

A CASE STUDY OF HOW
NURSING STUDENTS LEARN
CLINICAL DECISION-MAKING IN
PRACTICE PLACEMENTS

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Abstract

Clinical decision-making is a crucial component of being a health care professional and is essential for a registered nurse. Therefore it is a key competence for nursing students to achieve during their pre-registration programme. There is a dearth of research about how nursing students learn clinical decision-making in practice, and most of the previous studies sought students' opinions about their practice learning.

The aim of the research was to explore how nursing students learn to make clinical decisions in practice placements and the influences that affect learning clinical decision-making in practice placements. Using Yin's (2009) case study approach, the thesis explored the influences on first and third year nursing students learning of clinical decision-making on a female medical ward in a hospital. Ethical approval was obtained. A complex consent process included students, mentors, ward staff and patients, prior to data collection. Six students' learning in practice was observed on two occasions each (n=12) and they were interviewed at the time of the observations about their learning of clinical decision-making (n=12). Mentors supporting the students' learning were also interviewed (n=4) and students' practice assessment documents analysed (n=4). The data was analysed using Richie and Spencer's (1994) framework approach.

The findings showed that the ward's community approach to supporting students' learning enhanced their experience and supported the learning of clinical decision-making. Ensuring patient safety and delivery of dignified compassionate care was paramount through role modelled behaviour and safe supervision. A structured approach to learning clinical decision-making was evident by mentors and students, who were highly motivated and demonstrated a heutagogical approach (Hase and Kenyon 2000) to their learning.

First and third year students were supported differently by mentors with third year students having close supervision to enable them to make clinical

decisions about higher risk patients. First year students were sometimes in decision-making situations that caused them anxiety. Students needed to be self-regulating in their decision-making, seeking support from other staff when decisions might compromise patient safety.

Synthesis of the findings with established tools informed the generation of a proposed framework to support students' learning clinical decision-making and to facilitate their mentors supporting their learning in the future. The study has brought new understanding to the subject of learning clinical decision-making through real life evidence from observation of students and mentors in practice placements.

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Glossary of Terms/ Abbreviations

'6 Cs'	6 Cs of Compassionate Care in Nursing; Care, Compassion, Competence, Communication, Courage and Commitment
A&E	Accident and Emergency Department
A-G assessment	Assessment tool used for nursing assessment in the NHS Trust
AHP	Allied Health Professional
BNI	British Nursing Index
B/P	Blood Pressure
CDs	Controlled Drugs
DH	Department of Health
DVT	Deep Vein Thrombosis
ESRC	Economic and Social Research Council
EWS/MEWS	Early Warning Score/ Modified Early Warning Score
HCA	Health Care Assistant
HEI	Higher Education Institution
INR	International Normalised Ratio measures of the extrinsic pathway of coagulation
IRAS	Integrated Research Application System
ITU	Intensive Therapy Unit
IV	Intra venous
LCP	Liverpool Care Pathway
MDT	Multi Disciplinary Team
Mentor	NMC term for nurse supporting a student's learning in practice
NMC	Nursing and Midwifery Council
NHS Trust	The Hospital Trust Supporting the Research Study
NRES	National Research Ethics Service
PADS	Practice Assessment Documents
PALS	Patient and Advice Liaison Service
PDA	Personal Digital Assistant

RCN	Royal College of Nursing
SBAR	A tool used for effective communication - Situation, Background, Assessment, Recommendation
Sign off mentor	NMC term for an experienced mentor supporting and assessing a student in the practice placement prior to registration
S/N	Staff Nurse
Student	Student nurse/Nursing student
UK	United Kingdom
USA	United States of America

Chapter 1 Background and context

1.1 Introduction

This chapter provides the background and context to the thesis and the identification and development of the research aim, which is to explore how adult field advanced diploma in nursing students (students) learn to make clinical decisions in practice placements and the influences affecting their learning of clinical decision-making in practice placements.

The context of nursing that has influenced students' learning in practice will be appraised. Since the inception of this study there have been changes to the Nursing and Midwifery Council (NMC) Standards for pre-registration education (NMC 2010). Being able to make clinical decisions is essential for a registered nurse and is explicit in the standards for Competence for a student to achieve during their pre-qualifying programme (NMC 2010). However, this was not as evident in the previous nursing standards (NMC 2004), when the standards were skills or competence focussed. The terms competence and clinical decision-making are explained, and the concept of clinical decision-making is developed in more detail in chapter 2.

1.2 Competence

The term competence relates to the ability to do something to a required standard. The NMC in relation to students on pre-registration programmes identified it as "the student demonstrating the capability in particular skills areas to practice to the required standard" (NMC 2005), and the component skills contribute to a competent practitioner. When a competence-based curriculum was initially discussed, it was suggested that using a competence framework for nursing was an "anti-educational mentality" supporting the belief that educated nurses were too clever to care (Watson 2002, p.479).

There was discussion as to whether competence is only the safe performance of a skill or includes the associated theoretical knowledge. It is accepted that competence for registered professionals includes the commensurate level of knowledge (Gopee 2011). The NMC (2010) now offers a clearer definition of competence and a competent practitioner as “the combination of the skills, knowledge, attitudes, values and technical abilities that underpin safe and effective nursing practice and interventions”. A student must acquire these competences by the end of their programme to achieve “fitness to practice” and they are fundamental to the registrant’s professional accountability and autonomy.

1.3 Clinical decision-making

Practice is a term that encompasses a body of knowledge, a capacity to make judgements, sensitivity to intuition, and an awareness of the purposes of the actions (Beckett and Hager 2002 p. 12). It is this capacity to make judgements that constitutes clinical decision-making, and it is an essential part of a student’s journey to becoming a registered nurse and competent practitioner who is fit for practice. The effectiveness of their future decision-making will influence patient outcomes and the quality of care.

“Effective clinical decision-making is one of the most important contributions made by health care professionals in patient care” (Lauri et al. 2001).

The definition of clinical decision-making used in the thesis is that it is “a process that nurses undertake on a daily basis when they make judgements about care that they provide to patients and management issues” (Banning 2008a). The sources of evidence upon which the decisions are based will be varied. Therefore, it is imperative that students understand the basis of decision-making and the relevance of evidence-based knowledge that underpins their decisions.

1.3.1 Clinical decision-making within a multi-disciplinary context

Students learn clinical decision-making in a multi-disciplinary context in practice placements. Clinical decision-making is part of the patient's care and management and should involve the multi-disciplinary team (MDT) working in collaboration to make the right decisions. The MDT includes the patient themselves, and decisions should be made with their participation and this will be discussed in more detail in section 1.3.2.

Clinical decision-making within the MDT is dependent on effective communication and sharing of information to develop a clear understanding of the patient's needs. According to Simmons (2010), the process of decision-making is dynamic and actions are considered and discarded at multiple entrance points. This is applicable to the MDT decision-making process with several contributors evaluating the potential outcomes of proposed interventions. Greenhalgh et al. (2008) described the importance of knowledge based on previous experience of patient outcomes in clinical decision-making. The MDT working together could assimilate information and use their experience and intuition to supplement clinical evidence about patients.

Loftus and Higgs (2008) allude to the inclusivity and appropriateness of language in the MDT, highlighting the importance of using the language of patient narratives rather than terminology that is derived from bio-medical knowledge. Students in Standing's (2007) study described the collaborative nature of learning clinical decision-making from the MDT. Therefore, supporting students learning clinical decision-making in a MDT is a key component of preparation for registration as a nurse.

1.3.2 Patient perspectives of clinical decision-making

The value of consultation with patients (Standing 2007) and the role of the patient's view in clinical decision-making are a key part of learning about decision-making. Patient participation and service user involvement are

components of students' curriculum. In a systematic review of shared decision-making (Légaré et al. 2014), it was found that interventions that promoted patient-centred approaches to shared decision-making were valuable. They facilitated health care professionals understanding the value of shared decision-making, especially when patients and healthcare professionals participated in shared learning. In the studies the interventions did not need to be long (over 10 hours) as short interventions were found to be as effective.

Learning in practice settings, alongside patients offers students the opportunity to develop decision-making skills and an understanding of the patient experience. In the university, expert patients representing voluntary sector groups or patient experience groups are invited to participate in teaching sessions. This offers students the opportunity to understand the importance of shared decision-making and the role of the nurse as an advocate for patients. Boudioni et al. (2012) found that the attitudes and personalities of health care professionals were important for the facilitation of patient information and for patient participation in decision-making. Therefore, the values demonstrated by role models including patients in decision-making are important for students learning to involve patients and their families in decision-making.

1.4 Current context of nursing

The context of nursing at the time of writing this thesis was in the aftermath of the Ombudsman's report (2011) and the Francis Inquiry report (2013) into the failings of the Mid Staffordshire NHS Foundation Trust, when nursing was represented in the media as uncaring. To ameliorate this view of nursing as a profession lacking compassion and care, the Chief Nursing Officer for England and the Department of Health lead nurse introduced the 6 Cs (DH 2012), which encapsulated the expected values and behaviours of nurses, midwives and health care staff. It was anticipated that these values would be incorporated into everyday practice so demonstrating Care, Compassion,

Courage, Competence, Communication and Commitment to patients and the profession. In an effort to galvanise the NHS to do better for patients, the 6 Cs were introduced as a vision and strategy but they were not evidence based. However, the 6 Cs had previously been used as a nursing vision in a Canadian discussion paper (Roach and Maykut 2010), without the recent addition of courage (DH 2012). Having started as the 5 Cs of caring: compassion, competence, confidence, conscience and commitment in Roach's (1994) earlier work, Roach herself later added a sixth dimension; comportment was an observable expression of caring (Roach 2002). Roach and Maykut (2010) expressed the view that nurses must demonstrate caring behaviours and be in an environment where it is conducive to them showing respect and professionalism. It is likely that the environment and culture described would constitute a suitable learning environment where students were cared for as they learnt. Two key aspects of the changing context of nursing that will be considered are patient safety and the increasing autonomy of nurses.

1.4.1 Patient safety

Clinical decision-making has a direct influence on patient safety (Saintsing et al. 2011). Health policy has focussed on improving patient safety by constant learning and service improvement. Berwick (2013) advised that patient involvement should move away from tokenism towards real empowerment of patients in decision-making processes. Berwick (2013) suggested that the elements to improving patient safety are changing culture, improving skills and systems, improving leadership and candour.

Understanding patient safety is an important aspect of students' learning in practice. They need to understand its implications for practice and their role in ensuring patient safety. According to Steven et al. (2014), students are exposed to patient safety issues every day in practice. Moreover, they also reported that within curricula, teaching about patient safety is relatively hidden and inexplicit. However, in practice, patient safety is a constant aspect of

nurses' clinical decision-making. Saintsing et al. (2011) identified that novice registered nurses are involved in errors relating to medication administration, patients' falls and failure to recognise deterioration in patients.

It is evident that the amount of exposure students' had to patient care impacted on their understanding of patient safety, and their ability to identify potential mistakes (Saintsing et al. 2011). Steven et al. (2014) found that there was a difference in the views of patient safety between the academic and the care provider organisation, and this can have a negative impact on students' learning. Steven et al. (2014) believed that through dialogue and patient safety role models from both academic and practice backgrounds the dissonance experienced by students could be addressed.

1.4.2 Increasing autonomy

The change in the context of nursing has led to increased autonomy for nurses. As nurses become more specialised, they work more autonomously in nurse specialist, practitioner and consultant roles. However, it was also found that some members of the MDT did not understand or recognise these changes in some critical care environments (Bucknall 2003). Environments where nurses experience greater autonomy were found to retain their staff, and have greater staff satisfaction levels (Sawbridge and Hewison 2011).

Students can experience greater autonomy in practice learning with appropriate facilitative support (Levett-Jones and Lathlean 2009). Brammer (2008) agreed that increasing students' autonomy could be positive. She also identified that a laissez-faire attitude to supervising students could leave them struggling, which impacted negatively on their learning and also compromise patient safety. Understanding the impact of autonomy on individuals' work experience is a key aspect of developing healthy work environments, which positively impact on patient outcomes (Sawbridge and Hewison 2011).

