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Learning nursing: Gaining an insight into what helps students to make sense of nursing knowledge and practice

by
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Abstract

Learning nursing is regarded as a challenging, complex and somewhat difficult process. It has long been established that students have difficulty in integrating theoretical knowledge and nursing practice. Most studies in the literature focus on the causes of the theory practice gap, students' difficulties in relating theory and practice and examining specific teaching and learning approaches that could be employed in order to bridge this gap.

The aim of this phenomenological study was to gain an insight into what nursing students believe facilitates their learning and what helps them to develop cognisance of the complex relationship between theory and practice. Eleven pre-registration adult nursing students were interviewed and asked to share their experiences of learning nursing and what they believed enabled them to learn nursing and make sense of nursing knowledge and practice. Utilising Colaizzi's framework (Colaizzi, 1978), seven key themes emerged from the narratives with further analysis identifying situated learning as a key theme which permeated all of the students' narratives.

This study considers constructivism, situated learning and being in a community of practice as the key factors involved in facilitating the eleven students to learn nursing knowledge and practice and gain cognisance of the complex relationship between nursing knowledge and practice. The study recommends providing students with a range of educational experiences which situate their learning in meaningful contexts, thereby enabling students to construct an understanding of the complex relationship between theory and practice.

CHAPTER 1 - INTRODUCTION

1.1. Background and rationale

The process of learning nursing is regarded as challenging, complex and somewhat difficult (Alexander, 1983; Benner, 1984; Dean & Kenworthy, 2000; NES, 2006; NMC, 2008a; Boore & Deeny, 2012). It has long been established that students have difficulty in integrating theoretical knowledge and nursing practice (DHSS, 1972 cited in Jolley & Allan, 1989; Miller, 1989; Dale, 1994; Rolfe, 1996; Upton, 1999) and this continues to be the foundation of many discussions within the national and international literature (Turner *et al.,* 2003; Stevenson, 2005; Morgan, 2006; Baxter, 2007; Scully, 2011; Ajani & Moez, 2011; Dadgaran, 2012).

In examining the challenges which students experience in making sense of nursing knowledge and practice and understanding the key concepts and theories within nursing practice, the majority of the nursing research and literature has focused on the causes of the theory practice gap and students' difficulties in understanding the relationship between theory and practice (Allmark, 1995; Rafferty *et al.,* 1996; Corlett, 2000; Henderson, 2002; Maben *et al.,* 2006) and the complexities of acquiring and conceptualising nursing knowledge (Benner, 1984; Higgs *et al.,* 2001; Rolfe *et al.,* 2001). To address the challenges of learning nursing knowledge and practice, many studies have suggested specific teaching and learning approaches that could be employed in order to bridge the theory practice gap and assist students to make sense of their nursing knowledge and practice (Frost, 1996; Aronson *et al.,* 1997; Scanlan *et al.,* 2002; Morgan, 2006; Baxter, 2007).

A comprehensive review of the literature identified that there has not been any research which has singularly examined nursing students' views on what they believe helps them to learn nursing and make sense of their nursing knowledge and practice. Therefore, this study has focused on exploring students' views and experiences of learning nursing knowledge and practice with the aim of gaining an insight into what

facilitates students' learning and what helps them to develop cognisance of the complex relationship between nursing knowledge and practice.

1.2. Introducing the thesis

This thesis presents the processes which were undertaken to explore the students' views and experiences of learning nursing and what they believe helps them to make sense of their nursing knowledge and practice. It goes on to provide an interpretive analysis and discussion based on the outcomes of the findings and concludes by proposing recommendations for future practice.

The thesis is presented in a series of chapters which include the following:

Introduction:
This chapter briefly introduces the background and rationale for the study and outlines the content of each chapter.

Placing Nurse Education in context:
This chapter defines pre-registration adult nursing education and provides an overview of the history of nurse education and the educational changes which have taken over place over the past 25 years.

Literature review:
The literature review explores the complex relationship between nursing theory and practice and the conceptual framework which represents the challenges innate in learning nursing. The chapter also examines the learning theories considered applicable to learning nursing and introduces the theoretical framework underpinning the study. In addition the literature review considers contemporaneous views on learning nursing and some factors which may influence students' learning.

Methodology:

This chapter provides the rationale for employing a phenomenological approach to exploring students' views and experiences of learning nursing and identifies four research questions which directed and maintained the focus of the study. The methodology chapter also contains a detailed outline and explanation of the research design including the sampling process and how the data was collected and analysed utilising Colaizzi's framework (Colaizzi, 1978).

Findings:

This chapter identifies and describes the seven themes which emerged from the data. These include learning in the University, students' own approach to learning, learning through the use of visual or audio resources, individuals' role in their learning, learning in context, students' motivation, drive and determination to learn nursing and learning on the job. The findings chapter aims to represent the essence of the students' narratives and capture an overall sense of the students' experience of learning nursing and what facilitates this process.

Discussions:

This chapter provides an iterative discussion on the findings which draws upon the literature and research questions as a means to critically discuss the students' experience of learning nursing and what facilitates this process. As the concept of situated learning was a common theme throughout the narratives, the discussions are framed around the students' experiences of learning in the University, learning in practice and how they endeavoured to learn themselves. This chapter returns to the reflexive process and discusses some of the strengths and limitations of the study. It concludes by considering some of the implications of the findings and provides some recommendations for future research and practice.

Conclusion:

This chapter provides a synopsis of the thesis, summarises the key analysis and concludes by proposing some recommendations for future research and practice.

CHAPTER 2 - PLACING NURSE EDUCATION IN CONTEXT

To place learning nursing knowledge and practice in context, this chapter defines pre-registration adult nursing education and provides an overview of the history of nurse education and the educational changes which have taken place over the past 25 years.

2.1. Introducing the adult nursing pre-registration programme

The Nursing and Midwifery Council (NMC) is the regulator of nurses and midwives in the United Kingdom. Their mission is to safeguard the health and wellbeing of the public which they achieve by maintaining a register of nurses and midwives. The NMC safeguards the public by setting and maintaining standards of education, training and conduct and providing mandatory guidance and additional advice to people designing and developing education programmes (NMC, 2010:4).

"The term ‘pre-registration nursing education’ describes the programme that a nursing student in the United Kingdom undertakes in order to acquire the competencies needed to meet the criteria for registration with the Nursing and Midwifery Council" (NMC, 2010:4). The NMC are required by law to establish standards which determine the programme content, learning outcomes and assessment criteria for pre-registration nursing programmes (Department of Health, 2001). In the United Kingdom students qualify in a specific field of nursing practice which includes adult, mental health, learning disabilities and children’s nursing. This study focuses on exploring adult nursing students' experience of learning nursing.

The NMC standards are reviewed every 5 years. Students taking part in this study were governed by the 'standards of proficiency for pre-registration nursing education' which was published in 2004 (NMC, 2004a) and now superseded by the NMC competencies (NMC, 2010). The standards of proficiency defined the overarching principles of being able to practise as a nurse and addressed what nursing students

must do and achieve to meet the criteria for entry to the NMC register. These were specified as:

- Manage oneself, one's practice, and that of others, in accordance with The NMC code of professional conduct: standards for conduct, performance and ethics (the Code), recognising one's own abilities and limitations (NMC, 2004b).
- Practise in accordance with an ethical and legal framework which ensures the primacy of patient and client interest and well-being and respects confidentiality.
- Practise in a fair and anti-discriminatory way, acknowledging the differences in beliefs and cultural practices of individuals or groups.
- Engage in, develop and disengage from therapeutic relationships through the use of appropriate communication and interpersonal skills.
- Create and utilise opportunities to promote the health and well-being of patients, clients and groups.
- Undertake and document a comprehensive, systematic and accurate nursing assessment of the physical, psychological, social and spiritual needs of patients, clients and communities.
- Formulate and document a plan of nursing care, where possible in partnership with patients, clients, their carers and family and friends, within a framework of informed consent.
- Based on the best available evidence, apply knowledge and an appropriate repertoire of skills indicative of safe nursing practice.
- Provide a rationale for the nursing care delivered which takes account of social, cultural, spiritual, legal, political and economic influences.
- Evaluate and document the outcomes of nursing and other interventions.
- Demonstrate sound clinical judgement across a range of differing professional and care delivery contexts.
- Contribute to public protection by creating and maintaining a safe environment of care through the use of quality assurance and risk management strategies. (NMC, 2004a:5)

The NMC stipulates that the balance of theory and practice within all pre-registration programmes should normally be equally divided with 2300 hours of theory and 2300 hours of practice (NMC, 2004a, NMC, 2010). The theoretical component of the pre-registration programme should enable nursing students to acquire the knowledge, understanding and professional skills needed to plan, provide and assess total nursing care. The clinical component must include practice learning experiences in general and specialist medicine, general and specialist surgery, child care, paediatrics, maternity care, mental health, psychiatry, care of the older adult and home nursing (NMC, 2004a). The standards of proficiency also included the broad content of knowledge which should be covered in the pre-registration adult nursing programme including professional, ethical and legal issues, the theory and practice of nursing, the context in which health and social care is delivered, organisational structures and processes, communication, social and life sciences relevant to nursing practice and frameworks for social care provision and care systems (NMC, 2004a).

Although the NMC standards list a broad base of nursing knowledge which requires to be included in the pre-registration nursing programmes (NMC, 2004a; NMC, 2010), the knowledge which students specifically learn within adult nursing pre-registration programmes normally includes a wide range of subjects from a variety of disciplines. The core nursing knowledge includes models and processes of nursing including assessing, planning, implementing and evaluating patient care and clinical nursing skills such as infection control, moving and handling, vital signs, administering medications, basic life support, nursing documentation and patient safety. Students also learn the theories of health, health promotion, reflective practice, communication and how to develop therapeutic relationships. Other subjects which are core to nursing knowledge include professional, ethical and legal frameworks which cover a wide range of ethical principles, NMC legislation, health and social care policies and the core professional values within nursing. The programmes also draw upon knowledge from the life and social sciences to inform adult nursing practises including human anatomy, physiology, pathophysiology, epidemiology, bacteriology, virology, biochemistry, pharmacology, dietetics,

radiology, sociology, psychology and the principles of teaching (Potter & Perry, 2003; Mallik *et al.*, 2004; NMC, 2004; Walsh & Crumbie, 2007; NMC, 2010).

Although the pre-registration nursing programmes includes a wide range of subjects, Rodgers (2005) believes that nursing knowledge is more than a list of content covered in an educational programme, instead it requires nurses to learn to be critical and insightful about their knowledge base, question their own assumptions and biases and have the ability to problem solve alternative ways of thinking about the care they provide (Rodgers, 2005). This is reflected by the NMC (NMC, 2004a) who indicate that learning nursing involves the integration of relevant and sound theoretical knowledge with knowledge and experience derived from practice. The NMC also suggests that the level of learning within pre-registration programmes must facilitate students to achieve the knowledge, understanding and skills acquisition required to meet the needs of the health services and communities and facilitate them to develop the critical thinking, problem-solving and reflective skills required in complex professional practice (NMC, 2004a:15).

In terms of learning nursing, Hall (2004) believes that it is difficult to clearly define nursing knowledge as nursing is dynamic and constantly evolving and suggests that the culture, accepted practices and beliefs of nursing in practice may influence how nursing knowledge is described and expressed in professional practice. Therefore one could argue that the dynamic relationship between knowledge, culture, beliefs and nursing practises could have a bearing on the way in which students learn nursing knowledge.

Barbara Carper is regarded as one of the pioneering theorists in nurse education who has helped to more clearly identify and define nursing knowledge (Pollard, 2010). She was interested in clarifying what it means to know and understand nursing practice and what kinds of knowledge should be taught in the pre-registration nursing curriculum and set out to examine these questions during her Doctor of Education programme in America in the mid 1970s (Pollard, 2010; Risjord, 2010). Her doctoral work led her to conclude that the body of knowledge which informs nursing practice

has patterns, forms and structures that shape the way nurses think about their nursing practises and illustrates the complexity and diversity within nursing knowledge (Carper, 1978). Although Carper did not publish her research, her findings led her to create a conceptual framework which purports the kinds of knowledge which are essential in nursing practice. Her conceptual ideas were published in a paper entitled, 'Fundamental patterns of knowing in nursing' which is widely acknowledged as remaining significant in shaping how nursing knowledge is defined and conceptualised (Carper, 1978; Benner, 1984; John, 1995; Heath,1998; Rolfe, 2001; Rodgers, 2005; Pollard, 2010; Risjord, 2010).

In attempting to identify and define nursing knowledge, Carper's conceptual framework describes four fundamental patterns of knowing including empirical, aesthetic, personal and moral knowledge (Carper, 1978). She believes that knowing is derived from empirically verified scientific knowledge that informs the science of nursing. It also includes aesthetic knowledge which is focused on the art of nursing and how nurses' intuition, awareness and empathy is developed and shaped through their experiences of nursing. Another key pattern of knowing is nurses' personal knowledge and how their self awareness, personal reflections and attitudes about patient care can shape their knowledge and understanding of nursing. She also believes that nurses' attitudes and knowledge are influenced by ethical codes and professional standards and it is through having an awareness of these moral questions and choices that guides and directs nurses' conduct in practice. Carper (1978) concludes that understanding these patterns of knowing is essential for teaching and learning nursing and achieving mastery in the discipline of nursing.

Carper (2004) has continued to advocate for fundamental patterns of knowing to be taught in the nursing curriculum. She claims that as new problems and solutions are identified within health care, new methods of enquiry and different conceptual frameworks will subsequently be created that further develops the shape and patterns of nursing knowledge. She goes on to suggest that as the shape and nature of nursing knowledge and practises continues to change, teaching and learning nursing requires

individuals to make meaningful connections between the new knowledge, ideas and nursing practises that are continually being developed.

This section has contextualised nurse education including the content of the pre-registration nursing programme and the processes involved in learning to become a competent nurse practitioner. To appreciate how learning nursing has changed and evolved into its current form, the next section will discuss the history of nurse education.

2.2. Apprenticeship model of learning

Historically, nursing students in the United Kingdom learned their knowledge and skills whilst working alongside nurses in the wards. This apprenticeship model was developed by Florence Nightingale in the mid 19th century and remained the traditional form of nurse training until the late 1980s (Ramprogus, 1995). However radical changes within the National Health Service and a relentless campaign to have nursing recognised as a profession led to a fundamental ideological shift in nurse education at the end of the 1980s (Humphreys & Quinn, 1994). The United Kingdom Central Council for Nursing, Midwifery and Health Visiting (UKCC) which became the nurses' governing body in 1979 believed that disengaging nursing students from apprenticeship style training and integrating them into Higher Education would enhance nurses' credibility and professional status (UKCC, 1986; Meerabeau, 2001). The UKCC also believed that students required to develop higher order thinking skills and underpin their practice with evidence based knowledge in order to meet the complex demands of the ever changing health care system (Eklan & Robinson, 1995; Norman, 2002).

2.3. Implementation of the Diploma of H.E. in Nursing Programme

This philosophy led to the creation of the Project 2000 nursing programme with an emphasis on theoretical knowledge underpinning practice and ensuring nursing

students became 'knowledgeable doers' (UKCC, 1986; Koh, 2002). The introduction of this new programme in 1986 brought about several radical changes to nurse education. Colleges of Nursing which were affiliated and based in hospital institutions were moved into Higher Education Institutes (HEI), putting an end to students being employed by the Health Boards. The UKCC (1986) indicated that students should be perceived as learners rather than workers and their clinical practice should be educationally driven rather than service led. To ensure nursing students had the freedom to learn, they were no longer counted as part of the NHS workforce. Being granted supernumerary status enabled students to be available to observe and participate in any clinical opportunities which arose within practice (UKCC, 1986). Project 2000 also established the principle of continuous clinical assessments for nursing students and the concept of mentorship was implemented to manage this change in assessment (ENB, 2001; Pollard *et al.*, 2007). Although students had always been supported and trained by nurses in the wards, it was not until the conception of the Project 2000 programme that mentorship became a requirement within pre-registration nursing programmes (UKCC, 1986).

Prior to Project 2000, nursing students who completed their apprenticeship training were given a Certificate in General Nursing. By 1995, all of the nursing students within the United Kingdom were undertaking the Diploma of Health Education in Nursing Programme (Project 2000) in either further or higher education institutes (Burke, 2003). However the Project 2000 programme was not the success that the UKCC had hoped for. Employers expressed their concerns regarding newly qualified nurses requiring constant supervision and being unable to perform many basic clinical skills (Bradshaw, 2000). For that reason, the UKCC set up a commission in the late 1990s to examine pre-registration education which included consulting with over 84,000 nursing students and staff (UKCC, 2001). The subsequent report indicated many newly qualified nurses who had undertaken the Project 2000 programme were unable to integrate theory and practice, lacked basic nursing skills and initially required constant supervision as they were not competent in practice (UKCC, 1999). The findings of the commissioned research indicated that the existence of a gap between theory and practice had contributed to many nursing

students being considered unfit for practice (UKCC, 1999; UKCC, 2001; Bradshaw, 2000; NMC, 2005).

Many authors have examined what may have led to the existence of a gap between theory and practice and newly qualified nurses not being competent at the point of registration. Deloughery (1998) purported that as nurse training shifted from hospital based programmes into higher education, there was a gradual emphasis on developing a body of evidence-based knowledge which could be applied to practice. This body of knowledge included subjects out with the nursing domain including psychology, sociology and life sciences. Rolfe (1996) believed that this emphasis on the social sciences led to the nature of nursing being misconceived, devalued and detached from the art of nursing. However, he asserts that one of the main causes of the theory practice gap was the emphasis on building a sound theoretical base before gaining clinical experience and the dominance of theory over practice.

The UKCC's (1999, 2001) commissioned reports identified that within the Project 2000 programme, many of the students had very little contact with patients in the first 18 months of their programme, which Rolfe (1996) believed led to a distancing of nursing knowledge from the reality of nursing. This view was supported by Hislop *et al.,* (1996) who suggested that students had difficulty in applying theory to practice due to the abstract and decontextualised nature of the theory. In their qualitative study, Hislop *et al.,* (1996) interviewed 19 nursing students in a Scottish College of Nursing about their relationship between the Project 2000 programme and their experiences of practice. One of the key themes which emerged from the study was the students not wanting to learn theory in isolation and wishing to understand nursing within the context of practice. Hislop *et al.,* (1996) also expressed concerns over the timing of theory and practice and requested that academic studies and clinical placements should be juxtaposed to facilitate this process. Although the apprenticeship model had been lacking in theoretical knowledge, MacLeod Clark *et al.,* (1996) believed that the pendulum had swung too far in favour of the theoretical issues which had led to students only spending short periods of time in the clinical areas.

2.4. Lecturers role in supporting students' learning

Prior to entering Higher Education, nursing students were taught by nurse tutors in Colleges of Nursing and supported in practice by clinical nurse teachers. The key responsibility of the clinical teacher was teaching and formatively assessing students whilst they delivered nursing care to patients in the wards (Thomson, 1999). On entering Higher Education, the tutor and clinical teacher role eventually merged into lecturing posts based within the University and the new role of mentors became key to supporting students in practice (Humphreys & Quinn, 1994).

It is well established that many students find the pre-registration nursing programmes educationally and personally challenging (Boore and Deeny, 2012). In recognition of this, the NMC stipulated that HEIs should ensure pre-registration nursing students are allocated a personal tutor and link tutor who will support the students' academic and practice learning throughout the three years of their programme (NMC, 2008a; NMC, 2010; Braine & Parnell, 2011). Each HEI has their own way of managing these roles. Some schools/departments of nursing allocate one lecturer to follow a student through their academic and practice learning and in other institutes these distinct roles are assigned to different staff (Rhodes & Jinks, 2005; Braine & Parnell, 2011).

The link tutor/lecturer role is now primarily focused on supporting students in practice and assisting them to apply theory to practice. Normally lecturing staff are linked to an area within their own clinical expertise which enables them to keep up to date with their clinical knowledge, preserve their clinical credibility and maintain a partnership and honorary contract with their partners in practice (McSharry *et al.*, 2010). There remains an ongoing debate about the role and purpose of the link lecturer in practice with contention around the lecturers' clinical credibility, competing academic demands and the lack of clarity around this role (Meskell *et al.*, 2009; McSharry *et al.*, 2010, MacIntosh, 2013), nevertheless some students value the support mechanisms which lecturers provide whilst visiting them in practice (Brown *et al.*, 2005; McSharry *et al.*, 2010) whilst others perceive link lecturer visits as an opportunity to seek academic advice with assignments, reflect on their practice or be

provided with emotional support (Price *et al.*, 2011). Overall, the lecturer's role of teaching in practice has markedly reduced over the past 20 years (NES, 2008a).

2.5. Introduction of mentorship to nursing programmes

As the vision of the Project 2000 programme was to produce nurses who were knowledgeable doers and capable of responding to the ever changing demands of health care, there was a recognition that nurse education required to develop a different approach to professional development and the mentorship role was regarded as a means of effectively supporting students' learning and professional development (Spouse, 1998a).

The formal introduction of mentorship within the Project 2000 programme was fraught with difficulties and did not assist students to draw links between theory and practice as the UKCC had envisioned (UKCC, 1986). Twinn and Davies (1996) carried out a 2 year study to examine the relationship between teaching, support, supervision and role modelling in student clinical learning within the context of Project 2000 programme. Their research used a two-stage case study design which included interviewing 53 students, 37 nurses and 25 tutors within 3 colleges of nursing in England. The second stage focused on 6 case studies which involved non participant observations, tape recorded periods of interaction between students, their mentors and the patients, followed by debriefing interviews with the students and their mentors and interviewing staff involved in facilitating the students' learning. This in depth qualitative study was funded by the English National Board which was responsible for educational standards in England during the 1980s and 1990s. The findings indicated that many nurses felt inadequate in their role as a mentor and had difficulty in interpreting and understanding the new curriculum. They believed that their traditional nurse training and lack of theoretical knowledge had left them ill prepared to supervise diploma nursing students and felt that they were unable to assist the students to relate theory to practice (Twinn & Davies, 1996).

Neary (1997; 2000) had similar findings in the two studies which she carried out in three colleges within Wales between 1991 and 1996. The studies aimed to examine assessment of students' clinical competence, the support they received during their pre-registration programme and identify the processes and outcomes of this new mentorship role. The first study consisted of a questionnaire which examined 155 nurse practitioners, 45 mentors and 300 students' experiences and perceptions regarding students' assessment, support and mentorship. The second study further developed this enquiry by the use of semi structured interviews with policy makers, managers, lecturers and nurse practitioners (n=360) leading to the development of a widely administered questionnaire with both open and closed responses (n=1332). The use of mixed methods and data triangulation assisted in cross checking and validating the key themes. The findings indicated that many mentors were unfamiliar with the educational terminology inherent in the new programme and identified that both mentors and nursing students had difficulty in formulating links between the students' learning objectives and their clinical practice. In addition to nurses having problems with the new educational ideologies and learning objectives, Neary (1997) found that nurse practitioners had difficulties when faced with the dual responsibilities of providing patient care and supporting students in practice. These difficulties became even more unmanageable when the nurse was in charge of the ward, care demands increased or the mentor was responsible for more than one student. Research commissioned by the English National Board which included interviewing and observing 53 students, 37 mentors and 25 lecturers in clinical activities related to the students' education (Wilson-Barnett *et al.*, 1995) and a study which examined 260 students and their mentors' activity diaries (Lloyd, 2001) both found that students believed the lack of time available to spend with their mentors was a major constraint on their learning. Some students expressed their frustrations at the constant interruptions and postponements, which hampered their opportunities to talk over their understanding of practice with their mentors (Wilson-Barnett *et al.*, 1995; Lloyd *et al.*, 2001).

2.6. Establishing the supernumerary status

The establishment of the supernumerary status was initially welcomed by all sections of the nursing profession and acknowledged as a positive step towards providing a rich learning environment for nursing students (Ramprogus, 1995; Neary, 2000). A literature review by Elcock *et al*., (2007) identified that the introduction of the supernumerary status caused confusion and resentment. Many mentors appeared perplexed by the students' new role and were unsure how to manage them. Some mentors refused to allow students to participate in care, as they believed they were simply there to observe, others felt frustrated that they could not delegate work to them. This often led to students being isolated within the clinical areas and not feeling part of the nursing team. As a result the students did not gain a sense of freedom to learn but felt marginalized to the point where their learning experiences became even more restricted than in the traditional apprenticeship style model of training (Elcock, 2007).

2.7. Implementation of the vocational competency based curriculum

The majority of the challenges facing the Project 2000 programme were considered by the UKCC's commissioned reports which led to the implementation of the Fitness for Practice's vocational competency based curriculum in the early noughties (UKCC, 1999; UKCC, 2001). This new curriculum returned the pre-registration nursing programmes' focus on developing core nursing skills and competencies and also led to a strengthening in partnership between NHS stakeholders and HEIs (UKCC, 2001; Holland *et al.*, 2010). However in 2002, the NHS experienced their worst shortages in nursing staff in over 25 years which is believed to have been due to a combination of an ageing workforce and a depreciating number of school leavers (Lord, 2002). To address this problem, the Government rapidly increased the number of places available within pre-registration programmes and encouraged HEIs to widen their access to all nursing programmes (Bradshaw, 2003; DoH, 2002). However these factors are believed to have once again exacerbated the theory practice gap. For example Timmins and Kaliszer (2002) used Likert scaled

questionnaires with 110 3rd year nursing students in Ireland to investigate the factors which cause them stress. Their findings from the late 1990s identified that nursing students with the basic entry requirements were struggling to cope with the academic demands of the diploma programme. This was at a point in time when many nurse lecturers were voicing concerns over the rationale for raising the academic standard of pre-registration to diploma level at the same time as lowering the entry requirements (Ramprogus, 1995). Nevertheless, the national evaluation of the Fitness for Practice curriculum within Scotland in the late noughties suggested that the key recommendations in the Fitness for Practice Report had been met by the vocational competency based curriculum (Lauder *et al.*, 2008). This wide reaching and in-depth evaluation of nurse education was commissioned by NHS Scotland's education and training body, NHS Education for Scotland (NES) involving seven HEI's within Scotland and a large and extensive mixed methodology gathering data from a variety of sources including students, newly qualified nurses, nurse practitioners, managers, HEI documentation, carers and service users. This extensive evaluation confirmed that the vocational competency based curriculum was enabling newly qualified nurses to be fit for practice at the point of registration (Lauder *et al.*, 2008).

As health care continued to rapidly change and become incrementally more complex and highly technical in the early 21st century, nurses were expected to problem solve and critically think about how to provide, manage and lead evidenced based healthcare (Department of Health, 2006). There was also a continued drive for nurses to enhance their professional status and further restructuring within the healthcare system required many nurses to extend their roles and responsibilities within professional practice (Jones & Davies, 1999). Some of the traditional Universities had already been delivering nursing degree programme during the 1980s, however by the start of the noughties, the majority of pre-registration programmes were offering both diploma and degree pathways within their nursing programmes to meet these professional demands.

2.8. Establishment of the Nursing and Midwifery Council

In 2002 the UKCC was replaced by the incumbent Nursing and Midwifery Council (NMC). This newly established body undertook a further review of the pre-registration nursing programme. This led to the nursing profession, nurse educationalists and the NMC advocating for nursing to move towards an all graduate profession (NMC, 2007a; NMC, 2010; Holland *et al.*, 2010) and further strengthening of the role of the mentor (NMC, 2006; NMC, 2008a).

2.9. Strengthening of the mentor's role in practice

The initial lack of clarity surrounding mentorship led to confusion over the role (Neary, 1997). The use of various names including mentor, preceptor, co-ordinator, facilitator, assessor and supervisor used interchangeably further complicated attempts at defining the role (Andrews & Wallis, 1999). Watson's (1999) qualitative study interviewed 35 students and 15 mentors about their experiences and perceptions of mentorship. Her findings suggested that the concept of mentoring was still not clearly understood and discovered that definitions varied between clinical settings and were influenced by individuals' understanding of the role. A review of the literature on clinical education in the United Kingdom from 1980 to 2005 identified the lack of empirical evidence on the efficacy of mentorship, however recognised this role as being vital in supporting students in practice. Although anecdotally, mentorship has been regarded as a very effective method of supporting students' learning in practice, NES has continued to report a variation in the quality of mentorship being delivered within Scotland (Lauder *et al.*, 2008*;* NES, 2014c).

There are a number of factors which has reduced the quality of mentorship and mentors abilities to fulfil their role. For example, although the NMC (2006) stipulated that mentors are a requirement for all pre-registration nursing programmes and each student should have an identified mentor who is available to supervise the student directly or indirectly for at least 40 percent of their time in practice, studies have shown that mentors still lacked support in fulfilling their role, were reluctant to

fail students, did not have time to spend with their students due to the competing demands of patient care and clinical management and were conflicted by the dual role of mentor and assessor (Duffy, 2003; Nettleton & Bray, 2008; Carlisle *et al.*, 2009; Huybrecht *et al.*, 2011; Wareing, 2011). These studies ranged in scale from qualitative phenomenological studies with small participant sizes (Wareing, 2011) to large scale mixed methodologies exploring mentors and students views on mentorship (Nettleton & Bray, 2008; Hubrecht *et al,* 2011).

The NMC has now provided clear guidelines regarding the role and responsibilities required in mentorship and define a mentor as "a registrant who, following successful completion of a NMC approved mentor preparation programme - or comparable preparation that has been accredited by an approved educational institution as meeting the NMC mentor requirements - has achieved the knowledge, skills and competence required to meet the defined outcomes" (NMC, 2008a: 23). In describing the standards required for mentorship, the NMC (2008a) specified that mentors are responsible and accountable for organising students' learning activities in practice, supervising and assessing their skills, attitudes and behaviours, which includes setting realistic goals and providing students with constructive feedback.

Furthermore, an awareness of anecdotal evidence suggesting that on occasion mentors failed to fail students in practice, led the NMC to commission a qualitative, interview based study with lecturers and mentors from 3 HEIs in Scotland to explore this issue. The findings identified that although some mentors had concerns about certain students' clinical competence, they were failing to fail students in practice and in some cases students who were considered unsatisfactory were entering the NMC register (Duffy, 2003).

Following on from this study, all students commencing NMC approved programmes from September 2007 were required to have a sign-off mentor to ensure nursing students have achieved a satisfactory level of competency for entry to the NMC register (NMC, 2008a). A sign-off mentor is defined as "a nurse or midwife mentor who has met additional NMC requirements in order to be able to make judgements

about whether a student has achieved the overall standards of competence required for entry to the register at the end of an NMC approved programme." (NMC, 2010: 152). In addition, HEIs require providing all mentors with an annual update on current programme requirements, assessment process and any changes taking place in education and practice (NMC, 2006; NMC, 2007c).

NES's in-depth evaluation of nurse education in the late noughties clearly identified that many mentors are committed to investing time in supporting students' learning, nevertheless their first priority is patient care (Lauder *et al.*, 2008). Until recently mentors within the United Kingdom have not been offered protected time to undertake this role (Lauder *et al.*, 2008). However since 2006, mentors with sign-off status have been provided with one hour of protected time each week to spend with students in their final placement and advised that "their workload needs to reflect the demands of being a mentor" (NMC, 2006:30) nevertheless a report commissioned by NHS London identified that in some acute clinical areas, sign-off mentors were unable to utilise this protected time and were using their own personal time to fulfil their role as a mentor (Robinson *et al.,* 2012). These findings are supported by Rooke (2014) who asked 114 mentors, 37 nurses undertaking mentorship preparation and 13 lecturers to complete an open questionnaire regarding their perceptions of the sign-off mentor role. Rooke's (2014) findings suggest that the participants recognised the additional work required of a sign-off mentor and thought the one hour protected time would be difficult to implement. In the NES commissioned evaluation, Lauder *et al.*, (2008, p. 191) state that "given their pivotal role in pre-registration education, mentors should not have to make choices between patient care and supporting the learning of students" and go on to suggest that a more flexible model of mentorship roles may need to be considered (Lauder *et al.*, 2008).

Over the past decade, the Scottish and UK Government have indicated that everyone involved in delivering health care should be involved in delivering clinical education (DoH, 2004; NES, 2006; NMC, 2008a). In the standards of conduct, performance and ethics for nurses and midwives, it is a professional requirement for nurses to 'facilitate students and others to develop their competence' (NMC 2008b:5).

Consequently there is an expectation that all nursing staff will be involved in mentoring students, however not every nurse practitioner wishes to be a mentor or has the ability to be successful in this role (Grossman, 2007; Nettleton & Bray, 2008). Nevertheless, the implementation of the sign-off mentor status has clearly established mentors as gatekeepers for entry to the profession and the key individuals responsible and accountable for students' learning and assessment in practice (NMC, 2008a; Price *et al.*, 2011; NES, 2013a). Although the sign-off process is acknowledged as being an additional safeguard for protecting the public, the added responsibilities and accountability has increased workload and heightened anxieties amongst mentors (Robinson *et al.*, 2012; Rooke, 2014).

As lecturers' educational roles continue to diminish in practice, mentors are now regarded as the main source of educational support for students in practice (Pollard *et al.*, 2007). To provide nurses with the skills and knowledge required to support and assess students in practice, NES recognised that mentors would require ongoing educational support in fulfilling their mentorship role. These changes in practice education led to the implementation of the Practice Education Facilitator in the mid noughties (NES, 2008a).

2.10. Implementation of the Practice Education Facilitator role

In 2004, Scotland created a new practice education role to maximise the recruitment and retention of nurses and support their continuing professional development. The key responsibilities of the Practice Education Facilitator (PEF) include strengthening communication between HEIs, the clinical areas and Health Boards, further developing the clinical learning environment, maximising the number of students who can be supported within hospital and community settings and ensuring nursing students gain valuable educational experiences in practice, primarily through supporting nurses in their role as mentors (NES, 2008a; Carlisle *et al.*, 2009).

This new role has been generally welcomed and well received in Scotland and regarded as a supportive and valuable educational resource for nurses (Lauder *et al.*,

2008). In particular, mentors appreciate the guidance they receive from PEFs in regards to supporting and dealing with students who are failing in practice and clarification on student assessment (McArthur & Burns, 2008; NES, 2008a; Carlisle *et al.*, 2009).

With the success of this new appointment, the PEF's role continues to develop and change to meet the educational needs of health care staff. This now includes Care Home Education Facilitators (CHEFs) who support mentors to develop practice education within care homes and thereby enhance a positive learning experience for nursing students and staff within these community settings (NES, 2013a). In some areas, the PEFs are now considered as being the key mediator between the HEIs and Health Boards and have taken over the role of supporting mentors in practice (Lauder *et al.*, 2008).

2.11. NMC establish degree programme as minimum award

The NMC (2010) have now stipulated that the minimum outcome award for pre-registration nursing education programmes in the United Kingdom is a degree in nursing. Their rationale for an all graduate profession is to ensure nurses' skills and knowledge is commensurate with the level of practice required for future practice and enable nurses to work more closely and effectively with other professionals. From September 2013, all pre-registration nurse education programmes delivered in the United Kingdom are at degree level only. In line with these changes, the NMC produced new standards for pre-registration nurse education which required to be implemented in all pre-registration nursing programmes by 2013 (NMC, 2010). Nursing students within the current pre-registration programmes must acquire the NMC competencies and meet the NMC standards for pre-registration nursing education in order to be eligible for entry to the NMC register (NMC, 2010).

The NMC (2010:4) indicates that these new standards aim to enable nurses to give and support high quality care in rapidly changing environments. In conjunction with the NMC standards, the Quality Assurance Agency for Higher Education has

produced benchmark statements for nursing. This provides HEIs with the threshold standards required of pre-registration programmes, general guidance for articulating the learning outcomes and an external source of reference when new programmes are being designed (QAA, 2009).

The NMC (2010) purports that nurses who acquire the knowledge, skills and behaviour which meet their standards will be equipped to improve health and wellbeing, provide high quality care in rapidly changing environments and drive up standards. As graduates, they will be expected to think analytically, use problem solving approaches and evidence in clinical decision making as well as keeping up to date with technical advances and meeting future expectations. In addition, these standards will enable nurses to work in a range of roles including practitioner, educator, leader and researcher as well as being equipped to lead, delegate, supervise and challenge other nurses and healthcare professionals. Furthermore, as autonomous practitioners they will have the skills and knowledge to develop, promote and sustain changes in nursing practice (QAA, 2009; NMC, 2010:4).

The all graduate nursing profession has been welcomed by many within the nursing profession, nevertheless some academics have had concerns about the scholarly abilities of some students (Carr, 2008). Although the majority of HEIs have increased their academic entry criteria for the pre-registration programme, there is an argument that the Government's continued policy of widening access to University Education has increased the number of non traditional learners who may not necessarily have the academic ability to study at degree level (Carr, 2008).

2.12. Current challenges and enhancements in nurse education

NES (2014c:16) has indicated that 'the last three decades has seen recurring peaks and troughs in education commissioning' and 'a projected increased demand for nurses and midwives in coming years'. The likelihood is that pre-registration nursing programmes will continue to commission large numbers of students to meet these

demands. Therefore the challenges in supporting large number of students within the University and practice placements will continue.

A recent report commissioned by NHS London indicated that there are still mixed views on mentorship. Some nursing staff believe that all nurses should take on this role, whereas others believe being a mentor should be a specialist role, on the other hand some staff consider the PEFs to be the educational specialists in practice (Robinson *et al.*, 2012). NES (2012) recognised that further work was required to improve the support for both mentors and students and assigned a national strategic group to consider issues relating to practice placements. The aim of the group was to establish key principles which should inform practice and work towards implementing a national approach to practice placement assessment. The ongoing achievement record has now been implemented as a standardised approach to supporting and assessing students in practice and aims to provide a more positive experience for both students and mentors (NES, 2011b; NES, 2012).

The review by NES in 2014 indicates that the implementation of the National Approach to Mentor Preparation (NES, 2013a), Quality Standards for Practice Placements initiatives (NES, 2008b) and the creation of the PEF/CHEF roles have further enhanced mentorship and practice learning environments. However they indicate that the quality of mentorship and the students' learning experiences continue to vary within Scotland, therefore NES is now raising the question as to whether being a mentor is the role for all registered nurses (NES, 2014c).

2.13. Conclusion

This chapter has focused on the changes which have taken place in nurse education throughout the past 25 years and concludes that the legacies and ideologies established by the Project 2000 programme continue to have an influence on pre-registration nursing programmes today.

Although nurse education has taken great strides towards ensuring pre-registration nursing programmes are educationally sound and students are well supported in the HEIs and in practice, there is still room for improvement (NES, 2014c). One of the key challenges facing nurse education in the near future will be on supporting large numbers of students in the university and in practice and how the roles of the lecturer and mentor will continue to change and evolve in order to meet the learning needs of large nursing student populations and the ever changing health care system.

The next chapter will focus on examining the complex relationship between nursing knowledge and practice and the challenges of learning abstract knowledge and concepts within the discipline of nursing. As the study is focused on what facilitates students' learning, the literature review will also explore some of the key learning theories which are applicable in nurse education and finish by considering some contemporaneous views on learning nursing.

CHAPTER 3 - LITERATURE REVIEW

3.1. Reviewing the literature

Hart (2002) claims that reviewing the literature is an integral and fundamental part of a research study. It allows the individual to become familiar with the content, history and context of the subject and identify the current research, discourse and debates which exists in a particular subject. Furthermore, he suggests that evaluating the methodological approaches undertaken in a subject allows the researcher to critically reflect upon the implications and possibilities for their own study (Hart, 2002).

A review of the literature was undertaken to contextualise the study and examine the processes and challenges of learning nursing knowledge and practice. The review also explored the role of nursing and educational policies in shaping nurse education, the key educational theories that underpin learning and the teaching and learning methods which have been employed within nurse education. The methodological approaches, key strengths and weaknesses within the research studies pertinent to learning nursing and the theory practice gap were also critically examined.

The educational and nursing literature was accessed via the University of Strathclyde and the University of the West of Scotland's library databases. The electronic databases searched included Elsevier, Science Direct, Proquest, PsycINFO, Pubmed, ERIC (Educational Resources Information Centre), OVID SP and CINAHL (Cumulative Index to Nursing and Allied Health Literature). To provide a broad scope of information on educational theories and nurse education, a library search of books pertaining to learning, teaching and educational theories were sourced along with those based on nursing theory, knowledge and practice. Research and policy documents pertaining to nurse education were accessed online from the following governing body's websites: NMC, NHSScotland, NES and the Quality Assurance Agency for Higher Education (QAA). NES's Knowledge Network was a particularly useful online resource for current research and literature within nurse education.

The date parameter for the electronic databases was set from 1986 as this was the year in which there was a significant change in nurse education within the United Kingdom. By including literature from the late 1980s within the search strategy enabled key information pertaining to the educational and cultural shift in nurse education to be accessed.

Boolean logic and wildcards were employed to search the key words and terms including 'learning nursing', 'learning nursing knowledge', learning nursing theory', 'learning to be a nurse', 'learning to be a nursing student', learning to be a student nurse', 'theory practice', theory practice gap', 'being a nursing student', 'being a student nurse', 'nursing students' experience of learning', 'student nurses' experience of learning nursing', 'nurse education', 'practice learning' and 'mentorship'.

In regards to the inclusion and exclusion criteria, the search parameters only included literature pertaining to pre-registration nursing programmes, studies pertaining to post registration or post graduate nursing studies were excluded. In relation to teaching and learning methods within nurse education, several key terms were searched including 'clinical simulation', clinical skills', 'skills lab' 'reflection', 'reflective practice', 'problem based learning', 'group learning', 'peer learning' and 'peer review'. After the narratives had been analysed, a further search of the literature was carried out which included the following key terms: 'situated learning', 'situated cognition', 'link lecturer', 'personal lecturer' and 'cognitive apprenticeship model'.

Limits were set to include only articles written in English. Information pertaining to learning nursing was sourced mainly from the United Kingdom and also included literature from America, Europe and Australia. Many of the articles and books were immediately discarded from the review if the title or abstract did not directly to pertain to learning nursing. Whilst reading through the nursing literature, several authors were identified as having produced influential work in nurse education. Some of these included Benner 1984; Corlett 2000; Corlett *et al*., 2003; Hislop *et al*., 1996; Lave and Wenger, 1991 and Spouse 1998a, 1998b, 2001a, 2001b. Key policy

documents which were continually referred to within the literature were the Nursing and Midwifery Council's papers on 'Standards to support learning and assessment in practice' and 'Standards for pre-registration nursing education' (NMC, 2006, 2008a, 2010) and papers pertaining to the Project 2000 programme (UKCC, 1986; 1999; 2001).

Reading through the educational and nursing literature also identified secondary sources pertinent to the study that had not been sourced in the original or subsequent searches of the literature. The majority of the nursing and educational journals referred to within the thesis are from reputable peer reviewed journals such as Nurse Education Today, Nurse Education in Practice and Journal of Advanced Nursing.

The review of the literature identified four key themes including the complex relationship between theory and practice, educational theories, contemporary views on learning and the factors which influence learning which will now be discussed.

3.2. Examining the complex relationship between knowledge and practice

3.2.1. Bridging the theory practice gap

Since 1995 all student nurses have studied within either further or higher education institutes (Meerabeau, 2001; Burke, 2003), however the nurse education community is still debating issues around students' difficulties in understanding the complex relationship between nursing knowledge and practice and how best to support students to learn the skills and knowledge required to become competent and safe practitioners (Turner, 2003; Corlett *et al.*, 2003; Gallagher, 2004; Baxter, 2007; Hope *et al.*, 2011; Allan *et al.*, 2011).

In examining the theory practice gap, Spouse (2001a) believes that students initially do not know what to look for and are not able to make connections between the theories they have learned and the realities of practice. She also suggests that the

complexities of professional practice and discipline of nursing knowledge do not allow novice students to recognise patterns and relationships within nursing practice, especially when first faced with a novel situation.

Lecturing staff have researched various teaching and learning approaches as a means to enable students to understand the complex relationship between theory and practice and how to make sense of their nursing practice. This includes situated learning (Hislop *et al.*, 1996; Cope *et al.*, 2000; Spouse, 2001a; Woolley & Jarvis, 2007), portfolios (Gallagher, 2001), reflective practice (Schön, 1983; Rolfe, 2001, McCarthy *et al*., 2013), mentorship (Gray & Smith, 2000; Morton-Cooper & Palmer, 2000), clinical simulation (McCallum, 2007; McCaughey & Traynor, 2010; Hope *et al.*, 2011), Objective Structured Clinical Examinations (Brosnan *et al.*, 2006) and problem based learning (Wilkie, 2000; Gidman & Mannix, 2007).

