5 described the student population of nurses seeking postgraduate education, the impact of flexible learning for postgraduate nurses is now explored. Specifically this chapter addresses the study propositions: Flexible learning within the School of Nursing will support student centred learning and allow students more choice; Some flexible learning practices are more effective than others for postgraduate nursing courses; Postgraduate nurses need assistance and support to use technology for learning; and Support from the organisation is required for effective flexible learning.

The students' experiences of flexible learning are described illustrated by excerpts from interviews. Data for this chapter are from student interviews and assessed work; course documentation and reports; and from teacher interviews, which all support understanding gained from the student's perspective.

Three main sections provide the structure for this chapter:

**8.1 Quality of learning** considers students' application of learning to nursing practice, achievement, participation in learning and enjoyment.

**8.2 Learning in a community of practice** demonstrates how flexible learning supports students connecting with each other, which creates a sense of belonging and dispels feelings of isolation.

**8.3 Students' flexible learning challenges** describes the barriers to participating on-line, juggling multiple role and commitments and support, from work and colleagues, and also technical support.

### 8.1 Quality of learning

Prior educational experiences of students were universally with traditional face-to-face teaching. Faced with the prospect of flexible learning modes a prominent concern to emerge regarded quality of learning. Students were concerned about the quality of their learning, *"With all the other commitments I have I wonder how I am going to achieve quality learning!"*

Quality of learning is multifaceted and complex (Biggs, 1999). From the student perspective it includes achieving well for each assessment point and passing the course overall. While passing the course was important, a further dimension was the desire for depth of learning and understanding of concepts and course material reflecting the clinical and applied nature of courses (see Chapter 5).

### **8.1.1 Application of learning to nursing practice**

As noted above a motivating factor for students was the clinical relevance of postgraduate education provided by the School of Nursing. Assessments and course work that require students to draw upon their clinical experience reflected the kind of authentic learning experiences often referred to in the current literature. John Seely Brown and colleagues (J. S. Brown et al., 1989) maintain that learning that occurs independently to authentic situations neglects the way understanding and knowledge is developed through continued real-life use. Opportunities for nurses to utilise and reflect back to their practice underpins effective flexible learning for a number of reasons.

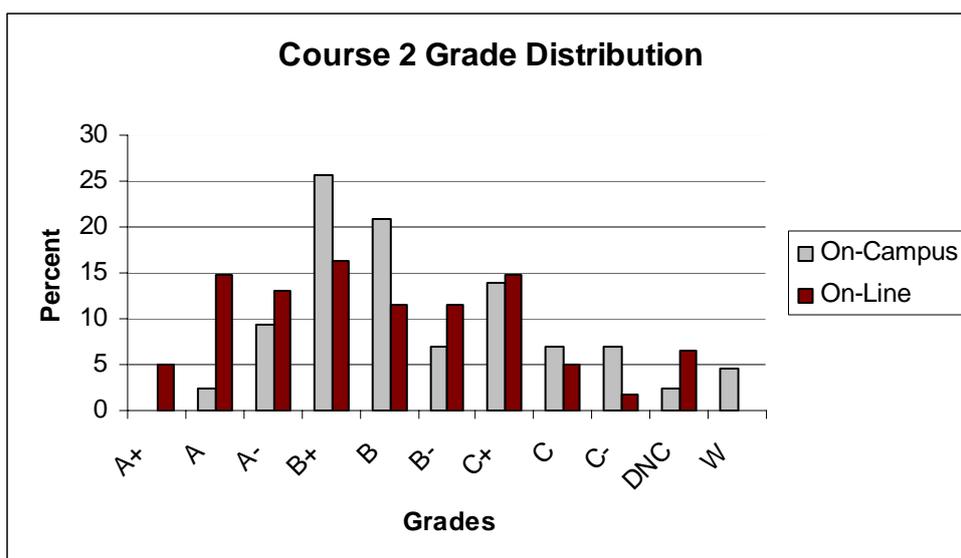
The way learning could be related to clinical practice made the courses relevant to students and their work. *“Yes it links to my practice. That’s the saving grace of the whole course; it actually does relate to my practice! I just love the way it informs my practice. It makes you look at things differently and understand more.”* The students’ ability to apply course assessments to clinical practice ensured that learning was relevant to them and to their own clinical experience. Assessments often provided a topic but could also accommodate students slanting their work to their own area of practice. *“Yes, the assessments allow us the freedom to choose. The case study, for example, is related to our field of practice”* and *“I’ve been slanting the assignments towards what I do. It’s been really good. So although it’s been a bit of a struggle at least it’s been relevant”*. The sample of students’ assessed work consistently demonstrated the utilisation of knowledge in a specific clinical context, and more commonly at an accomplished or exemplary level.

Authentic learning can provide opportunities for students to reflect and link their clinical reality to theory, thus reducing the theory-practice gap (Maeve, 1994). Batchelor and Hanley (2002) purport that nurses may be socialised into the different roles of scholar or clinical nurse, which may compete with each other. Authentic learning can assist in merging these two roles, creating a more thinking, reflective nurse. The ability to apply new knowledge to authentic clinical situations ensures learning *“builds on clinical work”* which was described as

providing *“useful knowledge”*. Nursing experience provides the basis for new learning and students recognised this, *“This course built on previous knowledge and experience that I had in my 25 years of nursing and has extended me and my practice”*. While improving clinical knowledge was motivating for students, also being able to apply learning directly to their practice was significant. A teacher attempted to explain why learning that relates to clinical practice is important in nursing. A stronger, broader knowledge base was considered to enable students *“to feel much more confident and professional and knowledgeable about a whole range of areas of work”* and that with this knowledge *“they could move sideways, upwards, whatever”*. Learning for advanced practice needed to do more than *“merely improve technical skills”*. The teacher clarified, *“The main thing is the ability to critically analyse; that’s the key thing”*. Considering the rationale behind healthcare decisions and questioning the status quo are examples, which a student demonstrated when saying, *“These courses are very relevant for my nursing practice and provide a questioning attitude towards the changes within health”*. Learning that related to practice also aided students to better understand the larger healthcare system, *“It’s fair to say that this course has definitely built on my experience but has also helped me see nursing in a whole new light in terms of the bigger picture”*.

### **8.1.2 Student achievement**

It is suggested that assessment drives learning (Cox & Clark, 1998; Hedberg & Corrent-Agostinho, 2000), and therefore assessments and marks can drive participation. End of semester course reports indicate that overall marks for assessments and pass rates for courses did not decline as courses became more flexible. While a small number of students withdrew (W) from their course (usually no more than two students per course) there were also one or two students per course who did not complete (DNC). If students completed the course they were very likely to pass. Occasionally a fail (mark below 50%, or grade below C-) was found. No significant changes were found in range, mean or distribution of grades in any course over the duration of the study. As an example a comparison of the distribution of grades achieved in Course Two in semester one (delivered face-to-face in four on-campus study days) and four (on-line with two optional on-campus days) of the study are shown in Figure 8-1. The number of students enrolled in Course Two in semester 1 was 43; this had increased to 61 in semester 4. In both semesters no students failed, but in both a small number, three and four students respectively, either withdrew or did not complete the course. The median for both groups was B+.



**Figure 8-1: Course 2 Comparison of Grade Distribution for Semester 1 and 4**

A concern from students was whether quality of learning would be maintained as courses became more flexible in their delivery. A small investigation was conducted comparing the on-campus and on-line delivery of one postgraduate course from the School of Nursing. Similar pass rates were noted in each assessment and for the final grade achieved by students. The same high level of student satisfaction for both modes of delivery was also found (Lim & Honey, 2003).

Students wanted to understand the course content well, rather than merely pass. One factor that detracted from achievement of depth of learning that students sought was the number of concurrent courses being taken. Students explained: *“The two courses do link together quite well, but with working and having kids ... If I was only doing one I could spend more time and really go into it more”* and *“Doing two courses at once is a problem; one [course] suffers and I don’t get as much out of it”*. Students did not use terms like ‘deep approaches to learning’, but rather were concerned about achieving quality in their learning experience. For students passing the course was one factor that indicated quality; another measure was indicated by their satisfaction with a course and the way it was conducted. Previous studies in nursing have found evidence of student satisfaction in flexible courses (Billings, Ward et al., 2001; Block et al., 1999; Sole & Lindquist, 2001; Yucha & Princen, 2000). However, while the present study found students enjoyed learning, their enjoyment was mitigated by competing commitments, especially related to time. Roblyer and Ekhaml (2000) suggest that students consider the amount of time and interaction as key factors in determining the quality of an on-line course, their achievement and satisfaction.

Students indicated an awareness of when quality learning had been achieved saying: *“I now think outside the square; the study has taught me how to think more critically, to find what I want, to persevere to find what I want and to put it into practice”* and *“There was a lot of self-learning in that course and there was really good quality in the work that came out of it”*. Another student shared, *“I think I am able to ask more questions regarding information that is given out. When it comes to written reports this course has made me more discerning and given me the skills to question and given me some really good tools to use to have a deeper look at the information should I wish to”*.

Teachers remarked on the quality of student learning through assessed work. A teacher, after marking an essay, stated, *“I saw them having a way and new language and ideas to frame what they did, and new ways of thinking about the meaning of their practice. I think they were thinking also about what they knew and how they had to integrate that to make sure their practice was better. A lot of the writing was very reflective and very insightful”*. On-line learning, such as a discussion forum, provided opportunities for teachers to see learning in progress as students’ grappled with ideas, which a teacher explained: *“I could see them making sense of what they knew and linking ideas to that. There were some great insights and on all sorts of angles. That’s where the on-line discussion is so rich”*.

### **8.1.3 Participation in learning**

Participation in learning was achieved in on-campus classes and in flexible mixed mode and fully on-line courses. Participation was shown by students’ active involvement in planned learning activities; by completing assessments and engaging in learning activities. Within the School of Nursing the most common organised learning activities in postgraduate nursing courses are discussions, either classroom discussion during on-campus study days or on-line discussions. Classroom sessions involved students receiving information and also sharing ideas. Many students indicated they enjoyed learning together in a group, with comments like, *“The class has been very much into group discussions and activities, which has been great. I get a lot from these sorts of discussions”* and *“During the study day I was able to interact, encourage, challenge, provoke (and once, upset) classmates during discussion activities”*. Discussion can give nurses, with diverse areas of expertise, the occasion to share their perspectives and experience and are an example of providing opportunities for co-operative learning.

Co-operative learning using computer-mediated communication, such as on-line discussions, can be a component of flexible learning. The lack of physical proximity between students, and students and teacher can be overcome and students are more likely to be treated equally, with the absence of stereotypes or low expectations. Jolliffe, Ritter and Stevens (2001, p. 42) state: "Computer-mediated communication is an important component of web-based learning, as it allows for both communication and collaborative learning, which in turn can lead to deeper processing of information and create a sense of learning community." There was evidence of co-operative learning in this study; through the communications between students, and between students and teacher.

However, a common message was that while students would like more opportunities to share within a small group they would also like the teacher to organise the groups. Reasons for needing teacher direction included, "*Maybe if we were sorted into groups to start with, on the first study day - make us meet each other and start the groups off. People at the start aren't all that friendly and if you're on your own, it's pretty hard to form a group*". Another factor was time, as one student explained; "*I've got everyone's email address and I could have but I'm too busy really. It would probably be useful, but there's enough to think about right now. I'd love it, at least a first one, if it were organised for me. I haven't got the energy. It's a low priority for me*". Ways this could be managed were suggested by students, "*In my last paper we passed around a piece of paper and everyone who wanted to added their details and we formed groups for revision and that was helpful*". Those students who knew others taking the same course felt it was an advantage, "*I participate with colleagues that I work with. It's helpful having others to talk to, share resources with, discuss and so on*". Some would try and arrange this in advance, "*Another nurse was going to do this course with me and be my 'study buddy' but she had a tragedy in her family*".

Teachers recognise that student interaction is important but as class sizes increased the issue then became how to plan for maintaining the interaction and active participation of all. With larger classes, of more than 20 students, teachers used strategies such as breaking the class into smaller groups. This happened with both on-campus face-to-face discussions and on-line. One teacher described how she had extra facilitators assist her so the class could be broken into smaller groups. In a class of 60, the students were divided into groups of six and each facilitator managed two groups. The smaller groups worked well by creating "*a sense of manageability about having them in smaller groups. And they got to kind of get to know each other too. At the end of semester one group, didn't want to stop. They liked the whole kind of*

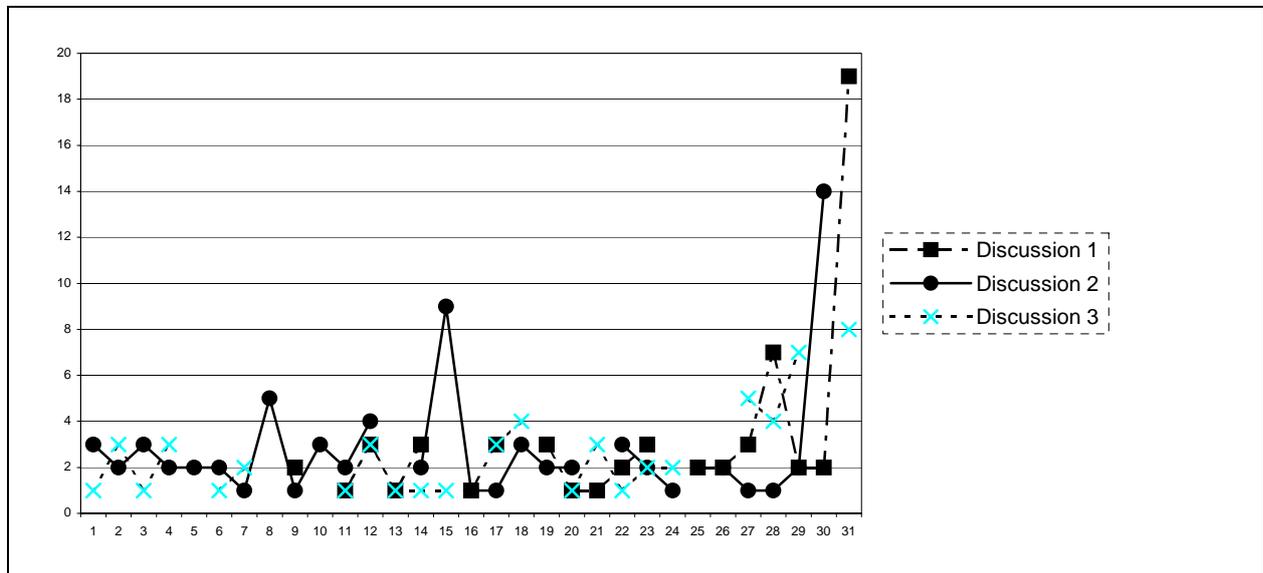
*discussion thing*". The teacher recognised the difficulties of "trying to communicate with too many students". This occurred both in class and on-line.

Although not all students were active in discussions teachers identified that quieter students were still learning, "Other students are listening and learning too". This also became apparent on-line. Teachers' monitored on-line participation, as one explains, "I know they haven't all contributed. I'm sort of trying to keep a record of each of them and to what extent they have contributed". Students were also aware that "not everybody interacted through the Internet". Salmon (2000) identified from exit interviews with students that perhaps three quarters of the class may actively participate, while half of the class recognised the value of passive participation.

However, some students got into the habit of regularly accessing the on-line discussion, with students stating, "I went on-line most weeks & either answered the course questions provided for us or looked at what other members of our group were asking or stating" and "I went on to [the LMS] at least twice a week, sometimes more. I found I enjoyed reading others contributions, but didn't have much to contribute myself". Reasons for students participating related to what benefit they perceived from the on-line component, which is supported by literature which emphasises the importance of teachers explaining the purpose and relevance of online learning for the course (Salmon, 2000). One student found the on-line discussion "was a good way of stimulating my own thinking"; another commented, "Thanks everyone for the fabulous discussions. This is my third and by far the best on-line discussion group I have participated in. It's been far more productive from my point of view".

One teacher considered having an assessed discussion an essential strategy for ensuring participation, "I think making it compulsory was good – as marks (grades) show that the teacher values it. It makes it a significant part of the learning equation". In this instance three assessed on-line discussions were used within a course. Marks for the three on-line discussions equated to fifteen percent of the overall grade. Each discussion was worth five marks and most students achieved well on the on-line discussion assessment with a range in one semester from 8.5 to 15 marks, and an average of 13.23, for the three discussions. Students were asked to contribute a minimum of twice to each on-line discussion so the expected contribution was 40 postings over the month. In one semester the course ran, the first discussion started slowly on the 9th day of the month, and peaked at 19 contributions on the last day. A total of 61 contributions were made for the first assessed discussion. The second discussion had the most contributions overall (76) and had a fairly even spread over the

month, yet still peaked on the final day for submissions. The third assessed discussion had less contributions overall (58) and while these were sporadic over the month, peaked over the last three days. This pattern of postings over the month is shown graphically in Figure 8-2. Students were more likely to contribute with an approaching deadline of the discussion closing.



**Figure 8-2: Rate of contribution by date**

The postings from students were monitored and the teacher sent students who had not contributed by the last week of the month a personal reminder email. Nine students were sent personal reminder emails for the first discussion, declining dramatically to three for the second discussion and two for the final discussion. Over the three discussions only one student did not contribute to one of the discussions. The teacher encouraged student participation in the discussion, although the strategies used were different in an on-line discussion, compared to a face-to-face on-campus based class discussion. Salmon (2000) stresses the importance of the teacher encouraging student participation ensuring a supportive and safe environment. The teacher in the present study described the contribution rate and actions to encourage participation that were used:

*There were a couple of students who I needed to chase, people for whom life got too busy, but generally it went well. I sent personal emails and reminded them that there was a week to go. I tried to be non-confrontational and I think I called it a 'nudge'. I mean they could choose not to bother and get 0 for that discussion. One, or maybe two people, I had a separate chat with (email) and suggested they get on early in the discussion ...as that might seem easier than to add when it's already rolling along.*

There was evidence of students lurking (Nonnecke & Preece, 2001), where they read others contributions, yet may not have responded. This was shown when individual postings had been accessed between 5 and over 60 times and a number of students indicated they had read messages without making contributions. However, participation in learning could still occur, for example, *“I did access the discussion quite frequently without actually contributing so I could read other students’ contributions”*. Another student identified herself as a listener rather than a contributor during discussions, whether face-to-face or on-line, saying: *“I’m more of a listener when it comes to discussions – in this case I was a reader.”* The on-line nature of the discussions did not change her basic behaviour, but her preference for passive participation in the on-line environment required a change from listening to reading.

#### **8.1.4 Enjoyment**

Mature, working, independent learners have been found in other studies to be more satisfied with on-line courses (Morris, Zuluaga, & Atkinson, 2004). This was confirmed in this study where postgraduate nurse students enjoyed learning, including on-line learning, despite obstacles. Evidence for students enjoying learning was found in course evaluations and also in interviews with students and teachers. For example one student commented about an on-campus study day, *“What a brain workout!!! I thoroughly enjoyed this awe-inspiring, mind-boggling, thought provoking session. The ‘light’ shone bright for me today! Learning CAN be so exciting sometimes!”* and another commented, *“I feel like I’ve learnt a huge amount and I also really enjoyed doing it”*.