1.5 The current context of nursing education

The education of students in clinical practice is of concern to practitioners worldwide (Carnwell et al 2007). The fitness for practice and purpose of newly registered nurses has been a concern of the NMC in recent years (NMC 2005, NMC 2007a). Nurses who exercise good clinical decision-making significantly improve the quality of the patient experience (Bonney and Baker 2004). However, despite clinical decision-making skills being recognised in both the United Kingdom (UK) and internationally as a generic competence in pre-registration nursing programmes (Carnwell 2007, NMC 2007a); it seems that the importance of learning clinical decision-making to a nursing student's future role is virtually unexplored (Garrett 2005). The concept of clinical decision-making is explored in more depth in chapter 2.

In the Standards for pre-registration education (NMC 2010), the students' learning about clinical decision-making is evident in domain three: nursing practice and decision-making. There are clear outcomes identified which must be achieved by students for entry to the register and fitness to practice. As these standards have been implemented in pre-registration nursing curricular in the UK since September 2011, there is now a new generation of nursing literature which supports students' learning of decision-making in practice, a topic previously relatively unexplored in these texts.

The students who participated in the study were on an advanced diploma adult nursing programme, and the study hospital was their host trust for practice placements. They were studying before the implementation of the Standards for pre-registration education (NMC 2010). However, their programme included all aspects of clinical decision-making in the Standards for pre-registration education (NMC 2010) (appendix 1). Although the content on clinical decision-making was not overtly identified as clinical decision-making in the curriculum or taught session titles, the content set out in the Standards for pre-registration education (NMC 2010) was included in the module specifications. This also meant that it was probably not highlighted in the taught sessions as learning clinical decision-making.

When appraising the curriculum, it was evident that aspects of clinical decision-making were apparent in the module learning outcomes and timetabled teaching. Before their first practice placement, first year students learnt skills for nursing practice that included aspects of assessment and prioritisation of care. They also studied professional identity and values, sociology, including ethical decision-making. In addition, they learnt anatomy and physiology that gave a grounding to build the rationale for care in relation to pathophysiology in practice placements. The third year students had studied theory modules and learnt in practice placements relating to care of acutely ill patients in the second year of the course. They had also been assessed with an Observed Structured Clinical Examination (OSCE) at the end of their first year that included aspects of clinical decision-making following patient assessment. Therefore, the third year students on the study ward had experience of assessment and prioritisation of care for acutely ill adult patients. In addition, the third year students would have had a specialist placement caring for acutely ill adults that might have been in the intensive care unit, the accident and emergency department or the operating department. Service users were included in aspects of the curriculum delivery with expert patients participating in teaching.

Standing (2007) asked nursing students what had facilitated theoretical learning about decision-making. It was perceived that these included learning to apply reflective models, physiology, holistic care, nursing assessment tools and research. They believed these elements had helped in development of critical thinking skills and understanding the value of evidence-based practice.

Prior to practice placements, the students on the study ward had preparation for practice placements that included mandatory training and annual updates in infection control, manual handling, basic life support, conflict resolution and safeguarding. The students in Standing's (2007) study valued preparation for practice but considered they had insufficient preparation for their placements.

In Standing's study (2007) there was no mention of learning in a simulation environment prior to their practice learning. The students on the study ward would have attended skills teaching sessions in simulation environments as part of their learning in university. Learning in a simulation environment is now an implicit part of students' preparation for their practice placements (NMC 2007b, Baillie and Curzio 2009). Students in simulation environments can rehearse and rectify mistakes in a safe environment without risk to patient safety (McCullum 2007). The students on the study ward would have learnt and rehearsed clinical skills in simulation environments that support students' integration of theory to practice (Morgan 2006). It is also evident that in a simulation environment students are able to critique their own and their peers' performance, enhancing skills development and performance prior to placements (McCullum 2007).

1.6 Students learning in practice

Learning in practice is in the hands of students and mentors who support learning. Much has been written about mentors supporting learning in practice since the introduction of the mentor role (Pellatt 2006, Wilkes 2006). Revision of the Standards to support learning and assessment in practice (NMC 2006, NMC 2008b) brought changes to the mentor role, including the introduction of the sign-off mentor role. The experience of students' practice learning has a direct impact on their retention, attainment and progression on the course (Crombie et al. 2013). Learning in practice placements is a multi-dimensional and essential component of learning to be a nurse. The researcher, as a nurse educationalist over many years, has witnessed various changes in practice learning and has supported the development of mentors and practice educators. How students learn in practice has always been of interest. Learning clinical decision-making has been a relatively unseen element of learning to be a nurse, and it was an area that it was identified needed further exploration, as there is a dearth of evidence demonstrating an understanding of how students learn clinical decision-making in practice. There is a large

body of literature relating to mentorship and this has been appraised in relation to learning clinical decision-making in chapter 2 section 2.7.

1.7 Chapter summary

This chapter has provided an introduction to this thesis, setting the context of the study. The aim of the study was to explore how students learn to make clinical decisions in practice placements and the influences affecting their learning of clinical decision-making in practice placements. The researcher wished to understand clinical decision-making processes better. There was also a desire to explore whether there were differences between students at different stages in their course and what support mentors provide in developing these decision-making skills.

The thesis addresses the aim throughout the following chapters. Chapter two provides a summary of the literature review strategy and a review of the literature including policy documents, scholarly opinion, primary research and discussion papers. The chapter considers literature relating to clinical decision-making, the theory of learning clinical decision-making and nurses learning clinical decision-making. In addition, literature relating to mentoring and the culture of learning environments is appraised.

Chapter three establishes the ontological and epistemological stance taken in the study. The underpinning methodology and methods are justified in relation to the study aims. The case study design and ethical considerations are described. Finally, the chapter outlines the framework approach used for data analysis.

The findings are presented in chapter four under an overarching theme and the five themes as identified in the data. These are summarised in the conclusion to the chapter. Chapter five draws together the findings using the themes as a structure for the chapter. Observation of students learning clinical decision-making in practice brings unique insights that are supported

by interviews with students and mentors, and analysis of completed practice assessment documents (PADS).

Finally, the sixth chapter draws together the findings and revisits the aims of the study. It presents a conclusion that identifies the unique and original contribution of the thesis. The strengths and limitations of the study are discussed. The impact and implications of enhanced understanding of learning clinical decision-making in practice are appraised and suggestions for further study identified. Recommendations for policy, practice, and education are also identified and areas for future research considered.

Chapter 2 Literature review

2.1 Introduction

This chapter focuses on the literature that was relevant to understanding the key concepts of the subject. The purpose of the literature review was to illuminate and appraise any significant literature and identify where there were deficits of understanding in relation to students' learning of clinical decision-making.

2.2 Literature search strategy

For this research study, a broad literature search was undertaken using key terms to ensure that the scope of available literature was captured. The key search terms used to access the material are shown in table 1. The databases used and the search dates are shown in table 2.

When reviewing the literature, it was taken into consideration that the terms used in the UK compared to other countries are different. In addition, models of pre-registration nurse education, practice learning and support for students' learning in practice vary considerably from the UK model of practice learning.

The search terms provided a range of literature, commentaries, literature reviews, discussion papers and research studies. A limited number of the research studies focussed on learning clinical decision-making, and even fewer studies related to nursing students' learning in practice. Therefore, the studies relating to registered nurses and clinical decision-making were included in the critical appraisal. There were no systematic reviews related to the terms searched but two narrative reviews of mentoring.

Table 1 Key terms and inclusion and exclusion criteria for literature search

Key terms	student, nursing student, student nurse, nurse, clinical decision-making, decision-making, clinical decision, critical thinking, diagnostic reasoning, clinical judgement learning, mentor, mentorship, team mentoring, practice learning, learning in practice, clinical learning, learning environment, ward learning, learning culture.
Inclusion criteria	Research studies, audits, systematic and other reviews, Within the UK Within nursing and nurse education worldwide Students learning clinical decision-making Students learning clinical decision-making in practice Registered nurses and clinical decision-making
Exclusion criteria	Languages other than English Language Commentaries Studies before 1981

Table 2 Databases and the dates searched

Database	Dates searched
CINAHL	Jan1981- Sept 2014
Medline/PubMED	Jan 1981-Sept 2014
ProQuest	Jan 1986- Sept 2014
British Nursing Index	Jan 1994- Sept 2014

The reviewed literature on clinical decision-making was limited to English language literature. Despite the limit of language, there were English language articles that represented nurse education in a range of European, Middle Eastern and Asian countries, in addition to English-speaking countries. Australian nursing programmes were considered to be most similar to the UK, as their students' practice placements are most similar to the UK model. American studies were used but with the understanding that the education and medical system which influences clinical decision-making by nurses is significantly different to that in the UK.

The literature was appraised for relevance and quality using guidance from Greenhalgh (2006) and the Clinical Appraisal Skills Programme (CASP 2010) in relation to rigour of methods, credibility and relevance. The abstracts of the papers were read to determine their relevance. Following this the papers were read and included if relevant to the thesis. Secondary searching from reference lists was used to elicit relevant papers. However, due to the dearth of literature on nursing students' learning clinical decision-making in practice, all papers that were appraised were included despite the limited methodological quality of some of them. The papers selected met the inclusion and exclusion criteria as outlined in table 1. Further details of the papers were extracted into tables for further analysis and are presented in the text later.

2.3 What is clinical decision-making?

The terminology used in clinical decision-making is varied, as are the views about what it is. Some authors use the term clinical reasoning (Haffer and Raingruber 1998, Baxter and Rideout 2006, Higgs et al. 2008, Alfaró-Lefevre 2009) with clinical judgement (Benner and Tanner 1987) and diagnostic reasoning (Carnevali et al. 1984) being used by other authors. Thompson (1999) described the differences as semantics, asserting that the terminology is interchangeable. For the purpose of this study, the term clinical decision-making is used throughout. Clinical decision-making is the term usually used in the UK (Thompson and Dowling 2009). Standing (2010 p.6) asserted that by defining clinical decision-making, the nature of healthcare is revealed. It involves making choices, which are grounded in knowledge and evidence, so the right course of action can be selected. Moreover, according to Rycroft-Malone et al. (2004) the evidence is not only scientific, but also gained through observation, feedback and reflective practice.

Clinical decision-making is defined as a process of choosing between alternatives (Thompson and Dowling 2009), but Thompson (1999) highlights it

not as a simple linear process utilising knowledge, but a more complex construct. However, it is agreed that it is a process essential for nurses' everyday work as they make judgements about management of care (Banning 2008a). Banning's (2008a) paper reviewed clinical decision-making models which are appraised in section 2.3.1. Clinical decision-making was clearly defined by White (2003 p.114) in a phenomenological study of students' views on learning decision-making, which is appraised within the studies about students' learning clinical decision-making as:

“a dynamic and complex thinking process that results in independent and interdependent nursing interventions”.

Many authors have described clinical decision-making as complex (Garrett 2005, O'Neill 2005, Banning 2008a). The papers are of different origins. Garrett's (2005) paper is appraised with the papers on students' learning clinical decision-making later in this chapter. O'Neill (2005) asserts that clinical decision-making is a complex task that requires a knowledgeable practitioner, reliable information inputs, and a supportive environment (O'Neill 2005 p.69). O'Neill's (1999) original work in the USA reported on a university based course to strengthen students' decision-making skills. This work recommended that students are educated about how to use knowledge to make clinical decisions, as experience alone does not develop the requisite decision-making skills. O'Neill's (2005) paper introduces a theoretical framework; the novice clinical reasoning model, based on existing literature and incorporating evidence from studies to assist decision-making skills in novice nurses. It has not been implemented but Dowling (2008) believes it may give insight into how novice nurses make decisions and assist with pattern recognition, a key aspect of developing decision-making ability.

It has been claimed that many authors writing about clinical decision-making did not define a clinical decision but describe the clinical decision-making process (Bakalis and Watson 2005). Haffer and Raingruber (1998) recognised the diversity of definitions and they incorporated the importance of a range of attributes, goals, skills and processes in their definition of decision-making. Higgs and Jones (2008 p.4), as allied health professionals, defined

clinical decision-making as a context-dependent way of thinking and decision making in professional practice, involving practice knowledge and reasoning, metacognition and reflexivity. Flannery Wainwright et al. (2010 p.75) simply defined it as “reasoning that results in action”.