However, some authors argue that despite employing a variety of teaching and learning strategies, the gap between theory and practice will continue to exist as it is an inevitable part of the learning process (McCaugherty, 1991; Hislop *et al.*, 1996; Corlett, 2000; Corlett, 2003). Corlett's (2000) qualitative study examined students, mentors and lecturers perceptions of the theory practice gap within one Scottish HEI. She conducted 23 group interviews, each group comprising of either 3 students, 3 mentors or 3 lecturers. She identified various factors which affect the theory practice gap including sequencing of learning, mentors' lack of communication, lack of time and lecturers teaching an idealised version of nursing. Corlett *et al.*, (2003) followed up this study by examining if mentors or lecturers were more effective in assisting students to apply knowledge to practice. 32 first year students were split into groups and taught by either a mentor or lecturers or a combination of both, then asked to complete a quiz at several points throughout a part of their programme. The findings identified that students who were taught by a mentor initially demonstrated more knowledge of nursing, however by the end of the study, there was no significant difference in the students' theoretical scores. From her analysis of the findings, she concluded that "the theory practice gap is merely a function of time, something students have to live with until they have sufficient knowledge and experience to fit

the different parts together" Corlett (2000:504). Nevertheless, Lauder (1994) argues that the complex nature of nursing does not allow theoretical nursing knowledge and nursing practice to be separated and contends that the relationship between thinking and doing are inextricably linked. Therefore, in order to gain more insight into the complexities innate in the relationship between theory and practice and the challenges students face in making sense of their knowledge and practice, it may be useful to further explore the concepts of nursing knowledge and practice and how these are inextricably linked to competence in nursing practice.

3.2.2. The complex nature of nursing knowledge and practice

As discussed earlier, Carper (1978) attempted to identify and define nursing knowledge and clarify what it means to know and understand nursing practice. The following section will examine some of the other ideas about nursing knowledge and practice.

Richardson *et al.,* (2004: 5) state that "health professionals need a judicious working knowledge of their practice epistemology in order to understand what drives their actions, to realise how they can demonstrate this understanding in their practice and to recognise how they learn from this understanding and develop their professional practice". They go on to describe professional knowledge as being "built upon existing knowledge and upon the conscious and unconscious beliefs and values held by practitioners about what they do, how they do it and why they do it" (Richardson *et al.,* 2004:6).

Higgs *et al.,* (2001) suggest that professional practice knowledge takes three categorical forms. The first is propositional knowledge that is derived from research, theory and scientific knowledge. Secondly, non-propositional professional craft knowledge which is derived from professional experience and knowing how to do something. The third form is non-propositional personal knowledge that is derived from knowledge about oneself as a person, oneself within the context of different roles and relationships and collective knowledge held by the community and culture

in which the person lives and works. In examining the literature on the different types of knowledge relevant to professional health care practice, Titchen and Ersser (2001:35) identified ten categories of health care knowledge including practical, experiential, aesthetic, intuitive, ethical/moral, embodied, personal, empirical, scientific and knowing-in-practice knowledge. However, they pointed out that there are variations in the way in which the literature conceptualises and differentiates between the different types of health care knowledge, with some categories of knowledge sharing common links in their classification (Titchen & Ersser, 2001). As a result it is difficult to categorise or clearly define some aspects of nursing knowledge.

Some educationalists believe that practitioners can have difficulty in expressing how they process the different types of professional knowledge (Schön, 1983; Benner, 1984). For example, the American philosopher and educationalist Schön (1983) considered the nature of professional practice and how practitioners conceptualise and articulate knowledge of their profession. In his well cited book "The Reflective Practitioner" he admits that his views on professional knowledge are based on his experience of working in a variety fields including education (Schön, 1983). Within this book, he discusses the dichotomy between the positivist knowledge of science and scholarship and the 'soft' knowledge of professional artistry and intuition. He goes on to acknowledge that his views on professional knowledge are not based on research knowledge, instead he offers an epistemology of practice which is based on his close examination of what professionals do in practice. He concludes that the majority of professionals' work is so tacit and implicit in nature that individuals have difficulty in explaining the processes they employ at work or in describing the competencies that are innate within their own professional practice (Schön, 1983).

3.2.3. Moving from novice to expert in nursing practice

The NMC (2010: 11) defines competency as 'the combination of skills, knowledge and attitudes, values and technical abilities that underpin safe and effective nursing practice and interventions'. During the pre-registration programme, students are

required to develop and attain a wide range of competencies and attributes including knowledge, skills, understanding, professionalism, self-awareness, attitudes, and values (Stuart, 2003).

The America researcher and lecturer Patricia Benner studied expertise, skills acquisition and clinical judgement over a period of 30 years and focused on learning in nursing practice. Her work has been recognised internationally as influential in nursing and nurse education (Benner, 1984; Benner, 2001; Milligan, 2010). Benner (1984) examined the different levels of skills performance and clinical decision making processes between newly qualified nurses and experienced nurses with the aim of discovering if there were any distinguishable differences in the novices' and experts' descriptions of critical incidents in practice. This study involved interviewing 21 pair of nurses each consisting of an experienced nurse and the newly qualified nurse they were supporting in practice. Participants were interviewed separately and asked about specific critical incidents that they had both been involved in. In addition, 51 experienced nurses were interviewed to discuss their views on the characteristics of nurses' performances in practice at various stages in their career and 23 nurses observed in their daily practises. Using an interpretive phenomenological approach in analysing the narratives, Benner identified five key stages which nurses go through to become an expert in their field of nursing. This study led to Benner devising a five-staged model of skills acquisition which demonstrates how nursing students pass through five levels of proficiency from novice to expert.

Benner (1984) suggests that novices initially have no experience upon which to draw and rely heavily on propositional knowledge from books and the principles they learn in the classroom. Novices adhere strictly and inflexibly to these principles and theories as they have little understanding of the contextual meaning of this knowledge and are therefore unable to make discretionary judgements about nursing knowledge in order to make adjustment or modifications to their nursing care. As students gain more experience in nursing, they require less support and supervision and are able to recognise, plan and prioritise patient care. Students eventually

develop the skills of critical analysis and become competent at making decisions and co-ordinating patient care. Once qualified nurse practitioners become experts in their clinical practice and develop tacit experiential knowledge, they gain a deep understanding and intuitive grasp of their specialist field of practice (Benner, 1984). This five stage model of skills acquisition continues to be influential in shaping the concepts of competency, assessment and knowledge acquisition within nurse education (Howard & Eaton, 2003; Stuart, 2003; Milligan, 2010).

Reflecting on her work, Benner (2001; v) believes that her research demonstrates that "practice is a way of knowing in its own right" which offers an alternative understanding of nursing "know how" and the development of nursing knowledge. She argues that in the quest to underpin nursing practice with positivistic approaches to research, the importance of perceptual awareness, discretionary nursing judgements and decision making by experienced practitioners in the realities of practice can be overlooked. She advocates for an interpretive phenomenological approach to examining nursing practice which focuses on answering the ontological question of how we know nurses know things rather than attempting to consider the epistemological questions of what it is to know nursing knowledge (Benner, 1994).

Rolfe *et al's* (2001) model of knowledge acquisition builds upon Schön's (1983) notion of professional practice and Benner's (1984) five stage model of skills acquisition. In their paper, Rolfe *et al.,* (2001) question whether evidenced based scientific research really does provide the most appropriate knowledge base for nursing or whether reflection might offer a better source of knowledge for practice. They also clarify that their model is not supported by evidenced based knowledge but instead based upon subjective reflective evidence. Rolfe *et al.,* (2001) believe that nursing students mainly focus on the concept of reflection-on-action which Schön's (1983) initially described as the process of reflecting back on past experiences and transforming these experiences into knowledge (Schön, 1983). Rolfe *et al*'s model consists of four key stages of knowledge development, at the first stage, nursing students initially acquire a body of *scientific theoretical knowledge* from books and then through supervised practice learn to apply this theoretical knowledge to

practice. After experience in the clinical areas, the students enter the second stage by developing *scientific practical knowledge* that is easily articulated as the principles and theories of nursing knowledge and begin to modify some of this scientific practical knowledge to meet the requirements of real life situations. Eventually after a great deal of experience in practice, nursing students reject the scientific practical knowledge in favour of *experiential practical knowledge* that is intuitive, tacit and difficult to articulate. As nurse practitioners become experts in their specialised fields of care, they enter the final stage by building a body of *experiential theoretical knowledge* out of their experiential practical knowledge. Rolfe *et al.,* (2001) claim that as nurses become experienced practitioners they develop Schön's notion of reflection-in-action and demonstrate the ability to reflect on their practice whilst actively engaging in patient care and utilise reflection as an integral tool to enhance and further develop their nursing knowledge and practice (Schön, 1983).

Ericsson (2004) suggests that for most professions it takes a considerable length of time to acquire the skills and knowledge required to become an expert within a field of practice. It is the lengthy time scale involved in learning a profession that distinguishes the expert from the novice. Ericsson points out that for some professions it takes decades to reach expertise. For example, qualified physicians may require years of additional experience and knowledge before being recognised as an expert and specialist in a field of medicine (Ericsson, 2004).

However Glaser (1999) argues that it takes more than just time to become an expert. The American educational psychologist Glaser (1999) has explored the concept of expertise and believes that experts have a great deal of domain specific information which is highly organised and conceptually integrated into meaningful patterns. He suggests that these highly organised structures may play a pivotal role in an expert's performance by allowing them to rapidly categorise knowledge and recognise patterns and associations. Glaser (1999) also discusses some of the key differences between an expert and novice's abilities. He claims that an expert's proficiencies are domain specific and derived from specialised knowledge, however placing an expert out with their specialised field of practice causes them to lose their rapid perceptual

and representational abilities and returns them to employing general problem solving skills. An expert's rapid fire and efficient pattern recognition can appear to reduce the cognitive processes involved. In contrast, the novice can only recognise smaller patterns which are not as clearly articulated and less likely to be applied to abstract theories (Glaser, 1999).

Glaser (1999) suggests that although both experts and novices may have the competence to utilise this domain specific information, it is much more likely to be the expert who can readily draw upon these principles in a cause and effect sequence of problem solving. Finally Glaser discusses the expert's ability to self-regulate their problem solving activities and evaluate their own competencies and indicates that within certain circumstances an expert's process of performing complex skills can become almost automatic and intuitive in nature. Glaser's (1999) theories may contribute towards understanding the difference between how nursing students and experienced nurse practitioners process and problem solve their daily activities and why nursing students find it difficult to retrieve the knowledge they have gained or how to apply this knowledge to a particular situation.

3.2.4. Threshold concepts and troublesome knowledge

Drawing upon various authors' perspective on learning a profession (Schön, 1983; Benner, 1984, Glaser, 1999; Rolfe, 2001), their conceptual ideas imply that students commencing pre-registration nursing programmes are novices who have not yet developed experiential and tacit knowledge or the cognitive processes required to utilise domain specific information

In examining the complex nature of learning a profession, Meyer and Land (2003) claim that certain disciplines have distinct core concepts within their body of knowledge which are regarded as being the conceptual building blocks that are necessary in order to progress understanding of a subject or discipline. Meyer and Land (2003) refer to these significant core concepts as threshold concepts and consider these as being central to the mastery of a discipline. They purport that

comprehending a threshold concept can act as a portal which opens up a new and previously inaccessible way of thinking about something. This also brings about a new way of thinking which leads to a transformed internal view of a subject landscape and reformulation of the learner's frame of meaning (Meyer *et al.*, 2010). Therefore the central tenet of Meyer and Land's work is the idea that within disciplines 'there are conceptual gateways or 'portals' that must be passed through, however difficult that passage might be, to arrive at important new understandings' (Land *et al.*, 2008: ix).

The notion of 'threshold concepts' was initially introduced by Meyer and Land into group discussions within the Economic and Social Research Council's Teaching and Learning Research Programme Project (Meyer & Land, 2003). Drawing upon these group discussions, observations by their academic colleagues from various disciplines and Perkin's theories of troublesome knowledge, Meyer and Land have written several publications about threshold concepts in partnership with a variety of authors (Meyer & Land, 2003; Meyer & Land, 2005; Land *et al.*, 2005; Land *et al.*, 2008; Perkins, 1999; Cousin, 2006; Meyer *et al.*, 2010).

Meyer and Land (2003) stress that threshold concepts are difficult for learners to comprehend and could lead to what Perkins describes as troublesome knowledge which is 'conceptually difficult, counter intuitive or alien' (Perkins, 1999; Meyer and Land, 2003:1). The educationalist David Perkins who has written extensively on cognitive development and educational psychology (1999) claims that learners may have difficulty in understanding knowledge as it has become ritualized, inert or the learner has not yet acquired the professional discourse that would enable them to understand the concepts.

Meyer and Land (2005) believe that difficulty in understanding threshold concepts and troublesome knowledge can lead students to feeling anxious, unsettled and finding the experience of learning problematic. This leaves the students in a 'suspended' or 'stuck place' which Meyer and Land refer to as a state of 'liminality'. This 'liminal' space blocks the students from progressing with their understanding of

a concept. However Meyer and Land (2005) suggest that this ‘liminal’ space has a transformative function as it acts like a portal or gateway opening up new and accessible ways of thinking about or understanding core concepts within a discipline.

Meyer and Land (2003) believe that once a threshold concept is understood it becomes transformative and has the potential to cause a significant shift in the student's perception of a subject. They go on to suggest that this change is also irreversible as once this new understanding is acquired it is unlikely to be forgotten or unlearned. Finally it is 'integrative, in that, it exposes the previously hidden interrelatedness' of a subject and allows the learner to make connections which were previously hidden from their view (Meyer and Land, 2003:4; Cousin, 2006). Once the learner has fully comprehended and internalised the threshold concept, 'they are more able to integrate different aspects of a subject in their analysis of problems' (Land *et al.*, 2005:54). This support Glaser's (1999) view that as individuals develop expertise, they evolve highly organised and integrated domain specific information which they can rapidly access to solve problems.

Land *et al,* (2005) also acknowledge that the troublesome nature of threshold concepts means that learners adopt both recursive and excursive approaches to learning, whereby they go through a convoluted journey of adopting different viewpoints by revising, digressing, deviating and revisiting the threshold concepts before making the necessary connections and integration of understanding. In relation to this convoluted journey, Cousin (2006:5) believes that there is no easy route to mastering threshold concepts and it will inevitably involve 'messy journeys back and forth across conceptual terrain'.

In addition to transforming students’ understanding of core concepts, Meyer and Land (2005) suggest that the process of going through the portal and comprehending threshold concepts can also lead to a significant shift in the learners’ perception and interpretation of their discipline and professional identity. Cousin (2006) suggests that grasping an understanding of threshold concepts can lead to an ontological shift in the way learners perceive themselves. In this way, new understandings become an

integral part of the learner's biography and become part of who they are and how they see and feel. So, as the learner gains new knowledge, they are ultimately changed by it (Land *et al.*, 2008; x).

In relation to Meyer and Land's notion of threshold concepts and its relationship with troublesome knowledge, Perkins (2008) has further developed his idea of troublesome knowledge. He argues that 'learning will only be truly effective when the conception of knowledge underlying it has a proactive character' (Perkins, 2008:3). He suggests that proactive knowledge consists of the 'ability to apply knowledge with understanding, serious energetic engagement with knowledge, and alertness to where it applies' (Perkins, 2008:13). However it is only once learners realise that they can reason with discipline knowledge and contexts that their knowledge can take on this more active form. As a result, proactive knowledge goes beyond understanding to prepare the learner for active use of knowledge. Perkin's (2008) idea of proactive learning in some ways represents the UKCC's original vision of nursing students becoming 'knowledgeable doers', with the ability to utilise evidenced based knowledge as a means to meet the complex demands of health care (Eklan & Robinson, 1995; UKCC, 1986).

In considering the challenges of knowledge acquisition and its application to practice, Perkins (2008) suggest that there is an illusion that possessing knowledge will produce understanding and interpreting knowledge will generate application to a variety of contexts. Tennant (1999) supports the idea of this illusion, by pointing out that one of the fundamental tenets of education has become the ideology that what an individual learns has generic application. Therefore, one would presume that what an individual learns in one situation could then be applied to another. However educationalists have examined individuals' ability to transfer learning from one context to another and have found little evidence of transfer of learning (Salomon & Globerson, 1987; Detterman, 1993; Mestre; 2002). Some studies have shown that even seemingly minor differences in a situation can reduce the probability of transfer (Salomon & Perkins, 1989; Alexander & Murphy, 1999). Both Mestre (2002) and Lave and Wenger (2003) believe that knowledge is closely linked to the situation in

which it was learned. As a result transfer of learning can be markedly reduced if learning is too tightly bound to the context in which it was learned. Nevertheless, Gicks and Holyoak's (1983) experimental studies which considered the use of additional statements to aid the transfer of knowledge identified that providing learners with hints and cues assisted individuals to transfer knowledge from one situation into another.

Drawing upon a range of research studies examining the concept of transferring knowledge, Salomon and Perkins (1989) concluded that there are two distinct mechanisms for transfer of learning. The first is low road transfer which is the spontaneous triggering of tacit knowledge, highly practiced skills and well learned behaviours into a new context. The transfer is automatic and unintentional due to continual practice in varied contexts resulting in habitual behaviour patterns which do not require logical deduction, reflective thinking or intellectual prowess. This is similar to Glaser's (1999) description of an expert who has intuitive, rapid fire and efficient pattern recognition and can readily draw upon their domain specific information in a cause and effect sequence to resolve problems. However Salomon & Perkins (1989) point out that in some contexts, automatic processes do not always bridge the gap between one context to another and in these cases individuals are required to use genuine effortful understanding in order to fully comprehend the contexts; this mindful abstraction is the hallmark of high road transfer (Salomon & Perkins, 1989)

In a later paper, Perkins (2008:12) goes on to suggest that 'proactive knowledge is a transfer rich view of knowledge' which differs from the traditional approach to applying knowledge. Firstly, proactive knowledge has a strong emotional and motivational dimension, secondly it calls for subtle cues to be provided during the process of learning and finally it requires the learner to be situated in an environment with minimal disruptions and competition for the learner's attention. He goes on to suggest that difficulty in understanding threshold concepts and being suspended within a state of liminality may engender a process of proactive knowledge which leads to transforming the learner's understanding of a discipline of knowledge.

In considering proactive knowledge and threshold concepts within the context of learning nursing, Meyer and Land's (2003) and Perkin's (1999; 2008) views on the process of learning the complexities innate in discipline knowledge could be considered as a way of illustrating the challenges students encounter whilst making sense of their nursing knowledge and practice. Therefore this thesis will utilise Meyer and Land's idea of threshold concepts and troublesome knowledge as the conceptual framework which underpins and guides the focus of the study.

This section has discussed the epistemological and ontological nature of knowledge within nursing and explored the symbiotic relationship between nursing knowledge and practice. To develop a more in-depth understanding of how individuals learn, the next section will examine the concepts and theories of learning and their application to pre-registration nursing education.

3.3. How we learn: educational theories applicable to learning nursing

The concepts and theories of learning have been debated for centuries. Phillips and Soltis (2004:5) purport that experts from a variety of disciplines do not agree on the theories of learning and are still attempting to understand how people learn. They go on to suggest that researchers approach, interpret and understand the phenomenon of learning within their own frame of reference and have therefore been unable to produce a single comprehensive learning theory. Nevertheless, they advise teachers to be aware of the various theories of learning which have been posited (Phillips & Soltis, 2004).

Due to the contested nature of learning and the wide range of learning theories available, this section will focus on the learning theories which could be considered as most applicable to learning nursing. Illeris's (2007) model of learning reflects the various dimensions of learning nursing and has assisted in providing an underpinning theoretical framework, structure and flow to the discussions.

Illeris's model of learning consists of three dimensions. The first dimension is content which includes knowledge acquisition, understanding and skills. Through this process of acquiring knowledge and skills, individuals create meaning and mastery as a means to strengthen their functionality at work, school or their community. The second dimension is in regards to the incentive for learning and the degree of motivation, emotions and volition which takes place in the process of learning. The idea being that the degree of mental engagement and mental energy placed on learning is dependent upon the benefits and outcomes of this process. The final dimension is the interaction of learning which takes place both at a social and societal level. In this dimension, the key elements required to learn within a community are action, communication and cooperation and it is through these processes that individuals develop sociability and facilitate their integration into various social contexts and communities (Illeris, 2007).

3.3.1. Content dimension of learning

Piaget examined the cognitive aspect of learning and the function of the acquisition process itself. His work focused on the structural aspect of learning, examining the content and nature of learning with the aim of uncovering how human intellect develops and how individuals learn (Piaget, 1951 cited in Illeris, 2007). Piaget believed the brain has a means of storing and organising information to enable retrieval of this knowledge and portrayed individuals' ways of thinking, perceiving and understanding as being structured into frameworks which he referred to as schemata (Hill, 1990). Illeris (2007:37) indicates that Piaget's structural approach considered the acquisition of learning being bound to the idea of knowledge being either assimilated into an already existing structure or patterns of knowledge and understanding being reorganised as a means to accommodate this new knowledge. Taking Piaget's theory into account, Gagne and Driscoll (1988) suggest using chunking as a cognitive strategy to enable students to process and organise large amounts of information into manageable chunks. By presenting new information into compartmentalised chunks, the students can organise it within their own schemata and find it easier to retrieve information from this structure.

Drawing upon Piaget's theories of learning, Bruner (1978) believed that learning is most effective when the fundamental concepts and principles of a subject are introduced in their simplest form and then revisited at ever increasingly complex levels in step with the learner's development. In this way, any subject can be taught as long as the content being presented corresponds to the stage of the learner's development (Bruner, 1978). However Bruner's (1978) educational theory is based upon a coding system which categorises and classifies knowledge into hierarchical groups. This coding system normally starts with general knowledge and principles with more specific knowledge being constructed as the learner's knowledge develops. In this way, learners can continually return to the general principles of a subject in order to further develop their understanding of increasingly more complex knowledge and concepts (Quinn & Hughes, 2007). This system of revisiting specific topics at increasingly levels of difficulty has been adopted by many pre-registration nursing programmes and is commonly referred to as a spiral curriculum (Boore & Deeny, 2012).

Gestalt theorists take Piaget's premise of constructing new knowledge a step further. They claim that an individual's previous experiences and new knowledge are restructured into a new relationship which enables them to connect the various elements together into an overall pattern or structure (Phillips & Soltis, 2004). By doing this the individual perceives the whole situation in an insightful new way and learning occurs suddenly (Hill, 1990). Von Glaserfeld concurred with Piaget's notion of knowledge construction. However, he held the premise that learners construct knowledge from their own interpretation and perception of the world which causes individuals to create their own reality (Von Glaserfeld, 1989 cited in Cobb, 1999).

David Ausubel integrated the ideas of various constructivists into a single coherent theory (Ausubel, 1978 cited in Novak, 1998). Ausubel believed that "the most important single factor influencing learning is what the learner already knows (Ausubel, 1978:163 cited in Quinn & Hughes, 2007:77). His theory of assimilation purports that learning takes place when new information is assimilated with the

learner's established knowledge and cognitive structures to form a more complex cognitive structure (Quinn & Hughes, 2007). Ausubel suggested that teachers should organise new teaching and learning materials into what he described as "advanced organisers". By configuring teaching and learning to progress in line with the learner's stages of cognitive and intellectual development, advanced organisers enable students to anchor and assimilate new information with their pre-existing knowledge (Ausubel, 1978 cited in Entwistle, 1997; Quinn & Hughes, 2007). Although Ausubel's theories were based on Piaget's notion of schemata, he believed that learning required to be meaningful. He distinguished the difference between rote learning and meaningful learning and argued that learning only occurs if the learning and teaching materials are presented in a way that is meaningful to the learner (Ausubel, 1978 cited in Entwistle, 1997).

Concept mapping is a metacognitive strategy which is derived from Ausubelian theory (Irvine, 1995). Novak (1998) believes that concept maps are a good way to help teachers organise their lectures and for students to find the key ideas and principles within subjects. All and Havens (1997) found that concept maps can illustrate an individual's personal interpretation and expression of meaning or they can simply serve as an organiser. However, Mueller *et al.*, (2001) highlight that some students who think in a linear manner could perceive concept maps as chaotic and confusing.

Perkins (1999) believes that in some respects constructivism could be regarded as being deceptive and may cause high cognitive demands on the learner. He goes on to suggests that although the premise of constructivism acts on the assumption that withholding information enables the student to construct their own understanding of knowledge, he suggests that sometimes the students just want to know the answer. Illeris (2007) points out that the traditional constructivist theories of learning did not initially use the terms understanding, insight or opinion within their theoretical frameworks and considered the content of learning as being either knowledge or skills based. As a result Quinn and Hughes (2007) suggests that the constructivist approach to learning is often criticised for not taking into account the affective or

emotional aspects of cognitive development Furthermore Roth (1999) points out that many constructivists focus mainly on examining individuals' isolated minds and how they construct knowledge from their experiences of living in the world. He goes on to argue that this individualistic view on learning does not take into account the socio-historical or cultural aspects of learning.

3.3.2. Incentive dimension of learning

In the late 20th century, views on adult learning became influenced by humanistic psychology and led to an ideological shift towards appreciating the role of autonomy, empowerment and self directed study in enabling the process of learning (Quinn & Hughes, 2007). The humanistic approach to learning differs from the cognitivist and constructivist approaches to learning in the respect that it also considers how the affective domain influences learning.

As humanistic educational theories are underpinned by the philosophy of phenomenology and the notion that reality lies within an individual's perception of an event, humanists advocate for a holistic approach to learning which considers the role of the learner's thoughts, feelings, experiences, attitudes and values in developing and influencing their learning and educational development (Quinn & Hughes, 2007). Humanists who base their underpinning philosophy on Maslow's educational theories, take it a step further and consider the central role of education as enabling their students to reach their full potential through a process of self actualisation (Maslow, 1971 cited in Quinn & Hughes, 2007).

Carl Rogers (1983) introduced the notion of the student centred approach to learning and transformative learning. His educational theory purports that learning is much more than the accumulation of facts; it is significant, meaningful learning which focuses on allowing students the freedom to engage, participate and self-evaluate their learning in a non-threatening and respectful classroom environment which leads to a difference in the students' behaviours, actions, attitudes and personality (Illeris, 2007; Quinn & Hughes, 2007).

Illeris (2007) purports that Rogers viewed learning as involving a change and restructuring in the organisation of self which leads to a change in the perception of oneself. Rogers believed that significant learning is to some degree painful, turbulent or distressing and involved a change in the individual's self organisation and personality (Rogers, 1969). This educational perspective is similar to Meyer and Land's notion of threshold concepts and Perkin's views on troublesome knowledge which suggests that difficulty in understanding concepts can leave students anxious and stuck in a 'liminal place'. However this liminality can act as a portal to transform students' understanding of a concept leading to a shift in their perception and interpretation of their discipline (Perkins, 1999; Meyer & Land, 2005).

Boore and Deeny (2012) purport that Rogers' focus on interpersonal relationships within education and the role of the educator as a facilitator echoes the values which underpin nursing practice. Building therapeutic relationships and facilitating patients to manage their own health choices and health care needs are two cornerstones practises within nursing. For that reason, Boore and Deeny (2012) believe that utilising a humanistic approach in nurse education allows lecturers to act as role models and demonstrate the comparable attributes which are to be found in nursing practice. As the values of humanism are congruous to both nursing practice and nurse education, Boore and Deeny (2012) go on to say that many schools of nursing espouse an educational philosophy which is underpinned by the theories of Maslow and Rogers and base their curricula on a student centred and humanistic approach to learning.

3.3.3. Interaction dimension of learning

Illeris (2007) indicates that the dimensions of learning not only encompass knowledge acquisition and the incentives to learn, it also involves interaction at a social and societal level. Vygotsky was one of the key individuals to initially explore the idea of learning within a social context. He centred his theories of learning on the social and historical traditions of the culture in which individuals learn and believed that much of what we learn is from other people (Illeris, 2007). From this

notion, Vygotsky developed the activity theory whereby knowledge and action are regarded as having a reciprocal relationship in the process of learning (Scribner, 1999). Vygotsky believed that knowledge is passed down through history by means of individuals who are more able or advanced in a field of expertise sharing their ideas and knowledge to those less able. Over time these shared ideas become further developed and modified by the next generation leading to a change in the established culture (Roth, 1999).

Within the context of learning through shared knowledge, Spouse (1998b) indicates that Vygotsky regarded language as a mediational tool which enables meaning to be attached to objects. As learners develop their acquisition of the language within a specific domain of knowledge, they learn to use this vocabulary to monitor their behaviour. In relation to nursing, Spouse (1998b) indicates that novice nursing students practise using unfamiliar words to see how they are incorporated into practice and often utilise them inappropriately. However she points out that as they become more experienced they are more able to use discipline language correctly and understand its meaning. This eventually enables students to engage in professional discourse and develop the higher mental functions required for problem solving and clinical decisions making.

By considering the difference between the learner's current developmental level and problem solving skills and their potential abilities, Vygotsky suggested that teachers can guide and support their students to function at ever increasingly higher levels of development and problem solving (Vygotsky & Luria, 1930 cited in Spouse, 1998b). Roth (1999) goes on to say that Vygotsky's theory of learning suggests that knowledge and understanding is socially constructed and it is through collaboration and interaction with their teachers that students develop their skills and knowledge. This socio-historical approach suggests that as a learner continues to develop their higher order thinking skills, the information and skills which they initially regarded as external to their own repertoire of knowledge becomes an integral part of their own understanding of knowledge and it is within this zone of proximal development that culture and cognition mediate to enable individuals to generate new ways of

knowing (Vygotsky, 1978 cited in Roth, 1999). In this way, Roth (1999) suggests that Vygotsky's zone of proximal development goes towards explaining how cultural knowledge is transformed and internalised by individuals.

However, Illeris (2007) argues that utilising Vygotsky's learning theory can lead to knowledge and learning being predominately influenced and controlled by the teacher. Candela *et al.*, (2006) assert that many nursing programmes remain underpinned by Vygotsky's philosophy of the teacher centred approach whereby nurse educators impart their knowledge and experiences of nursing and the students' primary role is to be a passive recipient of this knowledge. However they go on to argue that the best way for students to learn nursing is through learning centred approaches, whereby the educational focus is on the process of learning and both teachers and students are regarded as learners working together to explore and develop an understanding of nursing and the students' abilities.

In considering the social dimensions of learning, Dewey believed that learning begins with experience and requires learners to be directly involved in experiences and be given the opportunity to observe the consequences of their actions rather than being passive recipients of experience (Dewey, 1938 cited in Jarvis, 1987). Dewey placed an emphasis on theory being rooted within practice rather than outside of it and learners being engaged in purposeful activities within a social setting (Dewey, 1958 cited in Bredo, 1999). According to McDermott (2012), Dewey's theory of education and experience remains pertinent today and its underpinning philosophy of theory being rooted within practice still has the potential to influence the development of professional practice within nurse education.

Bandura's social learning theory identified that individuals learn from others' behaviour and takes place through a process of observation, imitation and modelling (Bandura, 1970 cited in Phillips & Soltis, 2004). Illeris (2007) argues that this process of learning can be either hampered or facilitated depending upon the response of the individual who is being modelled. Although Bandura's theory is underpinned by behaviourism, Bigge and Shermis (1992) suggest that his main emphasis was on the social aspect of learning and how behaviour is channelled and

activated cognitively. Furthermore, Rogoff (1999) points out that social learning is much more than the interaction between two individuals and purports that the societal norms and practices developed within an institute also have a bearing on the social aspect of learning. Drawing upon Bandura's theory of social learning and how behaviour is channelled and activated cognitively (Bigge & Shermis, 1992), Gopee (2010) identifies that a substantial proportion of social learning takes place within the culture of nurse education. For example, Bahn (2001) suggests that social learning has a role to play in the socialisation and professionalization of nurses and Bethard's (2014) use of Bandura's social learning theory enabled students to engage in professional discourse about the observations they encountered in clinical simulation scenarios.

Illeris (2007) suggests that the idea of social learning was not taken seriously until the concept of situated learning/cognition was conceived by Lave and Wenger in the early 1990s. These two cognitive anthropologists initially set out to reconsider the idea of apprenticeship. As part of this process, they drew upon five previous research studies which had explored apprenticeship from different cultural and historical traditions. From these 5 case studies, they further developed their ideas of situated learning which was published in the early 1990s (Lave & Wenger, 1991). Since then their views on situated learning has been influential in the development of social learning and understanding how individuals learn within a particular discipline.

Within a traditional apprenticeship model of learning, Lave and Wenger (1991) suggest that apprentices learn through observation and imitation, however go on to argue that this conventional way of thinking about learning is too simplistic and does not illustrate the dynamic processes involved in learning. They believe that knowledge is socially mediated and situated within the context in which it was constructed and have further developed the idea of apprenticeship with their concept of legitimate peripheral participation. They suggest that an apprentice's legitimate right to membership and access to a field of practice gives them permission to watch practice from the periphery, however as their knowledge and skills develop, their co-

participation in practice develops incrementally leading to performing ever increasingly complex skills.

In considering the concept of situated learning, Lave and Wenger (1999b) believe that abstract knowledge cannot be fully understood until it is placed within a specific situation. They claim that comprehending abstract knowledge in itself is a specific event within a specific circumstance and although an individual may understand an abstract principle within a specific situation, it does not necessarily mean to say that they will be able to understand or apply this principle within the context of another situation. From this viewpoint, Lave and Wenger (1999b) deduce that the process of understanding is always situated and believe that this is why story telling is such a powerful way of conveying complex ideas as individuals can abstract understanding from the specific situation.

Situated learning is also perceived by Lave and Wenger (1999b) as a transitory concept which acts as a bridge between cognitive processes and social practises. They posit that learning is not simply situated in practice but an integral part of the process of learning. They do not believe that social learning should be considered as one aspect of learning, instead they claim that social learning should be viewed as encompassing all aspects of learning. In relation to theory and practice, Lave and Wenger (1999b) suggest that rather than considering theory as being general and abstract and the world as being specific and concrete, situated learning offers the opportunity to explore the richness and complexity of their interconnectedness.

Lave and Wenger (1999a) contend that the concept of a community of practice and actively co-participating in a field of practice are the intrinsic conditions required for the development of skills and knowledge and enables learners to socially construct an understanding and knowledge of the activities prevalent within that culture. Intrinsic conditions include engaging in all activities, listening to the exchange of knowledge, engaging in conversations and making sense of this discourse within the context of what they are seeing and hearing. This process of active engagement enables learners to experience the social and cultural organisation of knowledge and

construct their own understanding of what constitutes the body of knowledge and practises within a community of practice (Lave & Wenger, 1999c).

In examining the role of legitimate peripheral participation in developing competence, Lave and Wenger (1999c) suggest that apprentices' tasks are initially short and simple, as novices, they have little responsibility and the cost of making a mistake is small. As they become more competent, their contribution and value to the community continues to increase and they begin to feel a sense of belonging to the community of practice. As they move towards fully participating in all aspects of practice, they take on more responsibilities, intensify their efforts and engage in more difficult tasks. This in turn, causes them to develop a stronger sense of identity as a fully fledged member of the community and begin to perceive this culture of practice as their own.

Lave and Wenger (1999c) stress that this sense of identity is central to the concept of legitimate peripheral participation and fundamental in transforming a learner's understanding of a community of practice. As a result, they believe that learning and a sense of identity are inseparable. However they point out that since legitimate peripheral participations is situated within social and cultural structures, this will inevitably involve apprentices being exposed to conflicts of interests and power struggles within a community of practice.

In considering these power struggles, Lave and Wenger (1999c) indicate that as a novice, on the periphery of practice, apprentices may initially be kept from more fully participating in practice which can cause the learner to feel disempowered, however as they move towards full participation, they can feel empowered by their responsibilities. Lave and Wenger (1999c) go on to suggest that being exposed to the conflicts within the community, introduces apprentices to the tensions innate within practice and enables them to learn how to navigate, interplay and negotiate through the disagreements that are played out in practice. In this way legitimate peripheral participation is far more than acquiring knowledge and skills, it is about learning the reciprocal relationship between people and practice.

In summary, Lave and Wenger's (1999a) central tenet is the view that being a member of a community of practice and having legitimate peripheral participation is central to learning and understanding an area of practice. They believe that it is having access to a community, being fully immersed in their social practises and interacting with all the members of that community that enables apprentices to learn the underpinning and tacit knowledge, principles, social structures and power relations innate within that specific culture of practice.

In considering the concept of legitimate peripheral participation, the literature has identified several weaknesses in this approach to learning in practice. Banning (2005) believes that the apprenticeship style, teacher led approach to learning may precondition students not to ask questions thereby stifling their opportunity to engage in discussion and debate about nursing practice. Bradley and Postlethwaite (2003) also challenge the idealisms of this theory and draws attention to the realities of practice. They believe that communities do not necessarily work in harmony and may have conflicting opinions on practice. As a result novices who have not yet developed sound theoretical knowledge and professional judgement may find it difficult to learn in an environment which displays divergent views regarding practice. Finally, Illeris (2007) points out that Lave and Wenger's work only focuses on the immediate social situation in which the learning took place. As a result, the idea of legitimate peripheral participation does not take into account the significance of the wider societal situation and cultural environment in which learning takes place.

Although there are inherent weaknesses in situated learning, Spouse was instrumental in introducing the concepts of situated learning and peripheral legitimate participation to nurse education in the early noughties. In the late 1990s, Spouse carried out a longitudinal study of eight students undertaking a pre-registration nursing programme in England, the results of which she published in a series of papers (Spouse, 1998a; 1998b; 2001a; 2001b). The aim of this study was to investigate the nature of professional development whilst learning in nursing practice and the processes and factors which influence students' acquisition of professional

knowledge in clinical settings. The research used mixed qualitative methodologies including phenomenology, grounded theory and ethnography and data was collected from a range of methods including interviews, non participant observation and analysis of the students' documented critical incidents in practice. By the end of this three year longitudinal study, five students had completed the programme. The findings from this small scale study led Spouse to advocating for the use of legitimate peripheral participation, scaffolding and Vygotsky's zone of proximal development as a means to further develop the supervisory relationship between nursing students and their mentors (Spouse, 1998a, 1998b). Spouse (2001a) has also suggested that a sociocultural approach to learning can assist nursing students in bridging the theory practice gap and enhance their professional development.

Taking into account the concept of legitimate peripheral participation and the findings of her longitudinal study, Spouse (1998a) believes that through the process of engaging in a community of practice, students are able to experience and subconsciously take note of the subtle and implicit therapeutic aspects of nursing practice. Being immersed in the nuances of practice can allow students to experience how nurses use tone and intonation in their communication and interpersonal skills, how information is presented in a variety of contexts and how the delivery of care is dependent upon the situation in which the nurses find themselves. However Spouse (1998a) points out that clinical areas can initially appear strange and frightening places for novices and without support, students can find it painstakingly difficult to recognise what they are seeing and making sense of what is taking place before them.

As students can lack an awareness of the relevance of their knowledge to nursing practice and have difficulty in knowing how to relate the knowledge they have learned to the situations in which they encounter in practice, Spouse (1998a) believes that students need guidance in how to reframe their knowledge within the context of what they are experiencing in practice. She suggests that this can be achieved by ensuring students are supervised by experienced and knowledgeable nurse practitioners who are skilled at mentoring. As the students work alongside their mentors in practice, this directly situates their learning within the context of nursing

practice. This situated learning provides mentors with the opportunity to help their students to see what knowledge is relevant to a particular situation, make the necessary connections between theory and practice and explain how the nuances within nursing practice contribute towards understanding professional practice (Spouse, 1998b; Spouse, 2001a).

Drawing upon various pedagogical frameworks within education and situated learning, Collins *et al.,* (1991) propose an alternative approach to learning which incorporates a range of cognitive strategies embedded within the traditional apprenticeship model. Within their roles as educationalists and researchers in America, they believe that cognitive strategies are central to integrating knowledge and skills and suggest that traditional approaches to teaching and learning do not place enough emphasise on the reasoning experts employ when they are working on solving complex problems or tasks. As a result the processes by which experts conceptualise knowledge and work towards finding solutions to problems remains inert to learners. To address these issues, Collins *et al.,* (1991) have produced a framework for learning called the cognitive apprenticeship model which enables thinking processes and inert knowledge to become visible and apparent to students.

This framework encompasses four dimensions including content, method, sequence, and sociology of the learning environments. Collins *et al.*, (1991) believe that employing the teaching methods they suggest provides students with the opportunity to utilise cognitive skills and discover experts' thinking strategies within a variety of contexts. Their teaching methods consist of the traditional modelling, coaching and scaffolding approaches to learning. It also includes methods of articulation which encourages students to express their thinking processes, how they resolve problems or critique a range of activities. This method also involves reflection and encouraging students to replay their performances and compare their own thinking processes and actions with those of an expert. The final method focuses on exploration and encouraging students to seek out and construct an understanding of the knowledge they are learning.

Collins *et al.,* (1991) believe that it is important to carefully balance the sequence of learning activities. Firstly, the students need to be able to see the big picture before attempting to carry out any part of a skill. This generic view can act as a map to guide the students through their performance. Secondly, with the use of scaffolding, the students need to perform increasingly complex skills. Finally students require to be exposed to a diverse range of experiences to enable them to know how to apply knowledge in unfamiliar circumstances and develop a richer net of contextual associations.

Although the cognitive apprenticeship model emphasises the important role of cognitive strategies in the developments of integrating skills and knowledge, Collins *et al.,* (1991) also recognise that situated learning has a vital part to play in facilitating students' learning. They believe that it is by being situated in practice that enables students to come to appreciate that the knowledge they have learned serves a purpose, learn how to use this knowledge and learn the different context in which this knowledge may apply. Collins *et al.,* (1991) appreciate that situated learning promotes intrinsic motivation as the students can see how their knowledge and skills benefits their personal goals and how being in a community of practice fosters cooperative problem solving and a powerful mechanism for developing knowledge and understanding.

Taking into consideration Collins *et al's* (1991) ideas on the cognitive apprenticeship model, Cope *et al.,* (2000) carried out a study which compared the experiences of students who had completed the traditional apprenticeship style training (n=11) and the Project 2000 programme (n=19) with a focus on the way in which the students had learned in their practice placements. All of the students were interviewed at the end of their respective programmes and their narratives examined for categories which derive from the theoretical perspective of situated learning theory (Collins *et al*., 1991; Lave & Wenger, 1991). The newly qualified nurses' narratives described the ways in which nurses had interacted with them during their pre-registration nursing programmes and the analysis of the findings identified cognitive apprenticeship strategies as a facilitative approach to enabling students to further

develop their learning in practice. These findings led Cope *et al.,* (2000) to conclude that although nurse education is now emphasising the need for students to develop higher order nursing knowledge, being knowledgeable in itself does not necessarily lead to expertise. They go on to claim that experts do not function by means of the principles they have obtained from higher order thinking, instead they believe that it is through the process of experience that experts derive a complex situational understanding of practice. However they appreciate that the tacit nature of knowledge can make it difficult for experts to be explicit to students about the complexities involved in nursing practice and emphasise that it is by being within the context of practice that is central to enabling students to interpret and understand nursing knowledge and practice. From the analysis of their findings, Cope *et al.,* (2000) support the use of mentoring techniques derived from situated learning and cognitive apprenticeship model to facilitate students' learning in practice.

There is some evidence of the cognitive apprentice ship model being adopted within pre-registration nursing programmes (Taylor and Care, 1998; Wooley and Jarvis; 2007) however the idea of situated cognition appears to have had a wider appeal within nurse education (Billett, 1996; Cope *et al.*, 2000) and is now being adopted in clinical simulation (Paige & Daley, 2009; Onda, 2012).

3.4. Contemporary views on learning nursing

3.4.1. Learning nursing in the 21st century

Traditionally in the 20th century, lectures and classroom teaching focused on the acquisition of knowledge and rote learning which were regarded as the main methods of teaching within the colleges of nursing. The students' training encompassed basic knowledge of nursing which was deemed sufficient for a life time of nursing practice. However with the exponential development of nursing knowledge in the latter part of the 20th century, the old traditions of passing nursing skills down through the generations has been replaced by the ideology of evidenced based

practice which is derived from research based knowledge and values research, lifelong learning and the development of specialist practice and inter-professional learning (Pearson & Craig, 2002; Woodhouse, 2007).