Enjoyment was also found as courses became more flexible. Related to the on-line discussion student comments included: *“I have enjoyed reading the discussion and presentation of ideas and views outside my area of work”*, *“This is my first on-line discussion group and I have enjoyed it so much”* and *“Enjoyed going on-line each day to read the discussions! Again, a luxury that I haven’t managed to do as frequently as I would have liked”*. While there was evidence of enjoying learning often a proviso was added: *“Have enjoyed the course, however it was new knowledge and I found much of it difficult, but enjoyable”*. This supports the theory of Vygotsky (1978) who suggested that learning takes place at the edge of the students’ comfort zone.

Negative comments, where students were dissatisfied, often related to a lack of time. One student describes her situation where she had taken annual leave days to complete an assignment, *“I started the week with a fair amount of antagonism. The first morning I felt*

*really annoyed that I was spending my own annual leave studying. By lunchtime I realised that I was actually enjoying myself. I found writing the assignment quite enjoyable and challenging. I guess it was reassuring to realise that I actually do enjoy doing this study when given the space and time to think, away from a stressful workload”.*

Enjoyment of learning can be aided by good flexible learning design. One teacher explained how she planned a course using the on-campus study day to support on-line learning, almost teasing students as well as preparing them for the required essay, *“I’ve changed the study days. They come in during the first week. That day we skimmed over weeks 1 to 3, then do an overview of 4 and 5 and what they need for assignment one. So by the end of study day one they were jumping...itching to get started on their assignment”.*

Teachers could sense when students enjoyed the course, *“The student feedback was positive, they enjoyed the course”*, and this was substantiated by the course evaluations. One teacher explained, *“They enjoyed it because it wasn’t a whole bunch of nursing theories that they saw as having no relevance, no connectedness with their work”*, highlighting the importance for students to be able to apply learning to clinical practice.

As well as enjoying learning, students enjoyed and appreciated the input from each other. Sometimes this input was on-campus: *“It was really great to meet up with some old friends and to see other class members and get down to work”*. Flexible learning supported on-line input, which was also valued: *“I have been really amazed by all the discussion on-line concerning the topic. There have been many really interesting and thought provoking discussions. We are a talented group”* and *“I have been really keen to see what has been posted each day and it has been very informative and a learning experience for me. We all see the topic in a similar way but nevertheless differently”*. Maintaining the interaction with other students and also with the teacher was an important facet of flexible learning.

## **8.2 Learning in a community of practice**

Student interaction with each other was beneficial for learning in that it connected students with each other, reduced feelings of isolation and created a sense of belonging. A sense of belonging is suggested to be a feature of a learning community (Wenger, 2000). Learning communities, whether face-to face or on-line, are formed around issues of identity and shared values (Rena M. Palloff & Pratt, 2003). Furthermore learning communities may be an effective way to support minority students as both social and academic connectedness can

occur (Tinto, 2000). However, students needed to know each other for that shared identify to develop and for interaction to be effective.

Some courses had on-campus study days at the beginning of semester; a student commented: *“Monday and Tuesday were spent at the workshop with the class. There was quite a big group and great diversity. It is always refreshing to meet a new group of nurses (and some familiar ones!) who are on the same journey as you”*. Postgraduate nurses have a shared professional identity and those who were also studying developed additional common bonds. Having these things in common formed a good basis for a sense of belonging. One student describes the connectedness between nurses: *“The fact there has been so many interesting comments on the same subject looking at the topic from so many different perspectives, and yet we are all nurses, I found really helpful”*.

Interaction occurred during on-campus study days and also on-line. Students’ different styles of learning affect their preferences for interaction with other students. Some clearly preferred face-to-face contact, but not computer mediated communication, *“I really enjoy face-to-face conversations with people but not Internet conversations”*. However, communication between students, and between students and teacher that is computer mediated provides greater flexibility. This is because students in different locations can interact with each other, and if the communication is asynchronous (not real time), then also at different times. This kind of communication *“is an important component of web-based learning, as it allows for both communication and collaborative learning, which in turn can lead to deeper processing of information and create a sense of learning community”* (Jolliffe et al., 2001, p. 42). While other students enjoyed communicating with each other on-line they also wanted to meet face-to-face at an early stage as the following comments demonstrate: *“It was helpful to have at least met everyone during that on-campus workshop”*; and *“Distance learning is good though find the discussion rooms frightening. I wish they'd held at least one meeting so you knew who you were communicating with and could put a face to the name”*.

While students indicated they would like an opportunity to meet each other face-to-face as an introduction, they also wanted the opportunity to conclude the on-line relationships they had developed, *“I would have liked the opportunity to meet up with the group at the end of the course. The on-campus workshop was great and provided an excellent beginning to the course. Some sort of conclusion would have rounded things off nicely”*. This comment reveals a connection and belonging between students. This was further shown by comments

from a student who stated: *“I shall miss the on-line discussions and logging onto [the LMS] most evenings to read all the contributions. There have been some amazing discussions”*.

While conducting the present study evidence for a learning community of postgraduate nurses being formed through the use of on-line discussion was explored by conducting in-depth analysis of a course over one semester (Honey et al., 2004). Examination of course documentation, on-line assessed and non-assessed discussions, teacher and student interviews and students assessed journals found that all six characteristics of a learning community identified by Bielaczyc & Collins (1999) were found within the course. The six characteristics of a learning community (Bielaczyc & Collins, 1999) are:

1. Value members with diverse expertise
2. Members benefit from multiple perspectives
3. Support for individual development
4. Advancing collective knowledge
5. Opportunities for sharing and
6. Collective effort is applied to problem solving situations.

These characteristics are briefly considered below, with illustrative examples of how one operated in this case.

### **8.2.1 Value members with diverse expertise**

The first characteristic, of value being attributed to the contributions of members with diverse areas of expertise, is particularly pertinent in the context of nursing education because of the nature of the profession and health care. Valuing members was demonstrated in the content of the assessed discussions through the manner by which students responded to each other. The course included two non-assessed on-line discussions where introductory and more social interactions took place. These non-assessed discussions included comments demonstrating that members valued each other. The ground was set for this by the on-campus and on-line introductions where the diversity of students' personal and professional journeys and clinical expertise were highlighted. Students knew and respected each other as indicated in a student's comment: *“On line ...the big long coffee... the (on-line) contact has been fun and a great way of expanding views on particular points re nursing”*. Feedback from the teacher agreed that

students liked the on-line discussion and “*appreciated the comments of their peers*”. Comments from students such as, “*We are a talented group*” further show that students valued each other. The use of the ‘we’ illustrates a sense of belonging and of collective identity.

### **8.2.2 Members benefit from multiple perspectives**

The multiple perspectives that postgraduate nurses were exposed to during the course reflected the complexity of the health care system. There was clear evidence that students benefited from the exposure to multiple perspectives from others in the group, shown by comments such as, “*it’s so easy to get locked into a particular corner in health care and not really appreciate what’s going on elsewhere...thanx to all for sharing thoughts / info / knowledge and of course the passion of nursing ...all the scholarly best !!!*”. Reading others’ views created interest and maintained involvement in the on-line discussion. As the course progressed evidence emerged of shared values and camaraderie amongst students. Respect for the perspectives of others and what that contributed to the learning community had an empowering and unifying effect on the nurses as one student articulated: “*Having such a talented and diverse bunch of participants has enriched so much for me - my thinking, my view points, attitudes, my understanding of Hospital, Community and Maori specific initiatives in nursing, and my belief that nursing is definitely on track for one day 'ruling the world' of health (something I believe in most emphatically)*”.

### **8.2.3 Support for individual development**

The encouragement and support provided by the group assisted each student to meet the learning outcomes and assessment points of the course. Support for individual development was shown most strongly through the social on-line discussion. Initially problems with on-line work occurred due to different Internet Service Providers, typing speeds and unfamiliarity with on-line discussion. Students helped each other using the on-line discussion for advice, encouragement and support and acknowledged the support they received from each other. The teacher also commented on the sharing of information, resources and ideas, both within and beyond the course and the lack of competitiveness in the cohort. For example interesting readings students came across were shared and suggestions about approaches to clinical issues were provided.

#### **8.2.4 Advancing collective knowledge**

The objective of advancing the collective knowledge base was enhanced by the three assessed on-line discussions. The discussions were found by students to be useful, informative and contributed to learning. Students described the on-line discussions as a “*very informative way of communicating and learning*”. The topics for the discussion were a significant factor in advancing collective knowledge and students commented on the relevance of discussion topics to learning: “*Good topics focussed on the course*”. This relates to the need for learning to be authentic, not only for practice, but also for the learning situation (Oliver & Herrington, 2003).

#### **8.2.5 Opportunities for sharing**

A characteristic of a learning community is that it needs to provide opportunities for sharing what is learned (Bielaczyc & Collins, 1999) and the assessed on-line discussions was the main medium for this. Students confirmed that the on-line discussion was “*a great opportunity to learn from others*”. Having five discussion forums provided multiple opportunities for sharing. Learning related to the course was shared through the assessed on-line discussions. Students’ experience and skill with on-line discussion was shared using the informal “Coffee Group” discussion. Another aspect of sharing occurred with the introductions, as student’s career paths, knowledge journeys and aspirations were revealed.

Sharing what is learned is congruent with constructivist concepts, specifically social constructivism. While constructivism asserts that students learn through a continual process of constructing, interpreting, and modifying their representations of reality based on experiences with reality (Jonassen, 1994), social constructivism focuses on learning as a social activity (Haynes, 2002). Collaboration occurs when there are opportunities for sharing what is learned and research indicates that on-line discussions are a useful medium for this (Buckley, Beyna, & Dudley-Brown, 2005; Honey et al., 2004). The learning in communities approach is appropriate for nurses as it extends beyond the classroom to all aspects of professional and social practice (Lave & Wenger, 1991; Wenger, 1998, 2000). Nurses working in different practice settings interact with each other and other health professionals in their professional lives and collaboration reflects the interaction expected in health care.

#### **8.2.6 Collective effort is applied to problem solving situations**

The course design did not include assessed group problem solving such as group projects. However, there was evidence of collective effort in problem solving some of the initial

technical problems with accessing and posting to the on-line discussions. The three assessed discussion topics were designed to build on themes within the course and contributed to knowledge development that would facilitate completion of the essay assessment. The assessment mix encouraged collective effort while assisting development of ideas. The teacher remarked on evidence of students' collective learning through participation in the on-line discussion, *"And there was depth there. Not from everyone. Maybe I shouldn't have expected it from everyone. But there was definitely deep and reflective learning. You could sense them struggling with clinical issues, considering theory and how it related to their practice and posing solutions and new questions"*. The assessed discussions encouraged collective effort by requiring comment on the discussion topic and then critique of the ongoing discussion.

### **8.3 Students' flexible learning challenges**

While there was evidence of students' achieving the quality of learning they sought and that learning within a community of other practitioners supported their learning, a number of barriers and difficulties students encountered were also identified. Three areas as issues for flexible learning: barriers to participating on-line, juggling multiple roles and commitments, and support issues, are described. Support issues include support from work and colleagues and also technical support.

#### **8.3.1 Barriers to participating on-line**

Students identified barriers to participating on-line, related to a number of factors, including a general unfamiliarity with using computers, flexible learning and postgraduate study. For example, despite the on-line discussion being an assessment point in some courses there was evidence that students could encounter barriers to contributing. For some students the barriers may have been an unawareness of how an on-line discussion works, technical issues, while for others it was the necessary discipline to go on-line regularly: *"I need to contribute to the discussion board. The on-line modality of learning is excellent for those who are skilled in self-discipline and is more of a challenge for the likes of me!"*

Anxiety about their lack of ability using a keyboard for typing was a barrier for some students:

*I was really terrified to start with when I found that this course was to have on-line discussions that one had to participate in. I thought my two finger typing would be a disaster! But it is amazing what can be achieved and judging by some of the howls of*

*frustration from others I feel I am getting along really well even if I am a bit slow. It does not seem to matter that I cannot type at 60 words per minute.*

Having shorter contributions can be helpful for those who are not proficient typists, as can focusing on the content rather than the length, or being distracted by errors.

Students were able to support each other through some of the barriers. Sometimes this was simply by sharing their experience, as the quote above demonstrates. Knowing others were having similar problems eased a student's anxiety. A teacher found it "*wonderful seeing them help each other with hints*", in the context of a non-assessed on-line discussion that provided a forum for students to share problems and the solutions they had found.

Some students were less active than others in the on-line discussion. Some were put off contributing by other student's responses to the on-line discussion, as a teacher pointed out: "*But the first person who replied answered it perfectly. Others had seen that and thought it wasn't worth them replying*". In response the teacher edited the on-line question to make it more open-ended and this improved the response rate as more students could present an answer from their own clinical perspectives. Another teacher described a conversation she had with a student: "*One of the students who rang up to find out the reference of an article also commented that she had been on-line and she was really impressed with the first response another student had put on and that daunted her and made her wonder about her contribution. The first student WAS very thoughtful and quite eloquent and so the second student said she didn't want to put anything on because she would feel she didn't have anything of equal quality to say. The teacher described this as "a bit of a concern really"*.

Another barrier to on-line participation was the permanent and visible nature of the discussion, where the written contribution can be read and scrutinised by everyone in the class. A student describes this: "*I had to think carefully before I put my discussion thoughts on-line. On-line makes me feel rather vulnerable as there is not just me and the marker to see my work*". One strategy that students shared was the idea of preparing their contribution in a document first, checking it, and then posting it. This did not change the visibility of their response, but did at least ensure that it was more carefully compiled and did not have obvious errors. The visibility of contributions seemed to encourage thoughtfulness and the quality of responses.

### 8.3.2 Juggling

Juggling relates strongly to lack of time for postgraduate nurses who work, study and have other commitments. Multiple commitments result in students needing to “juggle” and these impact on the approaches to learning used and enjoyment of learning. Students identified “juggling” as an issue: *“I just feel there is so much to juggle in life when you are working, studying and attempting to maintain some order in the family unit”* and *“I wish I had been more organised and been able to complete more of the readings. However, it is an ongoing challenge to juggle a new job, home life and study”*. One student described managing her multiple roles and commitments as; *“I just borrow from one basket and try and keep all the balls in the air as smoothly as possibly”*.

Despite valuing the learning, managing study alongside everything else was a burden: *“The courses I am currently engaged in are absolutely relevant for today’s rapid changes in the health care system and knowledge development and I am not able to put in the necessary time to get the most out of it.”* Even when courses are highly relevant and students motivated, multiple demands and overload can be a barrier to flexible learning.

While “juggling” commitments and the consequent lack of time to devote to study was an influence on students’ learning, it was also a reason why more flexible approaches to learning were beneficial. On-line learning and asynchronous discussions allowed students to study alongside their work using whatever time was available. Students explained the advantages, *“I can certainly do the work when it suits me i.e. juggled between paid work and home life, and parking is a heap easier!”* and *“Generally I have enjoyed the flexible leaning. It has fulfilled my need to be able to timetable study according to other commitments”*. However, family and home commitments were still an issue for some, *“If there was an on-line discussion I’d have trouble doing it at home, with children and things”*.

A number of students identified strategies to cope with fitting study into a busy life, foremost of which was the need to *“exercise good time management skills”*. Experience made the “juggling” easier: *“I’m getting better at managing study and work and home”*. Another student shared, *“It is a challenge at times, working nearly fulltime with a family etc can be fun!! It is really important to be aware of when assignments are due and try not to leave them till the last minute, and start thinking about appropriate topics early on”*. Other students found it easier to reduce commitments, and exercise was a common activity to be discontinued: *“I’m very busy. I’ve dropped going to the gym over the last 6 weeks as my*

*study has hotted up” and “At this stage I have found the two papers in one semester very heavy and sacrifices are made to make it happen. No sport, no other hobbies”. Those who could reduced their hours of work: “I have had to reduce my work by one day per week, which is hard financially. I was getting so stressed. I had to reduce my shifts”.*

Students recognised that lack of time affected their approaches to learning: *“Oh to have more quality time to digest and critically analyse the information instead of just a cursory glance. The reality for me is that currently this is not a reality.”* Another student described “juggling” as affecting the balance in her life as well as her approach to learning:

*I haven't had a balance this year. I've either been working or studying, nothing else. My husband has been doing the housework and the cooking, and I work until 7 each night. I'd have liked to spend more time on my assignments but I don't have the time. You have to balance things out. You have to sacrifice this to get that done. You short-change yourself and your study. It's hard to do it justice. I mean you're here to learn, you want to learn but having such as busy life means that you have to restrict the learning time so you short-change yourself and you don't get the joy from learning.*

Teachers recognised students' life circumstances impinged on their learning and provided what support they could. One teacher provided an example where the student discontinued her studies as she could no longer juggle: *“I had contact with the student and offered heaps of help and encouraged her to stay in. But her life circumstances were just not conducive to being able to continue”.* In such circumstances students withdrew from or did not complete the course.

### **8.3.3 Support issues**

Support has an impact on student learning. Support in the present study was found to have many components, including the valuable support from family and friends and fellow students. Especially noted by students, and related to postgraduate nurses undertaking study, was the support from employers and work colleagues, the University and other students. Overall the comments from students were, *“There is no doubt that there is enough help out there if one is prepared to learn how to access it & use it”.* The manner with which support was given was important, and with few exceptions the majority of students *“found everyone friendly and very helpful and willing to be of assistance”.*

### **Support from work and colleagues**

Funding was a dominant issue in employer support. Funding for postgraduate study is very important to nurses with students stating, *“It is often dependent on what courses are funded rather than having to pay for them personally and what is available rather than having to travel to [the main campus] at all”*, and *“I was so pleased to get a scholarship; that really helps financially. And now I can fit study in around my own time and part time work”*. Funding and on-line options for study assist students to fit study in alongside their work and family life. Some employers encouraged and supported students to undertake postgraduate study, a support picked up by work colleagues: *“In our team they’re encouraging us to do courses, and they ask who’s going to do this, remember there’s funding for it”* and *“I never have to ask for days off for study, it’s great”*. However, not all receive support, and there were examples of students not being supported in their study, either financially or in time allocated: *“I work in [education role] because of the easier hours. My study is relevant I think, but ‘Work’ doesn’t, so they don’t support my study at all. I also work part time (one day a week) at the [health centre] for my clinical practice and this course has been good for my own learning for this”*. Employers’ support of postgraduate study was perceived negatively by some students who expressed feelings of being pressured to study: *“I think that because management are putting a lot of emphasis on postgraduate study if you’re in a situation where you don’t want to do it then there’s a concern that it’s going to be attached to levels and promotion and money, all those kinds of things”*.

Another pressure and motivating factor for experienced nurses to study was that newly registered nurses had attained a degree as part of their initial nursing education. Students explained this, *“I think subconsciously a part of the reason I’m studying is this fear that my qualification’s diminishing. These nurses coming out now with degrees, it’s hard to keep up”* and *“I’ve felt that pressure that maybe I was becoming a bit of a dinosaur”*.