Standing’s (2010) work is appraised in detail later with other studies about students learning clinical decision-making. She developed a definition in her phenomenological study of nurses’ perceptions of clinical decision-making. She identified and emphasised the need to include critical thinking skills and professional accountability for decisions. Standing’s definition (2005 p.34) was expansive and included the elements of observation, information-processing, critical thinking, evaluation of evidence, application of knowledge, problem-solving skills, reflection and clinical judgement to select the best course of action for a patient, minimising potential harm. The amalgamation of these elements is reflected in the other empirical work on clinical decision-making (White 2003, Garrett 2005, O’Neill 2005, Baxter and Rideout 2008).

Banning (2008a) offers the definition that clinical decision-making is a process that nurses undertake on a daily basis when they make judgements about care that they provide to patients and about management issues. This definition recognises the frequency and purpose of clinical decision-making and is aligned to the researcher’s interpretation of clinical decision-making used in this thesis.

2.3.1 Clinical decision-making models

There are two main theoretical approaches to clinical decision-making processes (Thompson 1999). Banning (2008a) reviewed clinical decision-making models and their application to clinical decision-making practice. The review highlights the need for large-scale studies to examine nurses’ decision-making strategies, as many of the studies use small numbers where nurses are unsure of their decision-making processes.

The information-processing model was a frequently used model in nursing for clinical decision-making and was based on a systematic hypothetico-deductive task approach (Thompson 1999). Carnevali (1984) described a seven-stage diagnostic reasoning process based on the hypothetico-deductive approach. This model is usually reduced to a four-stage model involving Cue, Hypothesis or Judgement, Decision, and Evaluation (Tanner et al. 1987, Thompson 1999). The reduced four-stage model is easier to apply to decision-making situations. According to Thompson (1999), the stages remain the same. Within the hypothetico-deductive approach, decision-making trees may be used as tools to support decision-making. Banning (2008a) recognised the deficiency in these, as they rely on the existence of correct empirical data related to the decisions. However, in real life nursing events a degree of uncertainty often exists. This highlights one of the drawbacks to a decision-making process that expects clear unequivocal answers, as in nursing this is frequently not the case.

The intuitive-humanist approach to clinical decision-making has been variously described as “*understanding without a rationale*” (Benner and Tanner, 1987 p.24) and “*Immediate knowing of something without the conscious use of reason*” (Schrader and Fischer 1987 p.45). According to Lamond and Thompson (2000), these definitions are ambiguous and so there is an invisibility to the intuitive decision-making process. This is in agreement with Banning’s (2008a) view that the hypothetical-deductive approach does not take account of the humanist side of clinical decision-making. It is considered that the hypothetical-deductive and intuitive-humanist theories are at opposing ends of a continuum of decision-making approaches (Thompson 1999, Banning 2008a). O’Neil et al. (2005) related the intuitive approach to pattern recognition, which is a recognised feature of expert practice (Benner et al. 1996) and learning decision-making. Benner et al. (1996) also assert that prior to development of experience, nurses will use guidelines and policies to support their decision-making.

2.3.2 Knowledge and clinical decision-making

The types of knowledge that professionals use were derived from Carper's work on the fundamental "patterns of knowing" (1978). Carper's (1978) seminal work has enhanced understanding of the different dimensions of knowledge which were described as:

- Empirical knowing - empirically verified knowledge which can be measured and tested;
- Ethical knowing – attitudes and moral-based knowledge which is difficult to assess;
- Aesthetic knowing – intuitive-based knowledge grounded in experience and expertise, "the art of nursing";
- Personal knowing - knowledge related to self-understanding, and how this influences professional practice.

It is asserted that all of these dimensions contribute to clinical decision-making and it might be expected that students learning clinical decision-making would mirror a registered but inexperienced nurse in clinical decision-making. However, Cloutier et al. (2007) criticised Carper's (1978) work, as it disregarded qualitative inquiry and the aesthetic knowing component of the framework was grounded in a realist paradigm. Cloutier et al. (2007) believe that the work of Benner and Tanner (1987) captured the aesthetic knowing in their concept of intuition, making "the direct feeling of experience" (Carper 1978 p.16) an acceptable aspect of evidence. Scott and Spouse (2013) believed coaching using reflection to develop aesthetic and personal knowing enhanced students' ability in clinical decision-making. Benner's work (2001) demonstrated the importance of expert practitioners' communication in supporting novice practitioners' development of professional expertise.

The intuitive-humanist stance on clinical decision-making is aligned to Benner's view (2001) that decisions are based on a combination of intuition and experiential knowledge gained through professional expertise. Benner explained that the novice nurse used procedures and guidelines to underpin decision-making, whereas the expert practitioner does this through intuitive

experience. Benner's (2001) work was built on the work of Dreyfus and Dreyfus (1986) who described the expert practitioner as someone who responds to a situation in a fluid, automatic way. However, legitimising this expertise has caused concern with some theorists (Lyneham et al. 2008).

There is disagreement as to whether clinical decision-making and critical thinking are cognitive domain activities or skills-based functions including social, affective and personal knowledge (Benner et al. 2001, Tanner 1997). In an editorial, Tanner (1997) asserted that personal involvement in clinical decision-making was inevitable and there is also a moral and ethical component to decision-making, which is supported by Carper's work (1978). It could be argued that there is personal involvement in decision-making as self-reflection on decision-making is an implicit aspect of practice development (Lyneham 2008), they would therefore be cognitive domain activities. However, recognition that there is a social, affective and personal component to decision-making is crucial.

Evidence-based care has driven changes in health policy with the emphasis on the quality of decision-making (Pawson 2006). However, Monaghan et al. (2012) caution against policy always requiring new evidence, as this can be a barrier to new decision-making processes. As implied in Carper's work (1978) and documented by Benner and Tanner (1987), the role of intuition in decision-making in nursing has been acknowledged Thompson and Dowding (2009) would however argue that judgement and intuition are not a robust strategy for good and successful decision-making in nursing. Lyneham's (2008) work about expert practice in emergency care demonstrates the validity of intuitive practice by the development of an expert practitioner from cognitive intuition through transition to embodied intuition. It is evident that curiosity and reflective practice support the novice practitioner's journey towards intuitive practice (Lyneham 2008).

2.4 Learning theory in relation to clinical decision-making

Banning (2008b) considered that pre-registration students should be taught critical-reasoning skills to enable them to develop into autonomous practitioners. Thompson and Dowding (2008) identified that teaching clinical decision-making was difficult but suggested that other theoretical learning approaches were component parts. These were adult learning theory (Knowles et al. 1998), self-directed learning (Candy 1991), self-efficacy (Bandura 1997) and reflective practice (Schön 1987). These are considered in relation to learning clinical decision-making.

Botti and Reeve (2003) had said that little was known about the factors that enabled the attainment of clinical decision-making skills in novice nurses or their level of attainment during their programmes of study. In agreement with Banning (2008a) and O'Neill (2005), Thompson and Dowding (2009) suggested the use of a framework for clinical decision-making. Banning (2008b) believed that the use of 'think aloud' as a technique would support clinical decision-making and therefore those supporting students' learning should develop these skills. Originating in psychology, as a tool to understand thought development (Banning 2008b), 'think aloud' has been used as a tool for teaching nurses clinical decision-making skills (Fonteyn and Fisher 1995, Lee and Ryan-Wenger 1997). 'Think aloud' was proposed by Banning (2008b) as a suitable strategy for pre-registration nursing students learning supporting development of reflective responses to cues in development of decision-making. It is based on the assumptions that information processing and cognitive processes are acknowledged through discourse, and thinking aloud provides an indication of this information (Taylor 1997).

Banning (2008b) offered a framework of heuristics for clinical decision-making with the 'think aloud' approach:

- Making connections to identify possible relationships between cues,
- Describing as a means to present information
- Evaluating data to compare cues
- Explaining to provide reasons or a rationale for an action

- Judging to formulate conclusions on evaluation
- Planning as a means to predict possible future actions

Banning (2008b) recognised that students using ‘think aloud’ can be hampered by their difficulty in articulating their thinking processes. However, by using the tool from the start of their pre-registration course, this is likely to improve their capability.

The approach of adults to learning was described by Knowles et al. (1998). The importance of independence and autonomy in learning were recognised as attributes of adult learners. Moreover, adult learners valued learning and were driven by their personal motivation. The role of motivation in students’ learning is a key attribute to their success. In practice placements, this is dependent on a positive learning environment (Nolan 1998) and the attitude of mentors (Smith and Gray 2000).

According to Eraut (2004), tacit knowledge is learnt implicitly through processing knowledge; for example, being able to follow a procedure without remembering the next action. The key aspect of practice learning is that these concepts are learnt together and remembered for future reference, building a practitioner who is knowledgeable and competent (Eraut 2004). When strategic decisions are made, possible actions are considered based on tacit knowledge without recalling its provenance. Eraut (2004) suggested this is characteristic of clinical decision-making. In developing clinical decision-making skills, it may be suggested that students are building the bank of experience but this is enhanced by the presence of a mentor who prompts their knowledge-processing enabling them to become included in the community of practice (Lave and Wenger 1991).

The development of self-directed learning skills leads to confidence in a student, although this may be a journey with difficulties, which needs to be overcome (Lunyk-Child et al. 2001). However, to continue the professional journey beyond registration, being self-directed is essential to maintain personal and professional development. As registered practitioners, nurses need to be accountable and responsible for their practice (NMC 2008a).

Students learn professional standards in practice learning (O’Luanaigh, 2011), especially from role models (Spouse 2001). Self-efficacy is learnt through understanding one’s capability (Gopee 2008), which is enhanced by belongingness (Levett-Jones and Lathlean 2009), and feeling empowered (Bradbury-Jones et al. 2010). According to Bandura (1997), having others who believe in one’s capability is also a benefit to development of self-efficacy.

Reflective practice is a key component of learning (Schön 1987). By deconstructing learning through a process of reflection, learning is enhanced (Eraut 2004). In practice learning, reflection is encouraged and the mentor is a key instrument in this process (Spouse 2001), especially assisting first year students to make sense of their experience (Lascelles 2010). Learning to “reflect in action” (Schön 1983), is enhanced by mentors who help students to draw on the experiences encountered in their practice placement. Beckett and Hager (2002) refer to this as “hot action” and asserted that although it is extremely effective for learning, novices find it particularly difficult. Therefore, Beckett and Hager (2002) considered reflection on action after the event was more beneficial. According to Warelow (1997), developing the ability to critically reflect on one’s practice enhances the praxis of nursing and contributes to students’ ability to make clinical decisions. This is congruent with the findings that reflection assists practice development (Lyneham 2008).

2.5 Studies of students learning clinical decision-making

In reviewing the literature of students’ learning clinical decision making in practice, there were few studies where students’ learning about clinical decision-making in practice was explored. Studies found were from both qualitative and quantitative paradigms using a range of single and mixed methods.

Table 3 The studies related to students learning clinical decision-making

Author	Year and country	Paradigm/ Methodology	Methods	Number of participants and aims
Tschikota	1993 Canada	Quantitative	Tool to assess locus of control and recorded scenarios using 'think aloud'	19 senior Canadian students in a simulated environment were identified as either having internal or external locus of control and their decision-making processes identified
Taylor	1997 Australia	Qualitative	Observation in practice, semi-structured interviews	Unknown number of novice and expert nurses' performance compared in specific clinical skills
Botti and Reeve	2003 Australia	Quantitative	Quasi-experimental 6 simulated problems in a paper based exercise	60 2 nd and 3 rd year Australian students' performance in a simulated decision-making exercise linked to academic ability
White	2003 USA	Phenomenology Heidegger	In depth interviews	17 final year students views about learning clinical decision-making
Chesser-Smyth	2005 Ireland	Phenomenology	Interviews	12 first year students' experience in their first practice placement
Garrett	2005 Canada	Phenomenology Heidegger	Interviews, focus groups, consensus mapping exercise, questionnaires	21 final year students' views about learning clinical decision-making
Baxter and Rideout	2006 Canada	Case study Yin	Journals and interviews	12 second year students views about determining the need to make clinical decisions

Author	Year and country	Paradigm/ Methodology	Methods	Number of participants and aims
Etheridge	2007 USA	Phenomenology	In depth interviews	Unknown number of students' views about learning clinical decision-making
Standing	2007 UK	Phenomenology Heidegger	In depth interviews, reflective journals, critical incident analysis, documentary analysis and case studies	20 (10 at end) students' views about clinical decision-making throughout their course
Baxter and Boblin	2008 Canada	Case study Yin	Documentary review, journals and interviews	19 students' views on learning clinical decision-making in their course

The quantitative studies (Tschikota 1993, Botti and Reeve 2003) investigated decision-making processes in students. These are included in table 3. Tschikota (1993) examined the decision-making processes of nineteen senior nursing students in a simulation environment. The influence of an internal or external locus of control on decision-making was considered. Using the 'think aloud' technique students were asked to talk through their thinking process. Students were found to process information in small amounts and to formulate hypotheses, and in keeping with novices, attribute equal importance to all information. Those students with an internal locus of control were found to be more able to use complex reasoning strategies. It was asserted that increasing students' confidence in their ability to make decisions would improve their decision-making. In the UK this may be achieved by good support for students in practice.