Many educationalists are now advocating for nurse education to shift from content and teacher centred curricula to student centred approaches which focus on the process of learning. Candela *et al's* (2006) paper puts forward the case for a learning centred curriculum, they suggest that programmes should be designed to reflect current nursing practises and meet the learning needs of students who will be required to practise competently within contemporary nursing environments.

3.4.2. Student centred approach to learning

Contemporary pedagogies have evolved from critically debating the traditionally held assumptions and epistemologies about teaching and learning and further exploring ways of knowing and how we learn (Horsfall *et al.*, 2012). Contemporary nurse education is becoming more learner-centred with a focus on students actively participating in the process of learning. Instead of teachers being regarded as knowledgeable experts imparting their knowledge, there is a move towards both teachers and students working together to negotiate, interpret and critically debate nursing knowledge from a variety perspectives in order to further develop and understand nursing knowledge and clinical decision making. This shift in the relationship between teachers and students has led to a new underpinning philosophy in nurse education whereby the teachers is regarded as the facilitator and the students is ultimately responsible and accountable for their own learning (Horsfall *et al.*, 2012).

Horsfall *et al*., (2012) reflected upon the factors and issues which they believe should be considered when developing the underpinning philosophy of a pre-registration nursing curriculum and discussed various traditional and contemporary pedagogic models in nurse education. In relation to contemporary philosophies, they consider the learner centred approach to be a fundamental shift in pedagogy for many nurse

educators which is challenging in the respect that it requires teachers to facilitate their students' learning by means of listening, discussing, prompting, guiding and redirecting students rather than supplying the students with knowledge they require to obtain. Moreover, they suggest that the role of facilitator entails skilfully guiding the students towards a productive pursuit of knowledge without controlling the process and outcome of learning experiences. Another challenge with the facilitative approach to learning is guiding and directing the students towards identifying the relevant knowledge without providing them with the answers (Horsfall *et al*., 2012). This student centred approach to learning, ideally lends itself to small group work as a means to facilitate students' engagement in discussion and debate, however many nurse educationalists would argue that this approach is not feasible within large cohorts of students (Carr, 2008; Boore & Deeny, 2012).

Gagnon and Roberge (2012) believe that within higher education, there has been a shift from individualised learning towards learning in groups. In their qualitative study, they asked 96 Canadian nursing students to write about their experiences of working in a group. In their analysis of the data, they were surprised to discover the influence of psychosocial factors during group interactions and how group work helped the students to develop their social skills. Gagnon and Roberge (2012) also point out that listening to a diverse range of views enhanced the students' learning, fostered professional relationships and was considered a positive learning environment by the students.

In relation to the student centred approach to learning, Banning (2005) considered three different approaches to teaching and learning. These included the didactic approach which primarily involves lecturing, the facilitatory approach which is focused on constructivism, problem based learning and self directed studies and finally the Socratic style which focuses on a student centred approach to learning. Within her review of the research pertaining to these three approaches, she found that students preferred a student centred approach to learning where they had the opportunities to share their experiences of practice and take part in peer discussions which assisted them to assimilate new knowledge into their daily practice. By

shifting from a didactic to facilitative approach to learning, Banning (2005) believes a more humanistic approach to learning is established which empowers the students to challenge their own learning. She goes on to suggest that it is through discussion, debate, analysis and problem solving with their peers and lecturing staff that nursing students can conceptualise the relationships between nursing knowledge and their practice.

3.4.3. Critical thinking and evidenced based practice

The NMC Standards for pre-registration nursing education states that the nurse requires to deliver "nursing practice (care) that is appropriately based on research, evidence and critical thinking that effectively responds to the needs of individual clients (patients) and diverse populations." (NMC, 2010: 148). Therefore there is a requirement for nursing students to develop the skill of critical thinking and underpin their clinical decisions on evidenced based research and practice. Boore and Deeny (2012) believe that clinical judgement and decision making are two of the key skills which a nursing student requires to learn. They go on to suggest that students need to be able to understand the range of options, factors and ethical issues which may influence the situation. However as a higher order thinking skill, many students find the process of critical analysis a challenging skill to learn (Simpson & Courtney, 2002; Chan, 2013).

3.4.4. Experiential learning and reflective practice

With the NMC (2010) stipulating that students complete 50% of their programme in practice, Boore & Deeny (2012:125) believe that experiential learning and reflective practice both play a major role in the pre-registration nursing curricula. Kolb's (1984) experiential learning model and Schön's (1983) reflecting in and on practice have both been considered as pivotal in clarifying the process of learning through experience. The skill of reflection is now a requirement for all nursing students and has a central role in lifelong learning for qualified nurse practitioners (Quinn &

Hughes, 2007; Boore & Deeny, 2012). Illeris (2007:66) supports this view and indicates that reflection has become a key debate in academia and is now being embedded within most academic programmes due to the increased awareness of learning requiring to be utilised in practice. Nevertheless the process of reflection is considered a challenging educational process for students to understand and conceptualise (Schön, 1983; Boore & Deeny, 2012; Martin & Mitchell, 2001).

3.4.5. E-learning

E-learning is a radical departure from traditional teacher led learning strategies as it decentralises teaching and instead fosters independent, individualised and self-directed learning which is considered a more effective way of engaging students in the learning process (Bloomfield *et al.*, 2013). One of the key educational strengths of e-learning is in its flexibility, permitting students to access and engage with learning resources within a remote location and enable them to learn at their own pace according to their own personal needs and schedules (Cheng, 2013). Another key strength of e-learning is its interactive functionality whereby user friendly interfaces and hypertext navigate students through resourceful web pages and encourages them to actively engage and interact with a variety of mediums including text, video, audio files and online instructional videos that demonstrate clinical skills (Arhin & Cormier, 2007; Kelly *et al.*, 2009; Cheng, 2013).

With the focus on context dependent learning, e-learning has been further enhanced/developed in the use of web based platforms which simulate nursing practises in a virtual world which can be either a hospital or community based environment. Scenarios can be programmed into this virtual learning environment and taking on the role of avatars, nursing students can work their way through a series of increasingly complex nursing scenarios which may involve assessing a patient's health or managing the deterioration of a patient in the community or a hospital environment (Wood & McPhee, 2011). For example, the nurse education team within the Toronto's University Health Network asked 500 nurses to engage in role playing a variety of scenarios within a web based virtual environment. Feedback

from nurses indicated that the scenarios helped them to consolidate their clinical decisions skills and priorities in nursing care, however they would have liked more time to practise the various scenarios and learn how to more fully engage with the interactive features of the platform (Wood & McPhee, 2011).

Another current example of e-learning relates to the prevention of health care associated infection, a current national priority for the Scottish Government (NHSQIS, 2005). NES implemented an Online Cleanliness Champions Programme which is completed by NHS staff and nursing/allied health students undertaking pre-registration programmes in Scotland. This online e-learning platform focuses on patient safety and infection control and has been shown to improve infection control measures and reduce the number of infections in the hospital and community over the past 10 years (NES, 2014a). NES commissioned a study to review this online e-learning programme in 2006. The evaluation included surveying 801 nursing students, 161 mentors and interviewing key staff who had been involved in implementing the programme within either the HEIs or Health Boards. 71% of the students (n=801) who had completed the online programme responded to the survey and found the online platform to be flexible and adaptable, however had concerns about completing the programme within the given time frame and how to involve their mentors in the completion of their documentation. The students found the presentation of the on-line programme itself, at times, to be rather repetitive, however overall the evaluations concluded that infection control precautions within the programme were widely understood and transferable to various health care contexts (West *et al.*, 2006).

Although e-learning is primarily considered a form of independent learning, students do not need to feel isolated during their personal studies as they can still engage with their lecturers and peers remotely through the use of discussion rooms, chat rooms, email and instant messenger and use this medium to clarify points and further explore and examine aspects of nursing practice (Cheng, 2013).

3.4.6. Problem based learning

Problem based learning (PBL) is based on the principles of adult, self-directed learning with the curriculum being focused on the student rather than the lecturer (Boore & Deeny, 2012). It differs from traditional methods of problem solving strategies as it only provides the students with the problem itself and expects them to discover the information they require in order to solve the problem. This process is completed through teamwork and negotiating the various roles required to find the information, develop an understanding of the knowledge, skills and concepts to resolve the problems and then finally present the outcome of this process to the rest of the cohort of student (Quinn & Hughes, 2007; Boore & Deeny, 2012).

Horn *et al.,* (2007) believe that PBL encourages independent learning and a deeper exploration of nursing knowledge. They carried out a qualitative study which evaluated both students and lecturing staff's views and experiences on PBL within a pre-registration nursing programme in England. This included arranging 121 students into small groups and asking them to identify 5 strengths and weaknesses of PBL. 15 lecturing staff who facilitated the PBL groups were interviewed in focus groups and asked about their experiences of facilitating the students in this non traditional approach to group learning. Their findings concluded that PBL encouraged independent learning and a deeper exploration of the nursing knowledge and practice. Horn *et al*., (2007) also claim that negotiating learning within the team encourages the students to learn to be respectful and non judgemental in their group interaction and thereby allows the students to develop a professional and collegial approach to exploring nursing knowledge and practice. However, they stress that success is dependent upon the group dynamics and can cause issues if the division of labour is perceived as being unequal or not completed by certain individuals within the group. They go on to suggest that the role of the facilitator can influence the success or failure of PBL and requires a fine balance between "non participation and active facilitation" and the dilemma of cultivating an active or passive role in managing the group dynamics (Horn *et al.,* 2007. p.108).

Wilkie and Burns (2003) believe that one of the key strengths of PBL is its role in developing critical and analytical thinking skill. By designing PBL classes which cultivate an inquisitive approach to learning rather than rote learning, the facilitator can encourage students to engage in developing new knowledge which they recognise as being significant and meaningful to their practice. Although PBL requires more time and resources, Distler's (2007) evaluation of a PBL nursing curriculum based in America found that this learning approach increased the students' confidence in their ability to learn and enhanced professional satisfaction for both the lecturing staff and students.

3.4.7. Clinical simulation

Internationally, clinical simulation is an educational strategy which is becoming highly regarded and extensively developed in many pre and post registration nursing programmes (Pike & O'Donnell, 2010; Hope *et al.*, 2011; Merriman, 2014). The origins of this teaching and learning strategy began in the traditional practical rooms where students learned rudimentary nursing skills using very basic equipment such as practising administering an injection into an orange.

Clinical simulation normally takes place within a simulated ward environment which is often referred to as the clinical skills laboratory (Boore & Deeny, 2012). This simulated environment is typically equipped with mannequins in which to practise basic nursing care such as bed bathing. The labs are also furnished with modest equipment to practise moving and handling, hand washing and basic life support and life like body parts for students to practise administering an injection or inserting a urinary catheter.

High fidelity simulators are technologically advanced mannequins which integrate computer based software applications. The mannequins display physiological changes which emulate real life conditions and are programmed to be fully interactive and responsive to pharmacological and nursing interventions. The high fidelity mannequins are utilised for managing complex nursing practises in a safe

learning environment and programmed scenarios enable students to make clinical decisions and perform complex nursing actions in response to changes in the mannequin's medical condition (Marlow *et al.*, 2008; McCaughey & Traynor, 2010).

The main motivation for the growth of clinical simulation was due to technological advances in clinical practice and limited opportunities for students to observe or practise nursing skills in the clinical areas (Moule *et al.,* 2008). With exponential advances in technology and high fidelity mannequins, clinical simulation laboratories are becoming increasingly more authentic and believable clinical environments that enable students to experience the complexities of nursing practice vicariously. This environment affords students the opportunity to observe and perform procedures that they may rarely or never experience in nursing practice. It also enables them to practise complex and hazardous skills within the confines of a low risk and safe environment which is well controlled and supervised by experienced lecturing staff (Hope *et al.,* 2011).

Although several authors argue that there is limited evidence of robust research and evaluation on clinical simulation, there is growing evidence that it supports the development of skills and competence in practice (McCallum, 2006; McCaughey & Traynor, 2010; Dow, 2011). Some students can initially find clinical simulation intimidating and may have difficulty in interacting with the mannequin or be ambivalent regarding the realism of the clinical simulation lab, however, on regular exposure to this learning environment students can become less self conscious, start to assume the behaviours of authentic nursing practice and recognise simulated learning as an authentic way to learn nursing practice (McCaughey, & Traynor, 2010; Hope *et al.,* 2011). Practising skills in small groups provides students with the opportunity to ask questions, share their own experiences of practice and develop peer support within a large cohort of students (Hope *et al.,* 2011). Students clearly value clinical simulation as an effective learning approach (McCallum, 2007; Dow, 2011) and find that it enables them to relate theory to practice (Morgan, 2006; Hope *et al.,* 2011), however with the continued increase in cohort numbers, it is becoming

increasingly challenging to maintain small groups in the clinical skills labs (Boore & Deeny, 2012).

In accordance with the European directives, the NMC standards stipulate that pre-registration programmes within the United Kingdom must consists of 2300 hours of theory and 2300 hours of practice (European Parliament, 2005; WHO, 2009; NMC, 2010). Clinical skills classes have been traditionally delivered within the 2300 theory hours, however in the mid-noughties, the NMC came to recognise that nursing students often had limited opportunities to practise certain key skills in their practice placements and considered the use of clinical simulation as an effective approach to developing competency in practice. To examine this proposed change to the allocation of practice hours, the NMC commissioned a pilot study during 2006 and 2007 to investigate the use of designated practice hours for clinical simulation and ensure the reallocation of practice hours to the clinical skills laboratories could be validated as enabling students to gain the competencies required for nursing practice (NMC, 2007d). This pilot took place within 17 HEIs in the United Kingdom and involved 6361 students. Each HEI was asked to provide various sources of data regarding their use of clinical simulation including student/staff feedback and evaluations, relevant policies or protocols, a range of curriculum, audit and evaluation documentation, assessment frameworks and outcome of written and practical exams. The findings were overall positive and indicated that clinical simulation enabled the students to achieve their clinical learning outcomes, provided them with learning opportunities not available in their practice placements and helped increase the students' confidence in nursing practice.

Although the NMC report does not provide details of all of the methodological approaches utilised in each of the pilot studies, Moule *et al*., (2008) have published the approach which they employed as one of the HEIs involved in this pilot. Their study involved asking 69 adult and children's pre-registration students to attend 5 clinical simulation classes and complete written tests before and after each clinical skills lab. The students also completed a practical exam and evaluation of clinical simulation. In addition, 6 mentors were interviewed about their views and

experiences of the use of clinical simulation in the preparation of nursing students. Their findings supported the view that clinical simulation can develop students' skills and knowledge and provide opportunities for skills rehearsal and feedback. The study also supports the notion that simulated practice can offer students with the experience of observing and practising skills which may not necessarily be available to students in practice (Moule *et al.*, 2008).

From the findings of this UK wide pilot study, the NMC now endorses up to 300 hours of the mandatory 2300 practice hours being allocated to clinical simulation (NMC, 2007b; NMC, 2007d; NMC, 2010). This change in policy appears to go towards recognising clinical simulation as an effective source of clinical learning.

3.4.8. Blended learning / multimodal approach to learning

Various studies in the literature are now championing the use of blended learning/multimodal approach to learning nursing. This educational approach utilises a wide range of teaching and learning strategies, incorporates several modes of accessing information and makes use of different styles of formative and summative assessments. Bloomfield *et al*., (2013) introduced a range of teaching, learning and assessment strategies within a pre-registration programme in England which was evaluated by 55 students. Feedback from the students indicates that blended learning affords them with the opportunity to learn from a broad and comprehensive range of teaching and learning methodologies and enables them to utilise and adapt their own learning styles to a broad range of educational approaches. Drawing upon the literature and their experience of implementing a blended learning approach within 2 pre-registration programmes in Scotland, Johnson *et al.,* (2010) suggest that a blended learning approach offers the advantages of online environments with more traditional approaches to learning and serves to enhance the student's experiences by addressing their varied abilities. However they advise a careful evaluation of the integration of technology in a multi model approach to learning and ensure that further enhancements are built upon past successes and cater for the continual development of staff and students.

3.5. Factors which may influence learning

There are various factors which may influence learning, many of which have already been explored in depth in the literature review. The following section will examine some factors which have not been discussed within the context of the literature review.

3.5.1. Characteristics of students in the 21st century

Traditionally nursing students were female school leavers, however the student population within pre-registration nursing programmes has become increasingly heterogeneous. Changes in social policy such as widening access to higher education, wide entry gates to pre-registration programmes via Further Education, recruitment challenges and promotion of equality and diversity has resulted in a broader range of ethnicity, maturity and educational backgrounds within the current student population (Bloomfield *et al.*, 2013).

These social, political and cultural changes have resulted in a different profile of student who has different learning needs, requirements and expectations. Bloomfield *et al.*, (2013) indicate that although diversity in the student population has provided a rich learning environment whereby students with a wealth of life experience and knowledge can learn from each other, these demographical changes have also brought new challenges.

As approximately two thirds of nursing students are over 26 years of age, (Nursing and Midwifery Admissions System, 2006 cited in Donaldson *et al.*, 2010) many students have responsibilities for both children and ageing parents which can impact on their studies, practice learning experiences and priorities. Some students find it difficult to manage childcare arrangements during their pre-registration programmes and are looking for more flexibility in their studies and negotiation in their shift patterns in order to meet their family commitments (Carr, 2008; Donaldson *et al*., 2010).

3.5.2. Role of the teacher

Shulman (1999) believes that teachers have ways of talking, demonstrating, enacting and illustrating ideas that enables their students to come to understand and discern key concepts and principles and become proficient and skilful within a particular domain. However in order to do this, teachers must understand the distinctive pedagogical bodies of knowledge required to facilitate their students' learning. Shulman (1999) goes on to suggest that having scholarship in a discipline enables teachers to have established well organised conceptual knowledge and an abstract understanding of the key principles within their subject. These characteristics enable teachers to convey the important principles and skills in their subject and guide their students to what is central and peripheral to their learning. It also allows teachers to have the flexibility of explaining abstract knowledge in a variety of ways and to determine how the values and attitudes innate within a domain can influence the students' learning.

With the changing nature of nurse education, there is a view that some teachers remain conservative and prefer to maintain traditional methods which consist of didactic approaches to teaching, whereas other teachers are more progressive and willing to try new innovative approaches to teaching and learning which encourages interaction (Robin *et al.*, 2000. cited in Woodhouse, 2007). Therefore, the mode of delivery chosen will influence the level of engagement and interaction within the classroom.

The title of the teacher can also have an implicit influence on the student's learning experience. Initially, the term teacher was utilised in the colleges of nursing which harks back to traditional primary and secondary pedagogical approaches. However with the move to Higher Education, the term lecturer still infers a traditional didactic approach to learning. Interestingly, the NMC refers to the teacher as tutor, which Woodhouse (2007) suggests is a term more fitting for a HEI as it relates to the notion of an academic relationship being formed between the student and teacher.

3.5.3. Supernumerary status

Several authors have emphasised the importance of situated cognition and the role of legitimate peripheral participation in facilitating learning (Lave and Wenger, 1991; Collins *et al*., 1991; Billett, 1996; Spouse, 1998a; Cope *et al.*, 2000; Onda, 2012). There is however very little discussion on the role of the supernumerary status, how it is currently affecting nursing students' learning in practice or their social standing within the community of practice (Pollard *et al.*, 2007; Elcock, *et al.*, 2007; Allan *et al.*, 2011). A Norwegian study asked 27 students to discuss their experiences of learning in practice within small focus groups. Although the study was focused on their experience of learning, the students often discussed the challenges of 'fitting in' and wishing to be a member of the nursing team. Some felt that they were not accepted or were treated more like a guest than a member of a community of practice (Kyrkjebø & Hageb, 2005).

Allan *et al's* (2011) ethnographical case study set out to examine students' experience of the supernumerary status. The study took place within 4 HEIs in England and included a variety of methods. Initially key stakeholders (n=10) were interviewed and 13 students were observed for 5 days in practice. This was followed by informally interviewing the students, their mentors and ward managers. The study also included an online survey of an unconfirmed number of students and analysis of the pre-registration curricula with the 4 HEIs. Their findings suggest that mentors did not believe that supernumerary status facilitated learning and expected students to work as part of the team and learn through doing. In addition, there was tension within the Universities in regards to the legitimacy of the supernumerary status in practice. Consequently students came to perceive their mentors and nurse practitioners as gatekeepers of their learning and employed a variety of strategies including taking stock of which staff they thought would take their educational needs into consideration, negotiating their supernumerary status and utilising a variety of strategies on their mentors to ensure access to learning opportunities (Allan *et al.*, 2011).

3.5.4. Group work and peer support

Griffith (1999:95) defines small group teaching as "an exciting, challenging and dynamic method open to use in a variety of forms and to serve a range of purposes appropriate to different disciplines". She identifies this process as participatory whereby students, working alongside their tutors, take responsibility for their own learning. Keen's (2007) paper on small group work identifies a wide range of activities which can be utilised in small groups including brainstorming, problem based learning, role play, seminars, simulation and tutorials. He goes on to suggest that small groups provide students with more opportunities to contribute and become actively engaged and can promote deep rather than surface approaches to learning. However with the continued increase in cohort numbers (NES, 2014c:16), Boore and Deeny (2012) believe it is becoming increasingly challenging to maintain small groups in pre-registration nursing programme.

Although the underpinning educational philosophy within nurse education appreciates the value of social learning, there is very little literature which has explored or identified the use of peer support in facilitating learning within nurse education. Secomb's (2008) systematic review of the literature indicated that peer learning and teaching can develop students' nursing skills within clinical education, however emphasises the need for more research regarding this approach to learning. Gidman *et al.,* (2011) explored students' perceptions and experiences of support whilst in their practice placements using a mixed methodology. A questionnaire was completed by 272 students in an English HEI regarding their experience of support in practice and subsequently four focus groups (n=35) discussed in depth the themes which had emerged from the questionnaires. Their findings indicated that students highly value the support they receive from peers and recommended peer mentoring as a potential solution to supporting large numbers of students in practice. Chuan and Barnett's (2012) study compared students (n=142), mentors (n=54) and lecturers' (n=8) perceptions of the educational environment in the students' practice placements in Malaysia. Their findings also identified peers as a valuable resource for students in practice and suggest that peer support could be a key component of the students'

learning experience in practice which is often overlooked. In Roberts' (2008) ethnographical study, 15 students were observed in the classroom and in nursing practice at various points throughout their 3 year pre-registration nursing programme. The students identified their peers as an important support network and explained how they adopted a reciprocal teaching role and helped each other to learn by demonstrating skills and sharing their knowledge and experience. There was no evidence of a hierarchy amongst the students in Roberts' study, instead their key priority was in identifying peers who had gained experience in a skill rather than seeking out more senior students.

In examining a peer support initiative, Aston and Molassiotis (2003) recognised its benefits in developing students' skills and knowledge, however propose that students undertaking this new role require to be well prepared. They conclude by suggesting that the success of peer mentoring depends on both students and mentors being well supported throughout the process.

3.6. Conclusion

Many of the traditional views on learning consider a range of psychological theories regarding how individuals may learn which are not necessarily derived from empirical evidence. Many authors have explored what is involved in learning a discipline and believe that it requires a combination of knowledge, experience, skills, situated cognition, higher order thinking skills and working with others in order to become competent in a field of practice, however the conceptual ideas expressed about learning a discipline are often based on the authors' experiential knowledge or traditional theories of learning rather than being underpinned by empirical evidence (Collins *et al.*, 1991; Meyer & Land, 2003; Rolfe *et al*., 2001).

The epistemological and ontological nature of nursing knowledge has been explored within this literature review which concludes that the concepts of nursing knowledge and nursing practice are complex with their relationship to each other being inextricably linked and continually evolving (Lauder, 1994; Corlett, 2000; Benner,

2001). Many contemporary authors have argued that due to the complexities innate in nursing, they have come to value their own experiences of learning and teaching, reflective practice and other educationalists' educational ideas. This has allowed them to conceptualise their own interpretation of learning nursing knowledge and practice rather than drawing upon the findings of traditional research methodologies (Schön, 1983; Rolfe *et al.,* 2001). Although this literature review has identified a wide range of opinions on learning which draws from educational psychology, reflective practice and research based studies, there is a general consensus about the complexities involved in learning and applying knowledge.

Since pre-registration nursing programmes entered into higher education, educationalists have focused on enabling students to apply nursing knowledge to their nursing practises and ensuring students are competent and fit for purpose. This literature review has identified a range of national and international small scale qualitative and mixed methods research studies examining the complexities of learning to become a competent nurse practitioner. These studies have mainly involved examining students', mentors' and managers' opinions on the challenges students face in their pre-registration programmes and what measures are in place to enable students to become competent practitioners. However these studies have not considered the students' views on what helps them to learn nursing knowledge and practice. The UKCC and NMC have commissioned several large scale national studies which have focused on the process of auditing, evaluating and maintaining quality standards in education, however these have not reviewed the underpinning pedagogies which could facilitate and enable students to learn the profession of nursing (UKCC, 1999; UKCC, 2001; NMC, 2007d).

Some studies have considered a particular teaching or learning strategies which may help students to learn nursing knowledge and practice, however there has been no study undertaken which specifically examines the students' own personal views and experiences of learning nursing and what helps them to make sense of their nursing knowledge and practice. As this has been recognised as a gap in the educational research within nurse education, the next chapter will provide a detailed discussion

on the methodological approach which was undertaken to explore students' views on what they think assists them to learn nursing knowledge and practice and gain an insight into what they believe transforms their understanding of nursing knowledge and practice.

CHAPTER 4 - METHODOLOGY

4.1. Reflexivity and positionality

The literature discusses the importance of reflexivity and researchers being aware of their own positionality and how their ontological and epistemological position may affect their research. There is an acknowledgement that educational research cannot be value free and researchers' own values, perceptions, preconceptions and beliefs may influence aspects of their study including the methodology, research design and how the data is collected and analysed (Greenbank, 2003; Parahoo, 2006).

The process of reflexivity allows the researcher to understand how their positionality has guided their decision making processes and by being aware of their own epistemological and ontological stance, the researcher can understand and explain how their ways of perceiving, interpreting and understanding knowledge have influenced the development and outcome of their research (Parahoo, 2006; Keso *et al.*, 2009). Some of the literature suggests that transparency in the reflexive process has a role in monitoring, judging and evaluating the research process and goes towards validating rigour and veracity in a research study (Jupp, 2006; Parahoo, 2006). The rest of this section will discuss the reflexive process which has taken place within this study and will utilise the first person to facilitate this discussion.

My experiences as a nurse and lecturer have shaped my understanding of nursing practice and nurse education. I completed an apprenticeship model of nurse training and as a nurse mentor supported students through the traditional, Project 2000 and competency based nursing programmes. As a student, I have gained experience in traditional nurse training, studied by distance learning through the Open University and learned the benefits of adult and social learning in my post graduate studies. Within my role as a lecturer, I have come to appreciate the different philosophical, theoretical, social and cultural perspective within education and the complexities innate in learning nursing. These experiences have led me to realise that my ontological stance lies within a qualitative, interpretivistic paradigm with my own

personal views on the nature of nursing and education being centred upon the traditions of humanistic and phenomenological thinking.

As a qualitative researcher, I consider the nature of nursing and education as subjective which cannot be fully known and it is through people's perceptions and interpretations that we gain insight into these two disciplines. From a phenomenological perspective, I believe that the reality of nursing and education is not fixed and it is through interaction with our colleagues, peers and students that we create our own understanding of these disciplines. Furthermore the constructs we create about the nature of nursing and education change as we continue to experience a range of social interactions and social contexts (Porter, 1996).

This leads on to my epistemological position and my views on the foundations, scope and validity of nursing and educational knowledge. I believe that the foundations of nursing and educational knowledge are grounded and legitimised by both positivistic and interpretivistic traditions. There is a wide scope of traditional and contemporary knowledge to draw upon in both disciplines and the application of this knowledge is dependent upon the individual's own ontological and epistemological stance. As my own frame of reference is within an interpretivistic position, I regard the theory of nursing and educational knowledge as being rooted in tradition and continually being negotiated and reconstructed through quantitative and qualitative research, evidenced based knowledge, social interaction and social practises (Scott & Usher, 1999).

As a humanist, I support Roger's (1983) view of providing a psychological climate which supports, facilitates and empowers student to become self directed, autonomous learner and affords them with liberty of expression, freedom to make mistakes and learn from their experiences. Although the nature of my enquiry and research questions leads to a qualitative design which is innately subjective in nature and embraces a humanistic perspective on what facilitates learning. I believe it is important to be rigorous and transparent about the rationale for my actions and how my underpinning views and values have shaped the processes and outcomes of this

study and by doing this preserve a degree of objectivity in the research process (Scott & Usher, 1999).

Taking into account my phenomenological and humanistic position, I embarked on this study to find out students' views on what helps them to learn nursing and allow the students' voice to be heard. I had my own preconceived ideas about what the students may say, however this will be discussed later in thesis when I consider the reflexive processes which took place during the analysis of the findings.

This chapter will now specify the research aims and questions of the study and provide a rationale for the choice of methodology. Whilst being mindful of the ethical principles, an explanation of the sampling process and how the data was collected and analysed will be provided.

4.2. Research aims and question

The aim of this study was to explore students' views on what they think assists them to learn nursing knowledge and practice and gain an insight into what they believe transforms their understanding of nursing knowledge and practice.

To assist in achieving these aims, the following research questions were devised.

Research questions

1. What teaching and learning methods facilitate students to understand nursing knowledge and practice?
2. What learning strategies do students employ to assist them to learn nursing knowledge and practice?
3. Who assists students to make sense of their nursing knowledge and practice?
4. What assists students to transform their understanding of troublesome knowledge and gain cognisance of the complex nature of nursing knowledge and practice?

4.3. Methodological considerations

Quantitative and qualitative methodologies are clearly identified within the literature as being the two main approaches employed in research (Neuman, 1997; Cohen *et al.*, 2001; Creswell, 2003; Gomm, 2004; Parahoo, 2006). The main aim of quantitative research is to deductively produce hard evidence by measuring, correlating, comparing or determining a causal relationship between variables. The data is normally examined by numerical or statistical techniques with the aim of producing findings that are quantifiable, objective, generalisable and replicable (Parahoo, 2006). In comparison, qualitative research places an emphasis on processes and meanings and exploring the socially constructed nature of reality (Denzin & Lincoln, 1994). It aims to describe and interpret human phenomena (Parahoo, 2006) and focuses on exploring how social experiences construct an individual's reality (Speziale, 2007a).

In planning a research study, Creswell (2003) believes that the choice of methodology should be based on the research aims and questions. As the aim of the research study was to explore students' views on what facilitates their learning, a qualitative approach seemed the most suitable methodology to employ. This approach would enable the researcher to describe and interpret the students' experience of learning. However, Denzin and Lincoln (1994) point out that qualitative research consists of a wide range of interpretive practices that encompasses several methodologies including ethnography, action research, grounded theory and phenomenology. Therefore, each of these methodologies were considered before making a final decision on the most suitable approach to utilise.

Ethnography is a 'description and interpretation of a cultural or social group or system' (Creswell, 1998: 58). In this approach the researchers immerse themselves in the day-to-day lives of a group and through the process of observation and participation provide an interpretation of the meaning of the groups' behaviours, language, culture and interaction with each other (Creswell, 1998). This methodology was deemed unsuitable for the research study as it would focus on

illustrating a cultural and social portrait of being a nursing student rather than exploring the students' experience of learning.

The goal of action research is to gain a better understanding of the problems that arise within work practises and set about changing ways of working as part of the research process (Meyer, 2006). Participants and researchers are both actively involved in each stage of the research and a cyclical process ensues that enables daily practises to be re-evaluated and changed as a means of improving or implementing new work practises (Denscombe, 2003). However the nature of this methodology would focus on evaluating and implementing changes to the nursing programme as a means to enhance students' learning rather than looking specifically at students' views and experiences of what helps them to learn nursing.

The main aim of grounded theory is to generate a hypothesis or discover new theories emerging out of or grounded in research data (Parahoo, 2006). It differs from other qualitative methodologies in that its key purpose is to formulate a theory about social processes rather than describing and interpreting a phenomenon (Carpenter, 2007a). As the study did not intend to seek for emergence of a hypothesis or theory from the research findings, this particular approach was initially dismissed as an unsuitable approach for the study. One could argue that in exploring students' experiences and views on what facilities their learning, the research data could perhaps generate new theories or hypotheses about how students learn effectively or what enhances nursing students' learning. Nevertheless, the purpose of this particular study was to focus specifically on students' views of what assists them to learn nursing and gain an insight into their experience of learning nursing.

The purpose of phenomenology is to capture the essence of individuals' interpretation and perception of their lived experience and provide researchers with a framework for discovering what it is like to live an experience (Carpenter, 2007b). Since the aim of the research study was to explore students' views on what they think assists them to learn nursing knowledge and practice and gain an insight into what they believe transforms their understanding of nursing knowledge and practice, a

phenomenological approach was identified as being the most suitable methodology to utilise in answering the question of what facilitates students to learn nursing knowledge and practice. Therefore a detailed discussion on phenomenology and the rationale for employing this particular approach will now be provided.

Creswell (2003) suggests that researchers should be aware of the philosophical, epistemological and theoretical perspectives innate in research methodologies before embarking on a particular research design. Phenomenology has its roots in philosophy (Parahoo, 2006), however there are different interpretations of phenomenology as a philosophy and a method of enquiry (Carpenter, 2007b). Priest (2004) suggests that some researchers have a tendency to adopt phenomenology as a research method without fully grasping its underpinning philosophy and fail to acknowledge the different philosophical traditions which have emerged within this methodology. Difficulty in acknowledging the different traditions may be due to several factors including phenomenological philosophers being notorious at expressing their ideas in obscure and convoluted terms (Spinelli, 1989), the methodology being blurred due to multiple translations of the originals texts (Fleming *et al*., 2003) and several tiers of literature which have continuously reinterpreted the original sources (Paley, 1997). Since phenomenology is as much a way of thinking and perceiving as it is a method of enquiry (Carpenter, 2007b), it is important for the researcher to be aware of their own reflexivity and recognise how the different philosophical perspectives within phenomenology could influence and impact the shape of their study (Crabtree & Miller, 1999).

The two main paradigms within phenomenology are Husserl's transcendental phenomenology and Heidegger's existential phenomenology (Spinelli, 1989). Husserl is acknowledged as being the founding father of the modern philosophical school of phenomenology (Giorgi, 1985; Jasper, 1994). Husserl believed that all knowledge is derived from experience (Priest, 2002); therefore his aim was to develop a rigorous scientific philosophy that would clarify how it is that objects are experienced and presented to consciousness. Husserl did not want to study phenomena as they exist in the world but rather how phenomena appear in

consciousness (Spinelli, 1989). Central to Husserl's approach was the emphasis on describing experience as a means of extracting the essence of what constitutes consciousness and the perception of the human world. He believed that this sensory data could then be transformed into an empirical representation of the condition of knowing (Spinelli, 1989; Koch, 1995; Fleming *et al*., 2003). However in order to maintain objectivity, validity and trustworthiness, Husserl argued that we require to bracket out the reality of the outer world by temporarily setting aside all of our assumptions and judgements about the nature and existence of the external world (Paley, 1997; Fleming *et al*., 2003). This act of phenomenological reduction would strip away any interpretational layers in order to reveal the essential structure or essence of the phenomena and determine the form and nature of reality as mediated through an individual's experience of it (Priest, 2002; Carpenter, 2007b).

Heidegger who was a student of Husserl was more interested in answering the ontological question of how we live in the world rather than focusing on the epistemological question of how knowledge might be structured (Jones, 2001). Heidegger disagreed with the idea of separating consciousness from the world of objects and rejected the concept of bracketing out all of our assumptions and judgements about phenomena. In contrast, he claimed that individuals are an integral part of the social world and therefore cannot condition themselves to suspend their own beliefs and preconceptions during the process of investigating a phenomenon (Parahoo, 2006). He believed that experiences could only be understood in terms of the individuals' social contexts and historical backgrounds and that our pre-understandings are an innate part of our being in the world (Heidegger, 1972; Koch, 1995). Heidegger suggested that all claims to understanding are appropriated through our experience of being in the world and throughout our lives we are constantly in a hermeneutic circle of attempting to interpret and understand our meaning of being (Heidegger, 1972; Guignon, 1983).

Taking into consideration both of these philosophical perspectives, a Heideggerian approach was determined to be the most suitable methodology to answer the research questions. The main reason being that as a registered nurse and lecturer who is fully

immersed in the historical and cultural context of nursing and nurse education, it would be difficult for me to set aside my own assumptions, judgements and personal experiences of learning nursing. In fact, Gadamer argued that it is impossible to lose one's pre-understandings and suggested that it is only through one's pre-understandings that understanding is possible (Gadamer, 1990 cited in Fleming *et al*., 2003. p.115). Therefore employing a Heideggerian approach allowed me to draw on my own understanding and experiences of learning nursing as part of the process of interpreting the students' experiences, commensurately, remaining mindful of my own reflexivity and how this was influencing the shape of the study. Secondly, the study focused on the ontological perspective of capturing a sense of the students' experience of learning and gaining an insight into their reality of learning nursing rather than attempting to derive epistemological meaning from the nature of learning itself which would be more in keeping with Husserl's philosophical perspective.

Although Heideggerian phenomenology was identified as being the most suitable approach to employ in this study, there was also recognition that there are limitations to this methodology. Denscombe (2003) suggests that the phenomenological approach can be subjective and open to interpretation and contends that describing or interpreting the experiences of individuals may not be representative of a general population. Nevertheless, Parahoo (2006) emphasises that the focus of a phenomenological study is not on providing generalisations, but on developing themes that represent a phenomenon. Therefore, this study did not claim to identify what facilitates nursing students' learning in the general nursing student population; instead it endeavoured to capture a sense of what helps a small group of students to learn nursing.

4.4. Sampling

Burns and Grove (2003) point out that in quantitative research the larger the sample size the more likely it is to identify relationships among variables or to determine differences between groups. However, in qualitative research the focus is on the quality of the information obtained rather than on the quantity. The sample size

within qualitative research is normally approximately ten to twelve participants (Creswell, 1998; Carpenter, 2007c)

4.5. Inclusion/exclusion criteria

Creswell (1998) indicates that in a phenomenological study the participants require to have experience in the phenomenon that is being explored. Therefore in considering the student population within the chosen university, the inclusion criterion was a purposive sample of students within the third year of the pre-registration adult nursing programme. The rationale being that students in the first year of the nursing programme had not been exposed to all of the different teaching and learning approaches utilised in the nursing programme and would only have gained experience in specialist areas of practice. The second year students had gained nominal experience in general nursing practice and had only been introduced to some of the teaching and learning approaches. In contrast, the third year students had gained experience in a variety of clinical placements and been largely exposed to a wide range of teaching and learning approaches, therefore these final year students were considered as a contextually rich source of data.

4.6. The participants

At the proposal stage of the research study, consideration was given to what would be a regarded as a suitable number of participants for the size and length of the study. Carpenter (2007) examined the methodological approaches utilised in phenomenological studies within nursing and nurse education and identified ten studies which had taken place between 2003 and 2004. The number of participants ranged from six to sixty nine, with six of the research studies having between ten and fourteen participants. Taking these previous phenomenological studies into account, selecting twelve nursing students was regarded as a suitable number of participants for the size and length of the study.

To ensure an adequate number of participants took part in the study, third year nursing students from two different cohorts were invited to take part in the study. The September 2007 cohort consisted of 83 students who had completed all of their nursing theory blocks and 52 weeks of nursing practice. The January 2008 cohort consisted of 67 students who had completed all of their nursing theory blocks and 38 weeks in nursing practice and were due to attend their final research module in three months time.

Although the students who were asked to take part in this study were in two different cohorts, both groups of third year students were completing the same validated pre-registration adult nursing programme which included the same modules, subjects and mode of content delivery. The programme flow was slightly different for the January 2008 cohort with the research module being brought forward to ease the over capacity of students attending practice learning experiences in the summer months and to reduce the number of students attending the university in the peak teaching period over the autumn. The January 2008 cohort were 3.5 months behind the September 2007 cohort in regards to practice learning and still required to complete the final research module. The inclusion criterion identified that both group of third year students had gained comparable experiences in the University and practice placements and were both at a similar stage in their nursing programme.

The January 2008 cohort was invited to take part in the research study in February 2010 during the last few weeks of their final nursing theory module. Four students volunteered to take part and were interviewed in March 2010. The September 2007 cohort was asked to take part in April 2010 during the final weeks of their research module. Seven students agreed to be involved and were interviewed in May 2010. Out of the one hundred and fifty students who were invited to take part in the study, eleven adult nursing students volunteered to be participants and agreed to be interviewed. Ten of the students were female and one was male which mirrors the gender ratio within the nursing student population of the United Kingdom (NMC, 2012). Although the research proposal had aimed for twelve students to participate in

the study, eleven volunteers were considered an adequate number of participants for the size of this study.

From the inception of the study design, consideration was given for which students would be the most suitable to interview. As there are several Universities within Scotland which provide pre-registration nursing programmes, there was the option to interview the students within my own organisation or in another HEI within Scotland. Due to a recent merger taking place within my University, the students out with my own campus had undertaken a different validated pre-registration nursing programme and had experienced different learning and teaching approaches from the students within my own campus. As my own ontological perspectives were derived from a phenomenological, interpretivistic approach to enquiry, I endeavoured to draw upon my own knowledge and experiences of teaching and supporting students as a means to understand the students' own personal experiences of learning nursing within my organisation. If I interviewed students out with my own campus or HEI, I may not recognise the cultural or social references the students were referring to or be aware of the subtle nuances in the context of the narrative they used to describe their experiences of learning nursing.

As my study was underpinned by Heidegger's hermeneutical approach to enquiry, I decided to interview students within my own campus. Having knowledge of the students' nursing programme, the teaching and learning methods employed within their programme and having developed a professional working relationship with the eleven students over a period of two years afforded me with a rich source of information and experiences to draw upon in my endeavour to interpret the students' narratives and gain a deeper insight into their experience of learning nursing. Smyth and Holian (1999) assert that being knowledgeable of the history, culture and people within an organisation can enable a unique perspective of a phenomenon, however they emphasise that researching within one's own organisation and having a shared history with the participants can raise issues around the credibility of the findings.

There is much debate about the researchers' positionality in qualitative studies and how their role as an insider or outsider in the research process may influence the credibility of their methodological approach (Corbin Dwyer & Buckle, 2009; Burns *et al*., 2012; Blythe *et al*., 2013). Brannick and Coghlan (2007) describe an insider as an individual who is conducting research within their own organisation and suggest that insider research is often deemed as problematic due to the researcher having an emotional investment in the organisation and being too close to the research. They go to suggest that this lack of distance and objectivity may be considered as not conforming to the rigour required in a qualitative study. However they conclude that academics that have been socialised into their own HEI develop an in-depth knowledge and understanding of their organisation and suggest that an insider can rigorously examine their own organisation through a process of reflexive awareness.

As an insider researcher interviewing my own students, I required to consider how my professional relationship with the students may influence the content of the students' narrative and what they may choose to discuss with me. As the aim of my enquiry was to explore the students' views on what facilitated their learning, the interviews would be focused on the positive aspects of their learning and would not expect the students to divulge any information which would be deemed private or sensitive. As a lecturer on the programme, the students may consider me as a figure of authority who has influence over their standing as a student. However one of the central tenets within nurse education is the role of professionalism in practice, developing professional relationships and mutual respect. The students who volunteered to take part in the study were aware of the professional boundaries in the student/lecturer relationship, my role as a doctoral student and my interest in learning.

Corbin Dwyer and Buckle (2009) suggest that rather than focusing on their insider or outsider status, researchers should endeavour to be as open, honest and transparent with their participants and through demonstrating an authentic interest in the participants' experiences work towards accurately representing their experiences of a phenomenon. Before the interviews, the students were advised that this study was

focused on their experiences of learning nursing and I was genuinely interested in representing their views on what helps them to learn nursing. As the students had already established a relationship with me and volunteered to take part, the interviews were structured to be informal and engender interest in their narratives.