On a practical level, employers and colleagues supported students by giving them time for study or attendance at study days. Some colleagues were less supportive, conveyed by the following reaction: *“I would say there’s a bit of annoyance. Like when they’re a bit short staffed and YOU’RE OFF on a study day”*. Another example was from a nurse who worked in the community who found she could get the time, but the clinical workload remained, *“In our job no-one gets replaced when you’re off. So when you come back it’s all there, you’ve got all that and the next day too”*. Unlike in the present study where most students were supported an Australian study found that nearly half of the nurses anticipated that employers and colleagues

would hinder their study efforts in the workplace (Pelletier, Donoghue, Duffield, Adams, & Brown, 1998).

Nurses who were studying tended to influence their colleagues interest in study. One student described herself as a role model saying, *“It’s interesting that the older nurses that I know are interested in how I go, because if I pass, they think maybe they can too. I’m a role model for a certain group - for those who haven’t studied for a long time. That’s been a bit scary but also quite supportive”*. In the experience of some students, nursing colleagues negated their study efforts with comparisons about other commitments and age, for example: *“People saying to me, ‘Well you don’t have a family’. Like that makes it easier. But I’m choosing to do this now before I have a family”*. Another student shared: *“‘You’re younger and more used to studying so you MUST do well’. But it is still difficult and you do have those same fears. But it’s an added pressure that everyone expects you to get through”*. Students found these negative comments did not acknowledge the commitment they were making to study.

Another issue with colleagues was debate around whether postgraduate education improves practice, or put simply, whether postgraduate education *“makes you a better nurse”*. Students gave their answers: *“I think it makes me be a better nurse by helping me think outside the circle”*; *“I now think outside the square; the study has taught me how to think more critically, to find what I want, to persevere to find what I want and to put it into practice”*; and *“You are a good nurse and the learning affirms what you do”*. However, the debate about the value of postgraduate education was felt to imply a lack of support from colleagues.

### **Technical support**

From students’ perspectives support from the University often related to technical aspects. Technical issues arose during the enrolment process and continued into course work, although the beginning of semester always saw more technical problems as students first encountered the course and technological requirements. Students were mailed information after they had enrolled in a course which included initial course information, where on the Internet to look for dates, times and rooms for any on-campus study days, and how to access the LMS and library services. While School of Nursing staff noted that students *“didn’t ring as much”* after web-based information was introduced, personal assistance was still required by some students. This was provided by the Postgraduate Administrator, who was described by a student as *“a gem in the crown for distance students. Nothing was too much trouble no matter how trivial it seemed. And she took us seriously when we expressed our concerns about access”*. Students did not always know what support they needed initially related to using the

LMS or other technical aspects, *“I’m not very technical. I don’t really know what other support I need”*. The Postgraduate Administrator reassured students and referred them to the appropriate University services.

Some students had family, including children, who could assist: *“My technical support comes in the form of my highly computer literate husband - otherwise I would probably find online learning quite stressful as there have been hiccups in the past”*. Others used the central University services, including on-line support, *“I access all support on-line. When I enrolled at the beginning of the year there were some problems with access which were frustrating, especially when you needed to access articles and were unable to through no fault of your own. These frustrations had been ironed out by the time I started this paper and I had no difficulties”*. For students living outside Auckland on-line help was very important as illustrated by a student living in an isolated area in the north, *“I think the technical support is really good. I’ve lost my password twice and both times I’ve just emailed the ‘help people’ and they’ve got right back to me - no worries at all. I think I can find everything I need on-line”*.

Students could find technical difficulties very frustrating. As one student explained this was because it wasn’t the content, or the mode of delivery, but rather a technical issue causing problems, *“I had a problem earlier in the year. It gets you really frustrated and so cross, and it’s the technology that confounds you, not the subject”*. Early in the semester problems often related to passwords and enrolling fully as students explain, *“I initially had problems getting on [the LMS], but I was using the wrong password. I got help, and they told me what to do and it was fine”* and *“I was late paying my fees and I got dropped off [the LMS], but that’s my fault”*. Some later problems were associated with the LMS, with students reporting, *“It’s easy enough, but sometimes it’s not reliable as it has down times”*. However, as a teacher summarised, students *“are getting heaps of support, but it would be more empowering if the technology worked better for them so they could do it themselves”*.

From the teacher’s perspective supporting students was also about ensuring *“students don’t feel the course is just about the on-campus study days”*. Contact beyond on-campus study days was primarily via email. Students described email as *“the most successful way of getting in touch”* as teachers *“were good at replying”*. Students readily accepted the use of email for communication with the teacher with one student stating, *“I have it at home and you need it”*. The success of email support is demonstrated in the following quote, *“In terms of accessibility to the lecturers and them treating us as adult learners, it’s great. I can email them so easily.”*

*They are accessible. It's reassuring. They email you back straight away, and at the end of an email I got 'if you need further clarification, or my answer doesn't make sense please phone me'. What more could you want!"*

## **8.4 Summary**

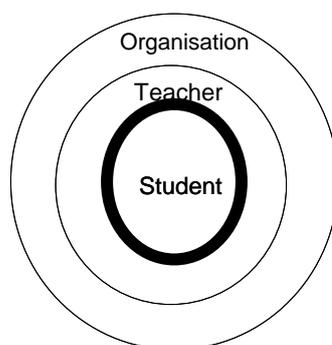
This chapter has focused on the students' perspective and the impact of flexible learning on their learning experience, with interviews from teachers providing supplementary evidence. The students in the present study are mature, mid career women in a professional postgraduate programme who seek and expect quality of learning. However, because of their personal circumstances the students describe the need to juggle multiple commitments. The study reveals that flexible learning both compounds and eases the juggling, by adding a new dimension to study, and giving a freedom over the time and place of study. While these nurses want to achieve good grades for assessments and pass their course, quality of learning concerns more than just passing. Participation in learning as shown by their engagement in learning activities and learning that is relevant to clinical practice are aspects that facilitate students' learning and add to their enjoyment of the learning experience. There was evidence of a learning community developing amongst the students, and this sense of belonging to a community enhanced learning and reduced feelings of isolation. Students also identified a number of issues that inhibited their learning, such as the lack of adequate support from within and outside the School of Nursing and university, and resolving these issues would improve the experience of flexible learning for this student population.

## 9 Flexible Learning in Practice

Findings across and between all key stakeholder groups and the courses that comprise the study are now interpreted as a whole. This builds on the preceding chapters that have reported the perspectives of the three key stakeholder groups: the organisation, teachers and students. Yin (1989, p. 23) defines a case study as “an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used”. Previous research concentrates on discrete elements of flexible learning, whereas the present study, using a case study design, reveals the elements and the whole, showing the interconnectedness between elements within the dynamic context of higher education provision in New Zealand while focusing on meeting the learning needs of a specific population, postgraduate nurses. In keeping with the student-centred model presented in Chapter 1 (Figure 1-1: Student-Centred Structural Model) this chapter follows the sequence of the student, teacher and organisation. The inner circle represents the postgraduate nurse, and in this chapter a study path perspective is used to consider the phases of pre-enrolment, enrolment, conditions for commencing flexible learning, studying flexibly and achieving career goals. The chapter then examines the second circle of the Student-Centred Structural Model that represents the teacher, followed by the outer circle, representing the organisation.

### 9.1 The inner circle: Students as central

The present study reinforces previous research findings that flexible learning can enhance and support student-centred learning (Figure 9-1). However, the importance of all aspects of the student’s learning experience, from first deciding to commence study, through to completion and achievement of goals, need to work together to produce a student-centred approach.



**Figure 9-1: Student-Centred Structural Model: Students as central**

### **9.1.1 Pre-enrolment phase**

The pre-enrolment phase for the postgraduate nurse is the decision making time when study is contemplated. The provision of course information is important to the potential student so those deciding that the timing and personal circumstances for postgraduate study is right for them can proceed to enrolment. Effective flexible learning can be better planned when the organisation and its agents know the incoming student population, their characteristics and circumstances.

The postgraduate students in this study studied part-time while at the same time managing personal commitments and work as nurses. Complexity is part of their lives. The present study has revealed that while the students were experienced nurses in clinical practice, many were novice learners at postgraduate level in a university, and for many the previous student experience was some years in the past. One factor that drives these nurses to pursue higher education is the opportunity for advanced nursing roles that require further qualifications. So while the students may be motivated to learn, they may also be challenged by life circumstances and their inexperience with university education and with flexible learning. There is an inherent paradox for these students who are mostly mature women with control over complex and busy lives with children, families and homes. Then as senior nurses they are highly regarded and in clinical practice may have responsibility for the wellbeing of many patients and some manage staff. Yet in the context of flexible learning and postgraduate education they lack experience and skills, and may feel less control; in a student role they are in a less powerful position compared to teachers and the organisation.

The importance of knowing the student population has been highlighted as a key lesson learnt during the introduction of flexible learning within the School of Nursing (Honey, 2006). Knowing the student body allows planning to accommodate their learning needs and to minimise factors that might hinder their success (Funk, 2005). Key variables thought to influence the students' learning experience include the teacher, peers, course design, technology and the learning environment (Atack & Rankin, 2002). The present study has demonstrated that personal characteristics are also highly significant but may be overlooked when postgraduate students are regarded as a homogenous population; experienced university students who have followed a trajectory as school-leavers, undergraduate students, then onto postgraduate study.

Adult learners have been recognised as being “at-risk” just because they are adults “who have life circumstances that can prevent success” (Funk, 2005, p. 1). An additional consideration is gender, because in the case of women, these adult students may have children or other dependents and commitments on their time (Pym, 1992). Flexible learning has been found to increase students’ satisfaction with learning because of the convenience it offers and options for managing time to suit personal circumstances (Ali et al., 2004). Students enjoy and appreciate the flexibility with on-line components of a course. For example, using computerised tests, such as on-line multi choice quizzes allows students to take tests at a time that suits them (Kathaleen C. Bloom & Trice, 1997) and flexibility can also support self-paced learning (Anna, 1998). The present study found while students could be somewhat flexible in their learning within a course, there was limited improvement in flexibility around completion times of courses or sequencing within a programme of study because of the constraints of university systems and timing of semesters with predetermined start and finish dates. In addition, programmes of study, such as a diploma or degree, are expected to be completed within time frames that favour the full-time student who is able to dedicate their energies to study. However, the students in this study are working professionals, postgraduate nurses who are in the main mature women with multiple other commitments and who as experienced nurses are seeking part-time higher education. Findings of the present study suggest that universities need to identify the different postgraduate student populations that make up the wider student population, and consider increasing flexibility in its regulations that would ensure student needs are met, while still maintaining rigour in quality education and outcomes.

Potential students need to be able to access appropriate course information, enrol in a programme of study and then to follow through to commencement of study. As flexible learning may attract students at a distance from the university it is important to ensure these functions are possible irrespective of location. To take advantage of the opportunities with flexible learning “that can deliver courses to broader audiences, free of the limitations of geography and time” (Pittinsky, 2003, p. 9), there is a need to have the information, enrolment and other student support services easily available. While an organisational web site can provide course information, the availability of web-based information increases competition to attract potential students (Draves, 2002), and with flexible learning options these can include national and international students (Parry, Holt, & Gillies, 2001). However, while the University in the present study could attract more students, McNaught (2001, p. 437) warns against allowing higher education providers becoming “online qualification ‘factories’ in order to achieve certain specified [student number] targets”.

One issue with web-based information that the University faces is the provision of easily locatable information through the standardisation of where course information is found within the complex organisational web site. Students have found web pages easier if there is consistency in where to look for information (Frey & Alman, 2003). While there is currently more information available on the University web site than previously and improved navigation, the look and feel of the web pages could be more internally consistent to assist potential and returning students with locating course and enrolment information. An ongoing issue is the maintenance of web information (Duderstadt, 1997) and it is not uncommon for new administrative roles to emerge related to maintaining web sites (Singh, O'Donoghue, & Worton, 2005), as indeed has occurred in the School of Nursing.

### **9.1.2 Enrolment**

Effective flexible learning is an organisational concern as “the picture emerging is of computer systems and technologies that are reshaping the conventional processes and practices of universities” (Cornford & Pollock, 2003, p. 111) and this is occurring from first contact of students through enrolment processes. Convenient and easy enrolment processes are important for students and form a component of the organisation’s services that need to be considered for flexible learning to be effective (Bates & Poole, 2003). It has been postulated that technologically knowledgeable students, who are used to doing everything from research to banking and shopping on-line, will soon have demands that exceed available on-line services from higher education providers (Everhart, 2001). Students are no longer willing, nor expect, to stand in queues to obtain information or to pay their fees. To be effective an on-line enrolment process must be easy so that enrolment is not a barrier, nor a deterrent in itself. In the present study the University on-line enrolment was not easy to navigate but did allow for students a distance from the campus to enrol. It has been suggested that management of the enrolment process should be at the programme level and initiated in the early planning stages of flexible delivery (Abel, 2005). However, in many higher education organisations, including the one central to this study, programme and course information and enrolment are managed centrally, with only specific aspects devolved to the School level. Literature supports the School of Nursing strategy of supplementing the University on-line enrolment system with a designated contact person, the Postgraduate Administrator, as the use of such a person has been recognised as a success factor for flexible learning (Abel, 2005). A designated contact, the Postgraduate Administrator, provided individual assistance and personal contact with the

School, and findings showed this support was of critical importance to students who otherwise might have abandoned their quest to enrol.

### **9.1.3 Technology preconditions for flexible learning**

The understanding of flexible learning underpinning the present study recognises the importance of students being able to access course information, support services and learning resources. There is recognition that postgraduate nurses are adult learners and are responsible for their own progress within a supportive environment that facilitates this access. Furthermore flexible learning is understood to make use of the benefits of technology.

Access is multifaceted and includes physical access to learning resources. This access can be mediated via technology thereby removing the barriers of physical proximity. However if, for example, learning materials are web-based, then fast and reliable Internet access is required. Access also requires the necessary skills to use the technology and educationally can be aided by a learning design that makes the resources easier to find. In developing flexible learning that relies on technology that is truly accessible, it must be kept in mind that not all students have access to the same technology or similar specification standards of technology.

To support flexible learning for students the technological infrastructure needs to consider the complete set of student services (Abel, 2005). This includes programme and course information, enrolment, and student learning support and library services. The library and its associated services have a key role in learning, especially when the significance of information literacy is acknowledged. Cornford and Pollock (2003, p. 105) suggest students in the future will be ready for more 'self-service' use of university services and on-line options are "welcomed as a replacement for those more paper-based and time-consuming". However, the present study found that while some 'self-service' mentality was evident among students, there was also a need for personal contact and assistance in negotiating university systems (as described above with respect to the Postgraduate Administrator. This is in line with best practice guidelines that suggest part of the infrastructure to support flexible learning should be a single point of contact to resolve students issues or concerns (Abel, 2005). The full range of student services theoretically need to be accessible wherever students are located, but in reality organisations are challenged to provide this.

It is necessary to clearly identify the student population and their ability to access learning and other resources. Getting off to a good start to study is crucial to students' ongoing success. At the outset, to ensure a sound basis for planning for increasing flexible learning that makes use

of the benefits of technology it is better to determine students' technology skills and access to technology for study purposes, rather than to guess or make assumptions. The majority of postgraduate nurses in the present study were women but the assumption that women are further disadvantaged by gender-based access and computer literacy inequities is no longer considered valid (Gunn, French et al., 2002). The mid 2002 Postgraduate Nurse Survey identified that most, but not all, of the postgraduate nurses had convenient access to a computer for study purposes, but that not all those computers had Internet access. The computers students used did not all have sound, nor could all play compact disks (CDs). Since the survey in 2002 prices of computers have decreased and the specifications and capability increased. For example, students were not asked about access to digital versatile/video disk (DVD) readers as this was a rare option in 2002, but since has become a common feature when buying new computer hardware in New Zealand. However, socio-economic factors can also restrict access to technology where the cost of technology, although decreasing, may remain a barrier (Washer, 2001).

Internet access has been problematic in New Zealand, with a range of Internet Service Providers and capacities, relatively expensive connection fees and less than reliable download speeds. These factors impact on students' ability to access learning materials that are provided via the web-based LMS or through hyperlinks to other web sites. In 2001 it was suggested that increasing computer capability and communications bandwidth would be the most influential trend to affect education (Billings, Connors et al., 2001). While computer capability has increased the communications bandwidth to make fast and inexpensive Internet access common for most households has yet to be realised in New Zealand. Until that time students may appreciate the breadth of information available through the Internet but mandatory downloading of resources, such as key readings, can remain a barrier. In such circumstances students would rather have such resources provided in hardcopy.

Effective learning design of an on-line course can make access easier for students. The teachers' ability to design courses and use technology in a manner that supports learning has been found to be a major factor influencing student satisfaction with their learning experience (Kathaleen C. Bloom & Hough, 2003). However, no matter how good the learning design, students new to flexible learning that has an on-line component may spend undue time learning how to access the course, rather than engaging with the course content (Billings, Connors et al., 2001). Technical problems, affecting simple tasks such as downloading a reading, highlighted for teachers that although more technologically advanced options might be available a priority was to ensure that flexible learning was going to be both consistently

and reliably accessible to students. Technical difficulties experienced by students are known to impact negatively on their learning experience (Hara & Kling, 2000). To be easily accessible students require a level of proficiency that allows them to act with competence and confidence in the learning environment (Burbules & Callister, 2000). To facilitate the student's transition to flexible learning an orientation to the learning environment is advised (Jolliffe et al., 2001), and the present study strongly supports this recommendation. Familiarisation with the learning environment may reduce the slope of the learning curve as students orientate themselves, and develop the skills and comfort level, to be able to then concentrate on learning.

#### **9.1.4 Studying flexibly**

Postgraduate education for nurses is perceived as a strategy to increase professional and career opportunities, yet achieving the required learning necessitates strategies to support students (Pelletier et al., 1998). Strategies that support postgraduate nurses achieve their learning goals include ensuring professionally relevant learning based on sound educational principles. The present study has illustrated educational principles, such as authentic and active learning that encourage deep approaches can be provided and supported with flexible learning.

Graham and colleagues (2001) contend that authentic learning links to the "Seven Principles for Good Practice in Undergraduate Education," (Chickering & Gamson, 1987) where Principle Six: Good Practice Communicates High Expectations, can be fostered by using authentic learning. In the present study curricula and teaching methods including assessments that related to nursing practice, such as case studies or nursing interventions, communicated the expectation and the value teachers place on clinical practice. Authentic learning that requires sharing among nurses parallels the teamwork and collaboration commonly evident, and definitely preferred, in the delivery of healthcare. An example of this was seen in on-line discussions where students formed a learning community and worked together to advance their collective knowledge, thereby developing a shared understanding, which reflects the findings of Oliver and Herrington (2003). Authentic learning supports student collaboration and co-operative learning. Furthermore, Grabinger and Dunlap (1995) consider how authentic learning, based on constructivist principles encourages student responsibility, initiative and decision making, thereby promoting higher-order thinking that help students develop rich and complex knowledge structures. Such behavioural and cognitive skills are essential for working in the increasingly complex healthcare environment and foster the development of skills for lifelong learning.