Botti and Reeve (2003) used a quasi-experimental design to investigate students' performance and skills in a range of simulated clinical problem solving scenarios. The 60 second and third year undergraduate students differed in experience and academic ability. The study showed students'

capacity to make decisions was based on their academic ability and experience, and findings were in keeping with previous research into novice and expert practitioners (Benner 1996). However, the problem-solving scenarios were related to simulated environments and there is no evidence to support whether students make decisions in a similar way in a practice setting. The results did demonstrate that higher ability students generated more hypotheses about the likely outcomes. It was suggested that the use of 'think aloud' would encourage critical thinking but this was not previously mentioned in the paper or part of the study.

The qualitative studies identified for appraisal were focussed specifically on students learning clinical decision-making in practice settings (Taylor 1997, White 2003, Baxter and Rideout 2006, Baxter and Boblin 2008, Etheridge 2007, Standing 2007) (See table 3).

The only UK study was from Standing (2007). Most of the studies were based in North America where students' learning in practice is under the auspices of clinical educators and students have shorter periods of time learning in practice. However, despite the different context these studies were included due to the lack of relevant British studies and they did explore clinical decision-making in practice. It was expected that the Australian studies would have more similarities to students learning in the UK, as students spend time learning in a range of clinical contexts during their programmes.

Baxter and Rideout (2006) and Baxter and Boblin (2008) considered how students determined the need to make decisions, and responded. It is possible the students participating in these two studies might overlap, with one study being a subset of the other but it is unclear in the papers. As Baxter and Boblin (2008) stated, it was part of a larger qualitative case study about nursing students' decision making throughout a baccalaureate degree programme. This may indicate the students within the two papers were the same students at different stages in their programme.

Taylor's study (1997), described as a qualitative study gave no more detail about the methodological approach. However, it was one of two studies that employed some observation in practice and semi-structured interviews. Surprisingly, Taylor's study (1997) did not make reference to ethical approval or consent of the participants, which would also have included patients. However, sixteen years ago publishers were less rigorous about this inclusion for publication.

Some studies did not justify their methodology or selection of data collection methods in relation to their literature reviews (Etheridge 2007, Garrett 2005). Taylor (1997) justified observing practice, as previous studies of students learning clinical decision-making had been in artificial settings and Taylor (1997) believed a real environment should be used to research nurses' problem-solving skills. This demonstrates an understanding of the context of nursing where problem solving in a simulation environment does not compare to the experience of a real-life situation.

Taylor's observations (1997) were of five specific procedures to compare performance between novice and expert nurses. Further information is not shown about how the observations were compared, although a field log was kept. Each participant was observed for only one procedure, in total nine first and nine third year students. This would not have yielded very much observation data and there is no discussion of the results having been based primarily on observation or interview data, and this is a limitation of the study. To capture the observation data in a consistent manner, a schedule was utilised (Taylor 1997). The results were reported in detail but it was not clear where observation or interview data was used. However, the results related clearly to novice or experienced nurses and this was particularly informative. Novice nurses did not use problem-solving as they did not recognise cues in the clinical setting. In relation to development of novice problem solving, Taylor (1997) advocated the use of real-life situations for education to develop novice skills in problem solving. However, this study was 15 years ago and the use of simulation in nurse education has increased during this time in response to NMC guidance (2007b). There were no specific findings

related to experienced nurses although it was identified that many clinicians were oblivious to the problem-solving process.

In all the studies, the participants were pre-registration students and all the researchers were associated with the related university. Participants were purposively selected in the studies, except Garrett (2005), who used a convenience sample of volunteers. However, Etheridge (2007) did not mention the number of participants or how they were selected, but the sample size of the study was identified as a limitation of the study.

As expected for qualitative studies involving in-depth interviews, the studies had small numbers of between 15 and 21 participants. It was difficult to establish the actual number of students in Taylor's study (1997). Standing's (2007) participants dropped from 20 to 10 due to attrition on the course, not withdrawal from the research. This is a problem with small-scale longitudinal studies and a limitation of this study. Indeed the total number of students included in all the studies was just over one hundred students, a tiny proportion of students' views about their clinical decision-making.

The authors in some of the studies acknowledged their position as educators in relation to student participants. They described how any perceived bias or coercion would be managed (Standing 2007, Baxter and Rideout 2006, Baxter and Boblin 2008).

In White's study (2003), students identified the importance of building relationships with staff and patients, gaining confidence so they start to think like a nurse, and the importance of a range of clinical environments for learning. Etheridge's paper (2007) was poor quality, omitting details about the number of participants, the data collection and analysis. It replicated White's work (2003), which was not referenced.

The interviews were all semi-structured with guides to direct them (Baxter and Rideout 2006, Baxter and Boblin 2008, White 2003, Standing 2007). Baxter

and Rideout (2006) used the clinical journals to inform the interviews. Baxter and Boblin (2008) used a pilot to develop an interview schedule.

With the exception of Baxter and Boblin (2008), interviews were face-to-face. However, Baxter and Boblin (2008) used both face-to-face and telephone interviews. This might be a limitation, as telephone interviews may not yield the same quality data as face-to-face interviews as the interviewer does not have the benefit of any non-verbal communication, yet this was not commented on in the study. No indication was given if the reflective journals would be used differently to inform discussion in phone interviews and whether both researcher and interviewee had a copy of it (Baxter and Boblin 2008). Garrett (2005) acknowledged a limitation that peer pressure might have influenced contributions in the focus group but believed the individual component would have mitigated this.

Thematic content analysis was used (White 2003, Garrett 2005, Standing 2007), which Standing (2007) then applied to the journal data. As advocated by Guba and Lincoln (2005) and Miles and Huberman (1994), a constant comparative approach was used to maintain rigour (Taylor 1997, White 2003, Baxter and Rideout 2006). Standing (2007) maintained rigour by respondent validation, peer review and researcher reflexivity through the use of a reflective account (Silverman 2006).

The rigour of the findings across the studies was difficult to verify, as the papers did not give substantial quotes from the participants to validate the findings (White 2003, Baxter and Rideout 2006, Baxter and Boblin 2008). It is possible that the publication word limits affected the authors' abilities to include sufficient detail about the studies. Qualitative studies are reliant on the evidence from interviews and observation and without these illustrations the trustworthiness of the reported findings is weakened.

Table 4 Comparison of the findings in the qualitative studies appraised

Students need	Author(s)
To gain confidence	White 2003 Etheridge 2007 Baxter and Rideout 2006
Skills in decision-making	White 2003 Etheridge 2007 Baxter and Rideout 2006
To know how to build relationships with staff & patient	Etheridge 2007 Baxter and Rideout 2006
Preparation for responsibility	Baxter and Boblin 2008
To develop problem solving skills	Taylor 1997
To understand decision-making processes	Garrett 2005

The findings of the studies appraised are set out in table 4. The findings purport to indicate that students needed to gain confidence and skills in decision-making (White 2003, Etheridge 2007 Baxter and Rideout 2006). They need to learn how to build relationships with staff and patients (Etheridge 2007, Baxter and Rideout 2006). Students need preparation for the responsibility of decision-making and the transition to autonomous registered nurse (Baxter and Boblin 2008). Taylor (1997) found novice students showed little evidence of problem solving, which was related to their inability to recognise cues in practice. Garrett (2005) found that students had little conceptualisation of the process of clinical decision-making. They prioritised clinical over cognitive skills, previously described by Benner et al (2001).

All the studies appraised recommended the need for further research into students' decision-making skills in clinical practice. The studies predominantly explored students' views of their learning in practice through interviews. The phenomenological studies (White 2003, Garrett 2005, Etheridge 2007, Standing 2007) claimed to be studying how students learn clinical decision-making but interviews and process mapping actually explored students' experiences of clinical decision-making. They did not seek the views of those

supporting the students, which would have given better insights into how students actually learn clinical decision-making. The studies all involved small numbers of participants that was in some studies recognised to be a limitation (Garrett 2005, Standing 2007). This was a limitation to the transferability of the findings of each study. However, there is congruency across the studies' findings. No studies were found where participant observation was used to understand the dimensions of how students learn clinical decision-making in their practice experiences. This method would enhance the understanding of students learning clinical decision-making in a real-life context and offer understanding to the processes involved.

Chesser-Smyth (2005) did not investigate students' learning clinical decision-making but studied the lived experience of first year students in practice. In this Irish phenomenological study, Chesser-Smyth (2005) interviewed twelve first year students about their first placement experience with the aim of exploring what prepared students for placement. The findings recognised the importance of welcoming students and helping them to learn skills to participate in care delivery that reduced their anxiety. Staff showing a positive attitude to the students and facilitating their learning also aided their confidence.

In a recent Irish study, Houghton et al. (2013) examined the factors impacting on students' implementation of clinical skills in practice. This study was appraised as it also used observation in practice and like Taylor (1997), Houghton et al. (2013) wanted to research students' learning in the real world. Although this case study did not look at students learning clinical decision-making skills but doing clinical skills it was considered relevant as it observed student in practice. The case study took place on 5 sites, involving 43 interviews and non-participant observation of students in practice at each of the sites. A total of 20 students participated. The consent process involving participants and patients whose care was being observed was reported. The paper does give some detail of the observation, although clear definition of non-participant is not given, except that the researcher was "far enough from the student to not make them uncomfortable" (Houghton et al. 2013, p.1963).

The researcher used time sampling and moved around the clinical area to see a range of students and activity, for two hours during a twelve-hour shift. Therefore, each student was observed for about 15 minutes in total. The observation data contributed to the findings by demonstrating the “reality of practice” (Houghton et al. 2013, p.1964).

The study highlighted that students experienced anxiety, which can hinder their practice skills development. Students needed someone to facilitate their skills development and other students also had a positive impact on their learning increasing their confidence. Houghton et al. (2013) observed missed opportunities for learning in practice that were sometimes related to the busy environment.

Although Houghton et al’s (2013) study does not relate to learning clinical decision-making but involved clinical skills development in practice, the methodology of observation of students’ learning in this study contributed to an understanding of conducting observation of students’ learning in practice. As so few studies of students learning clinical decision-making were identified, studies of registered nurses’ clinical decision-making were also appraised.

2.6 Studies of registered nurses and clinical decision-making

The studies that explored registered nurses’ clinical decision-making were frequently based in critical care environments (table 5). Some of these studies differentiated novice and experienced registered nurses.

Most of the studies of registered nurses and clinical decision-making took place in Australia. The reason for this is unknown but it is interesting that there are not any studies from other English speaking countries.

Table 5 Studies of registered nurses and clinical decision-making

Year	Author	Type	Method	Context
2001	Gerdtz and Bucknall	Qualitative	Structured observation	Observation of 26 triage nurses on 404 occasions using a 20 item instrument about decision-tasks
2003	Bucknall	Qualitative	Observation and interview	Observation of 18 critical care nurses for 2 hours of routine practice followed by a semi-structured interview
2006	Currey et al.	Qualitative	Observation and interviews	38 nurses' perceptions of decision-making in critical care of cardiac patients
2009	Rycroft-Malone et al.	Evaluation research of protocol based care	Ethnographic case study on 2 sites	Protocol-based care and other factors' influence on nurses' decision-making: participant and non participant observation, 26 semi-structured interviews with practitioners, 64 interviews including patients, and all grades of staff, and documentary analysis
2013	Deegan	Grounded theory	Interviews and observation	17 nurses from diverse cultural and linguistic backgrounds' views of clinical decision-making

All the studies used observation in some form. Some of the observations were timed but the researchers all wished to explore the real-life context of nurses working in the clinical setting. Several of the studies also used interviews to follow up and check interpretation of the observation.