4.7. Ethical considerations

Parahoo (2006) identifies six ethical principles that should be upheld in every stage of the research process. This includes beneficence, non-maleficence, fidelity, justice, veracity and confidentiality. The following processes and procedures were undertaken to adhere to these principles.

Ethical approval was sought and granted from the University of Strathclyde's Departmental Ethics Committee (Appendix 1). Access to the students was granted by the Dean and Head of School for the pre-registration nursing programmes (Appendices 5, 6, 7 and 8) and authorisation to carry out the study was approved by the chair of the Ethics Committee within the University in which the students were being interviewed (Appendices 9 and 10).

Carpenter (2007d: 63) believes that researchers are obligated to provide individuals with relevant and adequate information in order to enable them to decide if they wish to become a participant. For the September 2007 cohort, I informed the students of my study after delivering one of my lectures. For the January 2008 cohort, I gained permission from one of the lecturing staff to speak to the students about my study before their lecture commenced. Both cohorts were fully informed of the nature, purpose and benefits of the study and provided with a detailed participant information leaflet (Appendix 2) and consent form (Appendix 3). The documentation included information on the rationale for the study, how to volunteer, format of the interview, data collection, data analysis and dissemination of the findings in future publications. The students were also advised that their participation was voluntary and they could withdraw from the research at any time without it affecting their rights as students. The students were advised to contact me by phone or e-mail me if

they wished to take part in my study. The students who agreed to participate e-mailed or spoke to me after class to arrange a suitable time to be interviewed and signed the consent form prior to commencing the interviews.

To maintain participants' confidentiality and anonymity, the students were assured that the handling and storage of data would adhere to the Data Protection Act (Crown copyright, 1998). They were informed that the audio recordings and paper-based transcriptions would be stored in a locked filing cabinet and electronic data would be held on a computer which was password protected. They were advised that after completion of the study all electronic and paper data would either be erased or shredded.

The students were reassured that each audio recording and transcription would be allocated a reference number which would safe guard the participants' identities. At no point would their names be identifiable on the audio recording, transcription, raw data, thesis or publications and only the reference number would be utilised throughout the study and any subsequent publications.

Early in the process of writing the findings section and discussing each individual student's experiences of learning nursing, there was a realisation that referring to the students by their gender could inadvertently identify the one male student who had participated in the study. Therefore to safeguard the male student's identity, all of the discussions are non gender.

The ethical principles were also considered in relation to how the data was analysed. Scott and Usher (1999) suggest that the researcher requires to be transparent about their underpinning epistemological and ontological stance and how their values, assumptions and preconceptions shape the construction of knowledge. This thesis has endeavoured to demonstrate veracity by identifying the philosophical, epistemological and ontological perspectives underpinning the study and providing several discussions on how these sets of assumptions have shaped the development and outcome of the study.

4.8. Data collection

Wimpenny and Gass (2000) identify one to one interviews as being the main method of collecting data in phenomenological research. The rationale for this method is to gain a sense of each individual participant's unique experiences and perspectives on a given phenomenon (Marshal & Rossman, 1995).

There are three types of interview structures that range from formally set presentations to unstructured formats (Berg, 2004). This study utilised a semi-structured interview technique that is located between the two extremes of standardised and unstandardised interviewing techniques. This approach enabled the researcher to design predetermined open ended questions which provided the participants with the opportunity to express their views on what facilitates their learning (Carpenter, 2007b), yet at the same time, ensure the freedom to rearrange or change the wording of the questions during the process of interviewing (Berg, 2004).

An interview schedule was produced to act as a guide and ensure each interview contained the same content and followed the same structure (Appendix 4). All of the interviews took place in one of the committee rooms within the University campus in which the students were based. To ensure the students did not pay additional travelling expenses, the interviews were arranged on a day in which the students were already attending the University and organised to take place either before or after their scheduled classes. Prior to the interview taking place, a 'do not disturb' sign was placed on the committee room door, bottles of water and cups placed on the tables and the room arranged with two chairs placed alongside a table to ensure there was no physical barrier between the participant and interviewer. Once the participant had entered the committee room, the door was closed and they were asked to sit adjacent to me. The purpose and process of the interview was once again explained and the participant reminded that the interview would be recorded to enable the narratives to be transcribed. All of the participants were very familiar with the use of a Dictaphone in their personal studies and oral exams and appeared comfortable for the interview to be recorded. Before proceeding with the interview,

the participant's signed consent form was obtained and they were asked if they had any questions they would like to ask me before proceeding with the interview.

The interview itself comprised of asking the participants the following five key questions which were based on the four research questions.

1. What helps you to learn nursing and make sense of your nursing knowledge and practice?
2. What teaching and learning approaches do you think facilitates your learning?
3. What learning strategies do you use to help you to learn nursing knowledge and practice?
4. Who do you think helps you to learn nursing and make sense of your nursing knowledge.
5. If you come across a subject that you find particularly complex and challenging.
    a. What do you do to help you to understand this complex and challenging subject?
    b. What helps you to make sense of the complexities of a challenging subject?

Although Berg (2004) suggests that semi structured interviews allow the researcher to probe beyond the original questions in order to seek further clarification and understanding of a particular phenomenon, the decision was made not to digress far from the five key questions. The author believed that asking the participants to provide further clarification on particular aspects of the participant's answers may lead to the author influencing the direction of the discussion and cause the participant to focus on a topic which may not necessarily have been considered significant to the participant. So for example after the participant had answered the question regarding who they thought helped them to learn nursing and make sense of their nursing knowledge, if the participant did not mention a particular individual, the author did

not introduce this individual into the discussion as this may be seen to be influencing the content of the narrative.

As there were only five key questions, the use of semi structured interviews allowed the researcher to maintain focus on the topic of learning nursing and prevented the participants from digressing too far from the given subject matter (Speziale, 2007b). On occasion, the participants were aware that their discussions had digressed from the original question and asked for the original question to be repeated which also assisted in keeping the interview focused on the key topics.

Both Robson (2002) and Parahoo (2006) believe an interview which takes place in under half an hour is unlikely to be valuable and may not provide the depth of discussion required, however interviewing for over an hour may be regarded as making unreasonable demands on the participant and reduce the number of individuals who would be willing to participate. Therefore in order to obtain the depth of discussion without being overbearing and tiresome, the students were advised that they would be asked to spend up to an hour talking about their experiences of learning.

The length of the interviews ranged from eight minutes to fifty eight minutes with the mean of the interviews being 24 minutes. The participant who was interviewed for 8 minutes was very aware of their own learning strategies and very succinct in answering the questions and although the interview was short, the participant focused on sharing their experiences and views on learning. Some of the participants who had spoken for longer had on occasion digressed from the original questions and commented on their need to return to the original questions.

4.9. Data analysis

Bradbury-Jones (2007: 291) argues that qualitative studies should be judged against criteria that are congruent with this methodological paradigm. She posits that

qualitative researchers should clearly explain their methodological decisions and research design throughout the research process.

As phenomenology originated as a philosophy, there is no particular method of enquiry which has been deemed as being an accurate process of enquiry, instead the purpose and nature of the research itself shapes the methodological approaches undertaken (Jones *et al.*, 2012). Nevertheless Husserl's positivist descriptive phenomenology, Heidegger's interpretivist hermeneutic cycle and Gadamer's constructivist position on phenomenology are now being used to strengthen qualitative fields of enquiry (Carpenter, 2007; Dowling, 2007). To provide meaningful direction for phenomenology as a research method, several authors have produced procedural frameworks as a means to guide researchers in how to investigate phenomena and ground phenomenological studies in an approach that transparently represents or interprets the phenomenon that is being investigated (Carpenter, 2007b: 82). Carpenter (2007b) indicates a variety of authors and psychologists who have produced frameworks which provide procedural steps for examining a phenomenon including Colaizzi, 1978; Van Kaam, 1984 cited in Carpenter, 2007b; Giorgi, 1985; Van Manen, 1990). Many of the procedural steps within these different frameworks have similarities, (Dowling, 2007; Carpenter, 2007b).

The Colaizzi framework (1978) provides a seven step procedural framework which guides the researcher through the process of analysing the data and has been regarded as a particularly suitable framework to employ in phenomenological studies. In keeping with Heidegger's hermeneutics, Colaizzi's procedural framework requires both descriptive and interpretive processes and an appreciation that an individual's consciousness and cognition is not separate from their lived experience but an essential part of their experiences of being and living in the world (Heidegger, 1972; Jones *et al*., 2012). In considering the process of analysing a phenomenon, Colaizzi (1978:52) asks how human experiences can be investigated objectively if the human experiences are removed from the study and asserts that objectivity requires the researcher to recognise and affirm their own experiences and those of others as part

of an inquiry into another's experience of a phenomenon. He goes on to argue that the inclusion of human experiences should not imply careless methodological procedures instead he emphasises the need for the researcher to attempts to leap from what the subject says to what they mean in order to gain an insight into the phenomenon, but at the same time ensure that the meanings they reach does not digress from the participant's original meaning. By doing this, the researcher's interpretation should illuminate the hidden meanings within the context of the subject being investigated (Colaizzi, 1978:59). In this way, Colaizzi's (1978) seven step framework enables the use of Heidegger's hermeneutic circle whereby the researcher can initially use their own pre-understandings of a phenomenon to make sense of the whole text and then through focusing on each significant statement and its meaning, reconsider how each part of the text informs the meaning of the whole text. By employing this cyclical process of going back and forth between the whole text and parts of the text, the researcher can develop their original pre-understandings and pre-existing knowledge of a phenomenon as a means to develop a deeper understanding of the phenomenon being explored (Heidegger, 1978; Dowling, 2007).

Although Colaizzi's framework may assist in analysing participants' narratives, he believes that his framework is by no means definitive and suggests that the listed procedures and sequences should be viewed as flexible and modified in whatever way seems appropriate for the researcher's approach to examining a phenomenon (Colaizzi, 1978:59). Taking the above points into account, Colaizzi's framework was deemed a suitable analytical tool to employ in this study.

In considering rigour in the research design of qualitative studies, Bradbury-Jones (2007) acknowledges that the underpinning philosophy within Heideggerian hermeneutic phenomenological approaches to enquiry involve a number of subjective factors including the researcher utilising their own previous experiences, interpretation and understanding in an endeavour to gain an insight into a phenomenon. In order to reduce researcher bias in the data analysis process, Cutliffe and McKenna (1999) have noted that researchers may ask a colleague or expert to read the data and create their own set of categories and themes in order to verify the

categorisation of the data. However they argue that it is unlikely that another individual will interpret the data in the same way or produce the same categories or themes and suggest that a researcher's in-depth and immersive involvement throughout a research study is likely to influence and affect their interpretation of the data and emergence of overall themes. Cutliffe and McKenna (1999) go on to suggest that asking a colleague to independently create their own set of categories in order to verify the researcher's categorisation of the data is more in line with a positivistic approach to analysis and implies that there can be only one accurate interpretation and one reality within a particular phenomenon. However the underpinning philosophy of qualitative research focuses on the socially constructed nature of reality which is multiple and subjective (Denzin & Lincoln, 1994). Cutliffe and McKenna (1999) suggest that sharing the research process with an expert or colleague offers the researcher the opportunity to explain the rationale for their actions, interpretations and choices and allows their colleague or expert to highlight any omissions in the research process and discuss the critical decisions they have made throughout the process of collecting and analysing the data. Cutliffe and McKenna go on to suggest that this transparency can assist in providing a more reasoned and complete interpretation of a qualitative study (Cutliffe & McKenna (1999:377).

As a doctoral research student, it was important to maintain rigour in my approach to collecting and analysing the data and to be transparent in my interpretation of the data and the emergence of the categories, themes and overall findings. To ensure continuity and rigour in the research process, my first supervisor worked closely with me throughout the process of collecting and analysing the data and acted as an auditor and advisor throughout my doctoral research. Being allocated a second supervisor shortly after the categories and themes had been created provided the opportunity for my research to go through an additional robust critical analysis and evaluation by an independent post doctoral researcher and enabled me to more clearly discuss the rationale for my actions and interpretations in the thesis.

The following section provides a detailed explanation of the seven steps which were undertaken in the analysis of the data.

Step 1

Initially the participants' recorded narratives were imported into a password protected computer as WMA files and listened to several times to get a real sense of the participants' experiences of learning nursing. The narratives were then transcribed verbatim and stored as word files and labelled 'transcription of participant one' through to 'transcription of participant eleven'. The author then listened to the audio files whilst simultaneously reading the transcriptions to ensure the narratives had been accurately typed within the word documents. Once this process was completed, all of the participants' narrations were imported as word documents into the computer assisted qualitative data analysis software package (CAQDAS) NVivo. The rationale for using this software package was to assist in sorting, retrieving, indexing and handling the large amounts of text generated from the transcriptions (Gibbs, 2002).

Step 2

Once the narratives were imported into NVivo, sentences or paragraphs which directly pertained to the subject of what facilitated the student's learning were identified as significant statements.

Step 3

In step three of the framework, Colaizzi (1978) advises the researcher to consider the content of each significant statement and move beyond what the participant is saying to what they are meaning. He goes on to suggest that this meaning is then formulated into a descriptive term which places the narrative in context without losing connection with the original description.

To ensure this study remained within the principles of Colaizzi's framework, every significant statement was analysed using an inductive approach, the content, meaning and significance of each sentence or paragraph was considered and a descriptive term was created to represent the meaning of this particular statement (See Appendix 11). For example after reading the following narrative:

> *"Colour coordinating it, it might sound daft but see if I can get coloured paper I put like my respiratory in blue paper, cardiovascular pink, cancer yellow, and for me if I can link the colour to when I am studying, it helps me to remember so when I go into that exam I don't panic somehow just remembering the colour, what was on that paper helps me remember things."*

This significant statement was represented by the descriptive term: "visual learning and colours".

As the author worked through the transcriptions, some of the significant statements had similar meanings and were therefore placed within the same descriptive term.

For example participant 2 expressed the following significant statement which led to the creation of the descriptive term "pause and come back to it".

> *"Sometimes like I'll look over something but I'll not actually get it and then I'll say right put it down, give yourself a few moments, come back to it instead of obviously struggling and then I'll come back to it maybe see it in a different note as well."*

Participant 3 also discussed a similar viewpoint.

> *"I find it I take a step back, forget about it for a wee hour, go onto something else and come back to it, that helps me, my mental blocks."*

Leading to this significant statement also being assigned to the "pause and come back to it" descriptive term.

Step 4

Working systematically through the eleven transcriptions, the meaning of each significant statement was considered and given a description. These descriptions were imported into NVivo as nodes. Gibbs (2007) indicates the core function of the computer assisted qualitative data analysis software package system (CAQDAS) as facilitating the process of managing the large quantities of text. He goes on to warn of the dangers of regarding the use of a software package as being the mark of rigorous qualitative analysis and emphasises that CASDAS is just a tool for analysis and still requires the skills and experiences of the researcher to interpret and analyse the text (Gibbs, 2007).

Taking Gibbs' viewpoint into account, the author within this study believed it was important to remain true to Colaizzi's principles and carefully consider how each significant statement was being represented before importing these descriptions as nodes within NVivo. Colaizzi (1978) suggests that the researcher should use their own insight into a phenomenon as a means to interpret the meaning of each significant statement. He goes on to stress that although this process of formulating meaning allows the researcher to shed light on the context of the descriptions, they needs to ensure the meanings which they have created remain true to the essence of the original narrative (Colaizzi, 1978). Therefore it was only once all of the significant statements had been carefully considered and provided with descriptive terms which were believed to represent the participants' narratives that the terms were imported into NVivo as nodes. Once all of the descriptive terms had been imported into NVivo, the computer software package identified the creation of 75 nodes.

The next part of step 4 was to organise these 75 descriptive terms/nodes into themes. However, before going on to discuss in detail how the themes emerged, it is important to stop at this juncture in the thesis to consider the different terms which had been used interchangeably within this chapter to describe the significant statements. Within the context of discussing Colaizzi's framework, the significant

statements have been referred to as 'descriptive terms', however when discussing the use of NVivo in organising the data, the significant statements have been referred to as 'nodes'. In the research literature, the term 'category' is commonly used to signify the essence of the significant statements identified within the participants' narratives. Therefore in order to clearly explain the process of developing the themes and streamline the discussions taking place within this thesis, it was important to identify one term and use this consistently throughout the rest of the thesis. The term category has been chosen as it is the idiom which appears to be most commonly used in the research literature and fits in well with the other terms expressed in qualitative research studies. Therefore from this point onwards, the word 'category' will be used to represent the terms: significant statement, descriptive term and node and the rest of this chapter will now concentrate on discussing the development of the categories and themes.

In keeping with the philosophy of phenomenology, Colaizzi (1978) emphasises the need to ensure that the emergence of the themes clearly represents the essence of the categories and that each theme is a true representation of the participants' narration. In order to do this, Colaizzi (1978) suggests rereading the narratives to identify if anything significant has been missed during the process of creating the categories and to clarify if any of the emerging themes proposed anything that was not implied in the participants' narratives.

In considering the interrelationship between the various categories and how these come together to create the themes, it was necessary to ensure all of the significant statements had been placed in categories which clearly represented the participants' views. As it had taken a considerable length of time to complete this process, it was important to ensure that consistency had been maintained throughout the process of inductively creating the categories and making certain that none of the participants' views or ideas had been omitted during this lengthy process.

To ensure the approach to inductively analysing the data had been consistent throughout this lengthy process, a new project was created within NVivo which

included all of the original 75 categories, however in this new project, the content of each category was left empty. All of the transcriptions were read once again and each significant statement was placed into the category which was deemed to be the most suitable. By comparing the original project with the new project, it was identified that the same content had been placed into the same categories and only three new categories had been created through this additional process. This reinforced that the approach of inductively creating the categories had been consistent throughout the process of creating and populating the categories.

By the end of this process, 78 categories had been produced and the author had become even more immersed in the participants' narratives. Some of the categories had only one statement populated within them and many of the categories still overlapped in content and meaning, therefore categories with similar content and meaning were subsequently subsumed into one category which further reduced the number of categories to 48. For example, one of the participants talked about how they used highlighter pens to point out subjects they were unsure of or to highlight the key points of a lecture. In identifying this as a new category, the participant's discussion around this topic was initially placed within a newly created category called "highlighting notes", however once all of the narratives had been classified into categories, it became clear that this was the only participant who had discussed this approach to learning and the "highlighting notes" category was subsumed into the "students' learning strategies" category.

The remaining 48 categories were examined for key concepts and ideas and then divided into 7 themes. As each theme was examined, some of the categories continued to have very similar ideas and meanings which lead to the number of categories being further reduced to 24 (See appendix 12). During this final stage of classifying the categories, some of the descriptive terms were modified to reflect the integration of content from two different categories. For example, although the original categories of "being in practice" and "learning in practice" had slightly different nuances in the participants' discussions, the categories finally merged to become known as "Learning through the process of being in practice".

Steps 5 and 6

Step 5 and 6 of Colaizzi's framework consists of integrating all of the categories and themes which emerged from analysing the narratives and then identifying a fundamental structure and description of the findings which represents the essence of the phenomenon being explored. As the aim of this study was to explore students' views on what they think assists them to learn nursing knowledge and practice and gain an insight into what they believe transforms their understanding of nursing knowledge and practice, it was also important to return to the research questions and clarify if these had been fully examined and explored during the participants' interviews and were fully represented in the categories and themes.

Table 1 on page 98 presents the categories and themes which emerged from the analysis of the participants' narrative. Initially this table had three columns. The third column aligned the research questions to particular themes. The rationale being this would demonstrate that the research questions had been addressed within a particular theme. However on further analysis, there was a realisation that aspects of the research questions had been addressed throughout the themes. For example, in considering question two which asks what learning strategies students employ to assist them to learn nursing knowledge and practice. Theme 1 indicated that the students were strategic about how they utilised the classes and the environment to facilitate their learning. Themes 2 and 3 clearly focused on the students' own approaches to learning. Although theme 4 indentified who facilitates the students' learning, the narratives indicated that the students were strategic about who they would approach in order to further develop their understanding of nursing knowledge and practice. In theme 5 the students talked about their motivation and drive to understand nursing knowledge and the strategies they would use to try and make sense of troublesome knowledge. Finally in themes 6 and 7, the students explained how they would actively seek out resources that would place their learning in context and what learning strategies they employed to learn in practice. Therefore in varying degrees of depth, research question 2 had been considered throughout the themes.

Table 1 - Themes and categories

Categories	Themes
- Lectures - Group work - Skills labs* - Virtual learning environment	1. Learning in the University
- Reading - Writing notes - Asking questions - Studying & time management - Breaking subject down	2. Students' own approach to learning
- Mind map - Mnemonics - Visual learning and colours - Audio recordings	3. Learning through the use of visual or audio resources
- Role of lecturers - Role of mentor - Role of a range of individuals	4. Individual's role in their learning
- Motivation and determination - Being assertive - Grasping an understanding of nursing knowledge and practice - Pause and come back to it	5. Students' motivation, drive and determination to learn nursing
- Learning in context - Skills lab* - Applying theory to practice	6. Learning in context
- Learning through the process of being in practice - Becoming more like a nurse	7. Learning on the job
* Skills lab sits well within both category 1 & 6.	

In analysing the relationship between the themes and the research questions, it became apparent that aspects of each of the research questions had been addressed in each of the themes. Further analysis identified that the notion of situated cognition and learning in context was a recurrent theme which ran through many of the categories and all seven of the themes. Therefore the third column was removed as the thesis indentifies at various points how the research questions have been addressed.

Step 7

Step 7 in Colaizzi's framework requires the researcher to return to each individual participant and ask them if the overall findings which have emerged from all of the narratives compares with their own experiences of the phenomenon.

In seeking validation of the categories and themes which emerge from the narratives, Cutcliffe and McKenna (1999: 378) question whether the researcher should be concerned with seeking confirmation from all of the participants or only a proportion of the sample. They also go on to discuss whether or not the participants should be involved in verifying all of the categories and themes or only a proportion of these, their argument being that it is unlikely that each participant would recognise all of the emerging categories and themes as each individual had only contributed a percentage of the overall data. Cutcliffe and McKenna (1999) recommend that careful consideration should be given to the methods researchers use for validating the findings and suggest that participants are more likely to respond to categories and themes which have specific meaning to them and include terms that the participants would recognise as their own words.

In planning the interview schedules, it was recognised that the September 2007 cohort would be interviewed a few months after the first cohort of students and would be completing their programme four months after the interviews took place. Taking into consideration the length of time it would take to transcribe the narratives

and inductively create the categories and themes, it was recognised that there would be a lengthy gap before being able to return to the participants for confirmation that the findings were comparable with their own experiences of learning. The four participants in the September 2007 would more than likely have completed the nursing programme by the time the narratives were inductively analysed which would make it more challenging to contact the participants.

Although the majority of the procedural frameworks devised for processing phenomenological research does not include the requirement to return to the participants to verify the descriptions, one could argue that it was not necessary to include step seven of Colaizzi's framework in the research design, indeed Colaizzi (1978) himself believes that his framework is by no means definitive and suggest that the listed procedures and sequences should be viewed as flexible and modified in whatever way seems appropriate for the researcher's approach to examining a phenomenon (Colaizzi, 1978:59). Nevertheless, including some form of verification from the students may contribute towards providing a more rigorous approach to the data analysis. Therefore a modification of Colaizzi's step seven was developed.

Instead of waiting until after the narratives had been analysed and the categories and themes had been inductively created, each participant was provided with a synopsis of their interview and asked to confirm this summary represented the essence of their interview. The rationale for this process was threefold. Firstly, it would enable the students to verify that I had represented their experiences and views about learning nursing and had understood the general meaning of the students' narratives. Secondly, summarising the students' narratives would enable me to become more immersed in the content of the students' narratives. Finally, it would afford me with the extensive time required to analyse the narratives and inductively create the categories and themes. Ten out of the eleven participants agreed that the synopsis of their interview reflected their experiences and views on what facilitated their learning. One participant took a voluntary leave of absence from the programme, thus it was not possible to seek confirmation of the interview synopsis.

After completing the findings chapter, the original recordings were listened to on one final occasion. This ensured that the participants' experience of learning nursing was being clearly represented in the findings chapter and embodied the essence of what the participants had shared in the interviews. Revisiting the students' narratives at this juncture also ensured that the research process continued to embrace Heidegger's hermeneutic circle and considered how the cyclical process of reading parts of the texts and listening to the whole text led to developing a deeper understanding of both the hidden and visible meanings within the students' narratives. This final process ensured the discussion section was grounded in the students' experience of learning nursing and led to the further development of an overarching theme which will be examined later in the discussion section.

4.10. Conclusions

This chapter has explained the aim of the research study and provided a detailed rationale for the methodology. As this study was underpinned by Heideggerian philosophy, there was recognition that the research utilised an interpretivistic approach to examining the narratives. In order to provide rigour and veracity during this subjective process, the methodology chapter has endeavoured to be transparent about the research process which was undertaken and explain the procedures involved in collecting and analysing the data.

Colaizzi's (1978) seven step framework was utilised in order to clearly explain each step of the analysis process and some discussions ensued in regards to modifications to Colaizzi's framework and the need for researchers to be transparent about the restrictions within their own research. Several tables have been provided in order to illustrate the process of inductively creating the categories and themes, reducing the overall number of categories and identifying how many participants referred to a particular category.

As a sole analyst utilising a Heideggerian approach to analysis, it was important to be clear that the categories and themes provided in the tables and appendices

represented my own interpretation of the students' narrative. Under the auspices of my supervisors, I endeavoured to be transparent about my methodological approach by clearly setting out and explaining the process of collecting, analysing and interpreting the participants' narratives throughout the methodology chapter.

The next chapter will present the themes and categories which emerged from the participants' narratives, with the aim of providing the reader with an overall essence of the participants' views and experiences of learning nursing.

CHAPTER 5 - FINDINGS

Through the process of inductively analysing the students' narratives, the following seven themes emerged.

1. Learning in the University
2. Students' own approach to learning
3. Learning through the use of visual or audio resources
4. Individual's role in their learning
5. Students' motivation, drive and determination to learn nursing
6. Learning in context
7. Learning on the job

Through the process of describing these seven themes, this chapter aims to represent the essence of the students' narratives and capture an overall sense of the students' experience of learning nursing and what facilitates this process. For the rest of the thesis the participants will be referred to as students to place the findings in context and improve the general flow of the narrative.

5.1. Theme 1 - Learning in the University

The main teaching and learning approaches which the students thought facilitated their learning within the University were lectures, skills labs and group work. They also discussed their experiences of learning through the use of the University's Virtual Learning Environment and whether or not the environment within the University facilitated their learning.

The category 'skills labs' sits well within both the theme of 'learning in the University' and 'learning in context', however for the purpose of ensuring a methodical flow to the discussion, the 'skills lab' category is examined in detail within the 'learning in context ' theme.

5.1.1. Lectures

All the students shared their experiences of attending lectures and their views on its place within their learning. Through the context of the narratives, the students appear to consider lectures as being the main medium by which they are introduced to new subjects and provided with the key points they require to learn.

> *"The lectures definitely because they give you a broad knowledge base. The lectures are really good because it gives you all the information".*
>
> *Student 11*

> *"I feel that lectures help me to learn the subject and then I am able to take that and put it into practice".*
>
> *Student 9*

Some of the students found the lectures helped to break down the subject and guide them through the key component parts of a subject.

> *"When they deliver the lectures, I think that's good cause they sort of break it down on the slides, so it's not too much information".*
>
> *Student 1*

However some of the students expressed the challenges they encountered whilst attending lectures. This included, difficulty in concentrating for long periods of time, feeling unable to speak out in a large class and the constant distractions which occur during lectures.

> *"There is you and 70 people sitting in a lecture and you've got to put up with all the stuff that is going on."*
>
> *Student 7*

> *"Sitting in a lecture hall at 50 minutes at a time after the first 30 minutes I switch off. I try to concentrate, try to pay attention but I do switch off."*
>
> *Student 3*

"Sometimes in lecture theatres when you are in the middle of a lecture, you have got people talking, people eating and it kind of disrupts you, people texting on their phone kind of thing and nipping in and out of the toilet."

Student 6

Although the students appreciated that they were provided with a lot of important information during a lecture, many of the students referred to lectures within the context of recommending a more suitable approach to learning nursing.

".... being in the skills labs, hhmm so I think that's better than sitting through lectures".

Student 1

"I find the workshops better than a lecture."

Student 3

"I find it is easier when we are in smaller groups em getting small workshops and rotating round 2 or 3 workshops in the morning rather than a full lecture where there is a full class."

Student 4

"MicroSim .... helps me to learn much better as opposed to like lectures."

Student 8

"It's a whole combination of things, you couldn't just have lectures, I don't think that would work."

Student 11

One of the key issues with lectures appeared to be in regards to the large class sizes. Students expressed their discomfort about speaking in front of a large group of students, the lack of interaction and being unable to seek further clarification within the lecture theatre. The following narrative reflects and summarises the key points raised by the students.

"The smaller groups are a wee bit less detracting, you can ask questions, probably the same questions that come up if you are in a lecture theatre but because there is a smaller number, it sort of can become a conversation about em whatever issue or question you have brought up, the workshops are an awful lot more em interactive and you are able to talk through what you don't understand whereas in lectures it is much more question and answer sessions and you don't necessarily get to be progressive. If you have understood half of it, you don't necessarily get to ask the second question in a lecture where as in workshops and smaller group work you do tend to be able to thrash out the answers between you."

Student 5

Some students preferred to learn within the context of nursing rather than listening to lectures which were seen as being mainly focused on nursing knowledge.

"We were in this skills lab the other day and em we were talking through the Glasgow Coma Scale and when we did it in the skills labs, it made much more sense rather than in the lecture. The lecture just seemed quite confusing, like when we were talking about arm movements and flexion and stuff like that, but when we actually saw it being put into practice in the skills lab, it made a lot more sense."

Student 1

Although the students preferred other approaches to learning, they appreciated that it was important to learn nursing knowledge and recognised that a lot of the knowledge they gained was initially presented in the lectures.

"I just feel as if that [nursing practice] is something that we should have been doing more of. Cause I find it very beneficial rather than sitting in a lecture theatre 2 or 3 days a week. I'm not saying forget the theory; get the theory, but the practice, the practice helps me to link it better, to understand it better."

Student 3

Generally the students preferred to work in smaller groups rather than sitting in the lecture theatre. The next section will now examine the students' views and experiences on group work.

5.1.2. Group work

All the students talked about the advantages to learning in small groups and discussed group work within the context of skills lab, workshops, Microsim™ and problem based learning. Some of the students found learning in smaller groups more interactive, less intimidating and provided them with a safe environment in which to build their confidence as active participants in class.

> *"If I am with my peers who I have been with in the same[small]class from start to finish, I know them, they know me, they get what I am saying, if I get it wrong I don't mind if they say no [student's name]this is how it should be. But when it is in a big class I'm very intimidated. So that I cannot talk out, I just withdraw into myself em.....It's not that you don't know it, it's maybe that your confidence is not there to talk out."*
>
> *Student 3*

> *"I was fortunate to be in a small group of like 8 people [in the skills lab] and you know if I make a complete fool of myself here there is only another 7 lassie watching, so we were all very forthcoming in saying we'll volunteer for it because we knew it was only a small group but I think I would have volunteered much less had it been a group of maybe 12, 15."*
>
> *Student 4*

The theme of learning in small groups is discussed in all of the students' narratives and the various aspects of group learning will continue to be explored throughout the findings section.

5.1.3. Virtual learning environment

At the point in which the students were interviewed, the concept of the virtual learning environment (VLE) had been well established within the University and was regarded as an integral part of the teaching and learning approaches being utilised within the pre-registration nursing programmes. BlackBoard™ was one of the software packages which was being utilised when the students had been interviewed. This online resource mainly consisted of providing information on the modules and

storing a very large number of written resources and PowerPoint presentations. Some of the modules within BlackBoard™ provided some basic quizzes, web links and a small number of You-Tube style videos to view. Therefore, at the time in which the students had been interviewed, only a limited scope of the BlackBoard's ™ overall functionality was being utilised.

Three of the students talked about using BlackBoard™.

> *"Blackboard is really, really good. Cause there is wee quizzes and everything on maybe certain subjects that you are doing."*
>
> *Student 2*

However one of the students indicated that you required to be motivated in order to engage with this online resource.

> *"I think if I am just given stuff on the Blackboard for instance I might not read it even although I should but I don't read it [laughs] so that was better for me. I think when we first got Blackboard, we were all a bit uptight with it and I think it is a good way of learning if you are motivated to do a bit of work yourself."*
>
> *Student 10*

The virtual learning software training programme called MicroSim™ Curriculum (Laerdal, 2001-2013) had recently been introduced to the pre-registration nursing programme. This self directed learning system was customised on the University's computers and provided students with specific scenarios which were designed to further develop their nursing knowledge, problem solving and clinical decision making skills. Students worked through a series of scenarios and indicated how they would manage the care of each patient, the software package would then provide the students with feedback on their performance. Due to the limited number of computers with the MicroSim™ software installed within the University, the students worked through the scenarios in groups. Three of the students discussed in detail their experience of learning nursing practises through the process of interfacing with this software platform. Here is an example of one of the student's experience:

"I loved the microsim, the computer generated programme with the A&E patient and we had to click on what we would do for this patient..... I can't remember off hand what was wrong with the patient at the start and the patient died and I was like, I thought, God, we had failed that, but we had got 87% because even although the patient had died, we had done everything correctly and again you learned from your mistakes with that because it will say you should have put the oxygen on earlier, you should have given him this drug or you should have put up a drip or whatever and it makes you think, I well, if we had put a drip up earlier, well then, he wouldn't have been as dehydrated or if we had given him paracetamol, we would have started bringing down his temperature, you know, just wee things, and even your mistakes from that make you think, I well, I get it now and it helps you for the next time".

Student 6

However two of the students talked about the limited access to the electronic resource:

"I would love that programme for in my house, I think that would be great, I think that that would be great for sitting at home one night and thinking, I am going to do a couple of cases. Have a couple of different scenarios where you are constantly learning and especially when it tells you at the end, where it tells you, you done this correctly, you done this correctly, but you should have thought of this, you should have thought of that, you could have used this, it would have been ideal, you know, and for your mistakes, you do, you sit back and think, well, I well, it would make sense to do this or that so I enjoyed that."

Student 6

"The only things was it [microsim] was quite limited, the amount of time you could spend on it."

Student 11

This section has examined the students' experience of learning within the University and what teaching and learning methods facilitate this process. The next section will now focus on the students' own learning strategies.

5.2. Theme 2 - Students' own approach to learning

The students talked about a variety of approaches they used to learn nursing knowledge, however the narratives clearly identified reading, writing notes and asking questions as being the three key learning strategies which they employed.

5.2.1. Reading

All of the students included some discussion around how reading helped them to learn nursing.

> *"All the patients that were in [hospital] were quite sick, so I had to read up on their conditions and you know try and do it myself."*
>
> *Student 1*

> *"I'll just read and read those books over and over again."*
>
> *Student 4*

> *"I do a lot of reading.... I have to literally read things over and over and over again em to get the theory in."*
>
> *Student 5*

Some students appreciated that reading in itself is not sufficient to understand the application of theory to practice.

> *"You can read about it as much as you like in a text book but until you practically come down to doing something it's totally different."*
>
> *Student 11*

Some students were strategic in what they read.

> *"Sometimes if I read a textbook Beverley it goes straight over my head. If I'm being honest em the journals I find helpful, better than the textbooks because I find using my nursing standard subscription, if I can just type in what I am looking for, it will go straight to it. If I get a big textbook with thousands of pages, I'll be flicking for ages that says that and that says that and I get all*

confused whereas the journals I prefer because they're specific. If I'm specific enough, you'll be get me an answer."

Student 3

"I read. I read a lot. I start off and I read literature or I read a book em and I will find out a wee bit about it from the book and then I don't particularly take what that says for granted then so I will go and look at something else. I'll maybe go on the internet and see what it says about it em or I will see if there is anything on the Blackboard website especially if we are doing a module cause there will be a lot of information on there so I tend to look it up that way."

Student 11

Some of the students indicated that if they were struggling to understand a subject, they would read websites on the internet in order to grasp a basic understanding of a topic and then revert back to reading academic papers.

"So I would probably sit there and search terms on google or something like that, just to have a look and see if they can maybe em make it simpler for me. Even although we are not supposed to use Wikipedia as references, sometimes the terminology is really quite simple on Wikipedia, sometimes you can maybe just kind of make it that wee bit simpler for yourself."

Student 11

"Wikipedia [laughs loudly] I think I know that Wikipedia is a bad bad bad thing but I think to get an initial overview of things, of using things like patient UK, Wikipedia and is it a doctor dot net something, there's a net doctor whatever, of actually understanding and they do it in quite a laymen's form and you can actually get an idea and then it is sort of thinking well I want to know about this, so you go and look somewhere else that is kind of professional or you look in some of your textbooks so that you have got an understanding, so it is kind of breaking it down so you get a clearer understanding of it."

Student 7

"I use the internet to further look at something that's maybe I cannot really get my head round how it is in the book, I maybe then look at the internet to explore it further so that's what I use mainly reading and writing things down until I can understand it."

Student 9

Many of the students integrated both reading and writing as a means of learning nursing.

5.2.2. Writing notes

Ten out of the eleven students included some discussion around how writing helped them to learn nursing.

Writing repetitively was a common strategy for preparing for an assessment.

> *"If I am studying for anything I tend to write it down, read and write it down and I write it down continuously until I can write it down without looking at books.....so that's what I use mainly reading and writing things down until I can understand it."*
>
> *Student 9*

> *"Writing down, sometimes maybe write things down 3 or 4 times until 3rd time it maybe will maybe just sink in and it takes me to write and write and write and that's the way I do it if I am struggling with something. Em I think that is really all I do, just write and read and write and read until it filters through and eventually it just clicks, you are writing the same thing and reading the same thing but something clicks and that's you got it."*
>
> *Student 10*

The majority of the students talked about writing information in rote style, however, some of the students kept a notebook in their uniform pocket and would write new information and knowledge they had gained during their experience in practice.

> *"When I've done something, so, if I've done a certain wound dressing I'll write down the kind of stuff that has been used, why it has been used in that wound em and it's quite good, I always keep the reference I like if it has been from the wound formulary, I would write down that I got it from there so that I would know in future what to use it for."*
>
> *Student 8*

Although many of the students appear to mainly rote learn, there are some examples of students utilising reading and writing in a meaningful way as a means to further develop their understanding of how nursing knowledge relates to practice.

> *"If I maybe go into a patient that I have never treated; a patient with a certain illness, I would go home at night and try and look up that illness before I treated that patient the next day..... I am always a bit wary of dealing with somebody that I really don't know what is going on with them in case the family ask you a question or they ask you a question that you don't know about it. So I would make a note during that day with things that maybe pop into my head. What should normal limits be for this person? What would be side effects for this person? and I will look that up at night which then gives me confidence to go in the next day and know what I am looking for and what I should be expecting with this patient."*
>
> *Student 10*

5.2.3. Asking questions

Ten out of the eleven students talked about asking questions as a means to develop their understanding of nursing knowledge and practice. The key individuals they questioned were their lecturers, mentors and peers.

> *"I would always say to any student, if you don't understand something, ask. You know ask the lecturer, ask friends, ask teaching staff, ask mentors. I would always say to every student is ask questions, don't ever sit and worry about not understanding something."*
>
> *Student 6*

> *"Usually by the mentors, different nurses and going with them and questioning them and asking what they are doing, why they are doing it and maybe if it is a surgical placement, there's a lot of different surgical procedures, so I was asking why were they getting that done, em what was wrong with them and then I would go home and read up on it so that I had a better understanding of why the patient was the way they were."*
>
> *Student 9*

> *"I think if I have done the work and then there are bits that I don't understand and I just get just too confused, I have gone to them [lecturers] and I have asked the question I don't understand or whatever and I have e-mailed everybody and they have been good enough and they have e-mailed me back with explanations and stuff so I can't say anyone has ever turned around and said go away."*
>
> *Student 7*

The main reasons students asked questions in practice was to further develop an understanding of managing patient care or carrying out a nursing procedure. Many students indicated that after a period of independent study, they would question their lecturers and peers to seek further clarification on the subject they had been studying. One student produced their own set of questions as a means to test their own knowledge during a period of independent study.

5.2.4. Studying and time management

Although only three students referred directly to their study time, the majority of the students at some point in the narratives discussed the various techniques they used to learn nursing. The narrative below reflects the general approach that many of the students utilised during their study time.

> *"I always have a study timetable, I break the subjects into different subjects and focus on them, probably one subject a week and what I would do is I get a textbook and read up all about the condition and then I would write it all out and I'd reread it, read it out loud and then I'd record that and keep playing it back and then I'd focus on how to care for a patient with that condition, again read it, pick out stuff from the journals and then write it down, record that again and listen to it. Then once I had done all that, I would sit and like sort of think of a question and look back in our module handbook and look for a question that said, you know, if you have got a patient with this condition describe the pathophysiology and I'd sit and try and write it like under exam conditions em and I also like to do a wee plan, like a mind map of what I'd put into a question and also the mnemonics as well. I don't think I do anything else, no, I just take loads of notes and then read them back, that's the easiest way rather than just sitting with a book, I don't take anything in that way."*
>
> *Student 1*

However some students came to realise that they needed to adapt and change their studying technique in order to develop a deeper understanding of nursing knowledge and practice and how to care for patients.

> *"But obviously as time went on I've learned new methods using a dictaphone, making wee puzzles for myself, doing questions, answers, making it into*

obviously a game instead of constantly just saying, right, I've got to get this pen and paper, I've got to get this passage write down, I've to reread this, I've to reread this, now I can make it a bit more fun and exciting for myself and I know a lot of people would probably say studying can't be fun, but it can be. It actually can be nice. I like it sometimes."

Student 2

"I would say before I done nursing I was a crammer. I would leave it all and then cram and then pass the exam but what I quickly found with nursing is I need to know this, it isn't going to be good enough to cram because this is information that I need to act as a professional, so I need to start changing how I study and that was a big deal for me at first cause I didn't know where to start."

Student 3

One of the key challenges the students faced was making sure they set aside time to study. The pre-registration programme flows required the students taking part in this research study to complete all of their summative assessments whilst they were in practice. Many of the students discussed the challenges of preparing for their assessments whilst undertaking a full week in practice.

"S*trategy wise though I plan but the best laid plans of mice and men, it doesn't always go the way I want it to..... I can have a study plan but when you are taken out of university and put into placement and you have got the written exam at the end of placement, it's very very hard to stick to that study plan while you are out em in placement areas working a full time week."*

Student 5

To fit in with shift patterns, some students allocated small chunks of time each night of the week to get through their studies. One student arranged child care and others went to their local library or sat in the University open areas to prevent any distractions and make the best use of their time.

"I would say probably make a wee timetable, say, study 4 nights a week, 5 nights a week, wee bits at a time instead of trying to get it all done em maybe in 1 day."

Student 2

"So that is what I tend to do now is use my [study] time more wisely. During the day when [name of child] goes to school and I can sit and do studying rather than at night, but if I need it at night, if I have an exam coming up and I kind of need a few things into my head I'll say to Mum can [name of child] stay overnight tonight, she'll go down for a couple of nights and she will be with me during the day. It gives me that time that a couple of hours before I go to bed to get stuff in."

Student 6

One of the key strategies which the students used to facilitate their learning and study time was breaking the subject down into component parts.

5.2.5. Breaking the subject down

Five of the students referred to the term 'breaking it down' in relation to how they make sense of a subject.

"Breaking it down into bits. I need to break it and I can't just look at it as one big bit.... I need to know the quite small details about things to make a big picture for me and that helps me to get to grips with something. And sometimes when you break it down into smaller bits, you pick up on something that you've missed with the bigger bit and that's what ties it altogether, it's just that one bit that you've missed out and that's what's been making it really hard for you. So definitely break it down into small bits."

Student 10

"If the language is particularly difficult I'll try and break it down, I try and simplify it, so, if say there is a lot of information on a research paper that I didn't understand I would try and transcribe it into my language so that instead of looking at that and getting totally confused and getting myself anxious about it, I would break it down bit by bit, sentence by sentence, think, right, that's what that means."

Student 11

"It is breaking it down into key points, key factors, so it is like it makes it easy for me to look again and study I think."

Student 7

"I try and break it down into wee kinda steps until I can understand it."