Flexible learning is noted for its potential for including interaction and more active learning (Ali et al., 2004; Buckley et al., 2005; Grabinger & Dunlap, 1995; Salmon, 2000; Singh et al., 2005). In contrast, didactic teaching, such as the traditional lecture, encourages passive learning and provides little opportunity for feedback, while active learning is considered a necessary skill for students who are preparing for a professional role (Teikmanis & Armstrong, 2001). The present study provides evidence of active learning involving deep approaches to learning with reflection, critical reasoning and inquiry that go beyond superficial approaches, supporting quality learning by students. Teachers found evidence of deep approaches to learning in on-line discussions, essays and the questions students asked. The literature reports that some teachers have questioned the possibility of achieving comparable quality in learning with an on-line course as they had achieved with more traditional classroom-based courses (Kassop, 2003). Concern with maintaining the quality of a course can be particularly acute for teachers who have had positive experiences of teaching in classrooms, with evaluations showing high student satisfaction and good pass rates. Yet as Ramsden explains, "Good teaching implies engaging students in ways that are appropriate to the deployment of deep approaches" (1992, p. 61) indicating that it is the design of the course, not the mode of delivery, that is fundamental for promoting deeper approaches to learning (Bandy et al., 2004). Therefore good teaching practice, with consideration to appropriate learning design, can occur with any course, irrespective of mode of delivery and this has been linked to student satisfaction (Kathaleen C. Bloom & Hough, 2003). In conjunction with good course design, teachers need to plan and allow students sufficient time to engage with the learning material (Billings, Connors et al., 2001). If insufficient time for such engagement was allocated either by the teacher through the learning design or by the student because of time constraints, then superficial or faster approaches to learning were used.

### **9.1.5 Postgraduate nurses achieving their goals**

Postgraduate nurses perceive achieving pass grades for their course of study as a major goal. Assessments are the principal means for students to demonstrate meeting the course requirements and achievement of the learning outcomes. This study found that the pass rates did not change with the increase of flexible learning within courses. As discussed in Chapter 8 (8.1.2), direct comparison with a course that was offered on-line and on-campus in the same semester within the School of Nursing provided local evidence that student achievement, as shown by assessment marks and final grades, was similar for both an on-campus and on-line mode of delivery (Lim & Honey, 2003). Mode of delivery has not been found to be a

predictor of student achievement and “no significant difference” has been a common finding, confirmed in the present study, when on-line and traditional teaching modes are compared (Russell, 2001). However the subject of no significant difference has also been contended to be flawed because of the design and execution of the research, with criticisms such as failure to control for time on task and instructional method common (Joy & Garcia, 2000). One aspect that is open to challenge in the present study is the lack of data from students who withdrew from or did not complete a course. Although the numbers of students who withdrew or did not complete a course remained fairly constant in the exemplar courses for the duration of the study, little is known concerning whether flexible learning was a consideration for a student’s decision to withdraw or a factor in their inability to complete their course.

If attaining a pass in a course is part of completing a postgraduate qualification as a means to improve clinical practice or to achieve career progression in nursing, then the true test of students’ accomplishing their desired outcome may not be evident until after completion of the programme. A small survey was undertaken at the School of Nursing to explore whether postgraduate education did impact on clinical practice. Sixty-two percent of students, out of a possible sample of 74 who had completed a postgraduate nursing qualification between 2000 and 2002 at the School of Nursing, completed a self-report questionnaire. Results indicated that the School of Nursing programme impacted positively on patient care, increased the skill base and critical thinking skills of nurses (Dyson et al., 2004). However, a prospective, longitudinal study of postgraduate nurses that first determines their goals in undertaking study and then follow-up once or twice after completion of their qualification may better establish whether their learning and professional goals were met.

#### **9.1.6 Development of lifelong learning skills**

Higher education providers are in an awkward position as postgraduate education for professionals is ideally not just for the present, but rather for a future that may not be fully known (Higgs & Edwards, 1999). Therefore less emphasis is needed on current content, and more importance should be placed on lifelong learning skill development, which will last the student beyond their existing educational programme.

Nurses’ development of information literacy is part of developing lifelong learning skills (Cheek & Doskatsch, 1998; Cole & Kelsey, 2004; DeBourgh, 2002; Koerner, 2003). The present study supports the suggestion that flexible learning facilitates the development and consolidation of information literacy “meta-skills” through computer and information use

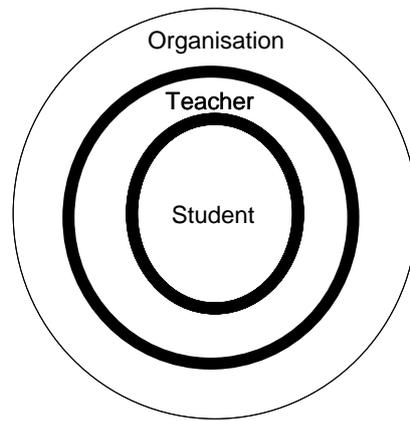
within an educational context (George & Luke, 1995). These skills can be transferred to other contexts in students' professional and personal lives (Everhart, 2001; McGuinness & Hardy, 1999), though how well this occurs is not evident in the literature, nor from the present study.

Education for nurses to develop information literacy skills has commonly been provided by nurse teachers (Batchelor & Hanley, 2002), though there are suggestions that librarians could provide this (Peacock, 2001; Sherwill-Navarro, 2004), and there is some evidence for using a joint approach (Fox, Richter, & White, 1996). Using both librarians and nurse teachers could reflect a perceived division of information literacy related to skills and content, where librarians teach the skills, and nurse teachers cover the nursing-related content. This study found that both nurse teachers and librarians can and do offer complementary skills using an integrated approach, where information literacy is embedded in the curriculum, as an integral part of a course and associated with assessments. The integrated approach is strengthened by being delivered "in collaboration with library staff" (Honey et al., 2006, p. 102).

Nurses need to be discerning users of information to meet the changing demands of patients and to work effectively in an increasingly complex healthcare system. There is a worldwide trend of health care consumers becoming more knowledgeable, and this occurs in conjunction with an increased range of treatment options and a plethora of health related information (Conrick, 2006; Honey & Westbrooke, 2006; Simpson, 2006; A. Tanner, Pierce, & Pravikoff, 2004). Patients, as well as health professionals, use the Internet to locate information. An illustration of the widespread use of Internet-based health information is the web site, [www.Discern.org](http://www.Discern.org), which states, "Despite a rapid growth in the provision of consumer health information, the quality of the information remains variable". In response to this concern the web site claims to provide users "with a valid and reliable way of assessing the quality of written information on treatment choices for a health problem". As patients seek out information, become better informed, and request a range of options, nurses need to be able to assist patients understand their choices. Information literacy therefore becomes an important skill and competency for professional practice and lifelong learning.

## **9.2 The middle circle: Teachers in the middle**

The place of teachers in the Student-Centred Structural Model (Figure 9-2) is represented by the middle of the three concentric circles. This places the teacher around the students, in close proximity to both the students and organisation, where the teacher is often mediating between the two.



**Figure 9-2: Student-Centred Structural Model: Teachers in the middle**

The position reflects the close relationship of teacher and student in flexible learning, as evidenced by much of the discussion above concerning a student-centred approach that is dependent on action from the teacher, and the teacher as the face of the organisation for the student. The outer circle, representing the organisation, is also adjacent to the teachers, symbolising the teachers' experiences working within an organisation, which can both support and constrain effective flexible learning. Three key aspects for teachers highlighted by this study are discussed: the teacher as a bridge, the changing role of the teacher, and teacher control of their practice.

### **9.2.1 Teacher as the bridge between student and organisation**

Teachers can be considered the bridge between the organisation and the student as teachers were found to mediate the student experience of flexible learning. The present study found the driver for teachers to act as the bridge between the organisation and student was concern for students.

While contact with administrative support, postgraduate advisors and the postgraduate administrator dominated student contact up to and during enrolment, once students were enrolled in a course with an identified course co-ordinator, then that teacher became the important contact point for students. Students approached teachers for support and assistance, mostly at the beginning of the semester as they settled into the course. The support from teachers was in addition to the organisational and faculty orientation and support; hence the teacher bridged the support the organisation provided with what the student expected and needed.

Teachers themselves expected to provide personal support, also called pastoral care, as well as purely educational support, then identified this as an important part of their role because they

recognised the particular student population whose limited experience with higher education was related to level of confidence. This study raised issues of concern for teachers regarding whether personal support, which teachers called ‘nurturing’ and ‘reassurance’ (Chapter 7.2.1) could still be provided with increased flexible learning. The present study supports findings from the literature that this is possible (Barone, 2005a; Draves, 2002). Furthermore this study found that student-to-student support was also facilitated with flexible learning, for example through the use of on-line discussions. However, the key issue is that teachers found themselves needing to act as a bridge when ideally the organisational services should be sufficient, accessible, appropriate and responsive enough to meet students’ needs.

### **9.2.2 Changes in role**

The present study found that with the increase in flexible learning the role of the teacher changed. There was a reduction in classroom based teaching with the teacher as the ‘sage on the stage’ and more facilitation of learning (Hewitt & Goodwin, 2000). Therefore there was less reliance on the teacher as content expert, and more emphasis on the teacher as organiser and facilitator of learning. For some teachers, for whom a central visible position is important, this change can be interpreted as a dilution of the power and status of the teacher, and the change in role away from content expert has been found intimidating for some teachers (DeBourgh, 2002). However, that issue was not reflected strongly in the present study, but nevertheless some teachers were anxious about aspects of a changed role.

While teachers can utilise a range of strategies to facilitate students’ learning, inattention to student-centred approaches can also constrain effective flexible learning. As a facilitator of learning increased importance is placed on the teaching strategy of providing feedback to guide students’ learning, which is a key factor in all learning situations. The present study found that giving students feedback was an important aspect of teaching and technology could aid providing feedback. Students appreciated all feedback, finding it important to guide their learning. As Chickering and Ehrmann (1996) note technology has added to the ways student feedback can be provided. This study illustrates examples of feedback provided electronically through email and the organisational LMS. Electronic communication is prompt and can be retained, thereby outlasting the verbal words of the teacher. Flexible learning technology can incorporate feedback into the course and this can be a bonus for those students living further away. A North American study involving three large state universities found students living further from the main university considered they received more feedback with web-based

education (Billings, Connors et al., 2001). However, some teachers may need additional education and professional development to enhance their provision of feedback to students.

The importance of supporting teachers with technology and pedagogy is stressed as a success factor for flexible learning (Abel, 2005). For example, managing an on-line discussion requires a new set of technical and pedagogical skills, and teachers need support to develop these (Billings et al., 1998; Cragg et al., 2004; Cravener, 1999). Effective collaboration between students, and between the students and teacher, is dependent on course design and the teacher's ability and skill. One method proposed to provide education for teachers in the development, teaching and facilitation of an on-line discussion is to have on-line discussion using the organisation's preferred LMS, with the aim of developing a learning community among teachers so they can experience and also support each other as they gain understanding of what it means to learn and teach in this way (Billings et al., 1998). On-line teacher development is suggested as being appropriate to support the professional teaching community and teaching practice (Panda, 2004). However, the present study reports an education session where teachers used on-line discussion that was not effective. This was for two reasons, firstly the organisational LMS was not used, and secondly the timing of the session was too early so the techniques were not reinforced in teaching practice. In conjunction with experiencing learning in an on-line environment, one-on-one consultations and teacher development classes can be helpful (Abel, 2005), and the present study found the one-on-one support for changing teaching practice the most effective. Whatever method selected, support and teacher development should meet the teachers' needs and as teachers are as diverse as students, one approach may not suffice.

The present study suggests that the role of the teacher expands as flexible learning increases. One aspect of this is the expectation by students of increased accessibility and availability of the teacher because of electronic communication. Instead of having set lecture times or office hours, teachers can be emailed at any time, and the present study found students expected speedy responses. Also in traditional classroom settings most communication is from the teacher to a group of students, which can be paralleled with electronic announcements or group emails. However, adding technology such as email enables individual students to reply or communicate with the teacher, which increases the accessibility of and demand on the teacher greatly. Another aspect of the expanded role of the teacher is the increased number of people with whom the teacher interacts. With traditional teaching the teacher is likely to interact with students and administration staff, whereas with flexible learning interaction may also include web and course designers, LMS personnel and technical support staff. While

teachers may perceive a loss of visibility and centrality with flexible learning, in relation to the number of people they interact with, the teachers' role can also be seen as more important.

The changing role of the teacher is further compounded by organisational expectations and the pressure of striving for excellence in research, service as well as teaching. The move to flexible learning with a student-centred approach gave impetus to the changing role of the teacher, which in turn heralded a need for teachers to retain control of their teaching practice during the changes and development of their role.

### **9.2.3 Teacher control of their practice**

One issue somewhat related to teacher workload, which is discussed fully in Chapter 7 (7.4), is a teacher having control of their course and teaching practice. While maintaining control of course content and management can increase workload, releasing control to instructional designers or technicians was found stressful by teachers in this study. Bates and Poole (2003, p. 18) describes the "potential threat to the power and control of teachers" as a barrier to flexible learning. In a study of the organisational considerations for moving universities on-line across four British sites three common reasons for failing were noted: the technology did not work as expected; costs were high; and teachers resisted the introduction of flexible learning as it threatened their autonomy (Cornford & Pollock, 2003). One reason for resisting introducing more flexible learning therefore is the potential loss of control of teaching practice.

Bates and Poole state: "Everything we know about teaching with technology suggests that the role of the teacher becomes more, not less, important, although technology is likely to require significant changes in the teacher's role" (Bates & Poole, 2003, p. 18). For teachers to retain control of their teaching role professional development may be required. For example, having an on-line course where course content and information is web based may mean that editing is done in HyperText Markup Language (html) which the teacher does not know and therefore has to refer back to the web designer. Ideally, an easy to use interface would allow the teacher to edit their own course material, or the teacher could learn some basics of html.

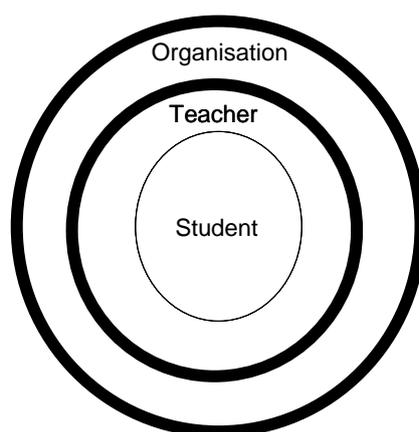
Having a School of Nursing champion of flexible learning was a strategy that this study found to be advantageous. The champion provided teachers with advice and support with flexible learning initiatives, including educational and technical aspects, such as good use of the LMS. Having readily available, non-threatening support from a colleague assisted teachers feel in control of their practice. The development of skills and proficiency in flexible learning was

found beneficial for teachers as demonstrated when teachers taught and supported each other and reported the sense of achievement this provoked. While peer teaching and support occurred frequently a highlight of the study was the seminar that celebrated successes in flexible learning initiatives within the School. This seminar illustrated the varied approaches teachers had used, depending on their course and subject area, and the skills they brought to, and developed with flexible learning. The emphasis on teacher choices and control were reflected in the accounts shared of flexible learning initiatives.

In summary the present study found the increase in flexible learning resulted in a greater focus on teaching practice. The role of the teacher changed, and while the teacher might be seen as a bridge to support a student centred approach, the changing role went beyond being a bridge between the organisation and student, and a response to the changes in role was the need for teachers to retain control of their teaching practice.

### 9.3 The outer circle: Organisational support for flexible learning

The higher education organisation in the present study is a university, with various central organisational structures, devolved Faculty divisions and discipline-specific Schools. A large educational organisation such as this is complex in nature. The organisation is represented as the outer circle of the model (Figure 9-3), yet the organisation does not exist in a vacuum, as outside the organisational circle there are a number of other forces that impinge on the organisation.



**Figure 9-3: Student-Centred Structural Model: Organisational support for flexible learning**

The organisation also encloses both the teacher and student circles representing the structure the organisation provides for teachers and students. The following discussion includes considerations of the organisational support needed for flexible learning, namely changes in

the way the university sees itself; strategy to direct flexible learning developments; development and support for teachers; and the technological infrastructure.

### **9.3.1 Changing view of the university**

This study has illustrated the place of the university as a higher education provider that exists in New Zealand. The organisation is under pressure from wider international trends, national politics and policies, and in conjunction with these the organisation exists within and contributes to national and local society. A consequence is the university is challenged by how it sees itself, both in relation to external factors and internally.

The University in the present study has considered itself traditional and campus based yet included 'flexible learning' in the organisational mission and goals. The University was then faced with the predicament on how to progress flexible learning developments having included reference to it in the organisational mission statements. That this was an issue is indicated by the time lag between the published University mission and the resource allocation, shown in the delay establishing the University Flexible Learning Centre and appointing staff. The lack of clear direction from the organisation may have also influenced the time taken to review the provision of LMS services in the organisation (see 6.2.8).

The University is constrained by needing to provide services as usual while new initiatives are introduced. Valcke (2004) comments that higher education providers often do not expect any dramatic changes with introducing flexible learning and that a 'business as usual' approach is not uncommon. He suggests that organisations tend to stretch to fit and mould to accommodate flexible learning rather than preparing for change in a strategic manner (Valcke, 2004). While this makes sense from a business perspective, the lack of a change management approach upholds the inadequate allocation of resources.

### **9.3.2 Strategy for direction**

From an organisational perspective support for flexible learning begins with the aims and direction of the university and the published strategy. A public and shared organisational strategy may enhance change by reducing the hold of traditional ways. A British study involving four organisations found that "despite pressures to change, whether through conscious choice or 'default', the university also remains committed to many established structures, identities and relationships" (Cornford & Pollock, 2003, p. 112). To be of use organisational strategy needs to be based on explicit understandings, including those of

flexible learning, and the myriad of definitions of flexible learning are problematic. An organisational definition of flexible learning is advisable to facilitate discussions on related policy, development, academic and administrative practices (Gunn, 2002). In the present study the organisation's strategy was devolved to Faculty and School levels where separate but associated strategies were developed. Marshall (2004) advises care, in instances such as this, to ensure the development of coherent and mutually supportive strategies while warning against strategies that compete or undermine each other, which could easily occur within a large and complex organisation.

Strategy ideally leads policy and resource allocation. One of the barriers to flexible learning is a lack of resources, specifically the lack of finance being apportioned, so while student numbers increase there are no additional resources (Bates & Poole, 2003). At the beginning of the present study the University had only recently committed to introducing flexible learning and many of the required resources were unidentified. The luxury of a planned and thoughtful approach to increasing flexible learning was not possible, but the impact of this was a gradual and slower than expected uptake of flexible learning options throughout the organisation. In addition, because of the above factors there was an asynchrony between strategy, direction, resource allocation, LMS development and teacher support for changes in teaching during this formative period. Furthermore, personnel not directly involved in or affected by the introduction of flexible learning were less aware of initiatives and implications, adding to asynchrony.

The organisation needs to support innovation and to this end Barone (2005a) recommends a planned and progressive approach to introducing flexible learning. In terms of funding Barone (2005a) suggests that as innovators and early adopters of technology complete one-off funding allocated to pilots and projects, and flexible learning becomes mainstream, the budget and funding is already assigned to ensure scalable and sustainable advances. This includes funding for teacher development in both pedagogy and use of use of technology in teaching.