One Australian study was Currey et al. (2006), which studied critical care nurses' perceptions of their clinical decision-making when caring for patients for two hours following cardiac surgery. Thirty-eight nurses were observed and interviewed about their perceptions of clinical decision-making, of which 21 were experienced and 18 were inexperienced cardiac nurses. Less experienced nurses voiced feelings of anxiety and feeling daunted by the decisions they needed to make. Both experienced and inexperienced nurses felt challenged and satisfied when their decision-making contributed to successful patient outcomes. Support from colleagues was highlighted as important, especially when receiving and settling a patient; which was deemed to be the most critical period for the patient. Inexperienced nurses

wanted support from those with theoretical knowledge about unstable patients. The study was acknowledged as small but equally provided a rich understanding of cardiac nurses' perceptions of clinical decision-making in the setting and identified that further study was warranted.

In another Australian study, 26 triage nurses (Gerdtz and Bucknall 2001) were observed making clinical decisions in practice settings. Gerdtz and Bucknall (2001) used a structured approach with a validated instrument to observe performance of triage tasks. Nurses' experience was found to affect the time taken for assessment but was not statistically significant. However, more notably the use of physiological data by nurses when assessing patients was limited. For example, vital signs were used by fewer than one quarter of nurses especially in less unwell patients and indicates that subjective factors strongly influenced decisions made.

In another study, also from Australia, Bucknall (2003) observed 18 critical care nurses during routine clinical practice using event sampling and then an interview to seek their interpretation of the observed period. The three categories of influence of their decision-making were: patient situation, availability of resources and interpersonal relationships. The patient's complexity and stability influenced decision-making, numbers of experienced nurses available affected the workload and inexperienced staff felt guilty seeking support from busy staff but were unable to make decisions without support. Bucknall (2003) recognised the stress associated with decision-making, suggesting its real impact has not been investigated. Collaboration and support for nursing staff was important in the delivery of quality care and conflict was considered to affect decision-making but there was no evidence for this.

Rycroft-Malone et al's (2009) study was a large ethnographic 2-site case study, which looked at how protocol based care had influenced nurses' decision-making. It was found that nurses did not always refer to protocols for their decision-making and when they did they were utilised flexibly alongside

their clinical experience. Some information was privileged and not openly available bringing a social context to the decision-making process.

In another Australian study (Deegan 2013), 17 nurses, 3 clinical educators and 14 nurses from diverse cultural and linguistic backgrounds who were completing a competency-based programme for nursing registration in Australia were observed and interviewed to ascertain their views on decision-making. The study identified that cue collection is fundamental to decision-making and this is through a nurse's ability to recognise and interpret changes in a patient's condition. In the study, nurses described how routines and their lack of autonomy as a newcomer meant they could not influence decision-making that was grounded in routine. The need to make decision-making processes explicit was recognised especially when supervising students. A more reflective approach to evaluation of care was suggested by Deegan (2013) to encourage nurses to examine their practice and ensure decisions are grounded in patient assessment not ritual.

These studies used observation and follow up feedback which has given rich data demonstrating evidence of clinical decision-making by registered nurses in a range of practice settings. Clinical decision-making benefits from being made explicit as a part of patient management provided it is linked to individual patient data.

The next section of the literature review appraises studies about mentorship in nursing. There was a large body of knowledge and so studies that explored support for students learning in practice were appraised as they were of relevance to the thesis.

2.7 Studies about mentorship

The support that should be given to students while learning in practice is defined in standards from the Nursing and Midwifery Council (NMC 2008b). Mentors are the nurses who support and assess students learning in practice

placements. For this reason, literature relating to mentorship was included in the literature review as it is a key aspect of students' learning and crucially their learning clinical decision-making in practice.

Systematic reviews of the studies about mentorship have been derided as being of poor quality methodologically (Merriam 1983) and lacking in rigour (Jinks 2007). Although Merriam (1993) is now over twenty years old, Jinks (2007) also considered the quality of methodology to be lacking in rigour. It was identified that research studies in the UK about mentorship are generally small but equally important due to the role mentors have in practice learning (Jinks 2007) and practice experience. It is unfortunate that a rigorous evidence base about mentorship is not available.

For the few quantitative studies identified, the primary data collection method was survey, using un-validated questionnaires, which has continued into contemporary studies (Andrews and Chilton 2000, Bray and Nettleton 2007, McCarthy and Murphy 2007). Mentorship was defined in individual author's terms and there was lack of consistency in mentorship processes (Morle 1990, Wilson-Barnett et al. 1995, Neary 2000).

The details of the more relevant qualitative studies appraised about mentorship are tabulated in table 6. There are two studies exploring mentorship that utilised observation as a data collection method (Spouse 2001, Smith and Gray 2001).

Several of the research papers sought to identify the attributes of successful mentorship (Spouse 2001, Smith and Gray 2001, Webb and Shakespeare 2008). It was recognised that the mentor role enhanced the student experience (Pellatt 2006, Jinks 2007). The studies on mentoring were central to identification of the key attributes of mentoring. Both Gray and Smith (2000) and Spouse (2001) explored mentorship using a phenomenological approach, but the former lacks the methodological clarity of the latter as it does not describe the data analysis or how trustworthiness was demonstrated. Using a grounded theory approach, Gray and Smith (2000) did

a three-year longitudinal study of mentoring. Spouse (2001) considered the attributes of successful mentorship and used a range of theoretical constructs to explore the subject.

Table 6 Studies related to mentorship

Year	Author	Type	Method	Context
1993	Baillie	Qualitative	Interviews	Factors affecting 8 UK students' learning in community placements
1998	Nolan	Qualitative	Interviews	6 second year Australian nursing students – discussions during their placement
2000	Gray and Smith	Qualitative	Grounded theory, diaries and interviews	10 UK students' perceptions of an effective mentor
2001	Smith and Gray	Qualitative	Interviews, observation, focus groups	9 UK students and 7 nurses views about the role of a good mentor
2001	Spouse	Qualitative	Interviews, observation, documentary analysis and artwork	Longitudinal study with 8 UK students to understand the role of the mentor
2001	Lloyd-Jones	Mixed methods	Work diaries and focus groups	81 UK student and mentor pairs, availability of mentors to students
2003	Duffy	Qualitative	Interviews	26 UK mentors about failing to fail students in practice
2008	Webb and Shakespeare	Qualitative	Critical incident in interviews	15 UK students about how judgements about students were made

The sample sizes in the qualitative studies were small but were consistent with the qualitative methodologies (Gray and Smith 2000, Spouse 2001, Duffy 2003, Webb and Shakespeare 2008). Webb and Shakespeare's sample (2008) did not match their target, as it was complex securing mentors and students in two institutions.

Data collection involved interviews (Gray and Smith 2000, Smith and Gray 2001, Spouse 2001, Duffy 2003, Webb and Shakespeare 2008) and in

addition, reflective diaries (Gray and Smith 2000, Spouse 2001) and critical incident analysis (Webb and Shakespeare 2008). Lloyd-Jones (2001) used a work diary and focus groups with a smaller number of participants.

Lloyd-Jones et al. (2001) studied the implications of student contact with their mentors in a mixed-methods study of activity diaries and focus groups. In grouping activities, student time with the mentor was broken down into patient-related and education-related activity, although the authors did recognise that many activities may have both these components. A weekly diary was used for mentors and students to record their work activity within given activity categories. Overall, the study showed that students with absent mentors spent significantly less time giving care in partnership with qualified staff and this may have been detrimental to their development. The authors recognised the low response rate as a limitation, but considered it would not have influenced the findings and recommended replication to corroborate the findings. They did not, however, comment that the list of the categories offered in the response might have influenced the findings. Lloyd-Jones (2001) acknowledged that use of observation as a data collection method might have added to the understanding of mentor student activity related to care and recommended this for future research.

The evidence relating to the attributes of a good mentor came from students who were interviewed about their experiences of being mentored (Smith and Gray 2001, Gray and Smith 2000, Spouse 2001 and Webb and Shakespeare 2008). The attributes of good mentors identified related to their personal qualities, professional skill and teaching ability. In addition, facilitating reflection on learning was highly regarded by students (Baillie 1993). Students saw the mentor as being someone who would challenge them (Webb and Shakespeare 2008). Spouse (2001) discussed coaching as one of the attributes of a good mentor. She described a mentor assessing a student's capability and "challenging her to extend her thinking and craft knowledge". This fits in with Carper's (1978) personal knowledge as the nurse uses therapeutic use of self in the mentoring role to develop a student.

Students appreciated mentors who not only offered them new experiences but also prepared them for the experiences (Baillie 1993). One of Webb and Shakespeare's (2008) categories within the "good mentor" theme was "being there". To do this mentors must be confident in their own skills and capabilities (Gray and Smith 2000).

Smith and Gray (2001) recognised the value to students of "having a good chat at the end of the shift". The role of feedback in learning is vital. Unfortunately, studies found this essential component in students' learning to be poor (Spouse 2001) and that it was also difficult to get constructive feedback even from "good" mentors (Gray and Smith 2000). In addition, Webb and Shakespeare (2008) found none of the data collected from mentors identified the need for positive feedback to be given to students. Moreover, mentors found it difficult to give negative feedback (Duffy 2003, Webb and Shakespeare 2008).

Mentors were also aware of other qualities in their students. They looked for evidence of attitudes from students and noticed verbal cues, which indicated inappropriate attitudes towards patients (Webb and Shakespeare 2008). Bradbury-Jones et al. (2007) explored empowerment in students through studying critical incidents, which showed if students were put in situations where they felt lacking in responsibility, they lost self-esteem and confidence.

Students wanted caring mentors but some mentors showed little regard for students as individuals and treated them as pairs of hands (Gray and Smith 2000). The attributes of bad or "toxic mentors" (Darling 1984) were poor knowledge and skills, giving poor standards of patient care, inconsistency towards the student, lack of respect for the student, lack of consultation with the student about their learning needs, not discussing learning or progress, avoiding helping the student to understand their own attitudes and feelings or allowing them to reflect on learning (Gray and Smith 2000, Smith and Gray 2001). Students needed to invest in relationships with their mentors (Smith and Gray 2001, Webb and Shakespeare 2008). These relationships could be

rewarding and students mentioned fun and humour as important in their mentors (Smith and Gray 2001, Webb and Shakespeare 2008).

The NMC stipulates that a mentor or practice teacher should directly or indirectly supervise students for forty percent of their time in practice. The named mentor is responsible for coordinating a student's experience and is accountable for their decisions to let the student work independently or with others (NMC 2008b). Gopee (2011)'s book on supporting students' learning suggested that an effective mode of mentoring is a team mentoring approach, although there is currently little work done related to team mentoring approaches.

In a large funded project about nursing and midwifery students' assessment in practice, Phillips et al. (2000) claimed that a team mentoring approach gave a more valid assessment of a student and allowed collaboration about assessment decisions. In reality, it appears that the team approach suggested in the study was to ensure consistency of teaching and assessing by mentors working regularly in a team with the student. However, it does not address any other aspects of learning in practice or learning clinical decision-making.

Caldwell's (2008) work, a small-scale team mentoring project, supported a team mentoring approach finding communication and stability of the staff team were key to the success of team mentoring; and that all staff participated in supporting student learning. Students reported the benefits as the diversity of teaching styles, continuous support, and guidance in professional development.

Mentors found the pressure of mentoring was less with the shared responsibility and the possibility of bias in the assessment was reduced. However, making time to communicate with the mentoring team was difficult. Caldwell's (2008) work remains the only paper about team mentoring. In an evaluation project of practice educators Neades et al. (2014) found that increased teamwork by mentors in practice supported and improved the

clinical learning environment. It is possible that team mentoring is not widely addressed, as the NMC has not recognised it as a valid approach to mentoring.

The final section of the literature review focuses on studies relating to the learning environment and culture. The importance of the learning environment has long been recognised.

2.8 Studies about the culture and learning environment

It has been known for a long time that the learning environment impacts on the students' experience on a ward or clinical placement. Therefore, it was considered valuable to appraise the literature relating to the culture of the learning environment as it was proposed it would impact on the students' learning clinical decision-making.