Student 9

This section has considered some of the more general learning approaches the students employed during their studies. The next section will examine the students' use of audio and visual resources as a strategy to learning nursing knowledge and practice.

5.3. Theme 3 - Learning through the use of visual or audio resources

The students talked about mind mapping and mnemonics as useful tools to organise their thinking and how they used colours, diagrams, audio recordings and the visual aspect of the internet to facilitate their learning.

5.3.1. Mind map

In all, six students discussed their use of this tool in organising their thought processes. However the students had very polarised opinions on the use of mind mapping.

Four of the students were very clear about how they utilised mind mapping to organise their studies. For example:

> *"Mind maps, I like mind maps, yep I nearly forgot about them there [both laugh] At first, usually, before I start anything, I do a mind map, I'll put my topics then I'll branch them off, I'll put my subtopics and then I'll decide where am I going to focus, what do I need to know, what are the questions I am asking, and my mind map helps me to get into my mind what I need to know. That's usually what I start with – a mind map, yes."*
>
> *Student 3*

Student 10 described the process of mapping their thoughts about a subject, however at the start of this discussion did not appear to recognise this process as a form of mind mapping.

"I am not a big mind map person but I suppose it is my own version of a mind map where I break things into compartments and work on that single bit and then I can relate it to the whole thing coming together like a jigsaw for me."

Student 10

Student 7 did not appear to be comfortable with the abstract nature of mind mapping and preferred to think linearly.

"Getting back to the whole kind of mind maps and stuff, they definitely don't work for me at all because I think it's more, cause it's all drawing your own kind of diagrams and all this kind of stuff and it's like what, I kind of go, I have no idea what that means. So I actually have to go back doing it, the way, the logical steps of ABCDE and doing it that way to get it clear in my mind."

Student 7

Interestingly both student 7 and 10 liked using mnemonics.

5.3.2. Mnemonics

In all, six of the students discussed their use of mnemonics to facilitate their learning.

"I will make up stories, wee rhymes that will help me remember things em A.I.P.E. for the nursing process, just wee things that I can remember and that's how I have to do it at home."

Student 10

"I like to use mnemonics. They certainly help me get the information processed into my mind, that actually helps me to remember it."

Student 4

"Mnemonics and different things, I will record what they are and what you would do, just like different things you would do to assess patients running through the A to G."

Student 4

Although mnemonics was one of the key tools they used to learn the process of nursing, many of the students discussed in detail a variety of visuals resources they employed to facilitate their learning.

5.3.3. Visual learning and colours

All of the students referred to a variety of visual resources which facilitated their learning including PowerPoint presentations, diagrams, drawings, clinical skill videos, You-Tube videos, CD roms and drawings integrated into mind maps. Four of the students explained how they applied colours as a visual tool or prompt in their learning.

Here are some examples of the visual resources they utilised in their study time.

> *"I have got quite a photographic memory so I tend to like write everything out and then sort of learn it with the way it is written. I'd use different colours for different bits and I can usually remember it that way."*
>
> *Student 1*

> *"I try and theme things .... I would do my handover in one colour and then I would maybe do a sign guideline in a bright colour so I can visually see it and I can see that and I remember it. Em sign guideline 111 in red and I will remember and that helps me when I am trying to regurgitate stuff, then I can see, I can visually picture that in my mind, that helps me to retain it, then em and I tend to do that right the way through the different things. I will use a red pen for each guideline and I will tend to think, that was sign guideline blab blab blab because and I will break it down into different depending on what I am speaking about em I'll maybe say em talking about a man with MRSA again, I'll change colours for that then, so I visually I can see the man with MRSA written in green for some reason but it helps me just to separate them rather than it being a block colour. I think sometimes it is a bit disinteresting if it is all in one colour, you tend to kind of see a blur of words and not take time to read the paragraphs properly so I find that helps me."*
>
> *Student 11*

> *"Colour coordinating it, it might sound daft but see if I can get coloured paper I put like my respiratory in blue paper, cardiovascular pink, cancer yellow, and for me if I can link the colour to when I am studying, it helps me to remember so when I go into that exam, I don't panic, somehow just*

remembering the colour, what was on that paper helps me remember things, it's strange but it helps than just having white paper. If you have got white paper it's a nightmare."

Student 3

"I do like spider diagrams and on each of those diagrams I will have a picture as well so for example if it was more oral exams I would have a spider diagram and the first part would be the patient's name and their age so I would draw a patient ID band so I'd remember that em or if it was an OSCE, I would draw a picture of some hands getting washed and an apron so that I would remember visually the whole spider diagram and colours, different colours as well for different sections, I do that quite a lot as well..... Yes, little drawings with maybe captions on it but not really a lot of text. All drawings for me."

Student 8

"I found videos help. My friend managed to get eh the human body downloaded..... I found watching the video, seeing the pictures, the diagrams, then going through it and if I wasn't sure, I'd replay it, keep playing it over and over until I understood it better. Em diagrams, drawing things out, if I am not too sure I like to draw a picture, so say it's the heart I could sit an draw that 3, 4, 5, 6 times until I understood the flow, what's going where better than sitting reading out of a text book."

Student 3

Some of the students identified the internet as a useful resource for visual material.

"I think the animations on the internet definitely help. YouTube as well as I think, I know you shouldn't [both laugh] be watching it but there are some amazing websites on YouTube. Different clips on YouTube. They are made by doctors and different things. Yeah they can really help as well and you do eventually get your head around them."

Student 4

"You can download lectures from Glasgow University and listen to the lectures, but you don't get that here. That is really good for me. You can listen to them when you want and I take it in easier than as opposed to reading it all the time. So visually I am much better and I remember."

Student 8

The main source of visual learning in practice was watching the nursing staff performing clinical procedures and looking and touching all of the available equipment.

> *"Out in practice, I would say, like as in actually getting a feel for it as instead of theory, and actual practice, I think I learn a lot more because it's a case of obviously I could see what's happening, like visually, taking it in, and obviously that way, I can see like, as in, cause sometimes when you read it in a book, it's like trying to put it into your mind, like as if, what's actually happening and there maybe objects that you weren't aware of, then you go and research it and then everything else well. If you are in a placement you can actually see it firsthand and actually you remember it, what it looks like em what it feels like em certain smells."*
>
> *Student 2*

> *"I think it is still that whole thing about actually going out and actually driving yourself, of actually going out there and finding the opportunities, of doing the nosey, I mean like looking in filing cabinets, looking in cupboards and looking in drawers to find out where things are.... know where equipment is stored so that if there is an emergency you can go and find it."*
>
> *Student 7*

As well as visual resources, some of the students had their own unique system of utilising audio recordings to facilitate their learning.

5.3.4. Audio recordings

Some of the students liked to read out loud as a means to remember information. One popular approach was the use of a dictaphone to record summaries of their own notes. Five of the students indicated that they routinely used either a dictaphone or their smart phone to listen to their own oral presentations. One student used headphones on public transport to listen to their summaries and another listened to the recordings during their car journeys.

The narratives on the next page summarise how the majority of the students utilised audio recordings to facilitate their learning.

"I would read out my notes, record them and then I'd just keep playing them back and then I'd stop the tape and see how much I could remember, speak it out loud. I find talking my notes out is better than just reading it. I find that I retain information better that way. If I've not, then I just keep playing it until I eventually do get it into my head."

Student 1

Student 2 shared their unique approach to reading out loud:

"Reading to my cat [laughs] actually I have done that as well, em when the house has been empty em sitting and saying [cat's name] come on, I'll read you this passage and then reading it out so that I can hear it, cause sometimes if I can hear it, I can understand it better than just reading it from a page, if I say it out loud it can sometimes make more sense to me."

Student 2

This section has considered what learning strategies students employ to assist them to learn nursing knowledge and practice. The next section will now focus on who facilities the students' learning.

5.4. Theme 4 - Individual's role in their learning

When asked who facilitates their learning, all of the students focused on discussing the key individuals they believed contributed the most to their learning. Some of the students agreed that a wide range of individuals had played some part in developing their understanding of nursing knowledge and practice. The narrative below reflects some of the students' sentiment.

"That's a big question [laughs]. Oh [sighs] I think it has been everybody though, I don't think, it's like it's one person. I don't think you can say well, it's the lecturers, it's the mentors, it's you know, the patients, I think it is everybody. Cause, I think it is more a case of learning from everybody of like good, bad and indifferent..... So it is kind of like, it across the board cause I think it is that everybody has got their own bits to add to it to make you kind of the perfect nurse."

Student 7

All of the students identified the lecturing staff and their mentors in practice as being the two key groups of individuals who facilitated their learning. Some students also pointed out other individuals who had a role in their learning. The next section will discuss these groups of individuals.

5.4.1. The role of lecturers

All of the students agreed that the lecturing staff had a role in facilitating their learning and discussed this within a variety of contexts. Four of the students believed that the approachability of the lecturing staff allowed them to feel comfortable about asking questions and seeking clarification about subjects.

> *"Lecturers, fantastic em they're approachable, they help you in a sense like as in if you don't understand anything, don't be scared, that's what I'm here for. Come and see me and we'll obviously guide you in the right path."*
>
> *Student 2*

> *"One lecturer was particularly good .... if he saw you [studying in the open area] he would come and [say] what are you studying? If you asked a question you would end up getting em a mini lecture as you sit there, em and other lecturing staff would be just be sort of passing, how are you doing? ....and again you could ask if you were stuck at something, you would just pipe up and say you don't get this and they'd .... say oh right this is what you want, that's the answer, this is how you get it."*
>
> *Student 5*

Three of the students suggested a reliance on the lecturing staff to help them make sense of subjects they were struggling to understand. They appreciated that they required to be responsible for their own learning, however were aware that they depended upon the lecturing staff to prompt and guide them towards thinking differently about a subject or clarifying their knowledge and understanding.

> *"I know the lecturers are very approachable. They are very nice, very helpful. Some will turn you away, you need to go and learn yourself, you need to facilitate your own learning. I'm trying that and I'm getting 4 answers, I've looked up 4 websites, I've been in 4 books, they are all conflicting and I don't*

know the right answers. [Both laugh] Some lecturers, yeh they battle with you because they want you to do well and they want you to go and get the information yourself but sometimes you need a wee bit of help, Beverley. Sometimes they need to know that, they need to recognise that. I have looked, I have learnt, I've got 4 answers, can you just tell me what is the right answer. Sometimes that's nice to get a wee bit of reassurance."

Student 3

"I find I learn better in the university with the lecturers rather than on my own at home. Cause I could read and read again and I don't seem to take very much of the information in, like I said earlier on, I need to write it out and then that's how I remember it but I can only write things out if I already understand them. I need the university and the lecturers to explain so that I can understand them."

Student 4

....and just saying I don't understand em maybe where I went wrong here or I'm not taking that question properly and they've [lecturers] said well read the question again and look at certain words and then it might trigger what does that word mean or what does that and then defining the actual word and then saying oh goodness that's been my own fault maybe em not picking it up properly and then obviously understanding what the university is actually wanting from us instead of just jumping the gun and then assuming

Student 2

Whilst discussing some of the ways in which the lecturers helped them to learn, four of the students pointed out that the lecturers helped by breaking down the subject into meaningful chunks of information.

"When they [lecturers] deliver the lectures.... they sort of break it down on the slides so it's not too much information. Em just pick out like the key points and then we are told to go away and like build on that."

Student 1

"Lecturers definitely because they can break it down and simplify things for you."

Student 11

Some of the students found the lecturers' personal experiences in practice helped them to relate nursing knowledge to practice.

> *"I found his lectures fantastic because he made up wee stories as well. He done kinda wee dances and that sticks in my mind."*
>
> *Student 10*

> *"It is helpful to know about the lecturer's experience, if you have got someone who has major experience in A&E em and they are talking to you about different traumas em that I find helps you work through in your head what you are doing em your sort of A to G, that they have just taught us about trauma."*
>
> *Student 5*

Student 3 believed that being recognised by the lecturing staff as an individual was conducive to their learning.

> *"Lecturers help me. If you're approachable, friendly, you take an interest in me, you know my name. I think that's great. But if you are just a face in a crowd and you feel oh they don't care, do they know I am here, does she know my name. I don't think that motivates some people and help some people.... if a lecturer takes time with you, is interested in you and has a laugh with you and a joke with you. Can treat you like an adult. Not just walked out of school, in here you just kids, shut up and just get on with it, I feel that that helps you learn .... it's good if you get lecturers who will treat you as an individual."*
>
> *Student 3*

Whilst each student had their own personal lecturer, only one student discussed how their personal lecturers facilitated their learning.

> *"She's [personal lecturer] pointed me in the right direction.... she'd be more the one to sort of 'try doing that' em to try and help you or 'there is a good book that is all round general on sort of that subject area' or 'it would cover 2 or 3 subject areas that are maybe coming up in the next exam' em and maybe being able to dip in and out of that em and I suppose just for extra support as well when it has got to the stage that you feel as if you are up against a brick wall. Em to sort of bring you down again to say right you need to go and do this em to make that clearer..... Em so they would be the other important person that helps."*
>
> *Student 5*

The students clearly identified the lecturing staff as being key in providing them with academic support within the University whereas they considered their mentors as being the key individual to facilitate their understanding of nursing practice.

5.4.2. The role of mentors

All of the students agreed that their mentors had a significant role in facilitating their learning in practice and shared their experiences of being mentored within the context of their various practice learning experiences.

The majority of the students talked in some capacity about learning the complexities of nursing practice by initially observing their mentors in practice and subsequently practising these skills.

> *".... watch how we [mentor and student together] do it first, take in as much information, then we'll discuss it, like what you found and what you didn't find, we'll obviously fill in the wee blanks for you. Em and then obviously later on maybe when there was a quiet period of the shift eh sitting down and actually discussing em what went on and obviously what I felt is maybe em I could do and what I couldn't do before I went into that situation."*
>
> *Student 2*

> *"I'll usually ask her [mentor] to do it first and then I'll do it the second time and maybe watch me to see how good I get on with that."*
>
> *Student 8*

Three of the students talked about how they learned about nursing from listening to their mentors' experiences of practice

> *"If I have a good mentor, I will maybe speak to them as well to see what their experiences are, sometimes they've got vast experience and pick up things before they even happen and that's really good, they give you signs and tips and things that you wouldn't think of looking for and probably wouldn't find in textbooks either it's just through years of nursing."*
>
> *Student 10*

Some of the students thought that their mentors were good at explaining and clarifying the complexities and interconnections within nursing.

> *"There was a man who had diabetes but he had chronic kidney disease and I couldn't equate the two. For a while I kept thinking that they are two separate things so how does one affect the other? But the mentor was really able to clarify that for me. She would say, this is what happens, so that was quite good you know, so in some instances they are really good at defining things for you and that makes a big difference cause then you understand. I can understand why that is affecting him that way em as I say the majority of them [mentors] are good that way."*
>
> *Student 11*

> *"You can say to your mentors, do you think we should be doing this or do you think we should be doing that? We get a yes or a no. Yes, we could ask the doctor to do that or no, that would be a bad idea, you know and that's even if you suggest something that is wrong, you are learning, it's teaching you and I like to know where I have went wrong."*
>
> *Student 6*

In order to further develop their clinical decision skills, some students liked to be questioned by their mentor.

> *"I like it when I am asked questions when I am out in placement, instead of just getting on with it, you know, when a mentor is saying why would you do this or what do you think we should do for this patient then that kind of helps you to jog your memory as well..... you know you will maybe be dealing with a patient and em we will be going in and doing a set of obs and then get told, right, the patients obs have changed, you know the temperature is raised, bringing up sputum blah blah blah what would you suggest next and having that thought as in right what do I do next?"*
>
> *Student 6*

> *"Being questioned by the mentors.... they'll maybe ask you, how do you do that and why are you doing it that way."*
>
> *Student 9*

Some students believed that having the opportunity to spend time with their mentors assisted their learning.

"Because it is one on one patient care they [nursing staff] were with that patient from the start to the end and I found they had so much time to explain to me what they were doing, how they were doing it, what drugs were going in, what anaesthetics were working, why they gave them pain relief, why they didn't give them this, why they gave them an anti-emetic? ..... I found because I was in a place where there was so much nursing staff and they had the time for me, I found I learnt better with them. ..... but you know how maybe in the wards you can get under their feet, they're busy, they've got drug rounds and they've got things to do, they've got scans, they've got referrals, you weren't always included whereas I found they had more time for me. It came down to time. If they have got the time, it makes my learning experience better. I get to learn better, I get to become more confident. I found that that helped me in placement."

Student 3

I wish more mentors, I don't mean this as a criticism, cause obviously they are busy as well but I wish they would take more opportunity to say I've got a couple of students or I've got a student I wonder if they would come along and attempt to do a certain thing or even observe something and then try it. So that would be a good thing.

Student 11

In regards to their time in practice, three of the students talked about their mentors arranging for them to gain specific learning experiences

"Well most of them [mentors]are quite accommodating, like if you've got anything that you have not practised before and you want some experience in and they will try their best to get that experience for you. Usually my mentor works quite closely by me all the time, if there is any activity going on, she'll let me come and join in."

Student 1

"She [mentor] would say to me, right do you want to come and do this or come and do that?"

Student 4

However five of the students indicated that their mentors restricted their access to certain clinical experiences and they had on occasions missed learning opportunities in practice.

"I think a lot of mentors or a lot of staff can be quite nervous of students doing things in case something goes wrong. So obviously they need to think of their registration.... a lot of them will say, oh no, I don't want you doing this, in this situation just now, you know, em, it just depends on the situation that you are in, the placement that you are in."

Student 11

"One of the mentors [pause] I would say, would you like me to do such and such and she would say no no no, I'll just do it and I would stand back and watch but another opportunity never arose again for me to actually do what she had .... There were a few instances that I had said to that same mentor do you want me to and said no I'll do it. I can understand that they are pushed for time and things like that."

Student 4

Nevertheless, some of the students appreciated that their mentors had to take into consideration their level of competency before allowing them to practise certain clinical skills.

"It is about having mentors out there that are willing to let you roll your sleeves up and get involved. 'Cause some, depending on the skill, some mentors do prefer you to watch 3 or 4 times before they are willing to let you get in there em and that can be quite frustrating.... but there are other skills em like catheterisation that you'd rather watch 2 or 3 before so but that is about weighing up the experiences that are available in the different areas"

Student 5

"I think, certainly for first year, it was kind of a bit frustrating because it was like trying to run before you could walk, kind of thing, so you are kind of going, just let me do it and they are right to slow you down and say 'woah up' a bit."

Student 7

However, two of the students believed that not all their mentors wanted to teach or become role models

"Not all the mentors want to be mentors and I think you need to want to be a mentor for your student to actually learn anything from you..... I don't think mentors should be forced into it. It should be a voluntary thing.... It's not doing student nurses any good mentors being forced into the situation cause a lot of them don't want to share their knowledge."

Student 4

"When you see bad practice or bad mentors, you say well I am not going to do that, so you have actually learnt from them even although they probably don't realise that you have learnt it, likewise when you have been with good mentors of actually saying well that is the person I want to be."

Student 7

One student thought the quality of the student-mentor relationship could impact on how comfortable they felt in practice.

Where certain mentors haven't really bonded with you and kind of staff issues as well em and I felt like an outsider, felt as if I shouldn't really be here em I have had two placements where I felt really uncomfortable being in the staff's presence."

Student 6

As the students were aware of the possibility of limited opportunities in practising certain skills, some students stressed the importance of being assertive with their mentor.

"I find you have to keep asking, you don't necessarily get the mentor come up to you and saying right this is what is going on, would you like to come and take part, sometimes you miss opportunities cause you don't know what is going on.... on the whole you do get to do an awful lot [experience], you do, if you push yourself, if you say, do you mind if I do this or do you mind if I do that em and a lot of them are not too bad and they'll say 'yes that's fine' em."

Student 11

Three of the students suggested that if their mentors demonstrated more confidence and trust in their abilities, this would enable them to recognise that they were developing competence in nursing practises.

"And maybe them [mentors]giving a wee bit of confidence in you that they think you are capable of doing these things, that makes you have confidence in your own abilities as well. Maybe trust you to do these things which then gives you confidence to try more things as well."

Student 10

"Cause she was always there to make sure I was OK and I was doing it right, if I need a wee bit of reassurance, she was like, no, you're fine carry on your doing it right."

Student 3

When the students were asked who facilitated their learning, lecturing staff and their mentors were clearly the two most significant groups of individuals involved in this process. However, the students also identified a variety of individuals who they believed had been a positive influence on their learning. The next section will discuss these individuals.

5.4.3. The role of a range of individuals

The students identified a range of individuals including peers, family, patients, medical staff, clinical workers and student services who facilitated their learning.

The narratives below reflect some of the students' experiences of learning from various individuals.

5.4.3.1. Peers

The students appeared to appreciate the collegial support that they received from their peers and talked about their experiences of exchanging information with each other and sharing new ways of processing and understanding knowledge.

"A lot of my friends [peers], they have got more experience really, a lot of them have been carers and they have got family who are nurses, so if there is anything that I am not sure about, then I'll ask them. We tend to have kind of like a study group together so we sort of sit down and I've noticed that my friends have different ways of learning, so we sort of learn from each other, so that is quite a good way of learning."

Student 1

"We all learn things slightly differently, somebody's take on something can be a wee bit different, so if I say to them, what do you make of this literature

search and how you are doing it? Somebody will have a different kind of take on it from mine that maybe I haven't looked at, so I speak to my other students a lot."

Student 10

"They'll know something, like I'll know something more than they'll know about the subject and they know more about something than me so we can help each other. So we have little group meetings and things like that. Other people kind of share ideas.... Em just a couple of friends meet up every so often. It's kind of like a study group I suppose."

Student 8

"You can speak to other students and you can ask their views on it and if there is something that you quite don't understand you can maybe say do you know anything about that.... sometimes if there is something that you don't understand and you are speaking to other students and maybe just the way they say it, it kinda falls into place then."

Student 9

5.4.3.2. Family

Student 2 talked about their partner allowing them to practise measuring their blood pressure and their family allowing them time to study and helping with housework.

"Family helps me through making sure that I've got time to study and taking off like as in pressure in the household things and eh maybe making my dinners instead of me making the dinners at night and giving me time and space so everybody really helps me."

Student 2

Other examples include:

"My family help me as well my mum, my dad em they've all been very supportive em..... My friends are understanding that I've not got so much time as what I used to have, I can't socialise as much.... but em having that good support unit that helps me learn and helps me get through my time in being a student."

Student 3

"My Mum and Dad are great at taking [name of child] to let me get my studying done. They'll keep her overnight; let me do some extra studying."

Student 6

Some of the students' family helped them to revise for their assessments.

> *"My husband helps me quite a bit. When I was doing oral exams and I was like, och, I can't get through this 15 minutes, he would actually start to ask me questions and he has got no interest in nursing whatsoever and he was like oh tell me how this nutrition works and what would you do in such a case that, he would just ask me different questions and I would end up rabbiting to him for 10 or 15 minutes .... So he does help quite a fair bit."*
>
> *Student 4*

> *"I also get my daughters to test me on things as well so that helps, get my family to help."*
>
> *Student 11*

5.4.3.3. Patients

Five of the students believed that they gained knowledge and understanding of nursing practice through the process of caring and listening to their patients.

Whilst sharing their experiences of engaging in patient care, the students' narratives appeared to convey an implicit understanding that by listening to their patients, they were learning the nuances of nursing care. In addition to appreciating the importance of applying theory to practice, there was a sense that the students were beginning to develop a deeper appreciation of the role of anecdotal and aesthetic knowledge in informing practice and how practice itself can inform theory.

> *"Quite often the patients will tell you different things about their illnesses and things that aren't broadly written because all illnesses are different and they affect patients in a different manner so one patient may have no side effects for one illness but another one could have most of them kind of thing and how bad they are and how they feel. I, definitely, the patients."*
>
> *Student 4*

> *"The patients in a way help you learn, because like, their experiences, when you listen to some of them, helps you sort of understand things a bit better, like the patient knows best. So say like they're diabetic, I found that although I had learned a lot about it, when I was actually in talking to someone, you know, they knew their condition and I learned through them, cause they were talking well this is what happens when I have a hypo, em, yeah, so listen to*

them, they know quite a lot about it..... also hearing the patients' experiences as well that's helped."

Student 1

"The patients themselves, because they have a vast knowledge on their conditions [Pause] and then you can take the theory that you have learned from here, you can apply it in practice and then the patients tell you how they cope with the illnesses, they actually know more about the illnesses than the staff do, different things that you wouldn't even read up on ..... so they are beneficial, they help me to understand."

Student 9

5.4.3.4. Medical staff and clinical support workers

Some of the students found that the medical staff were good at asking them questions and providing them with additional knowledge.

"The doctors would be, 'what do you think is wrong with this patient?'. Sometimes I was thinking ahead, I think it could be this, I think we need to do that and if they confirmed it, I would [say] Yes! You know it gave you that wee kind of feeling of God I have learnt, I have learnt."

Student 6

"It just the way the doctors justified it, as if they were justifying everything that they were doing and they would even ask us questions, you know, what do you think we should do for this patient next? Would it benefit her doing this or would it benefit doing [pause], it was making me think and there was one time he was putting fluids up and he asked me if I would prefer, what would I put up, would I put up Hartman's up or a Sodium Chloride up .... I was trying to think of things in my head and it was because her blood pressure was low and it would help to bring her blood pressure up em, He said, instead of the sodium chloride, you would use the Hartman's and I was like oh, so it was about a week later, he was asking the same questions to the medical students but of course I knew the answers so I just stood there and he turned round and said, don't answer these questions cause I know you know [Both laugh]."

Student 6

The students also indicated that they learned by working alongside the clinical support workers

"Quite often it can also be the clinical support workers that can help you cause often you are along beside the clinical support workers while the mentors are maybe doing the drug rounds in the morning and you are kind of chipping in."

Student 4

"Some of the older care assistants who have been out there, doing it for years, have an awful lot to teach the students em especially in the early parts of the course. Em in first year I have to admit, in my first year and in my ward placement in second year em it was the care assistants that I found absolutely exceptional. Em for teaching and helping you em learn the different things em that you needed to, the basic skills that you needed at that level."

Student 5

5.4.3.5. The students themselves

When being asked who helped them to learn nursing, a few of the students indicated that thought they were one of the key people.

"Who, well. Me first of all."

Student 3

"And just myself and the commitment I put into it."

Student 4

"I think it is a combination of three people. Your lecturers kind of give you the basics in the first place, your mentors that are watching you doing practical things in placement and yourself."

Student 6

This section has considered who assists students to make sense of their nursing knowledge. The next section will now examine the role of the students' motivation, drive and determination in facilitating their learning.

5.5. Theme 5 - Students' motivation, drive and determination to learn nursing

When the students were asked about challenging subjects and what helped them to make sense of the complexities of a subject, many of the students discussed this within the context of their motives and drive to learn nursing.

5.5.1. Motivation and determination

Some of the students talked about their ambition of becoming a nurse as being the key motivating factor in their determination to learn nursing.

> *"I think this is the only thing I have stuck to my whole life and I think it is the desire to want to achieve. The desire to make that wee bit of a difference at the end of the day."*
>
> *Student 4*

> *I need to have the motivation. If I've not got the motivation. Am not going to learn it. If I have not got the passion, I am not going to learn it. Em and I've found over these last 2 years that I've found that I'm more passionate about it that I initially thought, I love learning it. I love practising it. I feel as if I was made to be a nurse, it might sound totally naff but that's how I feel.... but it's really mentally demanding and I didn't realise.... But em for me to be a nurse I need to have it in me, I need to have it in my heart and soul and my mind and that has helped me be a nurse and I think hopefully a good nurse. Because I can take the time to learn, I can motivate myself to do that we bit of extra voluntary work or do that wee bit of extra research out with my university time or in my own time or I take an interest in it, I think that it what nursing needs."*
>
> *Student 3*

> *"Having a focus of what you want out of life as in saying this is not all for nothing; it's for to make my lifestyle better."*
>
> *Student 2*

Some of the students indicated that it was through sheer grit and determination that they persevered and studied hard in order to learn nursing knowledge and practice.

"I went to the library, I picked up books, I researched things on the internet and jotted down in a mind map roughly what I wanted to do. I worked for weeks on that essay until the day and hour that it had to be handed in."

Student 6

"I know I am going to get it, but the only way I'm going to get it is by studying."

Student 2

Within the context of drive and determination, some of the students talked about the importance of being assertive in order to learn nursing practice.

5.5.2. Being assertive

"I think it is still that whole thing about actually going out and actually driving yourself, of actually going out there and finding the opportunities, of doing the nosey."

Student 7

"I find you have to keep asking, you don't necessarily get the mentor come up to you and saying, right, this is what is going on, would you like to come and take part, sometimes you miss opportunities cause you don't know what is going on."

Student 11

This drive, determination and assertiveness appeared to help them to work through to grasp an understanding of the complex nature of nursing knowledge and practice.

5.5.3. Grasping an understanding of nursing knowledge and practice

When asking the students what helped them to make sense of the complexities of a subject, many of the students repeated several of the key points they had already raised earlier in their interview. The process of repetitively reading and writing, breaking down the subject and persevering with their studies until they could make sense of it were the key points which the students returned to again and again in their narratives. Some students' discussions also revisited the benefits of peer support and

asking their lecturers and mentors if they were stuck at understanding a particular subject or area of practice.

As these subjects have already been covered within the 'students' own approach to learning' section, the rest of this section will look at the other key points raised in relation to working through to grasp an understanding of nursing knowledge and practice.

Some of the students appeared strategic about learning complex subjects and would continue to work on understanding a subject until they reached a depth of knowledge they considered would enable them to practise nursing safely.

> *"Some people will keep avoiding. I know people, the now, that still avoids, oh I am not going near it. I'm not going to touch it but I feel that I need to, I need to learn, I need to know. I'd rather be here and look stupid. I could be asked this. What if I don't know it? I would look stupid and I don't want to look stupid. So if I have a general understanding I'm happy. I cannot go into the nitty gritty as much as I would like to but as long as I know the general I'm fine. If I want to know the nitty gritty I can force myself to go and learn it. I try my best, but it's not easy. I don't think it's easy. I think if you have got it in your brain that you don't like it, you are always fighting with that. You procrastinate, is that the word. You put it off and put it off and put it off until it is inevitable and you need to look, which I find with nursing is everything. You need know it, you need to learn it, get stuck in and if you don't know, ask and learn. And I've learnt that out the last two years. I'm a bit more confident now to go and ask."*
>
> *Student 3*

> *"If I tend to get stuck, I fall back on a book em I know it is not everyone preferred way of learning but if I can read something em or copy it out em from a book a couple of times that tends to em if not clear it in my head, not give me a clear understanding at least I know the answer, if you know what I mean, I know why something is like that even if I don't fully understand the answer.... What I meant to say there was that if you told me these blood results em indicates this disease, I might not understand why the blood results indicate that disease but I can go and learn it so that I know those results are an indicator of a disease or em or another process, so sometimes I don't necessarily understand why that is the answer but I can learn that that is the right answer for that question. Does that make sense?"*
>
> *Student 5*

"So it is kind of breaking it down, so you get a clearer understanding of it and again it is that whole thing, if it is a complex subject of actually understanding what you are looking at and so that you are not getting into the whole kind of a, you know, professor of whatever subject, of actually saying what level do you need it at."

Student 7

Student 7 had come to the conclusion that by applying a systematic and logical approach to understanding nursing and being aware of the underpinning concepts and processes within nursing practice could facilitate their learning

"[Lecturer's name] in the [name of module] gave us a perfect scenario of how to actually set out for the module. Well what are the symptoms? What are the cause and effect? How do you treat it whatever and that has actually stood me in good stead whenever I have been studying for these subjects this year and also to the tail end of last year, of learning to put it in actual order and it is the same thing with the module of the ABCs, I'm kind of thinking to myself, there must be a way, a generic thing across the board, it can't just be that everybody walks in the door and you've got 5000 different things, there must be a set way, so that's kind of helped in a way, saying well, there must be a logical way to actually do this, of helping people as against to millions and millions and millions of vague sort of things."

Student 7

The other key strategy which the students utilised in making sense of a challenging subject was the notion of pausing.

5.5.4. Pause and come back to it

Five students found that if they were struggling to understand a subject, they would stop trying to make sense of it, give themselves a break and then come back to the topic when their mind was fresh. This idea of coming back to a subject with a clear mind appeared to be a factor which allowed them to make a break through with their understanding of nursing theory and practice.

"Sometimes like I'll look over something but I'll not actually get it and then I'll say right put it down, give yourself a few moments, come back to it

instead of obviously struggling and then I'll come back to it maybe see it in a different note as well."

Student 2

"I find it I take a step back, forget about it for a wee hour, go onto something else and come back to it, that helps me, my mental blocks. Sitting suffering in silence for a week doesn't help me cause I keep going round in circles. I start pulling everything out and I have a breakdown. I start crying with frustration and I found that didn't help me. But taking a wee step away even if you say forget it, shut the books, go back in a day and start again. That's the key to it. Having a set back. You go back and then you go oh hold on a minute, I though, you were maybe staring at it for three days and you weren't taking it in but then you do take it in. You don't realise at the time but you take it in and then something clicks. That helps me, taking a break. If I don't take a break, I'm snookered. Putting it politely."

Student 3

"Right I move away from it. I come away from it to start with and I will maybe leave it a couple of days and I go back to it and I start again and I try and break it down into wee kinda steps until I can understand it. Usually if I go away from it for a couple of days and I go back to it I can then get past that because if there is a part of it that I can't get past then I know that there is something wrong and I need to backtrack to the point where it has went wrong and maybe go and speak to a lecturer if I couldn't get past that. That's what I would do."

Student 9

This section has examined the role of students' motivation and drive in learning nursing and how this can underpin their learning, another key factor which supports their learning is the idea of learning in context.

5.6. Theme 6 - Learning in context

All of the students appeared to prefer to learn within the context of nursing, whether it is in the skills lab, in practice, sharing stories of nursing practice or through the use of scenario based exercises in class.

5.6.1. Learning in context

The students preferred to be engaged in activities that allowed them to see how their knowledge could be applied in practice.

> *"Doing the real life situations, interviews with the lecturers as well or using them as patients, that was good, that helped me as well. Definitely it was more realistic as opposed to kind of all theory. The practical stuff, like it was really good."*
>
> *Student 8*

The use of real life incidents or scenarios helped them to gain a more in depth understanding of caring for patients' complex needs.

> *"Watching short stories or short videos or scenarios, they help me, helps me remember. Like if you link your Alzheimer a couple of the videos that .... would show, like that, I'll always remember them now, just because I have seen them and it helps me think of dementia, think of Alzheimers and how they are feeling rather than sitting reading a book."*
>
> *Student 3*

Three of the students found the stories which the lecturers shared about their own experiences of practice helped to place nursing knowledge within the context of practice.

> *"We had a lecturer [lecturer's name] who was great and I found his lectures fantastic because he made up wee stories as well. He done kinda wee dances and that sticks in my mind. So if I was in an exam, I could think back to his wee dance or whatever, it was what he done and I could remember it really clearly. So that really works for me, if I can picture something in my head. A story to go with something is the best way for me I think to learn personally..... If someone tells you something and they maybe go into it and a story of their own and you relate it then, that becomes a lot clearer for me as opposed to somebody who doesn't really relate anything that they are teaching to real life. I find it much easier to understand and follow then, I keep more interested if I can relate it to something."*
>
> *Student 10*

"I found that when lecturers tell you wee stories, like I found this quite a lot with [lecturer's name], he would relate different things to his wife and his daughter and like when he was talking about different systems in the body. I would think back and ah right, that's what he said. But the diabetes kind of, you know thing. Just for a wee instance ... he had said, if in doubt, whether it is a hypo or a hyper, if you give them chocolate and he went through like a train story kind of thing one day and it stuck with me, you always give them chocolate cause that can be fixed rather than the other way round kind of thing.... So definitely I think wee stories like that help me remember, cause on my notes I'll write whatever he was talking about, oh the wife and the cakes and the different things and the chocolate story. I remember back to those kinds of instances rather than trying to remember that this is what happens in your body."

Student 4

"It is helpful to know about the lecturers experience, if you have got someone who has major experience in A&E em and they are talking to you about different traumas em that I find helps you work through in your head what you are doing em your sort of A to G."

Student 5

Some students found that it was only once they were placed in the context of practice that they could appreciate the complexities of nursing and it was once they had experienced nursing practice that they could generate a new set of enquiries.

"I find when I go out onto the wards and you get to practise things, you think of questions you don't think of in your lectures. Why did I not ask that, but you don't think that until the time that you have actually practised things and these come to you."

Student 10

Although the students had been taught the underpinning principles of nursing practice within the University, it was only once they were in practice that they appreciated the importance of being able to adapt to any given situation. It was by being within the context of caring for critically ill patients that they came to realise the importance of making clinical decisions based on the problems they were presented with. The narrative on the next page is an example of the students

appreciating that they required to think on their feet and adapt to the context of the situation they were faced with.

> *"We had a wee woman who was really, really ill and my mentor said we are going to put a NG [naso gastric]tube in her and I was like, we saw that in the Uni and she said, oh that's fine, then you can do it and it was that kind of [student took a deep inhalation of breath] I can do it ! I mean it was so strange, because the way we were taught was to have your patient sitting up straight, your glass of water, you put it so far and then you get them to take the water and hold it in their mouth and tell them to swallow as you are pushing [pause] and I went, but she is nearly unconscious! How am I going to get an NG tube in? I can't ask her to sit up with a glass of water, my mentor said, no, you just have to put it down and I am like, what if I go into the lungs and she is like, you'll know if you go into the lungs [both laugh]. It's like, right OK. And then I was like, that isn't the way we were taught in Uni, she [mentor]said, the way you are taught is the proper way but sometimes things don't work out that way. She says, and you have got to use what you have got roundabout you, you can only use the situation you have got, you can't sit an unconscious patient up and get her to wake up and ask her to take a glass of water.... I was worried that this patient wasn't able to sit up and take a glass of water and she says, you'll know if you did wrong, I'll not have to tell you, you'll know and it will just come naturally what to do with her and I got it in first time.... so, when you see it all sides of the circumstances, it helps you to understand what you are actually doing."*
>
> *Student 6*

Although the students appreciated that the best place to learn nursing was in practice, they were aware that their experiences in practice could be limited and appreciated that they did not always get the opportunity to practise certain skills. Therefore, the students regarded the simulated scenarios within the skills labs as an alternative environment in which to contextualise nursing practice and enable them to further develop their skills and knowledge.

5.6.2. Skills lab

All of the students talked extensively about how the skills labs facilitated their learning. Although some of the students found this particular teaching and learning method challenging, the majority of the students found that the simulated

environment enabled them to develop their skills of clinical decision making within the context of complex and life like simulated scenarios.

> *"We had a skills lab where a few of the lecturers were pretending to be patients and even some of them were particularly awkward with you to see how you would react to the different situations; it felt more realistic then; so you felt, well, how would I deal if I was in this situation? How would I deal with it? So that's certainly helped, I think em, trying to get you to think on your feet rather than just reading something, you are thinking on your feet about a situation and it does makes you think oh well".*
>
> *"We had a lady, one of the lecturers pretended to be a lady that had dementia and kept trying to get out of bed em she tried eating sweeties when she wasn't supposed to be eating sweeties cause she was going for an operation, you would only turn your back for a second and she was at something and it actually makes you think, you know, that is something that is likely to happen and you think, how would I deal with that".*
>
> *"Another issue was a woman em who again she had dementia and she kept referring to her husband, when's my husband coming in to see me? and we kept saying to her, oh, in a wee while, a wee while, he'll be coming in to see you and then we thought, actually no, we actually just said to her, do you not remember your husband died and tried to break it to her gently again and that is the kind of situations that you are in, so being in that environment in a clinical skills lab definitely helps, I think, because it does give you that kind of environment."*
>
> *Student 11*

The skills lab enabled them to practise skills on a mannequin and learn from their mistakes before performing them within the uncontrollable environments within practice.

> *"I watched constantly when the nurses were putting ventflons in, taking blood and you know and I can't wait until I can kind of try this out and then we got taught it [in the skills labs]and alright it wasn't quite the same [pause] but we have got the arms with dye in them, that we can practise on and it was weird actually, standing with this needle and this plastic arm thing, god this is it, I am actually doing it, although, I know it's going to be different the first time I practise on a real patient.... however I loved that experience."*
>
> *Student 6*

"I think having the actual experience is how you remember how to do things, em when you are up in the simulation lab and em you kill sim man, if you like em I'd rather go up there a 100 times and deal with a heart attack on the sim man, have every eventuality flung in front of me; because when you are then flung in that situation, out in practice, em you are going to remember things because you are going to think, I did that wrong when I did it on sim man that time."

Student 5

"You do mess up a fair bit [in the skills lab] but I was fortunate to be in a small group of like 8 people and you know if I make a complete fool of myself here there is only another 7 lassie watching so we were all very forthcoming in saying we'll volunteer for it because we knew it was only a small group."

Student 4

"I suppose doing the stitch removal in here. When I done it at first, I thought the clips removal, we done it on the foam dummies and then, I had the chance to do it in the community but I had already done it on that [skills lab]but that made it easier I think because I had already practised it a little bit. So that kinda helped. That made it much easier."

Student 8

Although some students could be nervous about managing patient care in the skills labs, the majority of the students valued the opportunity to watch their recorded performance and discuss their delivery of care. The debrief sessions allowed the students to identify how they could have improved their patient's care and more importantly recognise that they were building confidence in their abilities.

"I think that [skills lab] helps a lot and then afterwards when you are debriefing it, you go in and watch the video and then you talk about what you could have done better and em where you did well and em so to other groups, although I don't like role play I find it is quite helpful in certain situations..... If you are doing it well, wrong or whatever, the lecturer then goes through it and that's better, cause although it is not a real life situation, it's the closest thing you will get being in the skills labs."

Student 1

"Although you are quite self conscious [in the skills labs]'cause you are aware of people, your peers are watching you, it is still quite good because it puts you in that ward, you feel as if you are in that ward situation and it actually makes you feel, you know what, this actually feels quite scary but in

a good way because then you think, well you know, I can do this, I can physically do this, I can mentally do it, I get the opportunity and it gives you the confidence before you go into practice and do it."

Student 11

"You can pick up on mistakes that they've [peers]done and you can see what you've done as well. So that was quite good. Em but also doing the real life situations, interviews with the lecturers as well or using them as patients, that was good, that helped me as well. Definitely it was more realistic as opposed to kind all theory. The practical stuff, like it was really good."

Student 8

Although the skills labs emulated practice, some students found it difficult to get into the mindset of clinical simulation.

"Em very good here because of the simulation labs that we have but there are just some things that you can't do on a dummy."

Student 5

"I think sometimes the labs are a bit unnatural, that even although you get into your mind, well, pretend the mannequin is a real person and doing it that way, it's still kind of unnatural when the legs fall off [laughs] so it's still kind of a bit unnatural to me and I think when I have been out in placements, working with real people, I do the same thing, you know like doing the basic checks but I suppose it is that interactions with a real person that aids you a bit rather than the mannequin all rubbery just lying there [Laughs].... it is not to the point whereby it is to my detriment or I am not learning or anything like that or I'm running away from it, I just feel it's a wee bit unnatural [laughs]."

Student 7

Some of the students would have liked more skills labs within the pre-registration programme as this would have enabled them to gain more practise and as a consequence would further develop their confidence.

"I would probably say the skills labs [pause] Actually doing it. It does, it makes so much more of a difference, it prepares you better.... before you get to a real patient. Even although it's not going to be the same as a real patient, but at least you know where your body movements are going to be,

em.... like venepuncture, for instance.... you're taking, you're taking the arm and making sure that you can feel for it and obviously how to put the tourniquet on and things like that, it gives you a wee trial run before the real thing.... it is not going to be the same as the real thing but it does, it builds that confidence in you. Yep so that you can say right I remember how I am doing it, so I'll go in and try and be as professional as possible, remembering your body language and everything else. I think it puts you at ease, definitely."

Student 2

"I do think we need more skills labs practise, em and I think a lot of my peers think that as well cause they do find it helps them best learning the nursing."

Student 1

Both the practice placements and the skills lab were identified as being the best environments in which to place their learning in context.

"Skills labs helps you apply that knowledge I think really well because you can read about it as much as you like in a text book but until you practically come down to doing something, it's totally different. I think the more you do it when you are out in practice placement that facilitates your learning as well and gain confidence in that skill."