### **9.3.3 Teacher development**

Teacher development can be considered from the 'carrot and stick' approach, which is the use of rewards and prompts. To provide a consistent university-wide approach rewards to support teaching innovation should be incorporated within organisational policies (Gunn et al., 1999). The organisation central to the present study introduced university-wide rewards for teaching excellence. Nurse teachers have been recognised at the organisational level for their initiatives

with flexible learning as contributors to the University-wide annual teaching and learning conference and to Faculty teaching events. Of importance was the School seminar that celebrated flexible learning developments as this ensured acknowledgement and recognition of the development of ingenuity, resourcefulness and expertise among teaching peers.

While much of the literature maintains best practice requires rewards and incentives for teachers to encourage effective flexible learning (Abel, 2005; Gunn, 2002; McNaught, 2001), it has also been suggested that rewards should apply to teachers who take the risk of changing their teaching practice (Ehrmann, 1995). While it is hoped that more effective flexible learning will result, the emphasis of rewards is on risking innovation and learning from the process, not just rewarding success. With the pressures on teachers to persevere with teaching, research and service, flexible learning can be seen as an added burden and one way to reduce this perception is to foster the recognition of the scholarship of teaching (Abel, 2005).

Prompts, or the stick approach, for teacher development may be negative and include having the use of educational technology as part of teacher assessment, mandatory teacher development in computer and information technology competencies, and having flexible learning count towards promotion and tenure (Valcke, 2004). Prompts such as these may become deterrents for flexible learning. Less direct prompts include Marshall's (2004) idea of having clearly defined accountability structures for the development of organisational, faculty, and individual capacity to effectively utilise information and communication technology in teaching and learning. Progress can then be evaluated in annual performance reviews at each level (S. J. Marshall, 2004). Good progress may result in a reward, but a lack of progress could penalise teachers. Others have suggested assisting teachers in transitioning to flexible learning, but then assessing them during the process (The Institute for Higher Education Policy, 2000). The present study found that the inclusion of flexible learning initiatives within annual performance review documentation was one way of getting the extra time taken with developing flexible learning initiatives acknowledged. However, the acknowledgement occurred at the School level and the organisation has no automatic method or calculation to reduce workload or fund development time for flexible learning developments.

All teacher development needs to follow best practice. Experience from colleges across California from a five year study of Faculty training needs determined that teacher development in technology use should be continuous, centred on pedagogy, with a technology learning curve that is not steep, provide follow up of training sessions, and training should be readily available (Meehan, Obler, Schiorring, & Serban, 2002). Specific teacher development

related to technology has to include the organisational LMS. With the renewed commitment of the University in the present study to the in-house LMS, LMS education for teachers was introduced centrally and a range of LMS related sessions were offered. Individualised on-demand teacher development was an option the present study found to be a useful strategy with busy teachers who have both teaching and clinical responsibilities (Doherty & Honey, 2006). However, Barone (2005b, p. 14.5) warns against the sustainability of this:

“Many faculty ... expect to receive individual attention from the campus instructional support staff to make the transition [to flexible learning]. One-on-one consultation works fine when there are just a few brave pioneers experimenting with new modalities. The resource base breaks down, however, when the majority of faculty need ongoing instructional design and consulting services”.

In summary, funding for teacher development needs to be allocated as part of organisational strategy to introduce or increase flexible learning. While technology focused education, specifically in relation to the organisational LMS, is needed, there is a greater need for pedagogical focused education including teaching approaches and learning strategies based on best practice. Whether this education is provided centrally to groups, or individually may depend on the learning needs and circumstances of the teachers.

### **9.3.4 Technological infrastructure**

The technological infrastructure for flexible learning are the complex systems, including other organisation-wide systems, that support teaching and learning, and assist in ensuring technology is readily available for teachers and students (S. J. Marshall, 2004). Complete, stable and reliable technological infrastructure is important when providing flexible learning for the organisation, including students, teachers and administrative staff. The importance of an organisation-wide infrastructure and having technical expertise and support easily available are well recognised (Cho & Berge, 2002; S. J. Marshall, 2004; Valcke, 2004). In Australia the significance of the technological infrastructure to support flexible learning is one of five key goals for the Australian Flexible Learning Framework (LeCornu & Ahern, 2001). The goal includes affordable access to on-line educational resources underpinned by nationally agreed standards for information and communication technology. Organisational standards for hardware, software, data transfer and processing all add to the reliability of technology performance (Billings, Connors et al., 2001) and can be further supported by service standards

to ensure organisational systems are available, with minimal disruption. The University in the present study has standards and organisational systems to review technology related service regularly. The national issues in New Zealand related to Internet speed have been discussed previously (Section 9.1.3). However, as yet there are no organisational standards to guide students when selecting computers to purchase, and while this is ideal it is recognised as a difficulty that will not be readily resolved because of the variety of students, disciplines, courses and therefore possible requirements.

The present study identified that for teachers one of the significant aspects of technology in their work environment, where a supportive infrastructure is paramount, is the LMS. The philosophical underpinning of any LMS affects development, functionality, and usability by both teachers and students. The in-house LMS developed by the University in this study, started as a computer supported learning system with a teacher-centric view of providing information and course materials. In contrast, some of the other options available, for example open source Moodle, were developed with a social constructivist perspective from the outset. Higher capacity servers, improved help systems, new version releases all enhanced the LMS, yet criticisms were still forthcoming about the in-house LMS. Effective teacher development can support teachers in use of the LMS to structure learning in terms of well established learning theories (Katz, 2003), thereby overcoming differences in the philosophical underpinnings. LMS use in the University increased but teacher development in best use of the LMS struggled to keep pace with the increased demand. Research indicates that while teachers need education to learn to use a LMS to support their teaching and student learning this is an area that is often under resourced, especially in terms of keeping up with increased demand and new developments (Valcke, 2004).

Research has found that administrative staff need to be aware of relevant information and services that support flexible learning (Billings, Connors et al., 2001), both for their own work and because administrative staff support teachers and students as well as the processes of flexible learning. One issue highlighted in Canada was the need for administrative staff to support an overall increase in student numbers, including more international students, which entailed new procedures (Bartolic-Zlomislic & Bates, 1999). Others have found that technical and administrative support imperative for effective flexible learning (Cravener, 1999; Harris, 2003). The present study emphasises the need for personable administrative support for students at the School level related to course selection, enrolment and general course administration.

Despite the recognised significance there is little guidance in the literature about the specifications that contribute to a reliable technological infrastructure as each organisation has different requirements. Recommendations from the literature do support an organisation-wide, or whole enterprise approach (Newman & Logan, 2006) as this has the potential to avoid the historical information silos, where administrative, research, teaching and library data and resources are all handled separately (Steinbrenner, 2003). In the present study an organisation-wide approach was used from the outset in relation to building the LMS.

## **9.4 Summary**

The practice of flexible learning has provided structure to interpret the findings of the case study within the context of postgraduate nursing education provision in a university. The accumulation of evidence and triangulation of data from stakeholders produces a picture of complexity. The findings of the present study reinforce previous research, such as the need for staff development and student orientation, and also demonstrated the interconnectedness of the elements. In addition the present study highlights potential benefits of flexible learning that focuses on teaching and learning with a student-centred approach, including an increased emphasis on teaching practice.

The introduction of flexible learning in the School of Nursing was found to enhance teaching and a student-centred approach. The present study highlights the importance of knowing the student population and ensuring a student-centred approach for the entire educational experience, from deciding to study through to completion and beyond, as the skills for lifelong learning benefit students in the future. Flexible learning involves more than merely adding technology to a course or putting a course on-line. Instead it involves the whole educational experience and organisation, and it is stressed that all aspects must support flexible learning for the student.

The focus on postgraduate nurses' learning and the importance of clinically relevant learning is a feature of the present study. From the teacher perspective key findings include the teacher bridging between the organisation and the student, further supporting a student-centred approach; the changing role of the teacher; and the response to this of teachers wishing to retain control of their teaching practice. Organisational support for flexible learning demonstrates the changing view the university has of itself, the merit of having an organisational strategy to provide direction, and the importance of teacher development and a sound technological infrastructure.

From this study it is evident that flexible learning is dependent on the combination of elements from the student, teacher and organisation perspective, however, the elements of flexible learning for postgraduate nurses are deeply interdependent. Inattention to any of the elements jeopardises the effectiveness of flexible learning, while excellence in relation to a single aspect might be of little account if there are deficiencies in other aspects. The lessons learnt from this study, and how these might be applied to flexible learning in the future, along with areas for further research and recommendations are presented in the following chapter.

# **10 Teaching and learning with technology: Conclusions and recommendations**

The preceding chapters have illustrated the perspectives of the students, teachers and the organisation in relation to flexible learning and then the findings were interpreted in light of effective flexible learning. The interconnectedness between the elements of flexible learning within the complexity of a dynamic higher education context has been argued in the previous chapter. This chapter presents the conclusions drawn from the research and highlights areas for further research and recommendations for policy and practice.

## **10.1 The present study**

The present study set out to answer the question: “What does flexible learning mean in practice when applied to a population of nurses pursuing higher university education?” This thesis has explored the practice of flexible learning applied to postgraduate nursing education in a university context. The postgraduate nurses in this study are predominantly mature women and experienced nurses, yet frequently novices in postgraduate and flexible learning.

The present research was based on a case study of flexible learning for postgraduate nurses within a university-based School of Nursing. In order to understand the implementation of flexible learning three key stakeholder groups’ viewpoints were sought: organisation, teacher and student. An appreciation of the study context is important as it enables the interconnectedness between the elements essential for effective flexible learning to be better understood. The research methodology was bound by the circumstances of the study and context. A strength of this research was the multiple perspectives of students, teachers, and key informants from the School, Faculty and central University.

The case study design, with the focus on three exemplar courses provided a longitudinal view, which revealed changes over time and yielded rich data for analysis. The data collection period extended to three years, which was beyond the two full academic years for the exemplar courses, to incorporate changes not initially anticipated. However, this was a strength as wider and more varied data collection across time was obtained despite the increase in resource requirements. Furthermore the case study design allowed for the interpretation of observed results within the broader context, with a focus on interactions among variables. The recommendations from the present study are based on the broad contextual findings from the

case, which provides an encompassing perspective that previous research that focuses on one or two narrow issues have been unable to address.

## **10.2 Contributions of the study**

Many of the findings of the present study agreed with and supported previous research (these are raised in Chapters 6 to 8 and not repeated here). Summarised below are key new contributions. The case study of flexible learning for postgraduate nurses is significant. Unlike many studies that have focused on one or two elements of flexible learning, this study, through an in-depth investigation has demonstrated the dynamics associated with flexible learning for a specific student population in a higher education setting and shown the complexity and interconnectedness between the elements. The interdependency of key perspectives and elements, and the importance of synchrony among them are shown to be crucial.

Flexible learning is where "technology and pedagogy are converging in the learning landscape" (Barone, 2005b, p. 14.1). The present study highlighted the fit between flexible learning and a constructivist pedagogical theory to produce a student-centred approach. Introducing flexibility as a mode of teaching and as technology enabled only is in itself insufficient. There is also a need to consider flexibility in aspects such as regulations, scheduling, and time to complete, while not sacrificing educational rigor to ensure the learning needs of mature, working, professional students can be met. Furthermore this study demonstrated the importance for the entire student experience, from first inquiries, through enrolling, study, to successful completion, being student-friendly and easy to access and use wherever the student is. A further contribution from this study is evidence of the acceptability of flexible learning to postgraduate nurses, some of whom might otherwise be unable to study.

The present study showed the value of knowing the student population and of not making assumptions, perhaps based on the 'normal' postgraduate student. When flexible learning that makes use of the benefits of technology is used by students, assumptions cannot be made about students' skill with or access to technology for study. This study showed the importance of empirically establishing these issues in relation to a student population. Flexible options should be geared for the lower specifications that students can access, rather than technology that is less commonly available. In addition support to assist students in gaining skills and confidence is using learning technology are needed. Orientation to the on-line learning

environment makes a useful contribution to facilitate a smooth start and to ensure the focus is on learning. The need to regularly reassess student access and capability is stressed.

The present study showed as erroneous an expectation that flexible learning costs less to run (per student) and workload declines. While it is acknowledged that flexible learning initially increased teachers' workloads as course development takes longer, once a course was established some aspects of workload decrease. However, with increasing student numbers and increased interaction made possible by flexible modes, this study showed that teaching workload is not reduced. Rather teaching is different, for example with time spent on managing on-line discussions rather than preparing for lectures. Teacher development is needed to support teachers to expand their teaching. This study highlighted the importance of support for teachers to master new technologies and design courses appropriate for flexible delivery.

Increasing flexible learning within the School of Nursing amplified the focus on teaching practice and made learning more student-centred. This study showed that flexible learning enhanced rather than detracted from the importance of the teacher and teacher control over content and delivery. While there are some flexible learning practices that are more effective than others for postgraduate nursing courses, it is predominantly the course design that determines this. This study has highlighted and agreed with views that despite advances in technology and educationally innovative options flexible learning "still has much more to do with the [teacher] teaching the course than anything else. It's still the teaching, not the technology" (Abel, 2005, p. 76). Technology is the enabler to provide student-centred learning in flexible ways.

The present study has highlighted the limitations of approaches that consider flexible learning as a technological issue to the detriment of pedagogical concerns. The case study findings help shed light on the importance of flexible learning for a specific student population within an organisational context. However, this study also indicates that this a moveable feast and that even in the three years of the study students, teachers and organisational features have changed, showing the dynamic context of flexible learning.

### **10.3 Implications for policy**

Implications for future organisational policy are derived from strategy, LMS and other technology. The value of taking an organisational approach to flexible learning, from

development of strategy, through to supporting structures, processes and deployment has been stressed as a means to ensure coherent organisational change through a shared vision. The national document, “Highways and pathways: Exploring New Zealand's e-Learning opportunities” released by the E-Learning Advisory Group in 2002 states, “If New Zealand wants to truly realise the potential of e-learning, it must develop a shared vision of the kind of learning environment it wants to create which reflects our unique identity and strengths and the changing needs and expectations of learners” (E-Learning Advisory Group, 2002, p. 5). This broad approach has implications in order to occur nationally, as well as within an organisation.

The poor broadband speed for Internet connection in New Zealand has policy implications at a national level. The macro issues, such as broadband speed and cost, are a national concern, and until these are resolved so that Internet users have fast, reliable and affordable connection full use of any LMS, or other web reliant technology, will not be effective. Although new technology is emerging and may have educationally uses there remains the need to be aware of students' access, and broadband speed and cost is a major component of access.

Policy implications for the organisation include providing a shared vision and strategy for flexible learning and the organisational structures and processes to support innovation. Impediments to innovation occur both internal and externally to the organisation. Internally the setting of strategic direction every few years constrains vision and aims to what is currently known, rather than being open to unknown possibilities. While conservative approaches to maintain traditions need to be respected, there is also a need to mobilise resources to explore new opportunities and to lead innovation. Externally, a macro level issue that impacts on higher education organisations being able to respond to changing needs is the process of approval for new programmes. Earlier discussion focused on technology for learning and integrating technology into courses, assuming that courses already exist. The need for due care and consideration before creating new programmes is recognised, yet the depth and detail required in submissions to the Tertiary Education Commission make the process lengthy. While the stance of the Tertiary Education Commission supports flexible learning, the time to complete documentation makes it more difficult for organisations, such as a University, to be responsive to the changing needs of the student population and society. An organisation needs to be nimble enough to adapt to change and take advantage of new and emerging opportunities, yet a large complex bureaucracy such as a university and its complex policy environment interfere with its ability to respond quickly to new opportunities.

Flexible learning is best based on a strategic organisational commitment that results in allocation of support resources. One of the vital organisational resources for flexible learning is the LMS. The selection and adoption of a LMS to support flexible learning within an organisation is important, though not fixed, as decisions need to be periodically reviewed, to ensure the correct fit between technology and organisational needs. The implication for the organisation is the need to periodically review the fit of the LMS to the organisational needs and direction, and to ensure the teaching and learning needs are considered.

However, a LMS should not be considered in isolation. To be truly efficient the LMS needs to link with back office systems, such as those related to staff and students (Valcke, 2004). An implication derived from the present study is the need to provide easy access to all student support services, and this could occur seamlessly available from the LMS. Administration and support services can connect to the LMS so from the same interface students can update their contact information, review their grades and note available services. Integrating the LMS into other organisational systems allows information to be shared and to be available where and when it is needed. The LMS can also be usefully linked to authentication and security systems, further enhancing efficiency, and creating easier access to information for students.

#### **10.4 Implications for teaching and learning**

Anderson and Elloumi (2004) suggest the evolution of the practice and theory of distance learning representing a move from traditional classroom teaching, as having gone through stages: from learning supported by a series of means (posted material, television or radio support, video or audio conferencing, computer conferencing), to web-based. This view is supported by Burbules and Callister (2000, p. 8) who consider the “information technology revolution is just one in a long line”. This suggests that flexible learning that makes use of the World Wide Web is not an end point, but rather a contemporary option of learning delivery that is expected to be replaced or augmented by other innovative means in the future. The future possibilities are innumerable, not only because of the rapidity and complexity of change, but because new developments are beyond "our imaginings of capabilities and goals" (Burbules & Callister, 2000, p. 14). The evolution of teaching to maximise the benefits of technology can, however, ensure education is not driven by technology but pedagogical core values (Pittinsky, 2003). The foremost implication for teaching and learning is to focus on the core values that put the emphasis on teaching practice for students' learning. Furthermore teacher development needs to focus on principles of good teaching practice, and as teaching

and learning evolves these principles need to be revisited so that teacher development is ongoing and can be updated to take account of future changes.

Teacher development needs constant reviewing to keep abreast of currently available and emerging teaching options. For each new technological development there are likely to be teachers at different stages of adoption. Rogers (1995, p. 262) describes these as ranging from 'innovators', 'early adopters', 'early majority', 'late majority' and 'laggards'. While teacher development is more often directed towards the majority, an important implication for the future is to support the early adopters and the laggards too. The nature of the support required will be dependent on the technological or educational innovation.

Torrissi-Steele (2002) warns against new technologies that may be used inappropriately or in ways that replicate traditional teacher-centred approaches, such as videos of lectures, therefore contributing little to improve the quality of the learning environment. Educational technology has been defined as "The actual tools and equipment used to support teaching (including software, programs, and networks, as well as projectors, computers, audiocassettes, television monitors, and so forth)"; as well as "an understanding of the teaching and learning process and how educational tools and equipment can be selected and used appropriately to support such processes" (Bates & Poole, 2003, p. 5), therefore highlighting the need for teacher development. There is more emerging educational technology and this seems likely to be a continuing trend. Therefore an implication is to focus on the educational principles to guide selection and use of technology for flexible learning.