Some of the earliest UK nursing research studies were exploratory in that they described the key aspects of a clinical learning environment (Orton 1981, Fretwell 1982, Ogier, 1982). Orton (1981) used a questionnaire of students, ward sisters and clinical teachers and tutors (n=396). The main findings were that students' satisfaction with a ward experience was correlated to the highly student orientated wards.

Ogier's study (1982) used a grounded theory approach to explore ward sisters' leadership styles and interactions with students. Students and ward sisters completed questionnaires and ward sisters were audio recorded while working on the ward. The study included only four ward sisters and the students allocated to their wards at the time of the study. The small sample size was acknowledged by Ogier (1982) who rationalised this by the quantity of data that the recordings and questionnaires had generated. The study showed the importance of the ward manager in students' learning by creating a ward learning environment (Ogier 1982). The way work was organised and the leadership style were influential in maintaining the learning environment

(Orton 1981, Ogier 1982). The approachability of the ward sister was key to the students' learning (Ogier 1982). Like Ogier (1982), Fretwell's work (1982) used questionnaires but with observation to identify the attributes of a good learning environment. Fretwell (1982) recognised that the ward sisters' interest in the student was important, especially when they start on the ward. Good relationships and team working were described as helpful, as was sisters' approachability and students feeling safe to ask questions.

Both Fretwell (1984) and Ogier (1989) developed their initial work to validate and replicate their findings. Later research showed the significance of good interpersonal relationships with the ward staff, apart from the ward manager, in creating a positive learning environment (Dunn and Hansford 1997). The term 'ward' or 'clinical learning environment' has been supplanted by the term 'the ward culture' (Henderson et al. 2006). More recent studies have looked at key influences and characteristics of the culture and learning environment (Henderson et al. 2010). These are identified in table 7. Some of the studies about mentorship were also important in relation to the learning environment.

Table 7 Studies relating to the learning environment

Year	Author	Type	Method	Context
2004	Pearcey and Elliott	Qualitative	Focus groups	14 Australian undergraduate nurses; the influence of the learning culture on their experience
2006	Henderson et al.	Quantitative	Survey inventory tool	Australian undergraduate nurses' perceptions of psychosocial aspects of clinical learning environment
2006	Midgley	Quantitative	Survey using CLEI tool	UK students in acute/high dependency placement to access perception and key characteristics of clinical learning environment

It is important to consider the influence of good support and role models on students' learning (Pearcey and Elliott 2004) and the importance of the ward culture (Henderson 2010). In contemporary research, the ward manager's importance as a key influence on the students' learning has arguably been

superseded by the mentor's role (Spouse 2001, Carnwell et al. 2007, Myall et al. 2008). However, the influence of the learning culture on a work environment is created and sustained by managers (Eraut 2004).

The importance of an individualised approach to students' learning was highlighted by Midgley (2006) who surveyed UK students using the Clinical Learning Environment Inventory (CLEI) tool. This tool explored perceptions and key characteristics of clinical environments and acknowledged the importance of individual learning styles and the context of the learning environment. In addition Nolan's Australian qualitative study (Nolan,1998) involved six students and identified how the importance of feeling accepted in a placement was a pre-requisite to learning. Several qualitative studies set in the UK or Australia, which explored students' learning in practice from different perspectives, found that students' belonging and feeling part of their clinical placement was important for their learning (Gray and Smith 2000, Carnwell et al 2007, Webb and Shakespeare 2008, Levett-Jones et al 2009). Henderson's (2010) work, also in Australia, identified the importance of the acceptance of learners into a placement, so that they feel accepted as part of the team and able to express opinions. The learning environment was attributed as a vital component of students' learning that prepares them for practice as a safe competent practitioner (Midgley 2006). In addition, Holland and Lauder (2012) believe that the quality of care delivered influences the learning environment.

The studies relating to the learning environment considered the relationship between students' learning and the culture of the learning environment but this did not extend to the implications for development of their clinical decision-making skills.

2.9 Chapter summary

The literature has demonstrated evidence of the importance of clinical decision-making as a key component of nurses' competence. However, how

students are taught and learn clinical decision-making is less clear, especially in practice placements. There were no studies about how students actually learn to make clinical decisions in practice and the influencing factors.

Studies that did explore students and clinical decision-making used phenomenological approaches, which yielded rich data, but the findings remained the perception of student nurses about their decision-making. There were no studies that explored mentors' views of students' learning decision-making. In addition, most of these studies were conducted overseas with only one study in the UK. A study that observed students' learning in practice (Taylor 1997) was a study conducted in Australia, which observed one specific activity, not the totality of care over a period of time. There was a paucity of evidence relating to observation of students' learning in practice. Appraisal of literature about registered nurses and clinical decision-making identified use of observation in practice with several studies using interviews in conjunction with observation (Currey et al. 2006, Bucknall 2003, Rycroft-Malone et al. 2009, Deegan 2013).

There is limited evidence that the learning culture and environment has a significant impact on students' learning and it is likely that it also has an impact on their learning clinical decision-making in practice. A key component of the learning environment is the mentors who support students, and other members of the team were found to be important for their learning. Holland and Lauder (2012) agree with this but also identified the quality of care delivered impacts on the quality of the learning environment.

In the UK, the importance of practice learning for students is paramount, as it comprises fifty per cent of their hours of learning. The literature demonstrates some understanding of how students make clinical decisions in practice, (Baxter and Rideout 2006) although this study was not conducted within a UK setting. There is little understanding about the process of students learning clinical decision-making, particularly in practice placements.

The studies exploring clinical decision-making with students have involved mainly third or final year students, and only Taylor's (1997) study included some first year students. Houghton et al. (2013) identified some differences in clinical skills implementation between junior and senior students. A comparison between students learning clinical decision-making at different stages in their course has not previously been studied.

The literature review therefore demonstrates that there are four key areas that need further research and the research questions for this thesis derive from these gaps in knowledge.

2.10 Aims of the study

The aim of the study was to explore how students learn to make clinical decisions in practice placements and the influences affecting their learning of clinical decision-making in practice placements. The research questions are:

- How do pre-registration students make clinical decisions?
- How do pre-registration students learn to make clinical decisions in their clinical placements?
- What influences pre-registration students' learning of clinical decision-making in practice placements?
- What are the differences between how first and third year students make and learn clinical decision-making skills in practice placements?

This chapter has therefore considered the existing literature before identifying areas where research is still required. The aim and objectives of the thesis have been listed in relation to the knowledge gaps identified. The following chapters take the thesis to the next stage of discussing how the aim and objectives of the research have been met.

Chapter 3 Research methodology

3.1 Chapter overview

This chapter focuses on the underpinning theoretical stance taken in this study and justifies a qualitative case study approach to the research. The rationale for the data collection methods and ethical issues related to consent, access and confidentiality are also addressed. The data analysis and factors to promote rigour of the research are also presented.

3.2 Introduction

Within nursing research qualitative methodologies have emerged as suitable approaches to explaining and exploring complex phenomena and concepts (Gangeness and Yurkovich 2006). The qualitative approach used in this study facilitates exploration of individual experiences to develop knowledge about how students learn clinical decision-making in practice. The way students learn is continually changing as is the context in which they are learning. The constructivist ontology allows meanings to be developed through personal experience to create a socially and culturally constructed reality (Sarantakos 2013).

3.3 Philosophical perspective

It was decided in this thesis to adopt the pragmatic philosophical approach as identified by Creswell (2009) as one of four world views, which allows *“the most personal experiences to create a knowledge that is inclusive, and contextual”* (Warms and Schroder 1999).

Pragmatism is problem-centred and pluralistic. It enables the consequences of actions to be explored and is real-world practice centred (Creswell 2009). James (1997) described the plurality and the changing view of truth with

pragmatism. Cherryholmes (1992) suggested the need to stop asking about reality but look at the actions, situations and consequences.

Pragmatism allows the value of theory to be assessed in practice (Weaver and Olson 2006) and to focus on “what works” (Creswell 2009). Ontologically pragmatism brings together an understanding of the influence of the physical world with the experiential dimension. In pragmatism, the importance lies in how academic concepts may be understood and applied in everyday practice (Johnson and Onwuegbuzie 2004). Dewey (1997 p.224) believed that pragmatism removed the remoteness from philosophy that guided action. In addition, understanding the practical consequences of actions should help predict real-life outcomes (Johnson and Onwuegbuzie 2004). This is a view echoed by Bernstein (1988 p.383) who said it is “an on-going engaged conversation consisting of distinctive and sometimes competing voices.” Pragmatism allows for a spirit of open enquiry and free-minded engagement (Brendal and Miller 2008 p.25). A pragmatic approach offers fluidity to the study allowing flexibility, creativity and open-mindedness (Brendal and Miller 2008 p.31) as is essential in research grounded in the real world.

A study of physiotherapy practice (Shaw et al. 2010) used pragmatism as it allowed for plurality of truths as a reflection of real life. This enabled use of a range of methods to contribute to evidence and inform practice development. The relevance of pragmatism to the investigation of practice is advocated in a position paper about a joint nursing and social work interprofessional education programme (Trevillion and Bedford 2003). These papers justify pragmatism as relevant to mixed methodology research (Johnson and Onwuegbuzie 2004, Brendal and Miller 2008, Shaw et al. 2010).

Pragmatism has been criticised as simplistic (Lipscomb 2008) but according to Shaw et al. (2010) it allows a realist perspective of the world alongside a constructionist view of the social world. It is therefore appropriate for exploration of practice learning and clinical decision-making in this thesis. Other qualitative methodologies already considered and rejected were, grounded theory, as from the researcher’s propositions it was already

apparent that there were pre-conceived ideas about the theoretical concepts related to the study area. Phenomenology was also rejected as it would have given the personal experience of learning clinical decision-making in practice without triangulation of other data sources.

Within pragmatism many methodologies can be used (Johnson and Onwuegbuzie 2004). The researcher debated whether ethnography or case study methodology was most suitable for the study. The researcher anticipated that the culture of the ward community would be a focus of the study therefore would be appropriate (Cruz and Higginbottom 2013). However, after consideration, a qualitative case study was congruent with this research study's questions because they sought to investigate the influences on students' learning of clinical decision-making in one clinical context. In addition, the researcher wished to go farther than exploring only the culture of the group to also include educational issues beyond the boundaries of the culture. Using case study made this possible as Yin (2014) recommends case study research when the boundaries between the phenomenon and context are not clearly evident. Case study allows in-depth investigation of phenomenon in a real world context. Yin (2014) adds that a desire to understand the contemporary phenomenon justifies a case study method and the triangulation of multiple sources of evidence is consistent with case study as a method. Multiple data sources are powerful as one source corroborates another (Yin 2014). Due to the complex nature of the factors influencing students' learning clinical decision-making in practice the selection of a case study approach for the study was justified.

3.4 Case study design

Case study research is widely used in education (Simons 2009) and in health and nursing research (Baxter and Jack 2008). Case study can be used as either a quantitative or qualitative approach and data is usually descriptive. It is widely used as a qualitative research methodology to inform clinical and

policy decision-making and professional practice development (Baxter and Jack 2008).

This thesis explores how pre-registration students make clinical decisions, how they learn to make clinical decisions in clinical practice, and what influences learning of clinical decision-making in practice. It also identifies the differences between how first and third year students make, and learn to make, clinical decisions. Yin (2009), stated that when the research questions are how and why questions, case study is appropriate. Therefore, a case study was an appropriate methodology for the research on which this thesis is based. The approach is contextually grounded and allows for identification and exploration of the significance of particular factors within the context of the case (De Vaus 2001). Yin (2014) recommends case study as a method when the researcher does not have control of behavioural events but the research focuses on contemporary events. This reflects the context of a clinical practice setting where students are learning in an uncontrolled environment.

Case studies may be classified in differing ways. Stake (1995, 2005) classified three types of case study: intrinsic, instrumental and collective. He believed the methods used varied depending on the type and the purpose of the study. This thesis is based on an instrumental case study as the case is being examined to give insight and understanding about students' learning clinical decision-making. However, as Stake's work (1995) does not offer a clear framework for undertaking a case study, Yin (2009) has been used for this study.

In Yin's earlier work (Yin 1994, Yin 2003), five categories of case study are described; explanatory, descriptive, illustrative, exploratory and meta-evaluation. In more recent work, this categorisation is not evident and Yin (2009), who is an advocate of case study as a method in its own right, now emphasises the necessity to develop an appropriate design for the research questions. He says it is essential to ensure the design enables the research questions to be answered. Yin (2009) identified five components that are

important in case study design as shown in table 8. These cover selecting the study questions and the units of analysis, and identifying any propositions and how they relate to the data, as this may influence the data collection methods.