Student 11

"Being given practical sessions and skills labs and being able to apply the theory that you are learning to practise. And placements as well, they help a lot and you learn from the patients and about their conditions and their illnesses through that and the theory that you have learned makes more sense that way."

Student 9

5.6.3. Applying theory to practice

In relation to learning in context, ten of the students discussed the importance of being able to apply theory to practice and how being in practice enabled them to apply their knowledge to practice.

"Seeing like my theory being put into practice helps me learn nursing."

Student 1

"In practice, I think when you are in practice em I think you gain confidence the more you do something em and you can apply what you learnt in the classroom, you can apply it to practice em I definitely think that helps, cause there is no point in being out in practice and doing a particular skill and not knowing the theory behind it. You really need that theory to back up your knowledge. You really need to know why you are doing something, not just go out and do something for the sake of it.... I had a lady with palliative care and I could apply that to my [name of theory module] because that was something we were looking at and because I was reading about that, that knowledge base helped me with that patient, so it kind of backed up what I was doing and I had kind of more of an understanding of like the psychological aspects of it as well cause I had read quite a bit from [name] Hospice as well. So.... you can't do the practical work without the theory to back it up."

Student 11

"Because most of the learning, for all the time that we are in University, I feel that we learn an awful lot more when we are out in practice and we need to know the theory of all these things so that when we are out in practice em we can expand on that. But we also need to know the theory and the background so that in a year or two time when it is a student under you, that you are still able to explain and link that back to the theory for those students that are coming up behind us."

Student 5

"Once you are out in practice you maybe see someone with that disease or with that problem then it becomes clearer as well and you can relate to it better and see it happening. It's quite good if you can then think well this is what is going on inside, all that knowledge then comes out and I think that makes you feel quite good as well when you realise that you can understand exactly what is going on with someone."

Student 10

This section has considered the notion of learning in context and how contextualising learning can assist in transforming the students' understanding of the complex nature of nursing knowledge and practice. The final theme will focus on examining the students' views on what assists them to transform their understanding of troublesome knowledge and gain cognisance of the complex nature of nursing knowledge and practice.

5.7. Theme 7 - Learning on the job

Permeating throughout the narratives was the notion that once they had been taught the fundamental concepts and knowledge of nursing, the best way to learn was by being in practice. This is where they developed their understanding of the complex nature of nursing practice, learned the 'tools of the trade' and transformed the way they perceived their own role in practice.

5.7.1. Learning through the process of being in practice

The general consensus amongst the students was the view that the best way to learn nursing was by being in practice.

> *"Getting out there, getting your sleeves rolled up and practising is the only way to learn."*
>
> *Student 5*

> *"The best way to learn for me is placements, practice. Linking what I've learned in the university to practice .... it isn't until you are out in placement that it all falls into place. Sometimes I could be in here [university]for weeks, you could be telling me something and I'll go right, right, right but the penny will not drop until I'm out there, I'm seeing it, I'm practising it. If I am not too sure, I can ask there."*
>
> *Student 3*

> *"Working in a ward is the best place to learn. It's just a shame I think that we don't have more ward experience cause that's where definitely I have learned the majority of what I need to learn is on the ward."*
>
> *Student 10*

> *"I was in a theatre placement and I actually seen all the surgical procedures and then I was in a surgical ward after that so I was able to understand how they were feeling, the way they were doing and why the wounds were here and different things like that so I found that useful. It was really beneficial to learning."*
>
> *Student 9*

The students appreciated the important of the nursing knowledge they had gained in the University, however thought the nuances and complexities of nursing practice were best learned by being in practice.

> *"I think when it comes to the end of the course and what you have learned, I think the skills we learn out in practice will be the ones that will put us in better stead further on, em, the theory and what we do in University is exceptionally important but it is the hands on practical stuff that I think and how we learn and interact in a ward area and things like that is of more advantage at the other end."*
>
> *Student 5*

> *"I think because you are doing it whilst you are in practice, you are asking questions when you are with your mentor, when you are watching them do different procedures and you are following them about, em, like going back to that thing I said earlier on, it definitely sticks with you much more because you are actually doing the process.... it's an event that has happened so a lecture is not really an event so you can be there in body but not in mind. Em so yeah I find that most of everything that I have learned in practice it's kind of stayed with me in my head cause it is an actual event."*
>
> *Student 4*

On entering each new practice placement, some students preferred to initially learn by observation, remain in the periphery of practice and then become more actively involved as their confidence developed, whereas others preferred to be actively involved in all aspects of nursing care as soon as they commenced a new placement. Several students talked about this concept within the context of whether or not they preferred to be 'flung in at the deep end'.

Below is an example of both viewpoints

> *"Just hands on sometimes for me, I think being flung in at the deep end is the best way for me. Just go and get on with it. Obviously you have always got someone there supervising you but if I am left to think about it, to watch someone too many times that puts me off I would rather they say, right, can you do this and get on with it. Definitely putting you in at the deep end and let you get on with it. That's worked for me in practice.... So hands on experience straight away."*
>
> *Student 10*

"Probably what helped me is not being flung in at the deep end first em maybe saying em [Pause] step back and watch how we do it first, take in as much information, then we'll discuss it, like what you found and what you didn't find, we'll obviously fill in the wee blanks for you.... So I'd probably say when a mentor says watch what we are doing, watch them, learn from them and obviously be tasked like that, yet again it's basic, you're watching, but you're observing and everything you're observing them from mannerism, to where their body's positioned to obviously what they're doing from em obviously just really an overall view of it before you're maybe actually doing something. Like really taking it in. Before you actually get flung it at the deep end [laughs]."

Student 2

The students appreciated that by being in practice and being an active participant in practice enabled them to build confidence in their knowledge and skills and recognise that they were becoming more like a nurse.

5.7.2. Becoming more like a nurse

As third year students, they were beginning to see themselves more like nurses than students and recognising that they were becoming more competent practitioners. They were engaging in more meaningful discussions with their mentors, building confidence in their knowledge and skills and appreciating that they were becoming fully participating member of this community of practice.

"I think now in my 3rd year, I'm starting to feel part of the nursing club, I feel you can talk to people and you've got enough experience to sit and join a conversation with nurses may be in first year I didn't have that confidence or knowledge to be able to sit down and chat to them about things but now as I am in 3rd year I feel that I have got the knowledge and experience that I can sit down and talk to them just in general. So I think talking to nurses as a nurse rather than as a student even although I am still a student nurse but I have more knowledge now and more experience that I can sit and talk to them in that way. I feel like it's kind of a wee club that you are getting involved in and they start to open up to you as well because you open up to them and that's helped me a lot more as well. They've become very open about their experiences and their learning and I am learning from that and I don't think I had the confidence to do that before I think it has taken me to my last couple of placements."

Student 10

"I was in the ward which is a step down from HDU [High dependency Unit]and you are one nurse with four patients and they were all really quite poorly em a lot of them had a lot of IVs going in and they were on hourly urine volumes by the time you had circulated around each patient, it was time to go round again and actually I really enjoyed the challenges of that because you could, I felt you were applying, you could, you know this is serious stuff, it's kind of not reading things out of a textbook anymore, you are actually in this situation and you have to apply what you have learned, you have to learn to apply it to these patients so that made me think not that I didn't take it serious before but that certainly made me think a lot more about it and how responsible you have to be in the job."

Student 11

"I think it is the changeover from being a student to actually being a nurse is what I am kind of aiming to do this year. So that. You know in January, February when you get a job you get the nurse badge, so you are actually a proper nurse [laughs]…. There is that ownership on yourself of actually taking responsibility for yourself and your learning but I think as further you go along you actually have to you know, take kind of the initiative that you are the nurse, you are in charge, you are responsible for the people, so you have to, you know, I don't know what I am trying to say here but I think it is more.. in that sort of third year of actually being that person, you work on your own initiative and you are going out there and doing it because in one respect this year, it's a good year because you are not quite there as a nurse but you are still getting the opportunity to go out there and do the things as an actual nurse so that is what I am kind of looking forward to doing and so."

Student 7

5.8. Conclusions

This chapter was specifically designed to focus on presenting the categories in such as way as to guide the readership through the students' narratives and give them a sense of the students' views and experiences of learning. The rationale being that focusing on the students' narratives and allowing their voice to be heard would offer the readership with the opportunity to draw their own conclusions about the students' experiences of learning before being provided with a detailed analysis in the final two chapters of the thesis.

Although the participants' narratives were a rich source of data, the categories and themes presented in this chapter cannot be unequivocally confirmed as answering

each of the research questions in full, nevertheless, it establishes that the categories and themes which emerged from the analysis of the narratives have answered the four research questions in varying degrees of depth. It is also important to clarify that this phenomenological study is only answering the research questions within the confines and context of the eleven participants' narratives and the views and experiences expressed by the participants are not necessarily representative of the nursing student population as a whole.

Now that the readership has been provided with the opportunity to read a portion of the students' narratives, the next chapter will draw upon the findings, themes and literature in order to provide an iterative discussion about what may have been involved in facilitating the students' learning.

CHAPTER 6 - DISCUSSION

6.1. Introduction

The findings section provided a detailed account of the students' views and experiences on what they believed facilitated their learning and helped them to make sense of their nursing knowledge and practice. This chapter will draw upon the findings, the themes and the literature in order to provide a critical discussion about what may have been involved in facilitating the students to learn nursing and make sense of their nursing knowledge and practice and also confirm that the research questions have been addressed.

When considering how to structure this chapter, it emerged that the research questions and themes were all interconnected. A table was devised to clarify which categories had addressed each of the research questions (Appendix 14). This process identified that many of the categories referred to several of the research questions and had meaningful connections to other themes. For example, the category 'motivation and determination' could be considered within the context of theme 2 whereby it is the students' motivation that facilitates their own approach to learning. Likewise, in relation to theme 7, the students utilised their motivation and determination to help them to learn on the job. This category could also be considered applicable to theme 4 and how students are motivated to seek out help from other individuals including their peers, mentors and lecturing staff.

The construction of this table and the aim of clarifying that the research questions had been addressed led to further analysis of the categories and themes and a recognition that the concept of situated learning was emerging as a common theme running throughout all of the students' narratives. Therefore, to construct this chapter around the research questions would have involved overlap and repetition in many of the discussions. Similar challenges would have ensued in attempting to methodically work through the seven themes which were also considered interconnected. As the students had shared their experiences of learning in the University, learning in

practice and how they endeavoured to learn themselves, framing the discussions around these three key learning experiences enabled all of the themes and research questions to be addressed within the context of situated learning.

6.2. How students endeavour to learn

6.2.1. Breaking down a subject

One of the key strategies which the students used to facilitate their learning was the process of breaking a subject down into smaller sections as a means to make sense of a subject. This notion of 'breaking the subject down' fits in well with Piaget's concept of schemata and how information is stored, organised and retrieved. Piaget purported that the acquisition of learning was bound to the idea of knowledge being either assimilated into an already existing structure or patterns of knowledge and understanding being reorganised as a means to accommodate this new knowledge (Piaget, 1951 cited in Illeris, 2007). Similar to Piaget's theory of schemata and Ausubel's theory of assimilation, the students appeared to break the subject down into the component parts and as the students made sense of each component part, they were able to assimilate this new knowledge into their own schemata. Once they understood the component parts, they were able to see the relationship between the various aspects of the subject and accommodate a deeper understanding of the subject within their own schemata (Ausubel, 1978 cited in Quinn & Hughes, 2007).

Bredo (1999) suggests that symbol processing can also assist individuals to process their understanding of knowledge. The students within this study utilised a wide range of symbols including concept maps, colour association and mnemonics to identify the component parts of a subject and would often associate colours or drawings with particular subtopics. These associations appeared to help the students to assimilate this new knowledge into their own schemata and made it easier to draw upon this illustrative information as required (Piaget, 1951 cited in Hill, 1990).

Glaser (1999) indicates that experts have a great deal of domain specific information which is highly organised and conceptually integrated into meaningful patterns. He suggests that these highly organised structures may play a pivotal role in an expert's performance by allowing them to rapidly categorise knowledge and recognise patterns and associations. He goes on to suggest that students are still in the process of identifying domain knowledge and have not yet articulated their knowledge into meaningful patterns. This may explain why the students found symbol processing an effective way to learn nursing as it enabled them to start to create meaningful patterns in their schemata and the colour and pictures associations allowed them to quickly draw upon this illustrative information during their assessments or whilst providing nursing care (Piaget, 1951 cited in Hill, 1990).

6.2.2. Reading and writing

The notion of identifying and acquiring knowledge was a prevalent theme running throughout the narratives. All of the students indicated that reading and writing was one of the main learning strategies they employed in their study time. Some of the students continually returned to talking about how they would repeatedly read, write or listen to audio files in rote fashion to learn knowledge. However there was a sense that some of the students were continually rote learning rather than aiming to fully understand the meaning and application of this knowledge. Hislop *et al.,* (1996) suggest that students have difficulty applying theory to practice due to the abstract and decontextualised nature of nursing knowledge. Therefore by continually reading and writing the content of nursing knowledge in isolation was not necessarily assisting them to understand how this knowledge could be applied to their practice.

Higgs *et al.,* (2004) believe that the development of knowledge for professional practitioners originates in practice first and then develops into a theory. However the students within this study had not yet gained a sufficient amount of time in practice in order to develop a complete body of professional knowledge, therefore they appeared to be still heavily reliant upon acquiring fundamental nursing knowledge from sources out with the context of nursing practice. Benner (1984) and Rolfe *et al.,*

(2001) both agree that due to students' limited experience in practice their acquisition of knowledge begins first and foremost with theoretical knowledge and they rely heavily on propositional knowledge from books and the principles they learn in the classroom. This may explain why the students within this study were spending so much time reading as this was still a key source of information for them and reading enabled them to gain the knowledge they had not yet experienced in practice.

Dewey (1958) cited in Bredo (1999) placed an emphasis on theory being rooted within practice and learners being engaged in purposeful activities within a social setting in order to understand knowledge. Furthermore, Lave and Wenger (1999b) believe that abstract knowledge cannot be fully understood until it is placed within a specific situation. Therefore the students within this study may have found it difficult to remember information as the conceptualisation of their nursing knowledge had not yet been placed within context and they were relying upon rote learning as a means to recall their knowledge as they had no experiential knowledge upon which to draw. For example, students who have had no experience of working within a surgical ward may find it difficult to recall knowledge of pre and post-operative care as they have not had the opportunity to place this knowledge within the context of nursing practice. As a result, students with no experiential knowledge of managing a patient in a surgical ward may be reliant upon books to identify and recall the principles of pre and post-operative care.

Within the students' personal study time, they appear to have focused on what Illeris (2007) describes as the 'content dimension of learning' which includes acquiring and understanding knowledge rather than considering how they would utilise this knowledge. Ausubel distinguished the difference between rote learning and meaningful learning and argued that learning only occurs if learning materials are presented in a way that is meaningful to the learner (Ausubel, 1978 cited in Entwistle, 1997). Furthermore, Benner (1984) suggests that novices adhere strictly and inflexibly to nursing principles and theories as they have little understanding of the contextual meaning of this knowledge. Therefore there was a sense that the students wanted the knowledge they were learning in their study time to be

meaningful and understand how their knowledge applied to practice. Hislop's *et al.*, (1996) study supports this view and found that students did not want to learn theory in isolation but wanted to understand nursing within the context of practice. Therefore although the students' personal study time seemed to be dominated by reading and writing, they appeared to be constantly looking for alternative ways to make sense of their nursing knowledge and place their learning in context.

Arhin and Cormier (2007) have identified that with the proliferation of the internet, smart phones and social networking, students are moving away from traditional modes of learning and exponentially engaging in pioneering ways of learning. The findings identified that nine of the students had used online resources as a useful medium to contextualise their learning or assist in breaking a subject down into its component parts. There was a sense from the students that if they were struggling to understand what they were reading, they would go online as a means to make sense of troublesome knowledge and place their knowledge in context. For example, some of the students would access Wikipedia as it explained the topics in laymen's term. Perkins (1999) suggests that learners may have difficulty in understanding discipline knowledge as they have not yet acquired the professional discourse that would enable them to understand the key concepts within a profession. Therefore the use of familiar, everyday language on Wikipedia may have enabled the students to place their understanding within a context that they understood. Other students accessed YouTube to make sense of a subject and once they had gained an understanding would revert back to reading about it in the nursing literature. A couple of students seemed to recognise that the resources they were accessing on the internet and YouTube may not necessarily be evidenced based or empirically sound. Nevertheless, during their personal study time, they were prepared to actively seek alternative mediums to help place their learning in context or assist them in breaking down information into chunk size sections. One student believed that watching YouTube videos about certain medical conditions was a much more effective way of remembering and understanding how to care for a patient than reading about it in a book. These findings support the view that contextualising knowledge helps the students to understand nursing knowledge and practice.

When the students were having difficulty with troublesome knowledge, many of the students talked about pausing and coming back to it later. This links in with Meyer and Land's notion of liminality where learners are blocked from progressing with their understanding of a particular concept (Meyer & Land, 2005). Meyer and Land go on to suggest that whilst they are in this liminal space, they will adopt recursive and excursive approaches to learning (Land *et al.*, 2005). This is evident in the students' narratives as they explain how they repetitively read, write and listen to audio files as a means to learn nursing knowledge, if they continue to have difficulties, they pause, take a break, then return to try again. If this fails they speak to their peers, mentors and lecturers as a means to make sense of what they are learning and then return to their studies once again to make the necessary meaningful connections. Similar to Cousin's (2006:5) view, the students' description of this recursive and excursive process appears to be an unsettling and 'messy' journey of discovery for them. Following on from this, Perkins (2008) believes that it is only once learners realise that they can reason with discipline knowledge and contexts that their knowledge can take on a more active form. This is clearly reflected in student seven's views on learning discipline knowledge and coming to a realisation that nursing knowledge is not an eclectic expanse of knowledge, rather it contains an ordered set of general principles that govern how experienced nurses process information. This new way of perceiving nursing knowledge seems to have had a transformative effect on the student and enabled them to reconstruct how they process and learn nursing knowledge (Meyer & Land, 2005; Perkins, 2008).

6.2.3. Students' motivation to learn

In regards to the incentive for learning and the degree of motivation, emotions and volition which takes place in the process of learning, Illeris (2007) suggests that the degree of mental engagement and mental energy placed on learning is dependent upon the benefits and outcomes of this process. The students within this study appeared motivated and determined to succeed in learning nursing. When asked about troublesome knowledge, some of the students would answer this question by talking about their motivation to become a nurse and this being their driving force to

learn challenging knowledge and skills. Perkins (2008:3) believes that 'learning will only be truly effective when the conception of knowledge underlying it has a proactive character'. The students demonstrated proactive knowledge throughout their narratives as they talked about actively seeking out learning opportunities, practising skills and asking questions to ensure they were further developing their skills and knowledge. The students also explained the recursive and excursive approaches they would employ in their determination to learn troublesome knowledge (Land *et al.*, 2005).

Another key factor in the students' motivation to learn was centred on the need to ensure they were practising safely and competently and causing no harm to their patients. Although the students were not accountable for their practice (NMC, 2008b), they appreciated that they were responsible for ensuring they delivered safe and competent nursing care. This was particularly evident when the students talked about learning from their mistakes in the skills lab and microsim™ and constantly practising in the simulated environment as a means to ensure they were safe in practice.

Humanists consider the central role of education as enabling their students to reach their full potential through a process of self actualisation (Maslow, 1971. cited in Quinn & Hughes, 2007). The students within this study appeared to consider undertaking the pre-registration nursing programme as giving them a new found sense of purpose and they gained a sense of satisfaction from caring for their patients. Becoming a nurse was a personal goal they wished to achieve as it would improve their quality of life, furthermore it was leading to an ontological shift in the way they perceived themselves. Therefore, to some degree, learning to become a nurse was enabling the students to reach their full potential through a process of self actualisation.

In sharing their experiences of studying, it was clear that the students still required to learn a lot of nursing knowledge and remained reliant upon the nursing literature to provide them with the key knowledge and concepts they required to learn. During

their study time, the students were actively seeking ways of organising their knowledge into a meaningful construct and were utilising a combination of symbol processing and online resources to place their knowledge in context and develop an understanding of the key constructs and concepts within nursing practice. However in keeping with Vygotsky's view on learning, the students were aware that they did not learn in isolation and could call upon a range of individuals within a wide range of setting to assist them with their learning (Vygotsky,1978 cited in Illeris, 2007). In fact, when discussing troublesome knowledge, ten out of the eleven students discussed how they engaged with other people to develop an understanding of nursing knowledge and practice which is in keeping with Lave and Wenger's (1999b) view on social learning as being a process which encompasses all aspects of learning.

6.3. Learning in the university

6.3.1. Competency based programme

The NMC's Standards for Pre-registration Nursing Education specifies the broad programme content which must be included in the curriculum and stipulates the competencies which the students must achieve (NMC, 2010). Although the NMC standards are focused on determining the content of the programme and the knowledge, skills, attitudes and behaviours which the students must achieve, it is the Higher Educational Institutes' responsibility to determine how these standards are met. Within this key policy document the NMC (2010:8) stresses that "programmes should offer a flexible, blended approach to learning, and draw on the full range of modern learning methods and modes of delivery in both academic and practice settings". This statement encourages programme teams to design and deliver innovative curricula which are fit for purpose in the 21st century.

Although the students were undertaking a pre-registration programme which utilised a blended learning approach, many of the students appeared to focus on the content dimension of learning and propositional knowledge with their key aim being the

acquisition of skills and knowledge. They talked about getting a good broad knowledge base, learning about the different systems in the body and getting the opportunity to practice key nursing skills. The students were aware that in order to enter the NMC nursing register, they required to meet the learning outcomes within the university and the NMC competencies and proficiencies within their practice placement, therefore the students may have been focusing on meeting the content of their learning objectives and NMC competencies rather than considering how this knowledge could be applied to nursing practice. The students had also been recently introduced to the NMC essential skills clusters (NMC, 2010) which identified the baseline skills required within the pre-registration programmes. This new list of essential skills may have reinforced their intent to centre their attention on the acquisition of skills and knowledge rather than considering how their knowledge and skills could be applied within nursing practice.

6.3.2. Learning in the lecture theatre

When the students were asked what teaching and learning approaches facilitated their learning, they all included some discussions on their experiences of attending lectures and their views on its place within their learning. They appeared to consider lectures as being the main medium by which they are introduced to new subjects and the key content they require to learn.

With the increasing number of students within the pre-registration nursing programmes, lectures are viewed as the most economical and productive way to impart knowledge (Boore & Deeny, 2012; Bati *et al.*, 2013). However the students in this study raised several issues with lectures. In keeping with Illeris's (2007) view on the interaction dimension of learning, the students appear to indicate that they wanted more than a forum for acquiring knowledge, they wanted to be actively engaged in learning with their peers and lecturing staff.

Whilst the students expressed the challenges they encountered in the lecture theatre, they recognised that the structure of lectures helped to break down conceptually

complex subjects into their component parts. Similar to Piaget's theory of knowledge construction, the students appeared to like the cognitive strategy of presenting new knowledge in compartmentalised chunks (Piaget, 1951 cited in Illeris, 2007). By presenting knowledge in manageable chunks, the lectures may have assisted in enabling the students to assimilate and accommodate new knowledge into their own schemata (Gagne & Driscoll, 1988).

As the students were still in the process of developing a body of knowledge and propositional knowledge (Higgs *et al.*, 2004), the students liked the way the lectures guided them through the key concepts and theories within nursing and signposted the key knowledge and skills they still required to learn. As discussed earlier, Benner (1984) and Rolfe *et al.*, (2001) agree that due to students' limited experience in practice, they are still heavily dependent upon theoretical knowledge and therefore the students may have considered the lectures as being a key resource for signposting the knowledge they still require to identify and learn.

Although many of the students considered the lectures as being the key source of information, they were also aware of the limitations of this particular teaching strategy. Whilst expressing their views on lectures, the students often recommended alternative approaches which they deemed as being more effective in enabling them to understand the relationship between nursing knowledge and practice. In this sense it appears that although the students appreciated the opportunity to identify the content dimension of their learning and the acquisition of knowledge, they were aware that it lacked the interactive dimension of learning (Illeris, 2007). As a result they preferred to be involved in workshops, skills labs and group work as these learning approaches enabled them to be actively engaged in meaningful professional discourse with their peers and lecturers and also situated their learning in a context which enabled them to relate theory to practice (Dewey, 1939 cited in Jarvis, 1987; Illeris, 2007; Spouse, 1998a; Lave & Wenger, 1999b).

6.3.3. Learning in small groups

The students found learning in small groups enabled them to build collegial relationships with their peers and lecturers and over time this collegiality engendered mutual trust and a safe environment in which to learn. There was a sense that the bond of trust which had been established in their small groups allowed the students to feel supported in their learning and encouraged them to become more self-assured in class. This developing confidence enabled the students to become active participants in class and encouraged them to ask questions and seek clarification as a means to progress their understanding of nursing knowledge and practice. Several other studies examining small group activities identified similar findings. For example in Hope's *et al's* (2011) study, small group activities enabled students to get to know each other well and subsequently share their experiences of practice. In Gagnon and Roberge's (2012) study the students believed the sharing of diverse ideas and viewpoints enhanced their learning and confidence in their peers was essential in group work activities.

6.3.4. The lecturer's role in facilitating learning

Throughout the narratives there was a sense that the students understood and embraced the notion of adult learning. They appeared to implicitly understand the principles of constructivism and the idea that they were responsible for constructing their own knowledge and understanding of nursing practice. However they also recognised that at times they needed the lecturing staff to help them clarify their knowledge, clear up their misunderstandings and help them make sense of their nursing knowledge and practice. Perkins (1999) suggests that although the premise of constructivism is based on the assumption that students construct their own understanding of knowledge, at times students just want to know the answers. This is clearly reflected in student three's discussion around struggling to learn troublesome knowledge and going around in circles trying to make sense of a subject. Although this student could understand the rationale for the lecturers encouraging them to become an independent learner, nevertheless, when it came to troublesome

knowledge, they wanted reassurance that they had found the right answer (Perkins, 1999).

In considering the application of knowledge to practice, Spouse (2001a) believes that students initially do not know what to look for and are not able to make connections between the theories they have learned and the realities of practice. The students within this study expressed this view and recognised that although they had endeavoured to learn particularly challenging subjects on their own, they appreciated that in order to understand some aspects of nursing knowledge, they needed the lecturing staff to explain it to them. The students seem to realise that it was through engaging in discourse with the lecturing staff, asking questions, debating, discussing and sharing experiences of practice that they were able to clarify their understanding of nursing practice. This approach to learning is in keeping with Vygotsky's view on social construction, whereby it was through collaboration and interaction with the lecturers that they developed their understanding of nursing practice and generated new ways of knowing (Vygotsky, 1978 cited in Roth, 1999). The students were aware that if they were struggling with particularly troublesome knowledge that the lecturing would be able to draw upon their own knowledge and skills to assist them. This once again, links back to Glaser's (1999) views on experts having highly organised and conceptually integrated patterns of meaning. The students seemed to appreciate that the lecturers could quickly draw upon their expert knowledge to help them to make the necessary connections between their own knowledge and how it was applicable to nursing practice.

Some of the students talked about the different teaching approaches which lecturers utilised to help them make sense of a complex subject. The students appeared to particularly benefit from listening to the lecturers sharing their experiences of being in practice and clearly recognised that story telling helped them to construct a concrete understanding of an abstract concept. In examining the strengths of situated learning, Lave and Wenger (1999) suggest that story telling is a particularly powerful way of enabling learners to make sense of a complex idea as the abstraction is understood within the context of a specific situation. For example, student four

talked about how the lecturer's story about chocolate initially helped them to make sense of how to manage a patient with diabetes. The student went on to explain how they would subsequently draw upon this particular story to remind them of how to abstract their original understanding of the principles of insulin metabolism.

The findings generally indicated that the lecturers' use of storytelling and sharing their own experiences of practice appeared to situate and ground the students' understanding of complex principles in concrete real life examples of practice and thereby helped them to understand how their knowledge could be applied in practice (Lave & Wenger, 1999). NES (2013b) is now advocating for the use of patients' stories to help nurse practitioners make sense of their practice and develop a better understanding of the events which take place in practice. They believe that storytelling can act as a powerful vehicle in disseminating and analysing practice, providing feedback and praise and most crucially enabling staff to act upon their learning (NES, 2013b; 2014b).

6.3.5. Learning through clinical simulation

Ten of the students talked about how the skills labs facilitated their learning. Although a couple of the students indicated that it was difficult to get into the mindset of clinical simulation and role playing, in keeping with previous studies, there was a real sense that the students enjoyed the skills lab and gained a lot from this learning strategy (Hope *et al.*, 2011). The students explained how clinical simulation enabled them to develop their skills and knowledge, helped to build confidence in their abilities and allowed them to develop an understanding of the complex relationship between nursing knowledge and practice. The students' general views are comparable to the findings within several other studies (Morgan, 2006; Moule *et al*., 2008; Hope *et al.*, 2010; Berragan, 2011).

In regards to the clinical simulation environment, student seven indicated that the skills labs felt unnatural and found it difficult to engage in role play with the mannequins, however Hope's *et al.* (2008) study found that the students' discomfort

reduced with regular exposure to the simulation. Although the environment within the skills lab appeared unnatural to student seven, they made it clear that this had not been detrimental to their overall learning experience.

The students shared their experiences of being apprehensive about practising complex skills in their practice placements and considered the skills lab as a place which afforded them time to repeatedly practice skills, build their confidence and become more competent in their abilities. Similar to Moule *et al's* (2008) study, the students were frustrated at not being able or allowed to practise certain skills in their practice placements and appreciated the opportunity to practise a range of complex skills in the skills lab.

In keeping with Dewey's view on learners being actively involved in experiences and having the opportunity to observe the consequences of their actions rather than being the passive recipients of knowledge (Dewey, 1939 cited in Jarvis, 1987), the students appeared to regard the skills lab as a safe environment in which to learn and more importantly a safe place in which to make mistakes. Although some of the students felt self-conscious during the scenarios, the majority of the students appeared to accept that making mistakes in the skills lab was an important part of their learning process. The students indicated in the narratives that they had developed good working relationships with their lecturers and peers and this sense of camaraderie and collegiality appeared to allow them to feel comfortable in critically discussing each other's performances within their small skills lab groups. There was a sense that the skills lab itself had become a small community of practice and although they were experiencing simulated practice as against being in the realities of practice, this safe environment enabled them to engage in professional discourse about their practice and construct their own understanding of what constitutes the body of knowledge and practises within nursing (Lave & Wenger, 1999c).

Whilst discussing their experiences of the skills lab, some students realised that they did not need to worry about the consequences of their actions as they were not placing any patients at risk. Others were conscious that the professional discourse

was centred on enhancing their skills and knowledge and as a consequence did not feel uncomfortable about making mistakes in front of their peers. In keeping with previous studies, some students believed that making mistakes in the skills lab had contributed towards further developing their knowledge and skills (Moule *et al.*, 2008; Hope *et al.*, 2011). Furthermore, some of the students suggested that the process of learning from their mistakes had assisted in further developing their confidence in practice.

The students appeared to genuinely value the opportunity to learn in the skills labs. They appeared to recognise that the real life scenarios contextualised their learning and enabled them to gain a sense of the complex nature of nursing knowledge and practise and what knowledge and skills they required to draw upon to ensure the most safe and effective outcome in nursing practice. McCaughey and Traynor (2010) and Morgan's (2006) studies had similar findings which found clinical simulation to be the students' preferred method of preparing for practice and were able to apply the skills and knowledge they had learned in simulation within their nursing placements.

6.3.6. Peer support

The students appeared to appreciate the collegial support that they received from their peers and talked about their experiences of exchanging information with each other and sharing new ways of processing and understanding knowledge. When they were having difficulty in understanding troublesome knowledge they would often ask their peers for assistance. There was a sense that the students were socially constructing their understanding of nursing by engaging in discourse with their peers (Lave & Wenger, 1991).

For some students it appears that listening to their peers' experience of being health care assistants may have enabled them to contextualise the knowledge they were finding troublesome (Lave & Wenger, 1991; Perkins, 1999). For others it appears they were aware that their peers may have a different way of processing information from them. Therefore some students would actively listen and attempt to understand

how their peers perceive and construct their understanding of nursing knowledge. By listening to how their peers articulated their thinking processes may have enabled the student to reconfigure their patterns of thinking and assimilate this new knowledge into their own schemata (Ausubel, 1978 cited in Quinn & Hughes, 2007).

6.4. Learning in practice

6.4.1. Learning through legitimate peripheral participation

The students all suggested that the best way to learn nursing was by being in practice. On entering each new practice placement, some students preferred to initially learn by observation, thereby remaining in the periphery of practice and then becoming more actively involved as their confidence developed. This description closely reflects Lave and Wenger's (1991) notion of legitimate peripheral participation. However other students preferred to be 'flung in at the deep end' and be actively involved in all aspects of nursing care as soon as possible. Irrespective of their approach to commencing each new placement, all of the students suggested that being in practice was key to their learning and it was through actively participating in patient care, working alongside health care staff and experiencing the complexities of nursing practice that enabled them to gain the experiential knowledge and skills they required to become competent nurse practitioners. This mirrors Spouse's (1998a) view of situated learning being central in developing nursing practice and Lave and Wenger's (1991) idea of knowledge being constructed and socially mediated within a community of practice.

Lave and Wenger (1991) believe that situated learning can act as a bridge between cognitive processes and social practises and offers students the opportunity to explore the richly complex connections between theory and practice. All of the students talked about how being in practice itself helped them to make sense of their nursing knowledge and practice. For example, student ten talked about not fully understanding a disease until they had nursed a patient with this particular condition.

It was being in the realities of practice that brought to life what they had been reading about. Caring for patients enabled them to understand how the clinical features of a disease affected their patients and determined their path of care.

In keeping with previous research findings, all of the students appreciated the significant role their mentors played in facilitating their learning (Lauder *et al.*, 2008; Gidman *et al.*, 2011). Some students recognised that their mentors had a key role in helping them to make the necessary connections between theory and practice. For example, student eleven could not understand the complex relationship between diabetes and kidney disease and required their mentor to explain how these two diseases were inter-related and how this could affect the outcome of the patient's care. This reflects Spouse's (1998a) assertion that students need guidance in how to reframe their knowledge within the context of what they are experiencing in practice. Another example is from student six who had learned the procedure of passing a nasogastric tube, had a good knowledge of anatomy and physiology and had practised this procedure in the skills lab, however faced with a complex situation in their practice placement, the student required their mentor to explain how to draw upon their knowledge and skills in order to perform this procedure safely. Similar to Glaser's (1999) and Spouse's (2001a) view on experts having highly organised and conceptually integrated patterns of meaning, the students required the assistance of their mentors to help them to make the meaningful connections between their knowledge and practice and to explain how domain specific knowledge applies to a particular situation.

Gicks and Holyoak's (1983) study identified that providing learners with hints and cues assisted individuals to apply knowledge to another context. Furthermore, Perkins (2008) suggests that learners require subtle cues during the process of learning. In the same way, the students appeared to depend on hints and cues from their mentors to guide their understanding and develop their ability to utilise nursing knowledge in practice. For example student ten talked about their mentors drawing upon their vast knowledge and experience and utilising their experiential knowledge to intuitively prompt them. Student ten seemed to grasp the notion that their mentors

were using non-propositional professional craft knowledge which they had derived from their own professional experience and recognised that they would not be able to find the valuable knowledge their mentors had shared with them within a textbook (Higgs *et al.*, 2001).

6.4.2. Working within the realities of a community of practice

Andrews *et al's* (2006) research identified that the traditional apprenticeship style model had continued in nursing practice with students remaining passive learners who watched and listened. However the students within this study were keen to be actively involved in learning and frustrated at not being informed of specific learning opportunities or not being allowed to practise certain skills. There was a sense that the students were utilising what Perkins describes as proactive knowledge and were motivated to learn and identify how to apply nursing knowledge to practice (Perkins, 2008). In this sense they were keen to become knowledgeable doers (UKCC, 1986) and become fully engaged in the community of practice (Lave & Wenger, 1991).

In a similar vein to Lauder *et al.,* (2008) and Gidman's *et al.*, (2011) studies, the students talked about having good mentors who would allow them to watch and practise skills, arrange learning experiences for them and share their own experiences of practice. They liked their mentors to ask them questions as a means to test and clarify their understanding and appreciated it when staff explained the complex aspects of nursing practice. In a sense, the students appeared to prefer the cognitive apprenticeship approach to learning which provided them with the opportunities to utilise their cognitive skills and discover their mentors' expert thinking strategies within a variety of contexts (Collins *et al.*, 1991).

Although the students talked about a range of learning experiences which facilitated their learning in practice, some students expressed their frustrations at not being allowed to perform certain skills and others believed that they had missed valuable learning opportunities in practice. The students provided a range of reasons for being excluded from learning experiences including their mentors being too busy to

afford time to spend with them or had simply forgotten to inform them of particular learning experiences, others believed their mentors were nervous about allowing them to perform skills or were not interested in being a mentor. The students' frustrations in practice are echoed in several research studies which have identified students' learning being compromised, forfeited or limited due to increasing numbers of students in practice and staff being too busy to support students' learning (Clarke *et al.*, 2003; Chuan & Barnett, 2012; Bisholt *et al.*, 2014). For this reasons some of the students believed they had to be proactive and assertive with their mentors to ensure they were able to access learning opportunities.

Whilst the NMC (2008b) stipulates that every nurse should be involved in facilitating students to develop competence in nursing practice, two of the students in this study believed that not all mentors wanted to teach or be role models. One student recognised that they had not always bonded well with their mentors which had caused them to feel uncomfortable in practice and another thought that being a mentor should be voluntary. Grossman (2007) agrees with the students' sentiments and purports that not every nurse may be able to become a successful mentor.

Within the context of the students' narratives, it was clear that the students' supernumerary status enabled them to be actively involved in all aspects of care, they could look at all the equipment and clinical documentation and engage with patients and all members of the team. Although the supernumerary status provided them with the freedom to learn, there was an implicit sense that their mentors were acting as gatekeepers to their learning by limiting their exposure to certain learning opportunities or preventing them from performing complex nursing skills. Lave and Wenger (1999c) point out that students will inevitably be exposed to conflicts of interest and power struggles within a community of practice and go on to suggest that it is the tensions in practice which can enable students to learn how to navigate, interplay and negotiate through the disagreements that are played out in practice.

According to Spouse (1998b), nursing students need to be provided with a combination of Vygotsky's zone of proximal development (Vygotsky, 1930 cited in

Spouse, 1998b) and Bruner's (1978) scaffolding whilst being mentored in practice. This combined process enables mentors to guide, support and prompt their students through increasingly more complex skills as and when they are able to perform these skills. Spouse (1998b) goes on to suggest that a skilled mentor can encourage students to achieve beyond their current level of ability and reach their full potential through this zone of proximal development. However a few of the students thought that some mentors lacked confidence in their mentorship role. They believed that this had held them back from further developing or practising certain nursing skills and thereby prevented them from reaching their zone of proximal development. One student suggested that if their mentors had demonstrated more confidence and trust in their abilities, this would have enabled them to recognise that they were developing competence in nursing practises.

Taking into account that the sign-off mentor status had been recently established within the University, the mentors' reluctance to allow students to be actively involved in certain skills may reflect the mentors coming to the realisation that they were now responsible and accountable for being the gatekeepers for the students' entry to the professional register. Both Robinson *et al.,* (2012) and Rooke's (2014) studies have identified that the sign-off mentor status has contributed to heightening anxieties amongst mentors and it may be that this new change to their status may have led to some mentors being more cautious about allowing students to perform certain skills.

Although some of the students may have felt frustrated at not being allowed to perform certain skills. Lave and Wenger (1999c) suggest that learners who are still on the periphery of practice and kept from fully participating in practice may feel a sense of being disempowered. However one of the students appreciated that there may be a valid reason for not being allowed to carry out certain skills and went on to point out that sometimes students try to run before they can walk and may not necessarily be at the stage to be able to perform these skills safely.

6.4.3. Becoming part of the nursing club

Now that the students were in the third year of their programme, they recognised that they were becoming more competent in practice and beginning to see themselves more like nurses than students. Perkins (1999) suggests that as learners become more familiar with the professional discourse, they are more able to engage in meaningful discussions about the key concepts within a discipline. For example, student ten talked about how the knowledge and experience they had gained enabled them to speak to their mentor like a nurse rather than as a student. This ontological shift in their perception appeared to enable the students to engage in more meaningful discussions with their mentors and see themselves as becoming part of the nursing profession. This reflects Lave and Wenger (1999c) view that as learners become more competent, their contribution and value to the community continues to increase and they begin to feel a sense of belonging to the community of practice.

Two of the students talked about their experiences of becoming more responsible, using their initiative in practice and starting to apply what they had learned in their practice placements. This increased knowledge and responsibility gave them ownership over the care they were providing and made them feel they were doing the job of a nurse. As a result, the students were beginning to perceive themselves as nurses. This reflects Lave and Wenger's (1999c) view that as learners intensify their efforts in practice, they develop a stronger sense of identity as a fully-fledged member of the community and begin to perceive this culture of practice as their own. This view is clearly summarised in student ten's belief that their accumulated experience and knowledge had enabled them to now feel part of the nursing club and more able to engage in meaningful discourse with the nursing staff.

In addition, Spouse (1998b) believes that students' ability to engage in professional discourse facilitates the development of the higher mental functions required for problem solving and clinical decisions making. Therefore, it was interesting to note that student ten had talked about the ability to engage in professional discourse within the context of troublesome knowledge and how their knowledge and

experience had enabled them to be more able to talk on a level footing with the nurse. The students seemed to imply that it was through being immersed and legitimately belonging to this community of practice that was enabling them to more fully grasp an understanding of nursing knowledge and practice and transform the way they perceived the discipline of nursing. Furthermore this new way of understanding nursing knowledge was leading to an ontological shift in their perception of their role in practice and they were beginning to appreciate that their ability to engage in professional discourse, work independently and use their initiative was a sign that they were grasping an understanding of the complexities of nursing practice and beginning to make the transition from being a student to being a nurse (Land *et al*., 2008).

Although the mentors had a key role in developing their professional knowledge, the students were also aware that everyone within their practice placements had a place in developing their understanding of nursing knowledge and practice. For example, student one believed that they developed a greater understanding of diabetes by listening to a patient's experience of living with this condition and student nine considered the patients' wealth of knowledge about their illnesses had enabled them to construct an understanding of several diseases which they may not necessarily have been able to learn in the literature. These experiences had enabled the students to develop a deeper appreciation of the role of anecdotal and aesthetic knowledge in informing their practice and how practice itself can inform theory (Carper, 1978; Rolfe, 2001). Student six talked about their experience of learning from listening to the medical staff talking through the rationale for their actions and student five learned essential nursing skills from experienced health care workers. Being immersed in this community of practice was enabling the students to learn from everyone and as a consequence, they were beginning to obtain their own non-propositional professional craft knowledge (Higgs *et al.*, 2001).

6.5. Addressing the research aim and questions

This chapter has drawn upon the students' narratives, the literature and an analysis of the findings to provide a discussion about what may have facilitated the students' learning and what may have helped them to make sense of nursing knowledge and practice. As situated learning was identified as a common theme running though all of the narratives, these discussions were placed within the context of the students' experiences within the University, learning in practice and how they endeavoured to learn themselves. However after completing this section of the thesis, it was important to once again return to the aim of the study and clarify if the findings, themes and discussions had addressed the research questions.

In critically analysing the construction of the emerging themes and the challenges of demonstrating how the research questions had been addressed, it became apparent that the research questions could not be easily aligned to one particular theme. A table was created to demonstrate the interconnections between the various themes and confirm that the research questions had been addressed (Appendix 14).

This section will summarise the salient points raised by the students and confirm that the research questions have been addressed within the narratives.

Research question 1: What teaching and learning methods facilitate students to understand nursing knowledge and practice?

Within the University, the students found that lectures identified the key knowledge they required to learn and helped to break down knowledge into their component parts. However the students preferred to learn in small groups and in the skills lab where they had the opportunity to engage in group discussions and gain learning experiences which enabled them to situate their learning within the context of nursing.

Research question 2: What learning strategies do students employ to assist them to learn nursing knowledge and practice?