Future students are likely to be different from the nurses described in this study who are mostly mature women with limited prior exposure and experience with technology. Students of the future are likely to have grown up with technology in their homes and as part of their schooling. The students in the present study demonstrated some of these changes in their ready acceptance of such aspects as email and word processing. The future students will be what Pelensky (2001) would call 'digital natives'; people who have been surrounded by digital media and gained such experience with it that their approach to dealing with new information is different. John Seely Brown (2000) builds on this theme of future students being different from those currently seen and suggests curious, active, interacting learners can be expected. The idea that future students will be different is upheld by Barone (2005b), who describes such students in "Educating the Net Generation". She contends that these 'net generation' students will be less accepting of transmission modes of education, and will be able to navigate information and create knowledge themselves. These projected students of the future raises

implications as there would be less reliance on the teacher and this is likely to challenge traditional higher education providers, such as universities. Student behaviour and expectations will impact on teachers and compel them from the all-knowing 'sage on the stage' to the more facilitative 'guide on the side' (Chaffin & Maddux, 2004; Draves, 2002; J. Haigh, 2004; Skiba, 1997). Teachers need support to move to a more facilitative style of teaching, and while this can occur through organised teacher development, a further implication is that support is also needed at the departmental level.

Flexible learning options can necessitate new roles. For example, establishing and managing an on-line discussion uses a range of skills, and the role of e-moderator has been coined to describe this (Salmon, 2000). A new role, like e-moderator, is dependent on new skills, and does not just utilise the same skills such as those used with a tutorial group. Added to this, flexible learning that makes use of or is supported by technology requires further changes in teaching practice and the use of specific technology skills. Experienced teachers who are content experts may be challenged by the need to improve their technological skills and therefore find the thought of adapting their courses for more flexible learning environments daunting (DeBourgh, 2002). The implications for the organisation are to provide teacher development in the use of existing, as well as new and emerging technology.

## **10.5 Recommendations**

An overarching recommendation is to monitor flexible learning developments at the organisation, Faculty and School level. Alongside auditing flexible learning at the various levels it is important to include audits of programmes of study and to consider the entire learning experience from the student perspective. A whole programme audit of flexible learning may identify areas where ongoing action and resources are needed.

Specific recommendations are offered using the framework of the three key stakeholder groups: student, teacher and organisation. The research findings indicate the organisation plays a major role in enabling a student-centred approach for flexible learning. For this reason a strong emphasis is placed on organisational recommendations. Recommendations for the teacher and student follow and reveal an interrelationship between all three stakeholder groups. This is consistent with the thesis contention that all stakeholder groups and elements are important for effective flexible learning.

## **10.5.1 Organisation**

### ***Strategy***

It is recommended that: A shared goal is articulated through a flexible learning strategy.

To be effective this is best aligned with the broader organisational goals and vision. While the flexible learning strategy needs to guide the direction of flexible learning development, it should not be so prescriptive that individual teachers' creative energy is stifled. Instead it should support a collaborative effort because of a shared goal and a focus on quality learning. Furthermore the organisation needs to build in a feedback loop to ensure strategy and policy implementation are supported in all possible ways.

### ***Champion***

It is recommended that: A person is identified, resourced and supported to champion flexible learning at the school or department level.

One strategy that worked in this case was having a School champion while embarking on flexible learning. The value of having a School flexible learning champion came from the champion's understanding of the curriculum and programmes, the teachers and the students. This contextual knowledge could then combine with flexible learning strategies that supported curriculum and instructional design. The champion role for flexible learning facilitated and led development, while also providing valuable support to others.

### ***Flexible learning as a continuum***

It is recommended that: Flexible learning is presented as a continuum.

When presented as a continuum, flexible learning is not seen as an all or nothing development. There is a need to recognise that some subjects and teachers may be less adaptable to becoming flexible. However, it is also recommended that to avoid disadvantaging students consideration is given to ensuring that a complete programme of study can be completed flexibly, rather than just having selected courses available.

### ***Robust technological infrastructure***

It is recommended that: The organisation provides highly reliable online access.

Administrative staff, students and teachers needs to be assured of highly reliable online access. Standards for data transfer and processing speed should be established and adhered to. Any down time should be minimised, planned for times of least student usage, and advertised beforehand wherever possible. All systems, including the LMS and library should be designed considering ease of use, and provide a consistent look and feel to facilitate navigation.

### ***Focal contact point***

It is recommended that: Students have a focal contact person.

A single point of administrative contact for students who need assistance from first contact through their programme of study is advised. The assistance may involve clarifying terminology such as the difference between a course and a programme, through to locating web-based information about courses, or providing a printed copy if required. Assistance should also be available through the enrolment process. Having a single focal contact point maintains a more personal touch with the organisation and allows a student to go back to the same person for repeat assistance until issues or concerns are resolved.

### ***Help systems***

It is recommended that: A central, free, accessible 24 hours per day, seven days a week (24/7) student support system is provided.

Flexible learning indicates that students study at times and locations that are convenient for them, so help and support services need to be equally accessible. A range of options including web-based, email, phone and face-to-face are suggested.

### ***Teacher development***

It is recommended that: Teacher development includes use of educational technology, flexible learning options, and use of the LMS; all based on constructivist concepts to enhance flexible learning.

A range of options in teacher development is needed to match the diversity of teachers. An introduction to the main University information systems should be included within orientation for new staff. A recommendation is to include a brief overview of LMS, library and other University and Faculty appropriate systems, then provide a range of other teacher development opportunities that teachers can access when they are ready.

### ***Reward teachers***

It is recommended that: Teachers are rewarded for innovative flexible learning practices.

Both attempts and successes in innovative flexible learning practices should be acknowledged and rewarded. If attempts to be innovative in teaching practice are not appreciated then there is a subtle message that it is not important. Flexible learning developments should be regarded as part of teaching practice and therefore recognised during annual performance reviews. Teachers should be encouraged to include flexible learning initiatives in teaching portfolios. Organisational teaching awards and more tangible rewards will foster positive attitudes to flexible learning.

### ***Evaluate flexible learning developments***

It is recommended that: Flexible learning developments are regularly evaluated.

Progress in flexible learning developments should be reviewed regularly. Reviews should include all stakeholders. Regular reviews and evaluation will assist the organisation, and teacher to learn from mistakes and allow for intermediate steps to rectify problems as they arise, and provide opportunities to celebrate achievements.

### ***Sharing resources***

It is recommended that: The organisation invests in systems that enable the sharing of learning resources.

There are benefits to be gained from finding a school, but preferably Faculty or University wide means to share learning resources. Leadership from the organisation in developing systems for the collection and maintenance of a list of available resources is a minimum. More desirable is establishing a repository where learning resources can be stored and accessed by others, so that sharing can extend beyond teachers who work in close proximity, to the wider University.

## **10.5.2 Teacher**

### ***Team approach***

It is recommended that: A team approach is employed for introducing flexible learning.

The use of a team or school approach to introducing flexible learning has multiple benefits. It may reduce the development of 'Lone Rangers'; individual teachers working independently on their approaches to flexible learning. While 'lone rangers' need to be supported in their innovation; support is also needed for early and late adopters of flexible learning. A team approach is more likely to enable peer support, shared experiences and synergies, increase the commitment of teachers to flexible learning, and enhance the likelihood of success in meeting strategic goals.

### ***Teacher control***

It is recommended that: Control of course content and delivery remain with the teacher.

Teachers having control of the content and delivery of their course is suggested as a means of ensuring sustainable student-centred flexible learning. The development of flexible learning may vary between teachers, depending on their experience, understanding of teaching and flexible learning, subject, and readily available support and technology. However, maintaining the teacher in control, rather than deferring to technicians or instructional designers, or becoming reliant on flexible learning staff, increases ownership of the course and engagement with the teaching and learning processes.

### ***Teacher support***

It is recommended that: Teachers are aware of all available support.

It is recommended that teachers are made aware of all available support for teaching, technology-use, instructional design, and other services and people who can support flexible learning development. It may be necessary to actively promote these resources as use of services is dependent on knowing what support there is, how to access it, and having a system for equitable call on the services.

### ***Workload***

It is recommended that: Time be allocated to teachers for flexible learning development and course management.

Time for developing flexible learning and teacher workload are continuing issues. Recognition that extra time is needed for the development of flexible learning, and that once developed flexible learning does not reduce teacher workload. Rather the workload can be

different, but that increased access to courses may increase numbers and therefore amplify the teachers work.

### ***Library partnership***

It is recommended that: Teachers collaborate with library staff to advance information literacy.

Extra and inter-curricula strategies are needed, but the goal should be towards intra-curricular information literacy education. This is likely to require a concerted effort from both School and Library staff to ensure integration of information literacy across programmes of study.

### ***Course Design***

It is recommended that: The design of flexible learning courses integrates best student-centred teaching practice.

Authentic and collaborative learning should be included within the design of a course. Teachers are advised to be thoughtful in their course design and include learning activities that foster critical reasoning and inquiry so that students are required to utilise deeper approaches to learning. Assessments and ongoing feedback for guidance are also recommended.

### ***Support students***

It is recommended that: Teachers support students in their flexible learning.

While other organisational support services are required teachers also need to support students. As part of their teaching practice this may include having strategies to recognise students having problems so that early intervention can resolve difficulties quickly. Also back-up strategies, for when technical or other issues occur, can further support and ensure students are not disadvantaged.

## **10.5.3 Student**

### ***Attend orientation***

It is recommended that: Students attend orientation to support their flexible learning.

Students are recommended to attend any orientations provided. Make a note of student support services that might be helpful and bookmark potentially helpful information. If necessary complete supplementary IT courses, including use of the organisational LMS.

### ***Assess and develop library skills***

It is recommended that: Students assess and develop their library skills.

Ensure that access and use of library resources are understood, including how to search and retrieve articles from electronic databases and other resources. Complete any required supplementary library sessions or tutorials to correct any deficits in existing skills or knowledge.

### ***Start promptly***

It is recommended that: Students promptly familiarise themselves with the flexible learning environment.

When a course starts it is suggested that students commence reading course material and expectations promptly to familiarise themselves with the course. If there is an on-line component check that access to the LMS is possible and become acquainted with the learning environment.

## **10.6 Limitations of the Study**

The limitation of using a case study design is noted. The case was confined to one student population, one School and one university. While the key contributions can be generalised some details cannot be.

A focus only on three specific courses within the School has limitations: it was not possible to consider the effect of flexible learning for a complete programme of study or the impact of implementing flexible learning on the School as a whole. The paucity of research about how a whole programme was delivered using flexible learning compared with traditionally delivered courses has been identified as a gap in the research previously (Phipps & Merisotis, 1999). The present study does not attempt to resolve this issue, but by incorporating perspectives and experiences of teachers, administrators and others in the school, has gone some way toward a whole programme of study.

In relation to teachers, reactive effects may have occurred in this study. As examples, the 'novelty effect', where something new and presented as an advancement is seen more positively, and the 'John Henry effect', where teachers may see themselves in competition with others using flexible learning and therefore work harder and perform beyond their normal

level for the duration of the study period. These potential effects were beyond the control of the researcher.

The lack of information about students who withdraw was noted in the present study, and has been highlighted in other studies as a concern (Murray, 2001). There are two significant issues around students withdrawing. Firstly, whether withdrawing is related to flexible learning or other factors; secondly, the final grade, evaluations and other measures then exclude those students which slant the findings toward those that were successful.

Finally the present study is circumscribed in time. Changes were noted over the duration of the study period and it is recognised that many facets of the study, including the students, teachers, organisation and technological options are dynamic. As teaching and learning technology advance some study findings will no longer apply. Actions to address this include regular surveys, such as the Postgraduate Nurse Survey, and to survey new students' access and skills with IT.

## **10.7 Future research**

The present study has revealed other areas for further exploration, which are listed below. These research areas are presented in the following order: flexible learning in other organisations and for other populations; impact of the organisation on student satisfaction, completion and success, students meeting their professional and learning goals, and teacher transition to flexible learning.

### ***Flexible learning in other organisations and populations***

The use of a case study design provided understanding of the application of flexible learning to a specific population within one context. Further research that replicates the study design could ascertain if the findings hold true to other student populations, both of nurses and other professional groups, and also in other organisational contexts.

### ***Impact of the organisation on student satisfaction, completion and success***

Future research could identify the contribution and impact of organisational regulations, policy and support services on student satisfaction, completion rates and success. The development of the organisational strategic direction, in terms of how strategies and policies arise and their impact on flexible learning for teachers and students is such a significant area that it is identified as an area for concentrated study. The development and maintenance of links

between strategy, policy and implementation within an organisation to support the development of flexible learning requires further research.

The characteristics and specifications of an organisation-wide technological infrastructure to support flexible learning is an area for future study. An enterprise approach may clarify the interrelationships between security, information management and information technology and the requirements to ensure reliable delivery of services.

The impact of student support services is an area for future research. Given the demonstrated importance of the entire educational experience supporting flexible learning, each support service and the contribution to supporting students is worthy of further investigation. For example, the present study found that orientation to postgraduate education was important to students yet the effectiveness of the current orientation to the University and postgraduate study provided to nurses is unknown.

### ***Teachers transition to flexible learning***

Across a number of teachers involved in flexible learning it may be possible to identify characteristics of teachers who are effective flexible learning practitioners. This study has not attempted to do this; however, understanding effective teachers' characteristics could be useful for planning teacher development. In conjunction, the mechanisms to recognise and reward teachers moving to flexible learning could be further investigated to identify their impact.

Further evaluation of learning designs that best support students' learning is an area of research that could be developed. This study has not revealed how students can be supported to conceptualise and understand content through the use of flexible learning design options. Yet learning designs that can be applied with flexible options may reinforce learning of abstract concepts.

The question remains whether teachers who are nurses themselves have specific characteristics as teachers, with particular ways of teaching and supporting students. Within this are two questions: Do teachers, who are also nurses, from a caring profession, exhibit more caring towards their students? If so does being a nurse impact on teaching practice?

### ***Students meeting professional and learning goals***

A follow up study of nurses is warranted to ascertain if completing a postgraduate qualification as a means to improve clinical practice or to achieve career progression was accomplished. Another aspect for further research is confirmation of the link between

transferring learning from the educational arena to clinical practice is made. The longer term effects of postgraduate nursing education to improve clinical practice and health outcomes has yet to be demonstrated. Likewise the development of skills for lifelong learning is not well understood and is an aspect for future research. A focus on transferring learning could include a study of nurses to determine whether and how transference of information literacy skills gained in the completion of postgraduate academic qualifications to their professional nursing context and practice setting occurs may lead to an emphasis on the acquisition of these skills in education.

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# Appendices

## Appendix 1: Flexible learning principles, potential data sources, data collection methods, and questions

Principle	Data Collection Method	Questions
<b><u>Students:</u></b>		
<ul style="list-style-type: none"> <li>Students have access to learning materials</li> </ul>	<ul style="list-style-type: none"> <li>Survey postgraduate nursing students</li> <li>Course survey</li> </ul>	<ul style="list-style-type: none"> <li>Do students have convenient access to a computer?</li> <li>Do students have the skills to use the computer to access and then use material?</li> <li>Is on-line access reliable and convenient during the course?</li> </ul>
<ul style="list-style-type: none"> <li>Students achieve the learning outcomes, assessments and meet the course requirements</li> </ul>	<ul style="list-style-type: none"> <li>Document analysis</li> </ul>	<ul style="list-style-type: none"> <li>assessment grades for cases</li> <li>final examination grades for cases</li> </ul>
<ul style="list-style-type: none"> <li>Students use deep learning approaches with evidence of reflection, critical reasoning and inquiry</li> </ul>	<ul style="list-style-type: none"> <li>Analysis of a sample of course assessments</li> </ul>	<ul style="list-style-type: none"> <li>Is a deep learning approach that requires reflection, critical reasoning and inquiry found in course assessments?</li> </ul>
<ul style="list-style-type: none"> <li>Students develop information literacy skills</li> </ul>	<ul style="list-style-type: none"> <li>Analysis of a sample of course assessments</li> </ul>	<ul style="list-style-type: none"> <li>Is there evidence of information literacy within course assessments by the use of a variety of appropriate supporting literature?</li> </ul>
<ul style="list-style-type: none"> <li>Students enjoy and value the learning experience</li> </ul>	<ul style="list-style-type: none"> <li>Course survey</li> </ul>	<ul style="list-style-type: none"> <li>Are students satisfied with the course overall and why?</li> <li>Are students able to make decisions and choices about learning? Does learning fit in with other commitments?</li> <li>Do they feel they are getting value for money?</li> </ul>
<ul style="list-style-type: none"> <li>Students utilise their previous knowledge and experience to build new knowledge which has meaning in the context of their sphere of practice</li> </ul>	<ul style="list-style-type: none"> <li>Student interview</li> <li>Course survey</li> </ul>	<ul style="list-style-type: none"> <li>Do students think that the course is building on their previous experience and knowledge?</li> </ul>
<ul style="list-style-type: none"> <li>There is interaction between students, and between students and teachers to support co-operative learning</li> </ul>	<ul style="list-style-type: none"> <li>Course survey</li> <li>Usage rates of software (LMS)</li> <li>Document analysis</li> </ul>	<ul style="list-style-type: none"> <li>Do students think that there is enough interaction between students, and between students and teachers to assist with learning?</li> <li>Do course structures encourage interaction?</li> <li>Can students access the teacher?</li> <li>Do students get the feedback they need?</li> <li>Do students participate online? How often, and types?</li> </ul>

Principle	Data Collection Method	Questions
<u>Teachers:</u>		
<ul style="list-style-type: none"> <li>The workload of teachers enables the development, preparation, management and teaching to the standard they wish to achieve</li> </ul>	<ul style="list-style-type: none"> <li>Teacher Interview</li> <li>Participant observation</li> <li>Documentary analysis (job description; workload allocation)</li> <li>Interview key informant (Head of School)</li> </ul>	<ul style="list-style-type: none"> <li>How long does it take to develop a flexible course?</li> <li>Is there enough lead in time?</li> <li>How many hours are needed to manage a flexible course?</li> <li>Do teachers have concerns about workload issues?</li> <li>How do teachers balance the expectations for research, teaching and community service?</li> </ul>
<ul style="list-style-type: none"> <li>Flexible learning allows teachers to provide learning materials reliably and efficiently</li> </ul>	<ul style="list-style-type: none"> <li>Teacher Interview</li> <li>Participant observation</li> </ul>	<ul style="list-style-type: none"> <li>Is on-line access available when students want it and is it easy to use?</li> </ul>
<ul style="list-style-type: none"> <li>Teachers design courses and set learning outcomes that build on the students' knowledge base in ways that relate to their practice</li> </ul>	<ul style="list-style-type: none"> <li>Documentary analysis</li> <li>Teacher Interview</li> <li>Student Interview</li> <li>Course Survey</li> </ul>	<ul style="list-style-type: none"> <li>Do the learning outcomes and timetable build on previous courses and students practice?</li> <li>Can students relate content and assessments towards their practice areas?</li> </ul>
<ul style="list-style-type: none"> <li>Teachers plan for collaboration and interaction between students and between the students and themselves.</li> </ul>	<ul style="list-style-type: none"> <li>Documentary analysis (Course structures)</li> <li>Teacher Interview</li> <li>Usage rates of software (LMS)</li> </ul>	<ul style="list-style-type: none"> <li>How is class interaction planned into the course?</li> <li>How accessible is the teacher?</li> </ul>
<ul style="list-style-type: none"> <li>Teachers develop assessments that both encourage and require students to use deep learning approaches that show evidence of reflection, critical reasoning and inquiry, yet also measure the achievement of learning outcomes.</li> </ul>	<ul style="list-style-type: none"> <li>Documentary analysis</li> <li>Teacher Interview</li> <li>Student assessments and other course work</li> </ul>	<ul style="list-style-type: none"> <li>Is deep learning that shows evidence of reflection, critical reasoning and inquiry found in course assessments?</li> <li>Do assessments relate to learning outcomes?</li> </ul>
<ul style="list-style-type: none"> <li>Teachers provide feedback that is timely and provides guidance for continued learning.</li> </ul>	<ul style="list-style-type: none"> <li>Teacher Interview</li> <li>Teacher evaluations</li> <li>Course survey</li> <li>Student Interview</li> </ul>	<ul style="list-style-type: none"> <li>What is the turn around time on assessments?</li> <li>What feedback is provided to students?</li> <li>What are students' perceptions of the teacher?</li> </ul>