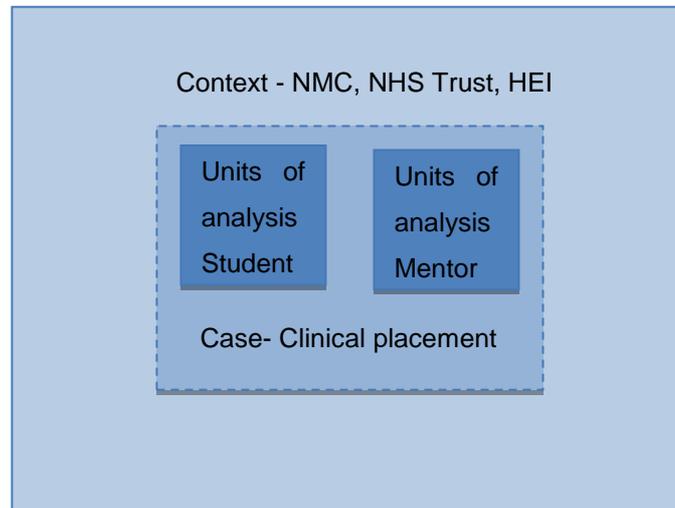
Table 8 Five components of case study research design (Yin 2009)

- | |
|--|
| <ol style="list-style-type: none">1. The study's questions2. Its propositions (if any)3. Its units of analysis4. The logic linking the data to the propositions5. The criteria for interpreting the findings |
|--|

According to Yin (2009), the case study design was constructed around theory, which identified theoretical propositions likely to be affected by the case. These propositions influenced the data collection methods selected. In case study research, propositions are used to focus the process during analysis. They help the researcher to identify any preconceived beliefs and to expose any potential bias (Gangeness and Yurkovich 2006). In relation to this thesis, there was literature that related to students' learning in practice but most of this did not focus on how students learn clinical decision-making. There was also little research that used observation as a data collection tool rather than interview data.

The thesis is based on an embedded single case study and is illustrated in figure 1. The 'case' was the clinical practice placement, which was a medical ward with pre-registration nursing students from one Higher Education Institution (HEI). The context of the practice placement was also affected by wider political and cultural influences including the NMC, the NHS Trust, and the HEI. In the diagram it is therefore represented by a dotted line. The embedded units of analysis were the students and the mentors. Defining the units of analysis is crucial to the case study (Stake 1995, Yin 2009). The factors that influenced the units of analysis were other mentors, other students, staff, patients, and the pre-registration adult nursing curriculum.

Figure 1 Illustration of the embedded single case study



The propositions of the study were that:

- Student nurses' learning is influenced by the learning environment
- Student nurses learning is influenced by their mentors
- The learning environment and their mentors influence the development of clinical decision-making in student nurses
- The student nurses own personal motivation is likely to influence their learning clinical decision-making
- The first and third year student nurses may learn differently.

Identifying the propositions gave an indication of the boundaries of the research. Stake (1995 p.16-17) described propositions as inextricably linked to political, social, historical and personal contexts that enable the researcher to understand the complex nature of the case. According to Baxter and Jack (2008), the propositions enable the researcher to place limits on the scope of the study, making it more feasible.

It is asserted by De Vaus (2001) that almost any data collection method can be used in case study but Simons (2009) identified that the most frequently used methods are interview, observation and documentary analysis. These were the three methods used in this study.

When looking at the influences on students' learning of clinical decision-making in practice, there are likely to be many interlinking contextual factors, only some of which have emerged from the literature to date. The research strategy needed to allow exploration of these complex factors through the experience of the individual student nurses and ward staff. Case study allows the deconstruction and reconstruction of phenomena (Baxter and Jack 2008). It also lets the complexity of a system or case to be understood and allows for the interpretation of observations in naturally occurring situations and contexts (Simons 2009). O'Luanaigh (2011) described how his case study research was enriched by the contribution of students' individual practice experiences.

Table 9 Data collection methods

Data collection method	Participants	Sample
Observation in practice	Students	6
	Mentors and staff	17
	Patients	33
Interviews	Students	12
	Mentors	4
Documentary analysis	PADS	4

The study participants are tabulated in table 10 with additional information about the student participants in table 11.

Within this thesis, the three selected data collection methods were used to triangulate the evidence. Table 9 summarises the data collection methods that were used in this case study and they are described in more detail later in this chapter. The three methods used were observation in practice (see 3.11.1), interviews with students and mentors (see 3.11.2) and documentary analysis of Practice Assessment Documents (see 3.11.3).

Table 10 Profile of study participants

Participants	Number	Observations of practice	Interviews
1 st year advanced diploma students	4	2 per student Total 8	2 per student Total 8
3 rd year advanced diploma students	2	2 per student Total 4	2 per student Total 4
Mentors and staff	17	Variable number of staff working during each observation	Total 4 mentors interviewed
Patients	33	Usually 3-4 patients observed during each observation	Not interviewed

Table 11 Information about student participants

Student	Gender	Previous healthcare experience	Programme of study
Student A	Female	None	Advanced diploma in adult nursing
Student B	Female	None	Advanced diploma in adult nursing
Student C	Female	None	Advanced diploma in adult nursing
Student D	Female	None	Advanced diploma in adult nursing
Student E	Female	Previously worked for 4 years as HCA	Advanced diploma in adult nursing
Student F	Female	None	Advanced diploma in adult nursing

The research questions sought to identify differences between first and third year adult advanced diploma students learning clinical decision-making. The rationale for first years and third years was to differentiate between the student groups. If second year students were included, they might be at the beginning or end of their second year and so be similar to either first or third years. At the university where the students were studying for an advanced diploma in nursing, the first year students had one twelve week placement on

an adult ward, and third years had two placements of eight weeks followed by twelve weeks.

Table 12 Student participants and data collected

Student	Year and length of placement	Observations and Interviews	Practice document	Mentor
Student A	First year 12 week placement	1 st - week 5 2 nd - week 11	Yes	S/N not interviewed
Student B	First year 12 week placement	1 st - week 5 2 nd - week 12	Yes	Mentor 1
Student C	First year 12 week placement	1 st - week 4 2 nd - week 11	Yes	S/N not interviewed
Student D	First year 12 week placement	1 st - week 5 2 nd - week 11	No	Mentor 2
Student E	Third year 8 week placement	1 st week 3 2 nd week 7	Yes	Mentor 3
Student F	Third year 12 week placement	1 st week 4 2 nd week 12	No	Mentor 2

The sample was a convenience sample of students who were allocated to the study ward for their placement. The researcher invited all first and third year advanced diploma students who had placements on the ward to participate. All the first year students and two of three third year students consented to participate. After discussion with her supervision team the researcher decided that a sample of 6 students was sufficient as there were no further first or third year students allocated for at least 2 months. The case study was set in one ward and the staff had willingly agreed to participate and facilitated the researcher's data collection for 6 months, and a large data set had been collected. Therefore, there were six student participants in the study: four first year, and two third year students.

Each student was observed on two occasions during their placement on the study ward, and interviewed at the same time as the observation, as shown in table 12. Students who participated were asked for a copy of their completed PAD for analysis at the end of the placement. The completed PADs were only provided by four of the students so two documents were not included in the

documentary analysis. The ward nursing staff agreed to participate in the study. Many of the nurses were mentors but only four of the mentors were interviewed (table 13). Access to other mentors was problematic with internal rotation and nursing staff working long days.

Table 13 Interviewed mentors

Mentors Interviewed	Role on ward and mentor
Mentor 1	Band 6 junior sister and sign off mentor Mentor to student B
Mentor 2	Band 6 junior sister and ward key mentor Sign-off mentor to student F, mentor to student D
Mentor 3	Band 5 staff nurse and less experienced mentor Mentor to student E
Mentor 4	Band 6 junior sister and sign off mentor Sign-off mentor to another student

Yin (2009) argued that observation in case study research is valuable as it increases the understanding of the case and context (Yin 2009). In the context of the research questions, it was the method that would give insight into students learning in practice. Yin (2014) asserts that the strength of the case study method is the ability to manage a range of evidence from a variety of collection methods. Achieving interpretation of observation and interview data is reliant on appropriate contextual data as individuals attach different meanings to experiences that can be interpreted through their speech and behaviour (Fade 2004). Therefore, it is important to understand and ensure the quality of the research design.

In summary, the characteristics of case study design are applied to this study through the articulation of the study questions, and boundaries to the study that were identified through the propositions. These also allowed the scope of the study to be limited. The students and mentors were the units of analysis and the case the clinical placement. During data analysis the propositions were linked to the data and finally the framework analysis enhanced the interpretation of the findings.

3.5 The quality of the research design, trustworthiness and rigour

The rigour of case study research is frequently criticised, therefore Yin's tactics for case study design were utilised to promote such rigour. Yin's work (2009) offered four tactics to be used to demonstrate trustworthiness, credibility, confirmability and data dependability. These were applied through the four usual social science methods of construct validity, internal validity, external validity and reliability (Yin 2009 p.40). Yin uses these terms that are usually associated with quantitative studies. However, he uses examples of qualitative case studies and Yin (2014) strengthens the importance of these principles to maintain rigour within case studies.

Table 14 identifies where the evidence to demonstrate the tactics can be found in the thesis, ensuring the quality of the study design and demonstrating how trustworthiness and rigour have been achieved. To adhere to Yin's (2009) case study process, these tactics have been applied to the design but in addition Guba and Lincoln's (2005) well-known strategy has been employed.

According to Guba and Lincoln (2005), rigour and trustworthiness in qualitative research are demonstrated by credibility, transferability dependability and confirmability. Sandelowski (1986) believed auditability was the key to promoting rigour in qualitative research. Therefore the rationale for decision-making is discussed within the thesis to allow auditability.

Within the thesis, credibility has been demonstrated in a number of ways. The researcher is an experienced nurse educationalist with an understanding of the context of practice learning. Using pragmatism as the philosophical approach, a case study design (Yin 2009) was identified as presenting relevance to a real-world context. The methodology was guided by the research aims and case study design. The data collection tools were developed following periods of observation in a practice setting. Data was transcribed immediately and field notes used to facilitate interpretation.

Table 14 Case study tactics for four design tests adapted from Yin (2009 p.41)

Tests	Case Study Tactic	Where evidenced in the thesis
Construct validity	Use of multiple sources of evidence	Documentary analysis Observation, and interview data with students and mentors (Chapter 4)
	Establish a chain of evidence	Transcript data used in findings (Appendices 9, 10,11 & 12)
Internal validity	Undertake pattern matching	Example of data (Appendix 9 &10)
	Undertake explanation building	Data analysis (Section 3.12, Chapter 4, Appendices 9, 10,11 & 12)
	Address rival explanations	Data analysis (Chapter 4, Appendices 9, 10,11 & 12)
External validity	Use theory in single case studies	Decision-making and learning theory (Section 2.3)
		Case study design (Section 3.4)
Reliability	Use case study protocol	Use of protocol from Yin (2009, 2014) (Section 3.4)
	Develop case study database	Database of evidence from transcripts available for scrutiny Example (Appendix 10)

Transferability is achieved through clear description of the context so readers can decide on its relevance to other settings. Dependability was achieved by using guides for observation and interviews (appendices 7 & 8), and only the researcher completed the data collection. An audit trail of decision-making about data analysis is evidenced and data analysis (appendices 9,10,11, &12) was discussed with the researcher’s supervisors as the framework was developed. The data is triangulated between interview and observation data, from student and mentor participants. Confirmability is achieved through a

clear audit trail and the combination of strategies to promote credibility, transferability and dependability.

Ballinger (2006) asserted that the variability of qualitative research made application of strict criteria for assessing rigour problematic. She did, however, suggest four considerations should be applied to the research process. These considerations have been applied to demonstrate the trustworthiness and rigour of the study. There should be 'coherence' between the research aim and design. The case study design in relation to the study aims is identified earlier in this section. Secondly there should be 'evidence of systematic and careful research conduct' (Ballinger 2006). This was demonstrated through careful recruitment of staff and students, and how data was collected as described in chapter 3. The study was conducted in line with the ethical approval and governance as described in section 3.6. Ballinger's (2006 p.241) third consideration is around 'convincing and relevant interpretation'. This is discussed in the data analysis section 3.12. In addition, detailed findings are presented in chapter 4 and these findings are further discussed in relation to existing literature in chapter 5. The fourth consideration (Ballinger 2006 p.242) is the 'role of the researcher'. The author has discussed reflexivity in the thesis and her role in the research in sections 3.11.4 in particular, her role as participant observer.