In their personal study time, the students would read, write, listen, draw concept maps and use colour associations in order to construct an understanding of the knowledge they required to learn, however they would often seek support from alternative resources or individuals to help them to break down the subjects into the component parts, contextualise their knowledge or see its applicability to nursing practice.

The key learning strategy they employed in practice was centred on the notion of seeking out learning opportunities and engaging with staff. Being in the midst of the realities of nursing practice, being involved in all aspects of nursing care, watching, listening, working alongside staff, asking questions, experiencing the complexities involved in patient care and having the opportunity to practise their nursing skills in a range of circumstances, all of these experiences enabled the students to learn nursing knowledge and practice.

Research question 3: Who assists students to make sense of their nursing knowledge and practice?

The students regarded their mentors and lecturers as having a significant role in helping them to construct and reframe their knowledge. It was by working alongside and engaging with their mentors and lecturers within a variety of nursing contexts that was most effective in assisting them to transform their understanding of the complex relationship between nursing knowledge and practice and learn how to apply their knowledge within a range of circumstances. Nevertheless, they recognised that everyone within the community of practice, including the patients, had a role in facilitating their learning. In addition, the students acknowledged the support they received from their peers and their family's role in providing them with the time to study.

Research question 4: What assists students to transform their understanding of troublesome knowledge and gain cognisance of the complex nature of nursing knowledge and practice?

When asked about troublesome knowledge, the students indicated that placing nursing knowledge within the context of nursing practice enabled them to make sense of nursing knowledge and practice. In reference to Meyer and Land's (2005) work, it appears that some of the students may have been stuck in a liminal space and struggling to make sense of inert knowledge and its applicability to nursing practice. However by placing their knowledge within the context of nursing appears to have enabled them to pass through this gateway of conceptually complex discipline knowledge and emerge through the portal with a new understanding of the relationship between nursing knowledge and practice (Land *et al.*, 2008). It appears that it was the process of being situated in the context of nursing practice and immersed in a community of practice that was key to enabling the students to make sense of their nursing knowledge and transform their understanding of the discipline of nursing knowledge (Lave & Wenger, 1991). Furthermore, being situated in practice may have also contributed to a significant shift in the students' perception and interpretation of their discipline knowledge and professional identity (Lave & Wenger, 1999c; Meyer & Land, 2005).

Returning to the overall aim of the study and the question of what the students believe assists them to learn nursing knowledge and practice and transforms their understanding of nursing knowledge and practice. The findings appear to suggest that it was through a process of constructivism, situated learning and being in a community of practice that was most effective in facilitating the students' learning.

6.6. Returning to the reflexive process

Earlier in the thesis, there was an acknowledgement that the researcher's own values, perceptions, preconceptions and beliefs may influence aspects of their study including the methodology, research design and how the data is collected and analysed (Greenbank, 2003; Parahoo, 2006). There was also an appreciation that the researcher's own epistemological and ontological stance has a role in perceiving, interpreting and understanding knowledge and how this influences the development and outcome of their research (Parahoo, 2006; Keso *et al.*, 2009). This next section

will critically discuss some aspects of the reflexive processes which took place during this study and will utilise the first person to facilitate this discussion.

As the focus of the study was on the students' experience of learning, my research design was underpinned by a phenomenological approach and asked the students five open questions based on the research questions. However I chose not to interject too often during the interviews. The rationale being, that if I started to ask for further clarification whilst the students were being interviewed, I could inadvertently cause the students to start talking more about a subject which they may not necessarily consider important or could influence the direction of the students' discussion. I also chose not to identify any particular teaching or learning strategies or refer to any particular individual or groups to ensure I was not influencing the students' responses.

Some of the students were very succinct in expressing their views and experiences, therefore some of the interviews are shorter in length, nevertheless all of the students provided a rich narrative which allowed me to gain an insight into the students' experience of learning nursing. On reviewing the findings chapter, the number of comments which were included for each students were commensurate with the length of the interviews. The shortest interview included 9 comments in the findings chapter and the longest interview included 15 comments. This ensured all of the students' views and experiences had been fairly represented in the findings chapter.

Prior to interviewing the students, I had my own preconceived ideas about what I thought may facilitate their learning. I assumed the students would use a wide range of learning approaches, however the majority of students' personal study time focused on a limited number of learning strategies. I thought some of the students may prefer lectures and being taught didactically, however the students unequivocally preferred learning in small groups. The students were much more independently minded and more proactive in practice than I had envisioned. When the students were asked what helped them with troublesome knowledge, some of the

students talked about the notion of becoming a nurse and then apologised for going off topic. This topic became a recurrent theme in the narratives.

When I originally looked at each significant statement as a means to identify the categories, I was fully focused on the nuances and meaning of each sentence. It was not until I started to consider how to structure the discussion section and once again revisited and analysed the categories and themes that the idea of situated learning and learning in context became so evident. Although I was aware of the importance of contextualising learning before commencing this study, I did not realise that it would become such a prevalent theme throughout the students' narratives.

Reflecting upon the students' views on both lecturing staff and mentors, I noticed that the students provided more critical discussions about their mentors than their lecturers. This has led me to consider if my position within the University had any bearings on how the students discussed these two significant roles. Prior to applying for ethical approval, I had examined my role as the interviewer. I assumed that since my study was based on what facilitated the students' learning they would focus on the positive aspects of learning. I also thought that since the students were not being asked to provide any critical comments they would feel comfortable to openly and honestly share with me what facilitated their learning. Therefore I was surprised to find the narratives including some constructive and critical comments. On reflection, I do not think that being interviewed by a lecturer influenced the direction of the students' narratives, however I believe that the students may have decided to only discuss the positive aspects of learning within the University.

Completing the literature review provided me with a detailed overview of nurse education including the teaching and learning strategies and the various policies in place to support students' learning. However, the students' narratives did not include some of the key points raised in the literature. As the aim of this study was to gain an insight into what facilitates students' learning, one could argue that from a phenomenological position only the students' views should be represented in this study. Nevertheless, as a lecturer, I questioned why certain topics were not raised by

the student. Had the underpinning phenomenological design and the attempt to ensure only the students' voices were heard, inadvertently identify something significant in the findings? Or were these unidentified topics simply of less importance to the students? Either way, a detailed discussion on these enquiries were out-with the scope of this thesis, nonetheless, I believe that as this study is part of a professional doctorate, it is important to briefly discuss these particular aspects of learning as it may be of interest to the readership and may lead to further research being considered in the future.

6.6.1. Aspects of learning not considered in the findings

Within pre-registration nursing programmes, the NMC has stipulated that HEIs should ensure students are allocated a personal tutor and link tutor who will support the students' academic and practice learning throughout the three years of their programme (NMC, 2008a; NMC, 2010). Within the context of the students' narratives, all of the students talked about the lecturers who were part of the module teams. However it was interesting to note that only one student discussed how their personal lecturer had assisted them with their learning and only one student briefly mentioned their link lecturer in relation to seeking advice about a problem in practice rather than on how they facilitated their learning.

The role of the link lecturer and personal lecturer has generated a contentious debate within the literature (Brown *et al.*, 2005; Meskell *et al.*, 2009; McSharry *et al.*, 2010; Price *et al.*, 2011), nonetheless both of these roles are a NMC requirement within pre-registration nursing programme (NMC, 2008a; NMC, 2010). The students in this study clearly valued the lecturers' role as a teacher and facilitator of their learning in the classroom and skills labs. Therefore this leads to the question of why the students did not identify their link lecturer or personal lecturer as having a role in facilitating their learning. Although this is an interesting question, the purpose of this study is to examine the students' views, therefore any further discussion on this topic is out with the remit of this study. Nevertheless it could be argued that the limited reference to these two roles in nurse education further fuels the debate on

their role in facilitating learning. Furthermore, these findings support the view that further research is required on the role of the link lecturer in supporting students' learning in practice and the role of the personal lecturer in providing academic support within the University.

In recent years, PBL has become established as a prominent teaching and learning strategies in nurse education (Lauder *et al*., 2008). The students in this study attended two PBL classes per week, however it is interesting to note that although the students clearly enjoyed working in groups, only one student briefly referred to this learning approach. In considering the role of PBL in pre-registration nursing education, Gidman and Mannix (2007) recognise this as an effective learning tool for post registration nursing students who have already developed higher order thinking skills and have a wealth of experience upon which to draw when utilising this learning approach. However they advise against the widespread adoption of this approach within pre-registration nursing programmes. They believe that pre-registration students have not yet acquired sufficient experience in nursing practice and do not have the higher level judgement skills required to utilise this learning approach effectively. Taking these points into account, the students within this study may not have recognised the benefits of PBL as they had not yet developed the complex cognitive processes required to effectively utilise this learning approach.

The literature identifies the skill of reflective practice as an educational and professional requirement for all nursing students and having a central role in lifelong learning for qualified nurse practitioners (Quinn & Hughes, 2007; NMC, 2008; Boore & Deeny, 2012). The students in this study were asked to submit written assessments based on reflection, complete a reflective diary as part of their personal and professional development and share these reflections with their mentors and personal tutors, however none of the students discussed the concept of reflection in their narratives. Coward (2011) believes that students do not fully understand the concept of reflection or how to utilise a reflective model and hold a negative view on this approach to learning due to its association with assessment. She goes on to suggest that these factors may be stifling the use of reflection as an effective tool for

learning nursing. McCarthy *et al.,* (2013) assert that it takes students time to develop the skills of reflection which are complex and cognitively demanding. Therefore the students may not have yet developed the cognitive processes required for reflective practice (Benner, 1984; Rolfe, 2001) and therefore did not appreciate how to use reflection as a tool to develop their understanding of nursing knowledge and practice.

On reflection, I believe the use of open ended questions may have limited some aspects of the discussions, however the aim of this phenomenological study was to identify the students' views. Therefore the research design had been carefully chosen in an attempt to limit the interviewer's influence on the direction or content of the students' narratives. However one could hypothesise that it may have been the design of the study which has led to these particular topics not being discussed during the interviews. Furthermore one could argue that the exclusion of these two learning strategies could be perceived as noteworthy, in the respect that it reinforces the notion that the students have not considered these learning approaches as significant to facilitating their learning. In conclusion, the students may not have included these two particular approaches in their narratives as they may not have yet gained the experiential learning or developed the higher order thinking skills required to effectively use these learning tools or appreciate their role in developing their professional practice.

So far, the discussion chapter has given some insight into what helps a small group of students to learn nursing and make sense of their nursing knowledge and practice. It has also drawn upon the literature to provide a critical discussion regarding what may have been involved in this process and identify aspects of learning which the students did not discuss in their narratives. The next section will provide a critical evaluation of the study including its strengths and limitations.

6.7. Critical evaluation of the study

Polit and Beck (2010) believe it is important to acknowledge that every research study has its own unique strengths, weaknesses and limitations. They go on to

suggest that research studies need to have a degree of transparency about how these factors influence the shape of a study and interpretation of the findings, therefore this section will provide a critical evaluation of this research study.

The literature review highlighted a lack of research specifically exploring nursing students' views on what facilitates their learning. One of the key strengths of this study was the opportunity to explore a small group of students' experiences of learning nursing and enable the students' voice to be heard. The qualitative design of this study afforded the opportunity to guide the reader through a sample of the students' narratives and provide the essence of the students' views and experiences using a thematic approach.

The students' in depth discussions was another key strength of the study. Their narratives provided a very rich source of data and further strengthened the students' voice. Nevertheless it is important to acknowledge that this was a small scale study which represented eleven students' views and experiences of learning nursing within one HEI. Therefore, interviewing a small number of students may be regarded as a limitation to this study as the findings may not be considered generalisable to the nursing student population within Scotland or the United Kingdom. Taking this point into account, it may be useful to repeat this study within other pre-registration programmes to identify if students have similar or different experiences of learning within another HEI.

As all aspects of this small scale phenomenological study was undertaken by myself, it was necessary to recognise the limitations of this approach and how I endeavoured to maintain rigour through a process of reflexivity. Interviewing my own students and being the sole interpreter and analyst of the study may be considered as weakening the methodological approach. Therefore Draucker (1999) stresses that researchers who utilise a Heideggerian phenomenological approach require to explain how the perspectives of the participants' narratives, the researcher's own pre-understandings, their methodological approach and their interpretation of the findings and previous literature have shaped and influenced the study.

Interviewing my own students and having a pre-existing professional relationship with them could be considered as strengthening the study as this enabled me to utilise my own pre-understanding of the students, their nursing programme and the culture in which the students were learning as part of the analysis process. Nevertheless this relationship may have influenced the content of the students' narratives and what they decided to share with me. As the study was focused on what facilitated the students learning, one could argue that the nature of the questions was focused on the positive aspects of learning and therefore was not placing the students in a position where they would feel uncomfortable to answer the questions or feel coerced to put forward a particular viewpoint. During the process of analysing the data, it became evident that the students had discussed both the positive and negative aspects of learning nursing in practice, however had mainly focused on the positive aspects of learning within the University. During the interpretation of the narratives, it was clear that although some of the students had been critical of aspects of their learning experiences in practice, most of the comments had been constructive and expressed within the context of explaining what helped them to learn nursing. From this analysis, one could hypothesise that my pre-existing relationship with the students and my role of as a lecturer may have led the students to only discuss the positive aspects of learning within the University and carefully consider how they expressed their critical commentary. Although my pre-existing relationship with the students may have led them to being guarded about discussing certain aspects of their learning, nevertheless the key purpose of the study was to explore the students' views and experience of what facilitated their learning and the eleven students appeared comfortable to share their positive and affirming experiences of learning nursing with me.

In regards to the students who took part in this study. One hundred and fifty students were invited to take part in this study and eleven students offered to participate. This may indicate that these particular students were more motivated to be involved in a research study or may have had a specific reason for participating. For example, they may have felt comfortable to speak to me or believed they had gained excellent experiences in the University or in nursing practice. They may have considered

participating in a research study as a positive addition to their curriculum vitae or were motivated to learn more about the practicalities of a research project. As this study focused on the positive aspects of the students' experiences of learning, the context of the study may have attracted students who had a more positive view of their learning. Therefore it is difficult to identify if the students' motives to take part in the study or their pre-existing relationship with me may have had an influence over the content and direction of the narratives. One could argue that the students who took part in the study may have been more motivated about their nursing studies which may explain why so many of the students talked about their own drive and determination to succeed as a factor in facilitating their learning. As a result, the theme entitled ' the students' motivation, drive and determination to learn nursing' may not necessarily represent the views of the rest of the students in their cohorts. Nevertheless one could argue that although this is a small scale study which has focused on a small group of students' views on learning, the findings may shed some light on the role of motivation in facilitating nursing students' learning.

At the initial stages of my doctoral studies, I had read about the hermeneutic process and Heidegger's belief that all claims to understanding are appropriated through our experience of being in the world and throughout our lives we are constantly in a hermeneutic circle of attempting to interpret and understand our meaning of being (Heidegger, 1972; Guignon, 1983). During the interview process and transcribing the students' narratives, I endeavoured to use my own pre-understandings of nursing and nurse education to assist me in interpreting and constructing an understanding of the students' experiences and views on what facilitated their learning. I also considered my own way of being, thinking and assumptions which Heidegger refers to as 'dasein' and drew upon my own sense of self as a nurse and lecturer as a means to understand what the students had expressed in their narratives (Heidegger, 1972).

As I progressively examined each individual significant statement and considered its meaning, I found myself returning to the narratives and re-evaluating my initial pre-understandings of the whole text. As I continued the process of analysis and endeavoured to gain a deeper insight into the hidden meaning and intention of the

students' narratives and the significance of the findings and the relationship between the various categories and themes, I came to realise that I had become immersed in a hermeneutic circle of going back and forth between interpreting the whole experience and parts of the experience as a way of developing a deeper understanding and insight into the students' experiences of learning (Heidegger, 1972; Bradbury-Jones *et al.*, 2010). For example, I continued to question why the students persisted on rote learning from books in the third year of their studies. The significance of this only became clear once I started to construct the discussion chapter, revisit the literature and consider how I could bring together all of the parts of the students' narrative and findings into a coherent whole within the discussion section. It was by going back and forth between the specific sections of the text, the categories, the themes and the whole text that I came to appreciate how over time my thinking and understanding of the students narratives' had changed and evolved to the point where I recognised that the concept of situated learning had emerged as a common and significant theme running throughout all of the students' narratives.

In considering Heidegger's hermeneutic circle, Ginev (2006) suggests that taking into account one's own past experiences, present concerns and projected future can assist a researcher in interpreting and reconceptualising their understanding of a phenomenon (Heidegger, 1972). As I embarked on this study, I was aware that situated cognition could help students to contextualise their learning, nevertheless, at the initial stages of interpreting the data, I did not observe the hidden meaning within some of the students' narratives. Through the lengthy process of interpreting and analysing the narratives, I now recognise that the concept of situated cognition was implicitly threaded throughout the students' views and experiences of learning and appreciate its significant role in enabling students' to contextualise their learning. I have come to realise that going through this hermeneutic process with the students' narratives has shaped and changed my understanding of what facilitates the students' learning and influenced my own practice as a nurse lecturer. The recommendation section reflects some of the new ideas which have emerged from this hermeneutic process and may contribute to shaping future practises within nurse education.

Although this cyclical and reciprocal process of moving back and forth between interpreting the students' whole experience and parts of their experience enabled me to develop a deeper insight and understanding of what facilitates this particular group of students to learn nursing (Heidegger, 1972; Bradbury-Jones *et al*., 2010). One could argue that one of the key limitations of this study was having only one individual taking sole responsibility for collecting and analysing the data. As a result, the interpretation and analysis of the data and the conclusions being drawn in this thesis are presented from only one person's perspective. Nevertheless, qualitative research focuses on describing and interpreting human phenomenon and the socially constructed nature of reality which is multiple and subjective (Denzin and Lincoln, 1994; Parahoo, 2006). Therefore one could argue that asking another individual to independently create their own analysis of the students' narratives in order to verify my categorisation of the data as being robust is more in line with a positivistic approach to analysis (Cutliffe & McKenna, 1999). Taking these points into account, it seemed that asking another researcher or colleague to analyse the data when they were remote from the study and had not engaged in the literature pertinent to the subject did not appear as rigorous a process as involving my own supervisory team who had invested time in advising my methodological approach to collecting and analysing the data. Therefore on balance, working closely with my supervisors over a period of several years and explaining to them the rationale for my interpretation and analysis ensured that my research was being consistently and rigorously reviewed and audited throughout the research process.

The critical evaluation of this study has indicated several limitations, nevertheless the interpretation and analysis of this small group of students' experiences by a sole analyst may be considered as a unique and original insight into what may facilitate students to learn nursing and make sense of their nursing knowledge and practice. Although this evaluation recognises that the findings within this small scale study may not be generalisable to the general nursing population, as part of a professional doctorate, it is necessary to consider the educational and professional implications and issues which have emerged from this small scale study. Furthermore, it is important to consider how the findings which have emerged from this study may

contribute towards creating new understandings and new educational practises within nurse education. Therefore the final two sections in this chapter will discuss some emerging issues identified within the study, provide some recommendations for future practice and suggest some research studies which may contribute towards developing a more in-depth examination of what facilitates students' learning.

6.8. Emerging issues and recommendations for future practice

In relation to the teaching and learning strategies employed in nurse education, Gidman and Mannix (2007:38) ask the question of what "we value the most - the process or product of learning" and how these strategies influence students' learning. One could argue that in striving to meet the governing bodies' standards, the curriculum could inadvertently become outcome and content driven with staff and students concentrating on meeting the NMC standards and QAA benchmark statements rather than focusing on the process of enabling students to become competent practitioners (Clarke, 2003; QAA, 2009; NMC, 2010). Furthermore, one could also argue that the focus on the content of nursing and meeting objectives may be unintentionally contributing to placing a wedge between nursing knowledge and practice.

Lauder (1993) cited in Lauder *et al.,* (2008) believes that whilst designing a curriculum there are always opposing tensions and balances to be made between educating the mind and producing competent nurses. Therefore curriculum development teams may wish to carefully design pre-registration programmes which are centred on the process of learning nursing and enabling students to meet the NMC standards as a consequence of a well rounded education, thereby ensuring that both the process and product of learning are achieved at the point of students' registration with the NMC.

The next section will suggest some strategies that could be employed to move away from a content driven curriculum towards a blended learning approach and

encourage students to make meaningful connections between nursing knowledge and practice.

6.8.1. The role of the lecture in 21st century nurse education

Although the students appreciated the important role of lectures in disseminating information and signposting knowledge, the literature has debated whether or not lectures still have a rightful place within the nursing curricula and how to deliver lectures which engage students and allows a degree of interaction (Murphy, 2007; Boore & Deeny, 2012; Bati *et al.*, 2013). Therefore programme teams may wish to reflect upon the strengths and weaknesses of the lecture format and consider more innovative ways of disseminating key knowledge to their student population. For example, with the wide availability of media technology and virtual learning environment within Universities, it could be argued that students no longer require to sit in overcrowded lectures theatres striving to listen and concentrate for lengthy periods of time (Clark, 2003: Boore & Deeny, 2012). Instead, lectures could be video streamed on the University's virtual learning environment. This would enable students to view the lectures at a place and time convenient to them, without having to manage the distractions and challenges of a busy lecture theatre, they could replay the lectures several times, watch longer presentations in stages or rewind sections they were having difficulty in understanding (Bennet & Glover, 2008).

Another increasingly popular approach for engaging students in the lecture theatre is by means of the interactive classroom response systems which enable students to interact with the lecture by means of a hand held key board system (De Gagne, 2011). This innovative system allows lecturers to present key concepts in the form of questions, the system then spontaneously generates the students' responses providing immediate feedback and an opportunity to validate the answers. Research has found this innovative approach to be a positive and fun addition to class, improves and gauges students' understanding of nursing concepts and enables student engagement in class (Patterson *et al.*, 2010; Porter & Tousman, 2010; De Gagne, 2011).

Although the students regarded the lectures as the forum in which to identify knowledge rather than apply knowledge, they preferred their learning to be situated within the context of nursing. For that reason, the programme team may wish to consider integrating theory and practice into all classes as a means to contextualise the students' learning (Boshuizen, 1999). Instead of teaching students the anatomy and physiology of the skin in a lecture theatre, this could be integrated into small class activities which place knowledge in a meaningful context. For example, knowledge of the skin could be an integral part of the administering injections skills lab or wound assessment tutorial class. The rationale being that students may be more likely to remember the layers of the skin if it is discussed within the context of administering an injection into the epidermal or subcutaneous layer of the skin. Similarly, students may be more able to differentiate between the different layers of the skin when it is taught within the context of skin assessment and wound management (Lave & Wenger, 1999b).

6.8.2. Situating learning in context

During the students' personal study time, they appeared to focus on the content dimension of learning and propositional knowledge as they appeared to not have the experiential knowledge to draw upon or help contextualise their learning (Higgs *et al*., 2001). The students also utilised symbol processing as a way of making meaningful connections and assimilating new knowledge within their own schemata (Ausubel, 1978 cited in Quinn & Hughes, 2007). However, the students preferred the process of social learning whereby they learned from each other and their lecturers during small group work activities and the skills lab.

Horsfall *et al.*, (2012) suggest that the 'student centred approach' calls upon staff to be able to engage in facilitating small group discussions and activities. However with the continued increase in cohort numbers NES (2014c:16), Boore and Deeny (2012) believe it is becoming increasingly challenging to maintain small groups in the pre-registration programme. Although there is a general consensus that many nursing programmes are underpinned by a humanistic approach to education, Boore

and Deeny (2012) go on to argue that the larger cohort of students and curricular design which is currently delivered within many pre-registration programmes may lead to many challenges in adopting a humanistic and student centred approach to learning. Nevertheless education is moving towards a more humanistic approach whereby students are being encouraged to become more autonomous, freely engage and participate in class and be empowered through the process of self directed meaningful learning (Quinn & Hughes, 2007). However this study has shown that the students' independent study time may be turbulent and painful (Rogers, 1969) and may cause them to get stuck and find themselves in a liminal space (Meyer & Land, 2005) whereby they need help to make the necessary connections between nursing theory and practice (Spouse, 1998b; Spouse, 2001a) and have someone to tell them the answers (Perkins, 1999).

Therefore taking all of the points above into account, nurse education has the challenge of managing these issues and finding solutions. One solution may be a blended learning approach which integrates e-learning and small group work activities to enable students to make meaningful connections between knowledge and practice. The e-learning package would enhance the students' personal study time by keeping it focused and situating their learning in context. Although developing and designing e-learning materials is initially a time consuming, complex process which requires lecturing staff to be afforded with the thinking time to create and construct intricately designed resources (Boore & Deeny, 2012), once the e-learning resources and lectures are available online, this would provide both the lecturing staff and students with more time to engage in meaningful professional discourse in the classroom and skills labs. Furthermore, students can find it difficult to manage childcare arrangements during their pre-registration programmes and are looking for more flexibility in their studies in order to meet their family commitments (Carr, 2008; Donaldson *et al.*, 2010), therefore e-learning would enable students to juggle their various commitments and provide some flexibility to where and when they learn (Cheng, 2013).

Bespoke e-learning packages could be designed for each module within the programme and underpinned by a spiral approach which introduces the domain specific knowledge, general principles and challenging threshold concepts in their simplest forms and revisits these at ever increasingly complex levels in line with the students' stage in their programme (Bruner, 1978). Constructing e-learning into advanced organisers would signpost the students to the knowledge and principles they require to learn (Ausubel, 1978 cited in Quinn & Hughes, 2007). As well as guiding the students through the key concepts, it would break down these concepts into manageable chunks and through this chunking process enable the students to construct this new knowledge within their own schemata (Gagne & Driscoll, 1988). However e-learning packages would be specially designed to place new knowledge within the context of nursing practice and help the students make the necessary connections between nursing knowledge and practice (Spouse, 1998b; Spouse, 2001a). Knowledge would be contextualised through the medium of video clips of patients, relatives and nurses experiences, health care scenarios or recorded skills demonstrations performed by lecturers in the skills lab. Some of the students in the study were uncomfortable about accessing online resources which were not empirically sound, therefore e-learning packages would navigate and signpost students through the maze of online resources and enable them to recognise empirically and educationally sound online resources.

In addition to a bespoke e-learning package, there are a range of electronic and online platforms which situate knowledge within nursing practice and enable the students to engage in real life scenarios during the process of learning nursing knowledge. Several students within the study found the virtual learning software programmes helped them to contextualise their learning and learn from their mistakes, however several students would have liked more access to these learning resources. Although virtual learning packages are expensive, educationalists have found that these online platforms contextualise learning, manage the challenges of teaching large groups and improve patient care (ADInstrument, 2013; Laerdal™, 2001 - 2013; NES, 2014) therefore programme teams may wish to integrate virtual

learning software programmes into their curriculum as a means to contextualise the students' learning and situate abstract concepts within a nursing context.

All of the students talked extensively about how the skills labs facilitated their learning and their preference to learn in small groups. E-learning packages would provide the students with the fundamental knowledge they require to learn and thereby provide staff with more time to engage in small group discussions about the key nursing theories and threshold concepts (Meyer & Land, 2003). Studies have shown that students find it difficult to transfer knowledge from one context to another (Salomon & Globerson, 1987; Detterman, 1993; Mestre; 2002). To facilitate the transfer of learning, lecturing staff could introduce a range of real life scenarios into the classroom and skills labs and through small group discussions and 'mindful abstraction' guide the students towards reframing their understanding and recognising how their knowledge is transferrable to a variety of nursing contexts (Salomon & Perkins, 1989; Spouse, 1998a).

Meyer and Land (2003) claim that certain disciplines have distinct core concepts within their body of knowledge which are regarded as being the conceptual building blocks that are necessary in order to progress understanding of a subject or discipline. However Shulman (1999) points out that lecturing staff already have well organised conceptual knowledge and an abstract understanding of the key principles within their subject. This enables them to convey the important principles and skills in their subject and guide their students to what is central and peripheral to their learning. As threshold concepts are difficult for learners to comprehend (Perkins, 1999), curriculum development teams may wish to identify the specific threshold concepts within the discipline of nursing and ensure all classes are centered on placing these concepts within a range of meaningful context. Supporting students to learn these conceptually difficult concepts may enable them to make progress with their understanding and bring about a new way of thinking about nursing knowledge and how it is applicable to practice (Meyer & Land, 2005).

Encouraging students to engage in professional discourse about these threshold concepts in the classroom may help in exposing the previously hidden interrelatedness of nursing knowledge and practice and allow the students to make meaningful connections which prior to understanding these concepts were previously hidden from site (Meyer & Land, 2003). As abstract knowledge is considered as not being fully understood until it is placed within a specific context (Lave & Wenger, 1999b), the key to enabling students to transform their understanding of nursing knowledge and practice may be achieved by embedding threshold concepts within a range of real life scenarios. Through the process of professional discourse, lecturing staff can explain their abstract knowledge in a variety of ways and how the values and attitudes innate within discipline knowledge influences their learning (Shulman 1999). These processes may help students to transform their understanding of nursing practice and make sense of the complexities innate in nursing knowledge and practice (Spouse, 1998a; Lave & Wenger, 1991; Meyer & Land, 2005).

6.8.3. Further enhancing mentorship

The role of mentorship in nurse education has been fraught with difficulties since its inception in the early 1990s (Morton-Cooper & Palmer, 2000). However the findings within this study indicate that the students recognised the significant role which their mentors play in facilitating their learning and helping them to make sense of their nursing knowledge and practice. The literature has identified confusion over the mentorship role (Andrews & Wallis, 1999; Bray & Nettleton, 2007), however the students within this study appear to have a clear idea of the role of the mentor and how to develop their skills and knowledge through working in partnership with their mentors. These findings indicate that the role of the mentor appears to be well established in the University in which the study took place and the initiatives which have been established by the NMC and NES appear to have enhanced the mentorship role (NES, 2008a; NES, 2008b; NMC, 2008; NES, 2011b; NES, 2014c).

Although the students within this study recognised their mentors as having a key role in facilitating their learning and helping them to make sense of their nursing

knowledge and practice, this study indicates that the students learning opportunities may have been limited due to their mentors being too busy to support their learning, however the Practice Education Facilitators are continually striving to maximise the number of students who can be supported within hospital and community settings (McArthur & Burns, 2008; NES, 2008a). Therefore this suggests that there are still challenges with managing capacity and ensuring staff have time to support students in practice.

To provide students with additional support, the NMC has advised all sign-off mentors to be provided with one hour of protected time each week to support students who are in their final placement (NMC, 2006). Extending this one hour of protected time to all mentors may go towards enhancing the educational support for students. The NMC has clearly indicated that the mentors "workload needs to reflect the demands of being a mentor" (NMC, 2006: 30) and establishing protected time for all mentors may go towards further enhancing students' learning. Therefore senior management may wish to re-evaluate their staff's workload capacity and current working practises to identify if there is scope to schedule protected time into every mentor's working week.

The recent review of Nurse Education by NES (NES, 2014c:12) indicates that the 'quality of mentorship and student experience continues to vary' and has raised the question as to whether being a mentor is a role for all registered nurses. This viewpoint may permit scope to re-evaluate the significant role of mentorship and therefore this thesis recommends the following initiatives to further enhance students' learning experiences in practice.

Over the past decade, nursing has developed the concept of nurse champions who specialise and champion a particular aspect of nursing practice (Perla, 2010; Kelley & Aston, 2011; Reicherter *et al.*, 2013). Therefore nursing may wish to consider adopting the idea of championing students' learning in practice and establishing a champion mentor in each area of practice who has a particular interest in supporting students' learning. Although each practice placement area has Practice Education

Facilitators and mentors who have clearly defined educational roles, the Practice Education Facilitator's role mainly focuses on working at a strategic level within the health board and mentors normally focus on supporting and assessing a small number of students. However the champion mentor's main responsibility would be to oversee and manage the day to day educational environment and experiences available to all students within their own clinical area. It may not necessarily be practicable to provide every mentor with one hour of protected time each week, however it may be possible to schedule champion mentors with protected time each week to focus on enhancing the educational environment within their own clinical area and be more readily available to provide students with additional support when their mentors are busy.

The NMC has indicated that all mentors must successfully complete an NMC approved mentor preparation programme (NMC, 2008a) and attend annual mentorship updates to ensure they are competent to support and assess nursing students (NMC, 2006: NMC, 2007c). However the literature has clearly identified that the majority of professionals' work is so tacit and implicit that individuals may have difficulty in explaining the processes they employ at work or describing the competencies that are innate within their own professional practice (Schön, 1983; Collins *et al*., 1991; Cope *et al*., 2000). As students can lack an awareness of the relevance of their knowledge to nursing practice, it may be considered challenging for mentors to be explicit about their tacit knowledge and higher order thinking skills. Spouse (1998a) believes that students need guidance in how to reframe their knowledge within the context of what they are experiencing in practice. She suggests that this can be achieved by ensuring students are supervised by experienced and knowledgeable nurse practitioners who are skilled at mentoring.

Taking these views into account, champion mentors could be provided with a more comprehensive mentorship programme which enables them to more fully engage with the key educational theories which underpin mentorship. Providing champion mentors with an in-depth knowledge of the cognitive apprenticeship model may promote a more robust educational approach to modelling, coaching and scaffolding

(Collins *et al.,* 1991). This approach may encourage champion mentors to provide their students with a clear explanation of their thinking processes and encourage students to express their own thoughts and actions and how this compares to their mentors. These cognitive strategies may enable inert knowledge to become more visible to students (Collins *et al.,* 1991) and guide students towards constructing and reframing their knowledge within the context of what they are experiencing in practice (Spouse, 1998a) thus enabling students to make meaningful connections between their nursing knowledge and practice.

6.8.4. The role of peer support in facilitating learning.

The students appeared to appreciate the support they received from their peers and talked about their experiences of exchanging information with each other and sharing new ways of processing and understanding knowledge. In considering the challenges of supporting large numbers of students in practice, Gidman *et al.,* (2011) suggest peer mentoring as a potential solution. Chuan and Barnett (2012) believe that peers are a valuable resource which is often overlooked and could be a key component of the students' learning experience in practice.

As it is a professional requirement for all registered nurses to be involved in facilitating students' competence (NMC, 2008b), one could argue that students should become involved in peer mentorship as a means to prepare them for their transition to becoming a registered nurse and mentor. However Aston and Molassiotis (2003) propose that students undertaking this new role require to be well prepared. Therefore taking forward these viewpoints, the pre-registration nursing programmes may wish to consider embedding peer mentorship in the final year of the curriculum. This initiative would act as a precursor to the mentorship programme by introducing senior nursing students to the skills required to support and facilitate students' learning and prepare them for their future role as mentors. In addition, the process of supporting junior peers' learning may enable senior students to recognise and articulate the development of their own nursing competencies as well as facilitating their transition to being a staff nurse (Gilmour *et al.,* 2007). Furthermore,

peer mentorship could also offer junior students with an additional learning support system and afford mentors with more time to manage their various responsibilities.

6.9. Future research

As part of a professional doctorate, this thesis has drawn upon the findings to propose some recommendations for future practises within nurse education. Taking into consideration the small scale of the study and the recognition that the findings within this phenomenological study are not generalisable to the nursing population, one could argue that the size and methodological approach may not provide sufficient evidence to justify any changes in educational practises within pre-registration nursing programme. Therefore the next section will suggest some research studies which may assist in further supporting or negating the findings within this thesis and contribute towards developing a more in-depth examination of what facilitates students' learning.

There have been several large scales studies which have looked generally at the quality of nurse education, however it would useful to develop an in-depth qualitative study which focuses on students' experience of learning. This could be achieved by including a much larger sample of third year nursing students within several HEIs and incorporating both one to one semi- structured interviews and focus groups. The inclusion of focus groups may stimulate a range of discussions and generate some ideas about what has facilitated their learning through their nursing programme (Bowling, 2009). From this inductive process, semi structured interviews could be conducted to focus on questioning the students about the specific ideas which emerged from the focus groups, thereby providing a detailed and rich narrative for analysis.

An alternative approach would be a longitudinal study which follows a group of students through the three years of their nursing programme and incorporates a range of instruments of enquiry. For example, students could be interviewed during the induction programme to clarify their expectations of the programme and how they

learn. This could be followed up by yearly interviews about what facilities their learning, content analysis of their yearly personal and professional development plans and quantitative analysis of their module results to identify if there is any correlation between their results, their experiences of learning and their personal motivation and goals.

A practicable approach to examining what facilitates students learning could be achieved through action research whereby a group of students and their lecturers work together collaboratively over an extended period of time to explore and examine a range of teaching and learning strategies. By delivering a variety of teaching and learning approaches, receiving spontaneous feedback from students after each class and implementing changes in response to the evaluation of the students continuous feedback may enable staff to fine tune what facilitates students' learning and allow the students themselves to become more aware of how they learn effectively. This cyclical approach to evaluating and implementing changes in the pre-registration programme may engender a more insightful and innovative process of learning nursing.

These proposals would be very time consuming and require extensive time and resources to implement, however with sufficient funding and rigorous methodological approaches, these proposed studies could potentially provide a more robust and rigorous approach to examining the complexities of learning nursing.

6.10. Conclusions

This chapter has been shaped by the overarching theme of situated learning and provided a critical discussion on how students endeavour to learn themselves and explore their experiences of learning in the University and in practice.

The analysis concludes that the students appeared to focus on the content of nursing knowledge rather than on considering how their knowledge could be applied to nursing practice. Motivation to become a nurse was a key determinant in their efforts

to learn nursing, however the students recognised that they could not learn in isolation and required to engage with other people to develop their understanding of nursing knowledge and practice.

The students valued small group activities and being engaged in meaningful professional discourse with their peers and lecturing staff in order to develop their understanding and place their learning in context. The clinical skills laboratory in particular encouraged the students to actively engage in learning nursing, enabled them to gain valuable experience in nursing skills they could not practise in their practice placements and allowed them to make mistakes without fear of reprehension. However all of the students agreed that being in practice was the best place to learn.

Being in practice is where the students transform their understanding of the symbiotic relationship between nursing knowledge and practice and develop their own body of nursing knowledge. It is through being actively engaged and working within a community of practice and experiencing the realities of practice that students begin to appreciate how their nursing knowledge and skills can be applied to a wide range of nursing practises and contexts. Being in practice enables the students to feel like a legitimate member of this community and recognise their rightful place within the profession of nursing (Lave & Wenger, 1991).

The students' experiences clearly illustrate the complexities of learning nursing and their continued endeavour to develop the body of knowledge required in nursing practice and understand the symbiotic relationship between nursing knowledge and practice. During this process of learning, the students could recognise that they were going through an ontological shift in the way they perceived nursing practises and themselves and appreciated that they were beginning to think and become more like a nurse.

This chapter has highlighted some educational issues which were outside the parameters of this study and suggests that more research is required around the role

of the link lecturer and personal lecturer in supporting students' learning. The findings have also raised issues around the role of the lecture and its place in nurse education and suggest that there could be more focus placed on situating learning within the context of nursing. In regards to practice, the discussion proposes that although there have been great strides made towards enhancing mentorship, due to increased pressure on student capacity and mentors' workload, nurse education may require re-evaluating the role of the mentor and implementing peer support as a means to support the large number of students in practice.

CHAPTER 7 - CONCLUSION

7.1. Synopsis of the research study

This aim of this thesis was to explore students' views on what they think assists them to learn nursing knowledge and practice and gain an insight into what they believe transforms their understanding of nursing knowledge and practice. Hart (2002) suggests that reviewing the literature is integral to a successful research study and enables the researcher to explore the breadth of literature before progressively narrowing the focus of the study. Therefore a review of the literature was undertaken in order to contextualise the study, identify the key educational theories that underpin learning and examine the challenges and policies which have shaped nurse education.

Reviewing the literature within nurse education clearly identified that learning nursing is challenging and indicated that there was no specific research which had examined the students' view on what helped them to make sense of their nursing knowledge and practice. From this review, the aim of the study was further refined and the following research questions were devised to provide the study with a clear focus:

1. What teaching and learning methods facilitate students to understand nursing knowledge and practice?
2. What learning strategies do students employ to assist them to learn nursing knowledge and practice?
3. Who assists students to make sense of their nursing knowledge and practice?
4. What assists students to transform their understanding of troublesome knowledge and gain cognisance of the complex nature of nursing knowledge and practice?

As the study was focused on the students' views and experiences, a phenomenological approach was identified as being the most suitable methodology.

Eleven pre-registration adult nursing students were interviewed and asked to share their experiences of learning nursing and what they believed enabled them to learn nursing and makes sense of nursing knowledge and practice. Only senior students were included in the study as they had experience with a wide range of teaching and learning approaches and had gained experience within a variety of practice placements. The students' narratives were transcribed and imported into Nvivo and then analysed utilising Colaizzi's (1978) framework. This ensured a phenomenological approach was maintained throughout the process of identifying the significant statements. This inductive process led to the emergence of 24 categories and 7 themes (See Appendix 13).

To represent and capture an overall sense of the students' experience of learning nursing, the findings chapter presented each category and theme within the context of the students' narratives. Once the findings chapter had been completed, further analysis of the categories and themes identified the concept of situated learning as a common theme running throughout all of the students' narratives.

The key findings of the study appear to suggest that the students utilised a variety of constructivist approaches to learn nursing, however preferred to learn knowledge within the context of nursing practice. They focused on learning the content of nursing knowledge and utilised reading, writing, listening and rote learning in their personal study time, however appeared to become stuck in a liminal space where they were unable to make the necessary connections between nursing knowledge and practice (Meyer & Land, 2005). In the University, the students liked lectures as it signposted them to the key knowledge and skills they required to learn. Nevertheless they preferred learning in small groups where they had the opportunity to engage in professional discourse with their peers and lecturers and be actively engaged in learning nursing in the classroom or the skills lab.

Being in small groups provided the students with the opportunity to ask questions, engage in debate and listen to other people's experience of nursing practice. It was through this professional discourse that they could situate their learning within the

context of nursing and make the necessary connections between knowledge and practice (Spouse, 1998a; Lave & Wenger, 1999b). They also appreciated that the lecturing staff could draw upon their expert knowledge to help them to make the meaningful connections between knowledge and practice (Glaser, 1999). Furthermore, they valued peer support and the opportunity to learn from each another and listen to how their peers constructed and processed knowledge.

The students talked in depth about their experiences of learning in the skills lab. Some of the students identified its disadvantages, however there was a sense that the students recognised the overriding benefits to this particular learning approach. They believed the skills labs was a safe place in which to make mistakes and it was through the process of practising a range of skills and engaging in professional discourse that enabled them to develop an understanding of the complex relationship between nursing and knowledge and practice. The opportunity to repeatedly practice skills which they may not necessarily experience in practice had a key role in building confidence in their abilities. The skills labs appeared to have a significant role in contextualising their learning and the process of situating their learning within a variety of scenarios enabled the students to appreciate how their knowledge could be applied to a range of situations they may come across in practice. Furthermore, the students recognised the lecturer as being pivotal in guiding them to make the necessary connections between nursing knowledge and practice in the skills lab and helping them to reframe their understanding of nursing practises.

All of the students agreed that the best place to learn was in their practice placements. As nursing students, they recognised themselves as legitimate member of the community and were keen to be actively involved in all aspects of nursing practice (Lave & Wenger, 1991). Being in practice enabled them to experience the complexities of nursing practice and gain the experiential skills and knowledge they required to become competent nurse practitioners. The students recognised the significant role of their mentors in facilitating their learning. It was through the process of working alongside their mentor, observing, practising, asking questions, being prompted as necessary and engaging with their mentors' knowledge and

experience that enabled them to make meaningful connections between nursing knowledge and practice. However, some students were frustrated when they missed the opportunity to practise certain skills and regarded their mentors as gatekeepers of their learning, this experience led to some students recognising the importance of being assertive and motivated in practice.

Being situated in a community of practice enabled the students to learn from everyone including nurses, doctors, patients and clinical support worker and begin to derive their own non propositional craft knowledge from these learning experiences Higgs *et al.*, 2001). The experience of being in a community of practice also led to the students having an ontological shift in how they perceived their role in practice (Meyer & Land, 2005; Lave & Wenger, 1991). As senior students, they recognised that they were becoming more competent in practice and beginning to perceive themselves as nurses rather than as students.