Principle	Data Collection Method	Questions
<u>Organisation:</u>		
<ul style="list-style-type: none"> <li>Information about courses and programmes are available</li> </ul>	<ul style="list-style-type: none"> <li>Documentary analysis</li> <li>Student survey</li> </ul>	<ul style="list-style-type: none"> <li>How many hits on website?</li> <li>Numbers of brochures printed and mailed out?</li> <li>Could students find information about courses and programmes? What sources did students use?</li> </ul>
<ul style="list-style-type: none"> <li>Students can enrol in courses and the enrolment procedure is clear</li> </ul>	<ul style="list-style-type: none"> <li>Interview key informant</li> <li>Student survey</li> </ul>	<ul style="list-style-type: none"> <li>How is the enrolment process working?</li> <li>What, if any, problems did students have?</li> </ul>
<ul style="list-style-type: none"> <li>Support services, including the library are provided for students</li> </ul>	<ul style="list-style-type: none"> <li>Interview key informant</li> <li>Student survey</li> </ul>	<ul style="list-style-type: none"> <li>How is the student support service that is provided accessed?</li> <li>How many postgraduate nursing students use the service?</li> <li>What student support services are students using and are they meeting their needs?</li> </ul>
<ul style="list-style-type: none"> <li>Development and support is provided for teachers</li> </ul>	<ul style="list-style-type: none"> <li>Teacher interview</li> <li>Documentary analysis</li> </ul>	<ul style="list-style-type: none"> <li>What support is available for teachers? How is this provided?</li> <li>What professional development or other further support would teachers like?</li> </ul>
<ul style="list-style-type: none"> <li>The computer, electronic networks and infrastructure to support teaching and learning is provided</li> </ul>	<ul style="list-style-type: none"> <li>Teacher interview</li> <li>Student survey</li> <li>Documentary analysis</li> <li>Interview key informant</li> </ul>	<ul style="list-style-type: none"> <li>What support services do teachers use and how well do these meet their needs?</li> <li>Do teachers and students have technical support? Does it meet the need?</li> <li>What support services are available and are they meeting the needs of the teachers and students?</li> <li>Are there any particular technical problems e.g. network downtime?</li> <li>Are computers available for student use? Can they access them?</li> </ul>
<ul style="list-style-type: none"> <li>Teachers' workload is equitable and excellence in teaching innovation is recognised and rewarded.</li> </ul>	<ul style="list-style-type: none"> <li>Teacher interview</li> <li>Documentary analysis</li> </ul>	<ul style="list-style-type: none"> <li>How does the University recognise and reward excellence in teaching?</li> <li>How is teaching and research workload managed?</li> </ul>

## Appendix 2: Postgraduate Nurse Survey questionnaire

Nursing Division

Faculty of Medical & Health Sciences



THE UNIVERSITY OF AUCKLAND  
NEW ZEALAND

**“Flexible Learning for Postgraduate Nurses:  
A Case Study”**

Private Bag 92019  
Auckland  
Tel: 64-9-373 7599  
Fax: 64-9-367 7158

### POSTGRADUATE NURSING STUDENTS SURVEY

This survey is designed to provide information about levels of computer use and access by postgraduate nursing students. The results of the survey will assist the understanding of how students currently use technology. Michelle Honey, a nurse, lecturer in the Division of Nursing and a PhD student, is undertaking this research and this survey contributes to her PhD which explores how the Division of Nursing can introduce more flexibility to its postgraduate courses in a way that improves learning for the students, and also works for the teachers within the University, and the institution. All responses are anonymous.

If you have any queries or wish to know more about the study contact: Michelle Honey, phone 3737-599 ext 7308 or via email: [m.honey@auckland.ac.nz](mailto:m.honey@auckland.ac.nz).

**Please return completed forms to the marked box at the Division of Nursing Reception area by 15/08/2002.**

1. Did you visit the University of Auckland website to find out about the programme and/or course you are enrolled in?

Yes  No

2. Were you able to use the NDeva system for enrolment without any assistance?

Yes  No

3. Do you have a University of Auckland ID (identification) card? Yes  No

4. Do you have a University of Auckland NetAccount (NetLogin & Password)? Yes  No

5. Do you own or have convenient use of a personal computer for study purposes?

*If NO go to question 4*

Yes  No

5a. If yes, does your personal computer have Internet access? Yes  No

5b. If yes, does your personal computer have a CD drive? Yes  No

5c. If yes, does your personal computer have speakers or sound? Yes  No

6. Do you own or have convenient use of a videocassette player (VCR) for study purposes?

Yes  No

7. Do you own or have convenient use of an audio cassette player (tape) for study purposes?

Yes  No

8. Please rate your overall proficiency in computer use:

No knowledge <input type="checkbox"/>	Beginner <input type="checkbox"/>	Adequate <input type="checkbox"/>	Good <input type="checkbox"/>	Very Good <input type="checkbox"/>
---------------------------------------	-----------------------------------	-----------------------------------	-------------------------------	------------------------------------

9. What are the main obstacles to you making more use of the Internet?

*Tick any that apply*

- Don't have a computer where I live
  - Cost of connecting to the Internet
  - Takes too long to download files
  - Lack of keyboard or typing skills
  - Fear or anxiety about using a computer
  - No access to a printer, or printing problems
  - Already overworked without the burden of Internet use
  - Can't find what I'm looking for on the website
  - Having to share with other members of the household
  - Little of value on the Internet that relates to my courses
  - Don't know how to use it properly
  - Difficulty in gaining access to a computer at University
  - Other *(please specify)*
- 
- 

10. These next questions relate to specific computer skills.

File Management

10a. Can you change from the 'C' drive to the 'A' or 'D' drive      Yes       No

10b. Can you organise your files into folders?      Yes       No

Word Processing

10c. Can you insert page numbers?      Yes       No

10d. Can you check spelling and grammar?      Yes       No

10e. Can you organise references using Endnote?      Yes       No

10f. Can you print an individual page from a document?      Yes       No

10g. Can you copy and paste in and between documents      Yes       No

Email

10g. Do you send messages to individuals?      Yes       No

10h. Can you send attachments?      Yes       No

10i. Can you open attachments?      Yes       No

Using the Internet or World Wide Web (WWW)

10j. Can you use the www to locate and use search engines?      Yes       No

10k. Can you use the www for literature searching?      Yes       No

Library Services

11. Do you use the University library?      Yes       No

If yes, have you used?

11a. the on-line catalogue (Voyager)?      Yes       No

11b. e-journals available via Learn      Yes       No

11c. Databases available through Learn      Yes       No

11d. The library services from your home computer?      Yes       No

About Yourself: *The following questions relate to the literature that shows that flexible learning might be helpful for students who are busy and fitting study alongside other commitments.*

12a. How many hours a week, on average, are you working in paid employment now?

0-20       21-30       31-40       not employed

12b. How many courses, including this semester, have you undertaken towards your current postgraduate programme of study? \_\_\_\_\_

**THANK YOU FOR TAKING THE TIME TO COMPLETE THIS SURVEY**

## **Appendix 3: Student interview topic sheet**

### Introduction

- How is the course going overall?

### Course Outcomes and Content:

- Do the course learning outcomes and timetable seem to build on your experience? How?

### Assessments:

- Can you slant assessments towards your practice?

### Learning Activities:

- How do you participate with the other students in learning activities?
- What types of participation? And how often?

### Teaching:

- Can/How do you access the lecturer if you need to?
- What feedback do you get about your learning progress? How do you get this?

### Support:

- What support services (including library) have you used and how well do these meet your needs?
- Is on-line access reliable and easy to use?
- Do you have enough technical support?

### Conclusion

- Are you able to make decisions and choices about your learning that suit you?
- How is your study fitting in with other commitments?

## Appendix 4: Student participation in the study

<b>SEMESTER 2 YEAR 2002</b>						
<b>Course 1</b>						
<b>Total Enrolments</b>	Auckland	32	Outside-Auckland	9	Total Completed	42
Withdrew				4	Withdrew	4
Did Not Complete		2			Did Not Complete	2
<b>Consent from</b>	<b>Auckland</b>		<b>Outside Auckland</b>			
	<b>N</b>	<b>% of Akld</b>	<b>N</b>	<b>% of Outside Akld</b>		
Interview	9	28.1	8	88.9		
Assessed	13	40.6	8	88.9		
	<b>Auckland</b>		<b>Outside Auckland</b>			
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>Total</b>	<b>%</b>
Interview	2	6.3	1	11.1	3	7.1
Assess 1	2	6.3	2	22.2	4	9.5
Assess 2	2	6.3	2	22.2	4	9.5
<b>Course 2</b>						
<b>Total Enrolments</b>	Auckland	39	Outside-Auckland	12	Total Completed	51
Withdrew		1		1	Withdrew	2
Did Not Complete		1			Did Not Complete	1
<b>Consent from</b>	<b>Auckland</b>		<b>Outside Auckland</b>			
	<b>N</b>	<b>% of Akld</b>	<b>N</b>	<b>% of Outside Akld</b>		
Interview	2	5.1	1	8.3		
Assessed	3	7.7	2	16.7		
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>Total</b>	<b>%</b>
Interview	2	5.1	1	8.3	3	5.9
Assess 1	2	5.1	1	8.3	3	5.9
Assess 2	3	58.5	1	12.0	4	7.8
<b>Course 3</b>						
<b>Total Enrolments</b>	Online	11			Total Completed	11
					Withdrew	2
					Did Not Complete	1
<b>Consent from</b>	<b>On-line</b>					
	<b>N</b>	<b>% of On-line</b>				
Interview	5	45.5				
Assessed	4	36.4				
	<b>N</b>	<b>%</b>			<b>Total</b>	<b>%</b>
Interview	2	18.2			2	18.2
Assess 2(diary)	3	27.3			3	27.3
Assess 3	3	27.3			3	27.3
Assess 4(essay)	3	27.3			3	27.3

<b>SEMESTER 1 YEAR 2003</b>						
<b>Course 1</b>						
<b>Total Enrolments</b>	Auckland	21	Outside-Auckland	7	Total Completed	28
Withdrawn		2		2	Total	4
Did Not Complete		2			Did Not Complete	0
<b>Consent from</b>	<b>Auckland</b>		<b>Outside Auckland</b>			
	<b>N</b>	<b>% of Akld</b>	<b>N</b>	<b>% of Outside Akld</b>		
Interview	5	23.8	4	57.1		
Assessed	5	23.8	4	57.1		
	<b>Auckland</b>		<b>Outside Auckland</b>			
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>Total</b>	<b>%</b>
Interview	2	9.5	2	28.6	4	14.3
Assess 1	2	9.5	2	28.6	4	14.3
Assess 2	2	9.5	2	28.6	4	14.3
<b>Course 2</b>						
<b>Total Enrolments</b>	Auckland	37	Outside-Auckland	11	Total Completed	48
Withdrawn				2	Withdrawn	2
Did Not Complete				1	Did Not Complete	1
<b>Consent from</b>	<b>Auckland</b>		<b>Outside Auckland</b>			
	<b>N</b>	<b>% of Akld</b>	<b>N</b>	<b>% of Outside Akld</b>		
Interview	12	32.4	5	45.5		
Assessed	15	40.5	5	45.5		
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>Total</b>	<b>%</b>
Interview	7	18.9	3	27.3	10	20.8
Assess 1	2	5.4	2	18.2	4	8.3
Assess 2	4	10.8	2	18.2	6	12.5

<b>SEMESTER 2 YEAR 2003</b>						
<b>Course 1</b>						
<b>Total Enrolments</b>	Auckland	24	Outside-Auckland	13	Total Completed	37
Withdrawn				1		1
Did Not Complete		1				1
<b>Consent from</b>	<b>Auckland</b>		<b>Outside Auckland</b>			
	<b>N</b>	<b>% of Akld</b>	<b>N</b>	<b>% of Outside Akld</b>		
Interview	9	37.5	7	53.8		
Assessed	13	54.2	8	61.5		
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>Total</b>	<b>%</b>
Interview	2.0	8.3	3.0	23.1	5.0	13.5
Assess 1	5.0	20.8	2.0	15.4	7.0	18.9
Assess 2	5.0	20.8	2.0	15.4	7.0	18.9
<b>Course 2</b>						
<b>Total Enrolments</b>	Auckland	46	Outside-Auckland	11	Total	57
Withdrawn						0
Did Not Complete		3		2		5
<b>Consent from</b>	<b>Auckland</b>		<b>Outside Auckland</b>			
	<b>N</b>	<b>% of Akld</b>	<b>N</b>	<b>% of Outside Akld</b>		
Interview	18	39.1	10	90.9		
Assessed	25	54.3	9	81.8		
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>Total</b>	<b>%</b>
Interview	7.0	15.2	3.0	27.3	10.0	17.5
Assess 1	5.0	10.9	3.0	27.3	8.0	14.0
Assess 2	5.0	10.9	3.0	27.3	8.0	14.0
<b>Course 3</b>						
<b>Total Enrolments</b>	on-line	20			Total	20
					Withdrawn	
					Did Not Complete	1
<b>Consent from</b>	<b>On-line</b>					
	<b>N</b>	<b>% of On-Line</b>				
Interview	8	40.0				
Assessed	8	40.0				
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>Total</b>	<b>%</b>
Interview	2.0	10.0			2.0	10.0
Assess 2(diary)	5.0	25.0			5.0	25.0
Assess 4(essay)	3.0	15.0			3.0	15.0

<b>SEMESTER 1 YEAR 2004</b>						
<b>Course 1</b>						
<b>Total Enrolments</b>	Auckland	19	Outside-Auckland	10	Total Completed	29
Withdrew		3			Withdrew	3
Did Not Complete					Did not Complete	
<b>Consent from</b>	<b>Auckland</b>		<b>Outside Auckland</b>			
	<b>N</b>	<b>% of Akld</b>	<b>N</b>	<b>% of Outside Akld</b>		
Interview	4	21.1	3	30.0		
Assessed	5	26.3	3	30.0		
	<b>Auckland</b>		<b>Outside Auckland</b>			
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>Total</b>	<b>%</b>
Interview	3	15.8	2	20.0	5	17.2
Assess 1	3	15.8	2	20.0	5	17.2
Assess 2	3	15.8	2	20.0	5	17.2
<b>Course 2</b>						
<b>Total Enrolments</b>	On-line	53			Total	53
					Did Not Complete	
					Withdrew	
<b>Consent from</b>	<b>On-Line</b>					
	<b>N</b>	<b>% of On-line</b>				
Interview	8	15.1				
Assessed	9	17.0				
	<b>N</b>	<b>%</b>				
Interview	7	13.2				
Assess 1a	6	11.3				
Assess 1b	6	11.3				
Assess 2	6	11.3				

## Appendix 5: Ethical Approval



THE UNIVERSITY OF AUCKLAND  
NEW ZEALAND

Research Office  
Office of the Vice-Chancellor  
The University of Auckland  
Private Bag 92019  
Auckland 1, New Zealand

Level 2, 76 Symonds Street  
Auckland, New Zealand  
Telephone: 64 9 - 373 7599 ext. 7956  
Facsimile: 64 9 - 373 7432

### UNIVERSITY OF AUCKLAND HUMAN SUBJECTS ETHICS COMMITTEE

14 May, 2002

#### MEMORANDUM

Michelle Honey  
Division of Nursing

#### Re: Application for Ethics Approval

The Committee met on 8 May, 2002 and considered the application for ethics approval for your research titled "Flexible Learning for Postgraduate Nurses: A Case Study" (Our Ref. 2002 / 122).

Ethics approval with comment was given for a period of three years. The Committee's comments were:

#### In CF for PG Nurses for assessed work

- ◆ *I agree to take part in this research and I understand that my written should be changed to I understand that my written*
- ◆ *I agree to take part in this research* should be inserted just above "Signed"

#### CF for PG Nurses interview

- ◆ *If selected a one-to-one interview then I can withdraw* should be changed to *I understand that, if selected for a one-to-one interview, I can withdraw*
- ◆ *I understand that I will not be identified in the research report, though brief extracts may be used to illustrate research finding* should be moved to the paragraph of "I understands.
- ◆ *I understand that the interview will be audio taped* should be added to the paragraph of "I understands.
- ◆ *I agree to take part in this research and agree that the interview may be audio taped* should be changed to *I agree to take part in this research*

#### CF for course co-ordinator

- ◆ *I agree to take part in this research and understand that Michelle* should be changed to *I understand that Michelle*
- ◆ *The interviews will be audio taped* should be changed to *I understand that the interviews will be audio taped*
- ◆ *I will provide* should be changed to *I understand I will provide*
- ◆ *I agree that the interview may be audio taped* should be deleted.

#### PIS Key University Staff

- ◆ *Participation is voluntary* should be moved to the head of the paragraph in which it appears.

#### CF Key University Staff

- ◆ *I agree to take part in this research and understand that the interview* should be changed to *I understand that the interview* and moved into the previous paragraph.
- ◆ *I agree that the interview may be audio taped* should be deleted.

If the project changes significantly you are required to resubmit your application to the Committee for further consideration.

**In order that an up-to-date record can be maintained, it would be appreciated if you could notify the Committee once your project is completed.**

Please contact the Chairperson if you have any specific queries relating



THE UNIVERSITY OF AUCKLAND  
NEW ZEALAND

to your application. She and the members of the Committee would be most happy to discuss general matters relating to ethics provisions if you wish to do so.

Kate O'Connor, Research & Ethics Administrator  
University of Auckland Human Subjects Ethics Committee

Research Office  
Office of the Vice-Chancellor  
The University of Auckland  
Private Bag 92019  
Auckland 1, New Zealand

Level 2, 76 Symonds Street  
Auckland, New Zealand  
Telephone: 64 9 - 373 7599 ext. 7956  
Facsimile: 64 9 - 373 7432

c.c. Head of Department, Division of Nursing  
Michelle Honey  
Division of Nursing  
FMHS

## Appendix 6: Postgraduate Student Participant Information Sheet

SCHOOL OF NURSING

Faculty of Medical & Health Sciences



THE UNIVERSITY OF AUCKLAND  
NEW ZEALAND

Private Bag 92019  
Auckland  
Tel: 64-9-373 7599  
Fax: 64-9-367 7158

### Postgraduate Nursing Student Participant Information Sheet

You are invited to take part in a study on “**Flexible Learning for Postgraduate Nurses: A Case Study**”

My name is Michelle Honey. I am a registered nurse, lecturer in the School of Nursing and a PhD student enrolled at the University of Auckland. This study contributes to my PhD and runs from March 2002 till December 2004.