The findings chapter identified that the research questions had been addressed and the discussions chapter provided some critical discussion about what may have been involved in facilitating the students learning and assisting them to make sense of their nursing knowledge and practice. The following section will draw upon the literature, findings and discussions to provide the concluding analysis.

7.2. Concluding analysis

This study set out to explore students' views on what they think assists them to learn nursing knowledge and practice and gain an insight into what they believe transforms their understanding of nursing knowledge and practice. Meyer and Land's notion of threshold concepts was identified as the conceptual framework underpinning the study and provided a clear focus throughout the research process (Meyer & Land, 2003).

When the students were asked about troublesome knowledge, they described a range of cognitive approaches which they employed to help them to learn nursing,

nevertheless this knowledge often remained inert and they continued to have difficulty in knowing how to apply the knowledge they had learned to their nursing practice. However when the students' knowledge was placed within the context of nursing practice, this appeared to enable them to construct and assimilate meaningful connections between their nursing knowledge and practice. It seems the process of situating their learning within the context of nursing practice was key to unlocking troublesome knowledge and enabling them to transform their understanding of nursing knowledge and practice (Meyer & Land, 2005).

In the 1990s, Rolfe (1996) believed that one of the main causes of the theory practice gap was the emphasis on building a sound theoretical base before gaining clinical experience and the dominance of theory over practice. Although the nursing students now gain an equal amount of time within the University and in nursing practice, to some extent, the students' narratives appear to indicate that they are continuing to focus more on acquiring nursing knowledge without necessarily understanding its applicability to practice. Therefore one could argue that the pendulum within nurse education continues to be swung too far in favour of theoretical knowledge (MacLeod Clark *et al.,* 1996) and requires educational approaches in pre-registration nursing programmes to provide more equilibrium between nursing knowledge and practice. Underpinning the curriculum with teaching and learning approaches which situate nursing knowledge within the context of nursing may bring some balance to the theory practice dichotomy and help students to recognise the symbiotic relationship between nursing knowledge and practice.

The students did not seem to consider any one particular teaching or learning approach as having the most significant impact on their learning, instead they focused on explaining how learning in context enabled them to make the meaningful connections between nursing knowledge and practice. This was achieved through being in practice, experiencing different scenario in the classroom and the skills lab, listening to their mentors and lecturers sharing their experiences of practice and explaining how nursing knowledge could be applied to a variety of nursing contexts. Therefore this thesis proposes that pre-registration nursing programmes consider

underpinning all teaching and learning approaches with the educational philosophy of situated learning (Lave & Wenger, 1991; Spouse, 2001a; Spouse, 2001b).

The literature review has identified some of the key causes of the theory practice gap and indicated some of the initiatives and developments which have been put in place to enhance students' learning and helps them to relate nursing knowledge to practice. The findings within this study appear to indicate that the current mentorship programmes and implementation of the Practice Education Facilitators appears to have enhanced the students' learning experiences in practice. The majority of the students appeared to feel comfortable in practice, learned nursing whilst working alongside their mentors and felt part of the team. Their supernumerary status was providing them with the freedom to be involved in a variety of activities and meet all members within the community of practice. One of the key issues for students was in relation to some mentors preventing them from practising complex nursing skills. As the NMC (2007c) had recently implemented the sign-off mentor status, the nursing staff's reticence to allow students to participate in complex nursing skills may reflect the mentors' increased awareness of their accountability and their role as gatekeepers to the nursing register.

Although the findings within this study indicate that the students were well supported in practice, the recent review of Nurse Education by NES (NES, 2014c:12) indicates that the 'quality of mentorship and student experience continues to vary' and has raised the question as to whether being a mentor is a role for all registered nurses. This is also reflected in the findings, with some students indicating that some of their mentors did not appear to embrace their mentorship role. To ensure students are fully supported in practice, this thesis has proposed the implementation of champion mentors who are responsible for the local educational environment and providing students with additional educational support.

Now that all nursing students are required to complete a nursing degree as part of their registration programme, this may be an opportune moment to re-evaluate the mentorship role. The NMC (2010) has indicated that as graduates, newly qualified

nurses will be expected to think analytically, use problem solving approaches and evidence in clinical decision making as well as keeping up to date with technical advances and meeting future expectations. By re-emphasising the need for students to develop higher order thinking skills, there is the possibility that the pre-registration programmes may begin to swing further towards a focus on theoretical knowledge. Providing champion mentors with a more comprehensive mentorship programme which is underpinned by the cognitive apprenticeship model and educational theories may promote a more robust and balanced approach to practice education (Collins *et al.,* 1991). Champion mentors could utilise a combination of situated learning and cognitive strategies to allow students to see how their inert knowledge is applicable to a variety of nursing contexts and enable them to make sense of their nursing knowledge and practice.

The students within this study appeared to struggle with making sense of troublesome knowledge and found it difficult to apply inert knowledge to their nursing practice. This thesis proposes a blended learning approach which utilises e-learning to guide and contextualise the key concepts and knowledge in nursing and small group activities to focus on enabling students to situate their e-learning within a range of nursing contexts. Once the bespoke packages are devised, it would provide the lecturing staff with more time to spend in small group activities and enable the students to juggle their various commitments and provide more flexibility to where and when they learn (Carr, 2008; Donaldson *et al.*, 2010; Cheng, 2013).

Although the students within this study did not necessarily know how to apply nursing knowledge, they appreciated that in order to become a competent practitioner they required to be able to apply their knowledge to whatever situations they encountered in practice. In considering the challenges of enabling students to apply theory to practice, Corlett (2000. p.504) asserts that "the theory practice gap is merely a function of time, something students have to live with until they have sufficient knowledge and experience to fit the different parts together". Nevertheless, Lauder (1994) argues that the complex nature of nursing does not allow theoretical nursing knowledge and nursing practice to be separated and contends that the

relationship between thinking and doing are inextricably linked. Therefore, the debate around the theory practice gap will continue.

To address the theory practice gap and help students to make sense of nursing knowledge and practice, this thesis proposes adopting a modern apprenticeship model of nurse education which is fit for purpose in the 21st century (Collins, *et al.*, 1991). An apprenticeship model which is grounded in both cognitive and constructivist approach to learning and situates evidenced based nursing knowledge within the context of nursing practice. A curriculum which aspires to the UKCC's original vision of newly qualified nurse practitioners as knowledgeable doers who can draw upon a range of evidenced based practises and higher order thinking skills to meet the complex demands of health care in the 21st century (UKCC, 1986).

This section has concluded the key analysis. The next section will provide some recommendations for future research and practice.

7.3. Recommendations for future practice

- Pre-registration nursing programmes devise bespoke e-learning packages which are constructed as advanced organisers and underpinned by a spiral approach to learning. The packages would be designed to signpost and contextualises domain specific knowledge, general principles and challenging threshold concepts in their simplest forms and revisit these at ever increasingly complex levels in line with the students' stage in their programme.

- Pre-registration nursing programmes adopt the cognitive apprenticeship model of learning which incorporates a range of cognitive strategies embedded within the traditional apprenticeship model. In conjunction with bespoke e-learning packages, this educational approach would encourage thinking processes and inert knowledge to become visible and meaningful (Collins *et al.*, 1991).

- Provide additional staff development in e-learning and cognitive apprenticeship model and identify staff who can design e-learning packages which are underpinned with the educational principles of situated learning, cognitivism and constructivist approaches to learning.

- Invest in champion mentors who have completed a comprehensive mentorship programme which is underpinned by the cognitive apprenticeship model. The key role of the champion mentors would be to work in partnership with the Practice Education Facilitator to further develop and enhance the local educational environment and provide students with additional learning support.

- Extend the one hour of protected time each week to all mentors. Senior management may wish to re-evaluate their staff's workload capacity and current working practises to identify if there is scope to schedule protected time into every mentor's working week.

- Introduce the concept of mentorship to senior students in the final year of the pre-registration nursing programme and in partnership with the Practice Education Facilitators implement and evaluate peer support initiatives in practice.

- Identify skill shortfalls in practice and utilise some of the mandatory practice hours to enable students to attend the University to practise complex skills in the skills labs (NMC, 2007b).

- Invest in web based platforms which simulate nursing practises in a virtual world and enable students to situate their learning within the context of nursing practice.

- Invest in staff development which enables key staff to locally manage web based platforms.

7.4. Recommendations for future research

- Qualitative mixed methods study examining students' views and experiences of learning nursing within a range of HEIs.

- Longitudinal, mixed methods study following a group of students through their pre-registration nursing programme in order to identify what factors facilitate their learning.

- Action research study which enables students and staff to work together collaboratively to implement and evaluate a range of teaching and learning strategies with aim of identifying which approaches are most effective at facilitating students to learn nursing.

7.5. Contribution to nurse education

Reviewing the literature within nurse education identified that there had been no research studies which focused on exploring students' views on what they believe facilitates their learning and helps them to make sense of nursing knowledge and practice. Therefore this thesis has provided an original contribution to the field of nurse education by providing some insight into what students' believe facilitates their learning.

As the findings may be of interest to both nurse educationalists and nurse practitioners, the aim is to submit several papers for publication to peer reviewed journal within the scope of nursing education. One paper will provide an overview of the research study, another will focus on embedding situated learning in the nursing curriculum and the final paper will concentrate on practice education and the benefits of the cognitive apprenticeship model in supporting students' learning in practice. A copy of the doctoral thesis will also be available in the University of Strathclyde and the University of the West of Scotland.

By publishing a synopsis of this thesis in a peer reviewed journal, it is hoped that the findings and discussions which have emerged from the study will contribute new knowledge to the field of nursing and add some insight to the ongoing debate about the challenges innate in learning nursing.

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Appendix 1 - Ethical approval from Departmental Ethics Committee

University of Strathclyde
Education

Notice of Departmental Ethics Committee Decision

Date: 6th October 2009

Applicant: **Wendy Cohen (Beverley Young)**

Title: Learning Nursing: Students' views on what facilitates this process.

Approval Of Investigation

The Departmental Ethics Committee confirm ethics approval for the above investigation strictly within the terms as advised on the application.

When your investigation is completed we would welcome a short note indicating completion and advising of any ethical matters that may have arisen but which were not anticipated within your application.

The committee wishes you success in your investigation.

For the Departmental Ethics Committee

David Wallace (Chair)

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Mr Clive Rowlands
Head of Department

Appendix 2 - Participant information leaflet

Learning nursing: Students' views on what facilitates this process
Participant information leaflet

An invitation to take part in a research study

You are invited to take part in a research study which will explore nursing students' views on what facilitates their learning. If you think you may be interested in participating, please read the following information. This outlines the reasons why this research is being carried out, what would be involved if you take part and provide you with details regarding anonymity, confidentiality and consent.

What is this study about?

Pre-registration nursing programmes have been designed to develop students' knowledge, skills and competence in nursing practice and ensure they are prepared to practise safely and effectively to the extent that the protection of the public is assured. The learning process that you are undertaking is recognised as complex and at times challenging. What some students find easy to learn others may find more difficult. Therefore, this research study will ask you about your own experiences and views on what you think assists you to learn nursing and what helps you make sense of your own nursing knowledge and practice.

The study is being carried out as part fulfilment of the Doctor of Education programme. This will lead to a written thesis that aims to capture nursing students' experiences of what facilitates their learning. A summary of the students' experiences of learning nursing may be published in a peer reviewed journal. Furthermore, the findings of this study may influence how course designers, nurse lecturers and nurse practitioners can meet the learning needs of their students.

Who can take part in this study?

Students who have completed at least two years of the pre-registration programme for adult nursing can take part in the study.

Do I have to take part?

No. Participation is entirely voluntary and you are under no obligation to take part in the study.

What happens if I decide to take part in this study?

You will be invited to attend an interview with the post graduate research student, Beverley Young. During the interview, you will be asked a series of questions about your experiences and views on what facilitates you to learn nursing. This process should take no longer than one hour. The accompanying interview guide provides an outline of the interview and what kind of questions you may be asked. Although you have been given this guide, you are not expected to prepare for the interview; the outline and questions are simply there to give you an idea of what to expect during the interview process.

If you decide to take part in the study, you can withdraw your participation before, during or after the interview process. You can refuse to answer any questions or stop the interview at any time. Please note that withdrawing your participation at any time during the research process will not incur any adverse consequences to your standing as a student or your progression on the nursing programme.

What happens to the interview data?
The interview will be audio recorded and transcribed word for word. A copy of this transcription will be made available to you approximately one month after the interview has taken place. You will be asked to confirm that the contents of the transcription are accurate and the synopsis of your transcription and the key themes identified in your interview are a reasonable representation of your experiences and views.

Will anyone know who I am or what I have said in the interview?
Your identity will remain anonymous throughout the research process. The audio recording of each individual interview will be allocated a unique reference code which will be used at all times. At no point will your name be identified on the audio recording, interview transcription, the post graduate research student's thesis or any subsequent journal publications and all quotations from the interviews will be anonymised.

To maintain your confidentiality, the digital recording of your interview will be secured in a locked cupboard and deleted once the transcription has been completed. In keeping with the data protection act, all information pertaining to the study will be stored in a password protected computer or held in a locked cupboard or filing cabinet within the University of the West of Scotland. After the research is completed, the transcriptions of your interview may be held for up to five years and then destroyed in accordance with the data protection act. The transcriptions of your interview will only be accessible to the researcher.

Ethical approval
The study has been granted ethical approval by the University of Strathclyde. Permission to undertake this study has been granted by the Ethics Committee within the University of the West of Scotland, the Dean of the Faculty of Education, Health and Social Sciences and the Head of the School of Health, Nursing and Midwifery.

What do I do next?
If you wish to take part, please read all of the information pertaining to this research study before making a decision. If you have any questions or require further clarification, please contact Beverley Young or the research student's supervisor Dr Wendy Cohen. If you decide to participate in the study, please contact Beverley Young by phone or e-mail to arrange an interview date. Please read and sign the enclosed consent form and bring your signed consent form to the interview.

Post graduate research student:

Beverley Young
Lecturer in adult nursing
School of Health, Nursing and Midwifery
University of the West of Scotland
Hamilton Campus
Almada Street
Hamilton
ML3 0JB.

E-mail: beverley.young@uws.ac.uk.
Tel: 01698 283100.
Room C429 in the Caird building

Supervisor and Chief investigator:

Dr Wendy Cohen
Lecturer
Department of Educational & Professional Studies
University of Strathclyde
Jordanhill Campus
76 Southbrae Drive
Glasgow
G13 1PP

Email: wendy.cohen@strath.ac.uk
Tel: 0141 950 3450

Thank you for taking the time to read this participant information leaflet

Appendix 3 - Consent Form

Consent form

Research study: Learning nursing: Students' views on what facilitates this process.

	Please tick boxes
I have read and understood the information sheet for the above research study.	☐
I have had the opportunity to consider the information provided and had my questions answered satisfactorily.	☐
I understand that my participation is voluntary and I can withdraw from the study at any time without giving any notification or reasons.	☐
I understand that withdrawing from the research study will not incur any adverse consequences to my standing as a nursing student or affect my future studies or progression on the nursing programme.	☐
I consent to participating in an audio taped interview and agree to the use of anonymous quotations in any future publications related to this research study.	☐
I agree to participate as a volunteer in this research study	☐

Name of participant *(Please complete in capital letters)*	Signature of participant	Date
_____	_____	_____
Name of researcher *(Please complete in capital letters)*	Signature of researcher	Date
_____	_____	_____

Appendix 4 - Interview schedule for researcher

Information to provide before commencing interview:

Prompts for researcher:

- Thank student
- No longer than an hour
- Interview will be digitally recorded
- Can refuse to answer any questions or stop any time
- Will not have an impact on your standing as a student
- I will transcribe the interview
- I will ensure your anonymity and confidentiality are maintained throughout the process
- Provide a copy in approx 1 months time
- Produce a summary of the interview and identify the key points to ensure it reflects a true representation of your experiences and views
- Ensure student has signed the consent form

Introduction:

Preregistration programmes are designed to develop nursing students' knowledge skills and competence in nursing practice and ensure nursing students are prepared to practice safely and effectively.

Learning nursing is recognised as being complex and challenging. What some students find easy, others may find more difficult. Nurse educationalists have looked at how we can facilitate students' learning; however I would like to find out about students' views and experiences of what facilitates their learning.

During this interview I would like you to share with me your own experiences and views on what facilitates your learning and what helps you make sense of your nursing knowledge and practice.

Anything you would like to ask before we start? Feel free to ask for further clarification regarding any of the questions.

Start the recording - Body of the interview:

During this interview I would like you to tell me about your experiences and views on what facilitates your learning and what helps you make sense of your nursing knowledge and practice.

Key questions:

1. What helps you to learn nursing and make sense of your nursing knowledge and practice?

2. What teaching and learning approaches do you think facilitates your learning? What kind of teaching and learning activities help you to learn nursing knowledge and practice? In class and in practice

3. How do you learn nursing? What learning strategies do you use to help you to learn nursing knowledge and practice? What do you do to help you to learn nursing? In your own study time and when you are in practice.

4. Who do you think helps you to learn nursing and make sense of your nursing knowledge and practice..... Is there anyone else who helps you to learn nursing knowledge and practice

5. If you come across a subject that you find particularly complex and challenging. What do you do to help you to understand this complex and challenging subject? What helps you to make sense of the complexities of a challenging subject?

Summary

Is there anything else you would like to share with me about what you believe helps you to learn nursing and nursing knowledge? Any other experiences you could share which would demonstrate what facilitates your learning and helps you to make sense of your practice?

To summarise - what do you think are the key factors that facilitate your learning

Feedback

Thanks. Were the questions clear? Are there any other questions you thought I might ask or could have included? Is there anything I could have done differently?

Appendix 5 - Letter to Head of School seeking permission to undertake study

Beverley Young

Home address

Home Telephone number

Home e-mail address

17th December, 2009

Mrs Heather Simpson
Head of School
School of Health, Nursing and Midwifery
University of the West of Scotland
Paisley Campus
High Street
Paisley
PA1 2BE

Dear Heather

Seeking permission to undertake a research study within the University

I have now completed the taught component of the Doctor of Education programme at the University of Strathclyde and would like to ask your permission to undertake a research study within the adult division of the School of Health, Nursing and Midwifery.

The aim of my study is to explore nursing students' views on what facilitates their learning and gain an insight into what students believe assists them to learn nursing and make sense of their nursing practice. To capture a sense of nursing students' experiences of learning, I would like to interview approximately 12 adult nursing students as part of the research process. This empirical study will form the basis of my doctoral thesis.

I have received ethical approval from the Departmental Ethics Committee within the University of Strathclyde and have received permission from the Ethics Committee within the University of the West of Scotland to undertake my research study within the School of Health, Nursing and Midwifery.

I would appreciate it if you would support my ongoing studies and grant me permission to undertake this research study within the adult division of the School of Health, Nursing and Midwifery.

I look forward to hearing from you

Yours sincerely

Beverley

Appendix 6 - Letter of authorisation from Head of School

UWS UNIVERSITY OF THE WEST of SCOTLAND in Paisley

Direct 0141 849 4200
Fax 0141 849 4203

Paisley Campus
Paisley
PA1 2BE
Scotland

Tel 0141 848 3000

Direct 0141 848 3715
Fax 0141 848 3948
E-mail heather.simpson@uws.ac.uk

Date: 18 January 2010
Ref: HS/ps

Dear Beverley,

Since you have received ethical approval from the Ethics Committee within the University of the West of Scotland to undertake research as outline in your letter dated 17 December 2009, access will be provided within the Adult Division in the School of Health, Nursing & Midwifery.

I wish you success with your research.

Yours sincerely,

Heather Simpson

Dr Heather Simpson
Head of School

School of Health, Nursing and Midwifery

Appendix 7 - Letter to Dean seeking permission to undertake study

Beverley Young

Home address

Home Telephone number

Home e-mail address

17th December, 2009

Mr Paul Martin
Dean of the Faculty of Education, Health and Social Sciences
University of the West of Scotland
Hamilton Campus
Almada Street
Hamilton
ML3 0JB

Dear Mr Martin

Seeking permission to undertake a research study within the University

I am a lecturer in adult nursing within the School of Health, Nursing and Midwifery. I am currently a third year student in the Doctor of Education programme at the University of Strathclyde and would like to ask your permission to undertake a research study within the adult division of the School of Health, Nursing and Midwifery.

The aim of my study is to explore nursing students' views on what facilitates their learning and gain an insight into what students believe assists them to learn nursing and make sense of their nursing practice. To capture a sense of nursing students' experiences of learning, I would like to interview approximately 12 adult nursing students as part of the research process. This empirical study will form the basis of my doctoral thesis.

I have received ethical approval from the Departmental Ethics Committee within the University of Strathclyde and have received permission from the Ethics Committee within the University of the West of Scotland to undertake my research study within the School of Health, Nursing and Midwifery.

I would appreciate it if you would support my ongoing studies and grant me permission to undertake this research study within the adult division of the School of Health, Nursing and Midwifery.

I look forward to hearing from you

Yours sincerely

Beverley Young

Appendix 8 - Letter of authorisation from Dean

UWS UNIVERSITY OF THE WEST of SCOTLAND
in Lanarkshire

Hamilton Campus
Almada Street
Hamilton
ML3 0JB
Scotland

Tel 01698 283100
Fax 01698 894403

PM/LS

19 January 2010

Dear Beverley

Since you have received ethical approval from the Ethics Committee within the University of the West of Scotland to undertake research as outlined in your letter dated 17 December 2009, access will be provided within the Adult Division in the School of Health, Nursing and Midwifery.

I wish you success with your research.

Yours sincerely

Paul Martin
Executive Dean

Faculty of Education, Health and Social Sciences
Paul Martin RN RHV DMS MBA DUniv, Dean

Appendix 9 - Letter to UWS Ethics Committee requesting authorisation

Beverley Young

Home address

Home Telephone number

Home e-mail address

Date 11.10.09

Professor John Atkinson
Associate Dean Research & Commercialisation
Chair of the Ethics Committee
School of Health Nursing and Midwifery
University of the West of Scotland
Paisley Campus
High Street
Paisley
PA1 2BE

Dear John

Seeking permission to undertake a research study within the University

I am a lecturer in adult nursing within the School of Health, Nursing and Midwifery. I am currently a third year student in the Doctor of Education programme at the University of Strathclyde and would like to ask your permission to undertake a research study within the adult division of the School of Health, Nursing and Midwifery.

The aim of my study is to explore nursing students' views on what facilitates their learning and gain an insight into what students believe assists them to learn nursing and make sense of their nursing practice. To capture a sense of nursing students' experiences of learning, I would like to interview approximately 12 adult nursing students as part of the research process. This empirical study will form the basis of my doctoral thesis.

I have received ethical approval from the University of Strathclyde and would like to ask the Ethics Committee within the University of the West of Scotland to scrutinise my ethical approval application with a view to considering my request to undertake research within the adult division of the School of Health, Nursing and Midwifery.

I look forward to hearing from you.

Yours sincerely

Beverley Young

Enc. Ethical approval application form and confirmation of ethical approval from the University of Strathclyde.

Appendix 10 - E-mail authorisation from UWS Ethics Committee Chair

Beverley Young

From: John Atkinson
Sent: 08 February 2010 13:07
To: Beverley Young
Subject: Authorisation for EdD Research study

To whom it may concern.

I can confirm that :
Beverley Young

Has authorisation to carry out her EdD study at the University of the West of Scotland. Please do not hesitate to contact me if you require any further information.

John Atkinson PhD BA RN NDNcert Dip Ed DNT
Professor Community Health and Post Graduate Studies
Academic web site: http://myprofile.cos.com/atkinson22
mobile: 0771 970 9688
School of Health Nursing and Midwifery
A Block 5th Floor
University of The West of Scotland, High Street, Paisley, Scotland, UK,
PA1 2BE
Email: john.atkinson@uws.ac.uk

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Appendix 11 - Examples of how the categories were created

Example of how categories were created for question 1.	Categories created from the narratives
Interviewer: Thank you very much for coming in to see me this morning. So during this interview I would like you to tell me about your experiences and views on what facilitates your learning and what helps you to make sense of your nursing knowledge and practice. So the first question I would like to ask you is what helps you to learn nursing and make sense of your nursing knowledge and practice?	
Participant 6:	
I find it easier to take things in when we are doing practical, when we are doing the kind of practical stuff.	Being actively involved. Hands on
Sometimes in lecture theatres when you are in the middle of a lecture you have got people talking, people eating and it kind of disrupts you, people texting on their phone kind of thing and nipping in and out of the toilet, sometimes I can find it quite hard to understand one of the lecturers	Lectures
and when I go home and I read over it then that's when I can understand what I have taught that day.	Reading
But then when you go in to the skills labs and you are actually in practice as well and something occurs and you think oh I remember, it kind of jogs your memory back to kind of thinking oh that was that day in Uni em	Applying theory to practice
and I like it when I am asked questions when I am out in placement, instead of just getting on with it, you know when a mentor is saying why would you do this or what do you think we should do for this patient then that kind of helps you to jog your memory as well.	Being questioned

Example of how categories were created for question 2.	Categories created from the narratives
Interviewer: Looking at both teaching and learning approaches that we use within the University and within practice, what particular teaching and learning methods do you find helps you to learn nursing?	
Participant 5:	
Small group work. Em both sides for the theory and the practice, sometimes I find it is easier when we are in smaller groups em getting small workshops and rotating round 2 or 3 workshops in the morning rather than a full lecture where there is a full class.	Group work Lecture
Em the smaller groups are a wee bit less detracting, you can ask questions, probably the same questions that come up if you are in a lecture theatre but because there is a smaller number it sort of can become a conversation about em whatever issue or question you have brought up, the workshops are an awful lot more em interactive and you are able to talk through what you don't understand whereas in lectures it is much more question and answer sessions and you don't necessarily get to be progressive if you have understood half of it, you don't necessarily get to ask the second question in a lecture where as in workshops and smaller group work you do tend to be able to thrash out the answers between you.	Group work Asking questions Lecture Talking through a process
I think group work where em where the students are left as a group to work through it themselves I think is useful as well em cause you have got the peer support going as well. Where you don't understand, I have a grip on but I don't understand this so we swap ideas. I can explain that to you if you explain this to me. I think that is very useful as well.	Group work Peers
Because most of the learning, for all the time that we are in University, I feel that we learn an awful lot more when we are out in practice	Learning in practice
and we need to know the theory of all these things so that when we are out in practice em we can expand on that. But we also need to know the theory and the background so that in a year or two time when it is a student under you, that you are still able to explain and link that back to the theory for those students that are coming up behind us.	Applying theory to practice

Example of how categories were created for question 3.	Categories created from the narratives
Interviewer: And the next question is what learning strategies do you use to help you to learn nursing?	
Participant 3:	
I would say before I done nursing I was a crammer and then pass the exam but what I quickly found with nursing is, I need to know this, it isn't going to be good enough to cram because this is information that I need to act as a professional so I need to start changing how I study and that was a big deal for me at first cause I didn't know where to start.	Student's approach to learning nursing
So we formed a study group, so there were about 4 of us, em, I found that learning from each other, well what do you find helps you.	Study group Peers
Some people like Dictaphones, some people like posters, posters in their room, some like the flash cards, writing in a card and just going through them,	Dictaphones Visual learning and colour
some like to write everything out again and again and again and I found I was more that way before but after discussing it with my peers,	Writing notes Peers
I've recently found that if I pick a subject like say respiratory, i break it down into the different topics	Breaking subject

so COPD, bronchitis, emphysema, asthma and if I can bullet point first either the pathophysiology I try and use bullet points.	
diagrams, mnemonics I find that's helping me, colour coordinating it, it might sound daft but see if I can get coloured paper I put like my respiratory in blue paper, cardiovascular pink, cancer yellow, and for me if I can link the colour to when I am studying it helps me to remember so when I go into that exam I don't panic somehow just remembering the colour, what was on that paper helps me remember things, it's strange but it helps than just having white paper. If you have got white paper it's a nightmare. So summarising it, bullet pointing it, using the colours, sometimes the Dictaphone.	Visual learning and colours Mneumonics
I wouldn't use the Dictaphone for a lot of information, I'd maybe use it for wee paragraphs or definitions or mnemonics help me remember my APO or my AMPU em MONA. I remember them but sometimes even at night just before I go to bed I'll listen or if I am driving I take my Dictaphone with me, If I've got them in my Dictaphone I play them while I am driving. Just things like that help me study. It helps me to learn and it helps me remember and	Dictaphone
I find if I keep all my note summarized, if ever, even after the assessment if I am not sure i can flick back and I have got it all there. I've not got masses of paper everywhere where before i had masses of paper, I was writing and writing and writing and writing and it was going everywhere, so i find that helps me.	Writing notes
And my videos, as long as I have something visual, am a very visual person, I like videos, diagrams, even role playing, things like that help. Say even watching sort stories or short videos or scenarios, they help me, helps me remember. Like if you link your Alzheimer's, a couple of the videos we were shown, I'll always remember them now, just because I have seen them and it helps me think of dementia, think of Alzheimer's and how they are feeling rather than sitting reading a book.	Visual learning and colours Role play Learning in context
Mind maps, I like mind maps, yep I nearly forgot about them there. At first, usually before I start anything, I do a mind map, I'll put my topics then I'll branch them off, I'll put my subtopics and then I'll decide where am I going to focus, what do I need to know, what are the questions I am asking, and my mind map helps me to get into my mind what I need to know. That's usually what I start with, a mind map, yes	Mindmaps Breaking subject down

Example of how categories were created for question 4.	**Categories created from the narratives**
Interviewer: So who do you think helps you to learn nursing knowledge and nursing practice.	
Participant 7:	
That's a big question. Oh, I think it has been everybody though, I don't think, it's like, it's one person.	Lecturers
I don't think you can say well it's the lecturers, it's the mentors, it's you know the patients, I think it is everybody. Cause I think it is more a case of learning from everybody of like good, bad and indifferent. You're going to take it from across the board.	Mentors Patients Other people
Even from the point whereby when you see bad practice or bad mentors, you say well I am not going to do that so you have actually learnt from them even although they probably don't realise that you have learnt it, likewise when you have been with good mentors of actually saying well that is the person I want to be. Of whom you want to aspire to.	Mentors
So it is kind of like, it across the board cause I think it is that everybody has got their own bits to add to it to make you kind of the perfect nurse.	Other people Learning from professionals
I think, the mentors, certainly the good mentors have got an understanding of what it is to be a student nurse. I think well obviously to kind of have a good relationship, well the ones I have enjoyed working with, I have had a good relationship with, they've have actually had confidence in me, that have trusted me to go and do things or like in the first year, the last placement in health promotion the mentor trusted me to manage my own schedule.	Mentor Good relationship Building confidence
Em the lecturers. Lecturers in here are fantastic, haven't come across a bad lecturer yet.	Lecturers
Em your mentors in the workplace, but quite often it can also be the clinical support workers that can help you cause often you are along beside the clinical support workers while the mentors are maybe doing the drug rounds in the morning and you are kind of chipping in em just the other staff	Other people
and also quite often the patients will tell you different things about their illnesses and things that aren't broadly written because all illnesses are different and they affect patients in a different manner so one patient may have no side effects for one illness but another one could have most of them kind of thing and how bad they are and how they feel. I definitely, the patients. Other than that.	Patients
My husband helps me quite a bit. When I was doing oral exams and I was like off I can't get through this 15 minutes, he would actually start to ask me questions and he has got no interest in nursing whatsoever and he was like oh tell me how this nutrition works and what would you do in such a case that, he would just ask me different questions and I would end up rabbiting to him for 10 or 15 minutes and he would say it sounds to me like you actually know what you are talking about and I was like oh alright OK. So he does help quite a fair bit. But I don't think there is anyone else.	Other people
And just myself and the commitment I put into it. I think this is the only thing I have stuck to my whole life and I think it is the desire to want to achieve. The desire to make that wee bit of a difference at the end of the day.	Myself Sense of achievement

Example of how categories were created for question 5.	**Categories created from the narratives**
Interviewer: If you come across a subject which you find particularly complex and challenging. What do you do to help you to understand this complex and challenging subject? What helps you to make sense of the complexities of a challenging subject?	
Participant 11:	
I usually sit and brood for a wee while and try to mull it over. I tend to go and withdraw into myself and sit and try and think and try and break it down.	Pause and come back to it
If the language is particularly difficult I'll try and break it down, I try and simplify it so if say there is a lot of information on a research paper that I didn't understand I would try and transcribe it into my language so that instead of looking at that and getting totally confused and getting myself anxious about it I would break it down bit by bit, sentence by sentence, think right that's what that means so when am looking at it then I can think I don't need to worry about that then. I know I have got the information there.	Breaking subject down
If I feel it's really hard, I cannot make head nor tails of it, I will usually go to one of the lecturers and say I am finding this really difficult, I can't manage, I am struggling, em could you clarify things for me, could you make it a wee bit simpler and the majority of them are really good and will say well look where is the particular area you can't manage. Where is it that you are struggling and they will go through things with you.	Mental block, difficulty in understanding Lecturer
I would probably read up about it as well and see if I could see, likes of the research a lot of it is quite difficult em I would probably look and see if there's other information in other areas to see if I could simplify it that way as well.	Reading
So I would probably sit there and search terms on Google or something like that, just to have a look and see if they can maybe em make it simpler for me even although we are not supposed to use Wikipedia as references sometimes the terminology is really quite simple on Wikipedia, sometimes you can maybe just kind of make it that wee bit simpler for yourself	Internet Making sense of a subject

Appendix 12 - Diagram representing the process of reduction of categories

Original 78 categories	n=	Integrated into 48 categories	Integrated into 24 categories	7 themes
n= denotes the number of students who included some discussion on each categories				
Theme 1 - Learning in the University				
Lectures	n=11	Lectures	Lectures	Learning in the University
Building the foundations of knowledge	n=2	Building the foundations of knowledge		
Environment	n=3	Environment		
Noisy lectures do not help	n=2			
Group work	n=5	Group work	Group work	
PBL	n=1			
Presentations to peers	n=1			
Microsim	n=3	Microsim 3/3	Virtual learning environment	
VLE	n=3	VLE		
Theme 2 - Students' own approach to learning				
Reading	n=11	Reading	Reading	Students' own approach to learning
Journals	n=1			
Preparing for assessments	n=1	Preparing for assessments	Writing notes	
Writing notes	n=10	Writing notes		
Asking questions	n=6	Asking questions	Asking questions	
Producing own questions	n=2			
Peace and quiet to study	n=2	Peace and quiet to study	Studying & time management	
Time to study for exam	n=1	Time to study for exam		
Independent learning	n=2	Independent learning		
Internet	n=7	Internet		
Enjoy learning	n=1	Enjoy learning		
Learning style	n=1	Learning style		
Knowing your learning style	n=1			
Being open minded	n=1			
Student's approach to learning nursing	n=11	Student's learning strategies		
PDP	n=1			
Keeping healthy	n=1			
Highlighting notes	n=1			
Quiz	n=2			
Study group	n=2	Study group		
Studying	n=2	Studying		
Time management	n=3	Time management		
Breaking subject down	n=6	Breaking subject down	Breaking subject down	
Theme 3 - Learning through the use of visual or audio resources				
Mind map	n=4	Mind map	Mind map	Learning through the use of visual or audio resources
Mnemonics	n=3	Mnemonics	Mnemonics	
Visual learning and colours	n=7	Visual learning and colours	Visual learning and colours	
Audio recordings	n=6	Audio recordings	Audio recordings	
Practising oral exam	n=2			
Theme 4 - Individual's role in their learning				
Lecturers being approachable	n=4	Lecturers being approachable	Role of lecturers	Individual's role in their learning
Lecturers giving academic support	n=1	Lecturers		
Lecturers	n=10			
Mentor	n=11	Mentors	Role of mentors	
Learning from professionals	n=1			
Good relationship with mentor	n=2			
Being questioned by mentor	n=1			
Talking through a process with their mentor	n=1			
Students own role in learning	n=2	Students own role in learning	Role of a range of individuals	
Other people	n=10	Other people		
Patients	n=4			
Peers	n=6			

Theme 5 - Students' motivation, drive and determination to learn				
Being actively involved	n=3	Being actively involved	Motivation and determination	Students' motivation, drive and determination to learn nursing
Building confidence	n=3	Building confidence		
Determination. Don't give up	n=3	Determination. Don't give up.		
Motivation	n=5	Motivation		
Procrastinating	n=1			
Sense of achievement	n=1			
Asking questions	n=6	Asking questions	Asking questions	
Producing own questions	n=2			
Being assertive	n=6	Being assertive	Being assertive	
Seeking help	n=2			
Making sense of a subject	n=3	Making sense of a subject	Grasping an understanding of nursing knowledge and practice	
Mental block - difficulty in understanding	n=1			
Logical approach to thinking	n=1			
Working through to grasp understanding	n=5	Working through to grasp understanding		
Recognising difficulties	n=3			
Pause and come back to it	n=4	Pause and come back to it	Pause and come back to it	
Avoiding dealing with difficult subjects	n=1			
Theme 6 - Learning in context				
Learning in context	n=3	Learning in context	Learning in context	Learning in context
Stories	n=3	Stories		
Skills lab	n=10	Skills lab	Skills lab	
Role pla	n=1			
Applying theory to practice	n=9	Applying theory to practice	Applying theory to practice	
Theme 7 - Learning on the job				
Being in practice	n=10	Being in practice	Learning through the process of being in practice	Learning on the job
Supernumerary	n=1			
Knowing your way around in practice	n=2			
See one. Do one. Teach one	n=2	See one. Do one. Teach one.		
Learning in practice	n=8	Learning in practice		
Observing in practice	n=2			
Becoming more like a nurse	n=2	Becoming more like a nurse	Becoming more like a nurse	
Being a nurse	n=5			

Appendix 13 - Information stored within NVivo

Categories	Number of students	Significant statements
Applying theory to practice	10	26
Asking questions	10	22
Audio recordings	7	18
Becoming more like a nurse	5	9
Being assertive	7	11
Breaking subject down	7	17
Grasping an understanding of nursing knowledge and practice	7	17
Group work	5	9
Learning in context	9	27
Learning through the process of being in practice	11	39
Lectures	11	28
Mindmap	6	7
Mnemonics	6	10
Motivation and determination	7	17
Pause and come back to it	5	6
Reading	11	43
Skills lab	10	26
Studying & time management	5	13
The role of a range of individuals	11	42
The role of lecturers	11	43
The role of mentors	11	37
Virtual learning environment	7	11
Visual learning and colours	7	19
Writing notes	10	23

Column 1 - Categories.

Column 2 - Number of students referring to a category.

Column 3 - Number of significant statements for each category.

Appendix 14 - The relationship between the research questions and categories

Research question 1	Themes and categories	Additional comments regarding what facilitates students' learning
What teaching and learning methods facilitate students to understand nursing knowledge and practice?	Theme 1 - Lectures Theme 1 - Group work Theme 1 & 6 - Skills labs Theme 1 - Virtual learning environment Theme 2 - Breaking subject down Theme 4 - Role of lecturers Theme 4 - Role of mentor Theme 6 - Learning in context Theme 6 - Applying theory to practice Theme 7 - Learning through the process of being in practice	- Lectures, group work and skills labs which places learning in a nursing context and provides the opportunity to apply theory to practice - Videos on the VLE which place knowledge in a nursing context - Being in practice and in a community of practice involves staff utilising a range of teaching and learning approaches in supporting students learning - Engaging in professional discourse in class could be considered a learning approach -Students like lecturing staff to break down subjects into the component parts and explain how knowledge is applicable to a range of contexts - Students like mentors to explain what they are doing and why they are doing it, they also like their mentors to ask them questions and test their understanding

Appendix 14 - The relationship between the research questions and categories.

Research question 2	Themes and categories	Additional comments regarding what facilitates students' learning
What learning strategies do students employ to assist them to learn nursing knowledge and practice?	Theme 1 - Virtual learning environment Theme 2 - Reading Theme 2 - Writing notes Theme 2 - Asking questions Theme 2 - Studying & time management Theme 2 - Breaking subject down Theme 3 - Mind map Theme 3 - Mnemonics Theme 3 - Visual learning and colours Theme 3 - Audio recordings Theme 4 - Role of lecturers Theme 4 - Role of mentor Theme 4 - Role of a range of individuals Theme 5 - Motivation and determination Theme 5 - Being assertive Theme 5 - Grasping an understanding of nursing knowledge and practice Theme 5 - Pause and come back to it Theme 7 - Learning through the process of being in practice	- Students utilise a range of learning strategies including reading, writing and listening to audio files to help them to grasp an understanding of nursing knowledge and practice - Students' motivation and determination has an influence on their decision to learn nursing knowledge and practice - If students do not understand knowledge, pausing and coming back to it later is a common strategy employed by the students - Once the students have exhausted various approaches to learning in order to understand knowledge, they will strategically seek out lecturing staff, mentors and peers to help them to make sense of their knowledge - If students do not understand knowledge, they will often be assertive in asking their lecturers for help and asking their mentors for involvement in more learning activities - Students utilise a variety of strategies to learn in practice including asking questions, observing, actively seeking out activities, looking at and becoming familiar with equipment, reading about the experiences they have gained in practice and talking to patients about their conditions - Students are strategic in using colours, mnemonics, internet, mind maps and VLE to help them to understand knowledge - To use their time effectively, students strategically record and listen to nursing knowledge whilst travelling - Strategically arrange for family to look after their children to enable them time to study -Students break down concepts into their component parts to enable them to make sense of knowledge

Appendix 14 - The relationship between the research questions and categories.

Research question 3	Themes and categories	Additional comments regarding what facilitates students' learning
Who assists students to make sense of their nursing knowledge and practice?	Theme 1 - Group work Theme 1 & 6 - Skills labs Theme 4 - Role of lecturers Theme 4 - Role of mentor Theme 4 - Role of a range of individuals Theme 5 - Motivation and determination Theme 5 - Pause and come back to it Theme 5 - Being assertive Theme 6 - Learning in context Theme 6 - Applying theory to practice Theme 7 - Learning through the process of being in practice	-Engaging in professional discourse with their peers and lecturers in small group activities and skills lab enables them to make sense of their knowledge and practice -Engaging in professional discourse with a range of staff within practice enables them to make sense of their knowledge and practice -Lecturers and mentors sharing their experiences of practice helps place their learning context - Lecturers and mentors help students to understand how their knowledge is applicable to practice - Patients enables students to gain a deeper understanding of the variations in medical conditions - Being in a community of practice and working alongside all members of this community assists students to learn - Lecturers help to break down complex subjects into their component parts and helps them to make meaningful connections between theory and practice -Working alongside their mentor; watching, questioning, practising various skills under their supervision helps to build their knowledge and skills -If students are struggling to understand knowledge after a period of time, they seek assistances from the lecturing staff -Students recognise that in order to learn, they sometimes need to be motivated and assertive in seeking additional support from their lecturers and mentors. - Students learn new ways of processing knowledge by listening to the way their peers process knowledge and information.

Appendix 14 - The relationship between the research questions and categories.

Research question 4	Themes and categories	Additional comments regarding what facilitates students' learning
What assists students to transform their understanding of troublesome knowledge and gain cognisance of the complex nature of nursing knowledge and practice?	Theme 1 - Group work Theme 1 & 6 - Skills labs Theme 4 - Role of lecturers Theme 4 - Role of mentor Theme 4 - Role of a range of individuals Theme 5 - Motivation and determination Theme 5 - Pause and come back to it Theme 6 - Learning in context Theme 6 - Applying theory to practice Theme 7 - Learning through the process of being in practice Theme 7 - Becoming more like a nurse	- Placing learning within a variety of nursing contexts helps the students to make sense of their nursing knowledge and practice and gain cognisance of the complex nature of nursing knowledge and practice -Group activities and skills labs enables students to be immersed in the complex nature of nursing practice and discuss and debates complex issues through professional discourse and begin to make connections between knowledge and practice. - Engaging in professional discourse enables students to discuss in depth the complex nature of nursing knowledge and practice - Being in practice allows the students to experience the complexities involved in nursing practice - Recognising that they are becoming more like nurses and appreciating that they are beginning to understand the complex nature of nursing gives them the confidence to further examine the complex nature of nursing in more depth and in so doing develop a deeper appreciation of the complex nature of nursing knowledge and practice. - The notion of being determined to learn and appreciating at times that they need to pause and come back to it, allows them time to process information and transform their understanding of nursing knowledge - Being in a community of practice, learning from all members of the team and being immersed in nursing practice enables students to transform their understanding of knowledge and practice.