Presently there is minimal flexibility and use of technology to support student learning for postgraduate nurses within the School of Nursing. The issues around how the School of Nursing can introduce more flexibility into postgraduate nursing courses in a way that improves learning for the students, works for the teachers, and an understanding of the organisational structures required for flexible learning need to be explored.

To take part in this study you must be enrolled in one or more of these postgraduate nursing courses:

- 704 Applied Science for Registered Nurses
- 720 Evidence-based Nursing or
- 723 Clinical Scholarship.

These courses have been selected for inclusion in the study. Course materials, course evaluations and other course information that does not identify you will be incorporated into the analysis. The course co-ordinators of each course are participants in this research. As a student in the course you are also invited to participate. This is entirely voluntary and your participation, or non-participation, will not affect your grades or achievement of the course. You are invited to participate in two ways:

Firstly by giving permission for written work you complete as part of the course requirements to be included. Only a sample of the work will be selected for analysis. Your assignments and other assessed work are identified with your student identification number only. You will not be identified in the research report, though brief extracts of your written work may be used to illustrate research findings. A consent form for allowing your work to be analysed is attached.

Secondly you are invited to participate in an interview. You would form a group with other students enrolled in the same course to discuss your perception of the impact of increased flexibility on your learning. The interview will be taped and notes taken. The interview can take place, either at the University of Auckland, or at a place convenient for participants. The interview should take no more than one hour. If you prefer a one-to-one interview can take place, which would also be taped. If you are studying at a distance the interview can take place by phone, either one-to-one, or in a group using a telephone conference call. A separate consent form for the interview is attached. If you

agree to participate please contact Michelle Honey on 3737-599, extension 87308, or [m.honey@auckland.ac.nz](mailto:m.honey@auckland.ac.nz). A meeting date and time will be arranged. Participation is voluntary. Prior to the interview you are free to leave without giving reasons. Once the interview has taken place it is not possible to remove your comments from the general discussion that has been taped in the group. Due to the nature of group discussion your anonymity cannot be guaranteed, as other participants in the group will know you. If you select a one-to-one interview, then you may withdraw your information at any time within three months of the interview, without giving a reason. A copy of the transcript of the interview can be made available to you upon request.

Your participation will remain confidential. No names or other identifying data will be used in the report and all research material will be stored in a locked office and destroyed six years after the study. The research material you provide will not be used for any other purpose, but to inform this study.

Thank you for considering this request. If you have any further queries or wish to know more about the study please contact:

Michelle Honey	My supervisor is:
School of Nursing	Dr Margaret Horsburgh
Faculty of Medical and Health Sciences	Faculty of Medical and Health Sciences
University of Auckland	University of Auckland
Private Bag 92-019	Private Bag 92-019
AUCKLAND	AUCKLAND
Phone 3737-599 ext 87308	Phone: 3737599 – ext 84451
Email: <a href="mailto:m.honey@auckland.ac.nz">m.honey@auckland.ac.nz</a>	Email: <a href="mailto:m.horsburgh@auckland.ac.nz">m.horsburgh@auckland.ac.nz</a>

Further contact people are the Head of Department for the School of Nursing:

Judy Kilpatrick  
 Associate Professor;  
 Chair School of Nursing and Director of Nursing Studies  
 Faculty of Medical and Health Sciences  
 University of Auckland  
 Private Bag 92-019  
 AUCKLAND  
 Phone 3737-599 ext 82897  
 Email: [j.kilpatrick@auckland.ac.nz](mailto:j.kilpatrick@auckland.ac.nz)

And if you have any ethical concerns then you may contact the Chair of the University of Auckland Human Subjects Ethics Committee:

Dr Pauline Tapp  
 Chair  
 University of Auckland Human Subjects Ethics Committee  
 Research Office  
 Office of the Vice Chancellor  
 University of Auckland  
 Private Bag 92-019  
 AUCKLAND  
 Phone 3737-599 ext 87830

Yours sincerely

Michelle Honey

**"APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN SUBJECTS ETHICS COMMITTEE  
 on .08/05/2002. for a period of .3. years, from .08./05./2002. Reference .2002/122"**

## Appendix 7: Course Co-ordinators Participant Information Sheet

SCHOOL OF NURSING

Faculty of Medical & Health Sciences



Private Bag 92019  
Auckland  
Tel: 64-9-373 7599  
Fax: 64-9-367 7158

### Course Co-Coordinator Participant Information Sheet

You are invited to take part in a study on “**Flexible Learning for Postgraduate Nurses: A Case Study**”

My name is Michelle Honey. I am a registered nurse, lecturer in the School of Nursing and a PhD student enrolled at the University of Auckland. This study contributes to my PhD.

Presently there is minimal flexibility and use of technology to support student learning for postgraduate nurses within the School of Nursing. The issues around how the School of Nursing can introduce more flexibility into postgraduate nursing courses in a way that improves learning for the students, works for the teachers, and an understanding of the organisational structures required for flexible learning need to be explored.

This study will run from March 2002 till December 2004. Three courses have been selected to be case studies for this project. As course co-ordinator your participation in three areas is sought.

Firstly you would be interviewed three times during the running of the course to discuss your perception of the impact of increased flexibility in learning. This would be before the semester began, about half way through, and at the end of the semester. The interview will be taped and notes taken. The interview can take place, either at the University of Auckland, or at a place convenient for you. Each interview should take no more than one hour. Brief extracts from the interview may be used to illustrate research findings.

Secondly intermittent observation, as you co-ordinate the course will take place. This would be arranged with you to ensure your convenience. I will be keeping field notes about my observations for later analysis for categories and themes.

Thirdly access to course material, including assignments, assessed work, your course report to the Board of Studies and the course evaluations that the Centre for Professional Development (CPD) collate is requested.

If you agree to participate please sign the attached consent form and return it to me.

Your participation will remain anonymous in that your name or other identifying data will not be used on the interview transcripts or observation field notes, or in the report. Material gathered during this research will be stored in a locked office and destroyed six years after the study. The material from interviews will not be used for any other purpose, but to inform this study.

A copy of the tape, transcript of the interviews and interim reports from the case will be made available to you and I will seek feedback to ensure I have interpreted your comments correctly.

Thank you for considering this request. If you have any further queries or wish to know more about the study please contact:

Michelle Honey	My supervisor is:
School of Nursing	Dr Margaret Horsburgh
Faculty of Medical and Health Sciences	Faculty of Medical and Health Sciences
University of Auckland	University of Auckland
Private Bag 92-019	Private Bag 92-019
AUCKLAND	AUCKLAND
Phone 3737-599 ext 87308	Phone: 3737599 – ext 84451
Email: <a href="mailto:m.honey@auckland.ac.nz">m.honey@auckland.ac.nz</a>	Email: <a href="mailto:m.horsburgh@auckland.ac.nz">m.horsburgh@auckland.ac.nz</a>

Further contact people are the Head of Department for the School of Nursing:

Judy Kilpatrick  
Associate Professor;  
Chair School of Nursing and Director of Nursing Studies  
Faculty of Medical and Health Sciences  
University of Auckland  
Private Bag 92-019  
AUCKLAND  
Phone 3737-599 ext 82897  
Email: [j.kilpatrick@auckland.ac.nz](mailto:j.kilpatrick@auckland.ac.nz)

And if you have any ethical concerns then you may contact the Chair of the University of Auckland Human Subjects Ethics Committee:

Dr Pauline Tapp,  
Chair  
University of Auckland Human Subjects Ethics Committee  
Research Office  
Office of the Vice Chancellor  
University of Auckland  
Private Bag 92-019  
AUCKLAND  
Phone 3737-599 ext 87830

Yours sincerely

Michelle Honey

**"APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN SUBJECTS ETHICS COMMITTEE on .08/05/2002. for a period of .3. years, from .08./05./2002. Reference .2002/122"**

## Appendix 8: Key Informants Participant Information Sheet

SCHOOL OF NURSING

Faculty of Medical & Health Sciences



THE UNIVERSITY OF AUCKLAND  
NEW ZEALAND

Private Bag 92019  
Auckland  
Tel: 64-9-373 7599  
Fax: 64-9-367 7158

### Key University Staff Information Sheet

You are invited to take part in a study on “**Flexible Learning for Postgraduate Nurses: A Case Study**”

My name is Michelle Honey. I am a registered nurse, lecturer in the School of Nursing and a PhD student enrolled at the University of Auckland. This study contributes to my PhD.

Presently there is minimal flexibility and use of technology to support student learning for postgraduate nurses within the School of Nursing. The issues around how the School of Nursing can introduce more flexibility into postgraduate nursing courses in a way that improves learning for the students, works for the teachers, and an understanding of the organisational structures required for flexible learning need to be explored.

This study will run from March 2002 till December 2004. As a participant you would be interviewed to discuss your perception of the impact of increased flexibility in learning or an aspect that relates to this. The interview will be taped and notes taken. The interview can take place, either at the University of Auckland, or at a place convenient for you. The interview should take no more than one hour.

Participation is voluntary. If you agree to participate please contact Michelle Honey on 3737-599, extension 87308, or at [m.honey@auckland.ac.nz](mailto:m.honey@auckland.ac.nz). A meeting date and time will be arranged. Prior to the interview or during the interview you are free to leave or cancel the meeting without giving reasons. You may also withdraw your information at any time within three months of the interview, without giving a reason.

Your participation will remain anonymous. No names or other identifying data will be used in the report and interview material will be stored in a locked office and destroyed six years after the study. The material from interviews will not be used for any other purpose, but to inform this study.

A copy of the tape or transcript of the interview can be made available to you upon request.

Thank you for considering this request. If you have any further queries or wish to know more about the study please contact:

Michelle Honey	My supervisor is:
School of Nursing	Dr Margaret Horsburgh
Faculty of Medical and Health Sciences	Faculty of Medical and Health Sciences
University of Auckland	University of Auckland
Private Bag 92-019	Private Bag 92-019
AUCKLAND	AUCKLAND
Phone 3737-599 ext 87308	Phone: 3737599 – ext 84451
Email: <a href="mailto:m.honey@auckland.ac.nz">m.honey@auckland.ac.nz</a>	Email: <a href="mailto:m.horsburgh@auckland.ac.nz">m.horsburgh@auckland.ac.nz</a>

Further contact people are the Head of Department for the School of Nursing:

Judy Kilpatrick  
Associate Professor;  
Chair School of Nursing and Director of Nursing Studies  
Faculty of Medical and Health Sciences  
University of Auckland  
Private Bag 92-019  
AUCKLAND  
Phone 3737-599 ext 82897  
Email: [j.kilpatrick@auckland.ac.nz](mailto:j.kilpatrick@auckland.ac.nz)

And if you have any ethical concerns then you may contact the Chair of the University of Auckland Human Subjects Ethics Committee:

Dr Pauline Tapp  
Chair  
University of Auckland Human Subjects Ethics Committee  
Research Office  
Office of the Vice Chancellor  
University of Auckland  
Private Bag 92-019  
AUCKLAND  
Phone 3737-599 ext 87830

Yours sincerely

Michelle Honey

**"APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN SUBJECTS ETHICS COMMITTEE on .08/05/2002. for a period of .3. years, from .08./05./2002. Reference .2002/122"**

## **Appendix 9: Assessed Work Rubric**

**9a: Flexible Learning Rubric for Postgraduates Nurses Written Assessed Work- Course 1**

**9b: Flexible Learning Rubric for Postgraduates Nurses Written Assessed Work- Course 2**

**9c: Flexible Learning Rubric for Postgraduates Nurses Written Assessed Work- Course 3**

### Appendix 9a: Flexible Learning Rubric for Postgraduates Nurses Written Assessed Work- Course 1

	Not Applicable	Beginning	Developing	Accomplished	Exemplary
<b>Students develop information literacy skills</b>					
<b>Evidence of reading and Knowledge</b>		Uses standard physiology/pathophysiology texts. Minimum of 3 key studies.			Strong supporting current literature.
<b>Citations/ Referencing</b>				Some inaccuracies	Excellent use of APA in text citations and reference list
<b>Deep learning approaches with evidence of reflection, critical reasoning and inquiry</b>					
<b>Reflection</b>	✓				
<b>Critical reasoning</b>					Comprehensive exploration of issues. Shows inter-relationships between clinical presentation and pathophysiology.
<b>Inquiry</b>					Accurate interpretation of results. Analysis of exceptions.
<b>Depth of learning (Bloom)</b>		Knowledge, comprehension and application	Application and analysis	Analysis and synthesis	Synthesis and evaluation.
<b>Structural complexity (SOLO: Hattie &amp; Purdie, 1998)</b>		One system	Multi-system	Integrated systems	Understands body as a whole
<b>Students utilise their previous knowledge and experience to build new knowledge which has meaning in the context of their sphere of practice</b>					
<b>Constructivist/ authentic learning</b>					Relates to client or intervention from practice

## Appendix 9b: Flexible Learning Rubric for Postgraduates Nurses Written Assessed Work- Course 2

	Not Applicable	Beginning	Developing	Accomplished	Exemplary
<b>Students develop information literacy skills</b>					
<b>Evidence of reading and Knowledge</b>					Strong supporting current literature from a variety of sources
<b>Citations/ Referencing</b>					Excellent use of APA in text citations and reference list
<b>Deep learning approaches with evidence of reflection, critical reasoning and inquiry</b>					
<b>Reflection</b>					Insightful consideration of case scenario
<b>Critical reasoning</b>					Comprehensive exploration of study/clinical question
<b>Inquiry</b>					Identifies relevant arguments. Explains assumptions
<b>Depth of learning (Bloom)</b>		Knowledge, comprehension and application	Application and analysis	Analysis and synthesis	Synthesis and evaluation.
<b>Structural complexity (SOLO: Hattie &amp; Purdie, 1998)</b>		1 issue/aspect of the study/clinical question	2 or more issue/aspect but not interrelated	Some integration of issue/aspect	Clinical question/study understood as a coherent whole
<b>Students utilise their previous knowledge and experience to build new knowledge which has meaning in the context of their sphere of practice</b>					
<b>Constructivist/ authentic learning</b>					Application of evidence to patient problems/clinical issue.

### Appendix 9c: Flexible Learning Rubric for Postgraduates Nurses Written Assessed Work- Course 3

	Not Applicable	Beginning	Developing	Accomplished	Exemplary
<b>Students develop information literacy skills</b>					
<b>Evidence of reading and Knowledge</b>					Strong supporting current literature beyond the reading list.
<b>Citations/ Referencing</b>					Excellent use of APA in text citations and reference list
<b>Deep learning approaches with evidence of reflection, critical reasoning and inquiry</b>					
<b>Reflection</b>					Insightful consideration of practice
<b>Critical reasoning</b>					Comprehensive exploration of issue
<b>Inquiry</b>					Identifies relevant arguments. Explains assumptions
<b>Depth of learning (Bloom)</b>		Knowledge, comprehension and application	Application and analysis	Analysis and synthesis	Synthesis and evaluation.
<b>Structural complexity (SOLO: Hattie &amp; Purdie, 1998)</b>		1 issue identified	2 or more issues identified but not interrelated	Some integration of issues	Issues explored as a whole
<b>Students utilise their previous knowledge and experience to build new knowledge which has meaning in the context of their sphere of practice</b>					
<b>Constructivist/ authentic learning</b>					Application of clinical scholarship to practice

## Appendix 10: 2001 Flexible Learning Plan Presented to School of Nursing

Stages	Who/When	Action	Advantages to School and Teachers	Advantages to Students
Stage 1	All papers Semester 1 2002	<ul style="list-style-type: none"> <li>Course Outline &amp; information on line</li> <li>Teacher biographical and contact details online</li> <li>Hard copy for each course also</li> <li>Try to standardise format</li> <li>Count hits web site</li> </ul>	<ul style="list-style-type: none"> <li>Minimal extra time required</li> <li>Reduce phone calls for this information</li> <li>Information comes from Handbook</li> <li>Potential to reduce printing costs</li> <li>Students can't lose information</li> <li>Prepare Division for on-line material</li> </ul>	<ul style="list-style-type: none"> <li>Course information always available</li> <li>Lecturer contact details always available</li> <li>Choice of using hardcopy and on-line</li> <li>Can't say lost information</li> <li>Prepare students for on-line material and getting used to looking for info</li> </ul>
Stage 2	Semester 2 2002	<ul style="list-style-type: none"> <li>Course assessments on-line with due dates, other relevant information – like marking criteria</li> <li>Announcements for notices to all students – eg room changes</li> <li>Timetable (dates, rooms &amp; topic)</li> <li>Marks on-line – students can see results of assignments etc</li> <li>Links to useful information</li> <li>Some Content</li> </ul>	<ul style="list-style-type: none"> <li>Minimal extra time required</li> <li>Reduce phone calls for info</li> <li>Potential to reduce printing costs</li> <li>Students can't lose information</li> <li>Saves leaving notes everywhere</li> <li>Saves students asking for results</li> <li>Provide pointers to useful sites as links saves handouts and helps students</li> <li>Might provide on-line handout if not available on the day, reading list etc</li> <li>Less hassle with changes e.g. room</li> </ul>	<ul style="list-style-type: none"> <li>Course information always available</li> <li>Can't say lost information</li> <li>Information available when needed</li> <li>Personal results available perhaps earlier</li> <li>Links to extra useful sites available to help learning</li> <li>More information available when needed</li> <li>Easier if unable to attend that day or didn't get material</li> </ul>
Stage 3	Semester 1 2003	<ul style="list-style-type: none"> <li>Communication – emails to and from students</li> <li>On-line chat and/or discussion</li> <li>Content – notes, PowerPoint, files</li> <li>Quizzes</li> </ul>	<ul style="list-style-type: none"> <li>Students can be on campus or afar</li> <li>Reduced asking for copy of material</li> <li>Reduced printing of quizzes etc</li> <li>Less phone calls</li> </ul>	<ul style="list-style-type: none"> <li>Personalised communication when necessary</li> <li>Opportunity to be involved in discussion with peers</li> <li>Less worry about taking notes</li> <li>Less worry if absent on the day</li> <li>Email assignments in – don't have to deliver</li> </ul>
Stage 4	Semester 2 2003	<ul style="list-style-type: none"> <li>Extra technical help needed</li> <li>Multi media</li> <li>Interactive notes</li> <li>CD ROMS</li> </ul>	<ul style="list-style-type: none"> <li>Once prepared is easier next time round</li> <li>Develop library of resources we could share with each other</li> </ul>	<ul style="list-style-type: none"> <li>Interesting material</li> <li>Self paced learning</li> <li>May be instead of lectures or as well as</li> </ul>
Stage 5	2003	<ul style="list-style-type: none"> <li>Fully flexible course (maybe on-line)</li> </ul>	<ul style="list-style-type: none"> <li>Once prepared is easier next time round</li> <li>Less hassle if going overseas etc as can manage class from afar</li> <li>Possibility of International students</li> </ul>	<ul style="list-style-type: none"> <li>Students study when they want</li> <li>Students don't need to live in main city</li> </ul>