3.6 Ethical approval and governance

Careful consideration was given to all ethical issues during the development of this research study, as recommended by Ritchie and Lewis (2003). The Economic and Social Research Council Research Framework (ESRC 2010) and the NHS Research Governance Framework (DH 2010) were used to inform the research planning and preparation for obtaining ethical and NHS research governance clearance for the study.

Ethical approval was obtained through the Integrated Research Assessment System (IRAS) in June 2010, with some minor points of clarification and

evidence of compliance received in July 2010 (Appendix 2). In August 2010, NHS research governance clearance was received from the research and development department of the NHS Trust (Appendix 3). The approval letters from NRES and the research governance department together with the research protocol were sent to the University ethics committee and university ethical approval was signed off (Appendix 4). The researcher had an existing honorary contract in the NHS Trust and this was submitted to the research governance department.

When the patient information sheet (Appendix 5) and consent forms (Appendix 6) were being developed, attention was paid to the language of the consent form to ensure that the form was accessible to service users. The Trust's Patient and Advice Liaison Service (PALS) was consulted and feedback was received from members of the service user panel prior to submission for ethical approval.

3.7 Selection of the case study ward and staff consent

The Director of Nursing of the NHS Trust who was supporting the researcher's professional doctorate in nursing gave consent for the study to take place in the Trust. This was part of the approval process through the Trust Research and Development department. In conjunction with the modern matron, the study ward was selected and the ward staff agreed in principle to participate in the study. The researcher did not participate in this process but provided information about the study. The researcher was then invited to meet the nursing staff to explain the study in more detail. The staff agreed to support the study and the staff participant information sheets and consent forms were left on the ward (Appendices 5 & 6). One of the members of staff agreed to ensure all members of staff received information and to collect the signed forms and return them. All nursing staff and health care assistants were asked for written consent to participate in the study and all ward nursing staff agreed to participate. At a later stage, one of the members of staff declined to participate in an interview but had been willing to be observed

giving care. Other non-nursing staff were aware that the study was taking place on the ward and that the researcher was observing care when she was present on the ward.

On two occasions as agency staff nurses were working on the ward on observation days, the researcher explained her study and consent was obtained on the day. In addition, when a nurse specialist visited to give a teaching session to ward staff, the researcher explained the study to her and she gave consent for her session to be observed.

At the same time, the researcher informed the medical consultants who had patients on the ward about the study and explained that consenting patients' care would be observed as part of the study. Although they were offered further information if required, none of them requested this but some wished the researcher success in the study.

3.8 Access to students and student consent

At the university, permission was sought and given by the Head of Department for Adult Nursing to access pre-registration adult advanced diploma nursing students in practice placements. First and third year adult nursing students who were undertaking a practice placement on the study ward were invited to participate in the study by letter and email. The researcher introduced herself to the students by email and requested their participation approximately four weeks before their placement commenced. They received the student participant information sheet and consent form with the information (Appendices 5 & 6). The researcher offered to meet with them and did meet all the first years during their teaching time in university to describe the study in more detail. All first year students on the ward during the period of the study agreed to participate. Two of the three third year students who were contacted responded by email and asked for more information. They subsequently agreed to participate and one other third year declined to participate stating she thought as it was her final placement she had sufficient

pressure and did not want to participate. She was present on the ward during periods of data collection and the researcher explained that although she would not be observing her, she would be there at times when she was present on the ward.

The students agreed to being observed learning in practice on two occasions and were interviewed at the same time. The researcher planned the observations with the students in relation to their planned shifts on the ward. On some occasions, the researcher was able to observe more than one student during an observation.

They also agreed to the researcher having access to their completed PADs at the end of their practice placement. The researcher only obtained four of the six PADs from students. One first year student's document could not be located by the researcher in the university and the third year student completing her programme did not make it available to the researcher as requested.

The researcher considered her role in the ward environment as a researcher not an educationalist; however, she also considered her response and intervention if any poor or unsafe practice was observed, or if she considered the students were experiencing poor support or learning opportunities. These were discussed as part of the ethical approval submission. The researcher did not witness any poor practice or poor support for learning. However, on one occasion she did assist when she considered a patient at risk of falling and was aware of another occasion when a student had not cleaned a trolley. The mentor checked with the student that she had done so therefore negating the need for the researcher to intervene.

3.9 Patient consent

The RCN (2005) advises that informed consent requires participants to be mentally able to give consent and to have adequate information in order for

them to give consent. Although patients were not the focus of the study, their understanding of consent to participate was essential. Exclusion of any patients who were not able to consent by virtue of their mental capacity or English language skills was achieved by discussion with the nurse in charge.

The RCN (2009) recommends that patients have sufficient time to decide if they wish to take part in the research. Therefore, in order to give patients time to decide and consent, the researcher visited the ward the day before an observation was planned. The researcher, with the nurse in charge, would identify the patients who could be invited to participate. Usually the nurse in charge would introduce the researcher and would explain the study. Sometimes if the ward was busier the researcher would do this alone. The researcher would either read the information sheet to the patient, or leave it with them to read (Appendix 5). Usually the patients consented to participate, and signed the form immediately. Some said they would like to discuss it with family or complete it the next morning (Appendix 6).

Patients who consented were assured they could withdraw at any point. The researcher always greeted them the day of the observation and ensured they were happy to participate; occasionally they said they did not feel well enough. If patients had consented previously and were still patients for another observation, a new consent was not obtained but their agreement to continue to participate was established verbally.

Most patients and their families were willing to participate as the research related to students' learning. Usually about six of the patients on the ward had consented to have their care observed and this provided adequate access for the researcher to observe student learning. If a patient had not consented to participate, the researcher did not watch or document any specific care given to that patient but there may have been general interaction or conversation which included the patient. There was one patient who became terminally ill during the course of the study. Her family were constantly present and were happy for the researcher to continue to observe and participate in her care at this time alongside the students and ward staff.

The patients retained a copy of the signed consent form and a copy was put in the patient's notes. For patients who were admitted overnight, they were asked to consent if it was appropriate in relation to their condition.

3.10 Confidentiality and Anonymity

Ensuring confidentiality of personal information was essential for compliance with research ethical approval (DH 2005). Therefore, minimal personal information was recorded. Patients were not identified, by a name or code, as their involvement was in relation to the students' learning, and in the findings they have been referred to as the patient.

In transcribing data from field notes, observation notes or interview recordings, participants were coded and transcripts anonymised. All electronic data was stored on password-protected computers and all hard copies were stored in locked cabinets. The data will be stored for seven years after completion of the study. The researcher and her supervisors only saw the raw data.

Interviews were mainly conducted in private on the ward, in offices, or staff rooms. However, with their agreement, one staff interview took place at the nurses' station but only the researcher and mentor were present.

3.11 Data collection

Both observation and interviews were undertaken concurrently during the period of data collection. In case study research, data collection is completed in the real world context and the researcher needed to be aware that observation and interviews needed to be flexible within the requirements of the ward (Yin 2014). The main data collection methods were piloted to review the observation and interview schedules. The first two observations and

interviews were conducted in the placement and critically reviewed with the supervision team.

3.11.1 Participant observation

The researcher originally decided that the observation would be non-participant. However, after consideration she decided this was not congruent with the research study as it was important to be accepted as a nurse and part of the study ward team and not to observe from a distance (Silverman 2006 p.68). Participant observation allows everyday events to be studied and constructed through interaction and communication (Sarantakos 2013).

Baillie (2007) highlighted the increased validity of observation data when the researcher wears uniform, as participants behave normally and develop relationships with the researcher. Therefore, a participant observer approach was adopted and to participate as a member of the team the researcher wore uniform. The researcher already had name and identification badges and a Trust uniform that identified her as a member of the practice education team and therefore a nurse, but outside the ward team. This fulfilled the requirement to be accepted but also meant she was not thought to be the ward manager or nurse in charge.

The researcher needed to consider her presence as an observer and the influence this may have on delivery of care and students' interaction. The researcher was familiar with observing delivery of care with previous experience as a practice educator. However, this was in the role of an educator not researcher. In preparation, the researcher spent time observing practice on another ward and developed the observation schedule (Appendix 6) whilst writing notes about her role observing and her experience. She also discussed her anxiety about "getting it right" with her supervisors and peer doctoral students who had used observation as a collection method, one of whom shared her reflexive diary with the researcher.

Before the first observation, the researcher spent time in the study ward in uniform meeting the first year students and nursing team, and observing care to allow participants to become used to being observed. During periods of observation, the researcher assisted in care giving; while not initiating care, the researcher assisted in making beds, assisting washing and moving patients, and general fetching and carrying. The researcher observed all aspects of students' learning in practice.

When observing on the ward, the researcher would arrive before handover and join the ward team. Prior to handover, there was usually some social interaction and she was able to participate with all staff, which helped to establish a relationship with staff. Staff on the ward worked 12-hour day shifts, as did the third year students. However, the first year students worked early and late shifts as it was perceived to be more beneficial to their learning for their first practice placement.

The students were observed on two occasions during their placement. The researcher completed eight observation periods, as on four occasions she was able to observe more than one student. This was possible as the ward was divided into two parts and frequently the students would be allocated separately to the two parts. The researcher would spend time with each student. Also, the first year students were on short early or late shifts so the researcher could spend time with one student in the morning and another during the early afternoon.

It was decided that the students would be allowed to settle into the ward before they were observed. The first years were not observed until at least week 5 of their 12 week placement. This was so that the researcher was able to observe them when they had some opportunity to participate in care and understand the ward environment. The exact weeks of the observations are set out in table 11. The researcher observed the ward for between four and six hours depending on whether one or two students were being seen. This was not continuous as the researcher would spend time writing notes and this also included time for interviews.

The researcher wrote field-notes in a notebook during observations. Depending on the activities being observed, these notes would be made during the observation or, more frequently, as soon after observation as possible. This usually entailed a period of observation followed by a period of note writing in a quiet area on the study ward. Occasionally, the researcher was able to write detailed notes while observing non-intimate care when the curtains were not drawn around a bed; for example, when a patient was being assisted to eat or drink. All notes were transcribed the same day so additional detail could be added.

The students knew the researcher was connected to the university and not surprisingly; one student took the opportunity to seek feedback. "What did you think of my performance?" (Student E, Interview 1, line 315). The researcher responded that was not her role on the ward but the student still said she would like to know, so the researcher gave some brief but positive feedback.

The researcher kept a reflective diary to enhance reflexivity and ensure rigour in data collection and analysis (Baillie 2007). It also demonstrated the decision-making trail in data analysis allowing judgement of the trustworthiness and rigour.

3.11.2 Interviews

All students and mentors had consented to having their interviews recorded. Therefore, the interviews were recorded on a digital recorder and were transcribed verbatim.

An interview schedule was used to guide the interview (Appendix 8). The interviews also picked up on meanings and interpretations from observations. The schedule was used appropriately, reflecting whether this was a first or second observation of the student. The interviews with students were

conducted on the same days as the observations. The interview schedule was used and participants were about the care that was observed. It was planned to conduct interviews with participating students, their mentors and other staff participating in student learning. In reality, the staff interviewed were all mentors working on the ward on the days of observation. The mentors of students A and C were not interviewed, as they were not available on observation days due to their shift patterns.

The researcher asked questions related to the observed care, and the key questions, and used probes to seek clarification. In addition there were general questions about support for students learning clinical decision-making on the ward were asked. The researcher also made notes about the interview and was able to include additional comments related to expression and mood alongside the transcription notes.

The interviews used a semi-structured approach as set out in the interview schedule. These interviews allowed the researcher to observe the non-verbal cues that give understanding to the verbal response (Robson 2002). The length of interview was variable from approximately 20 minutes to over an hour with one of the mentors. The total interview time was about five and a half hours. The interviews gave insight into the interviewees' views and perceptions, and corroborated data already gathered from observation.

It was often difficult for mentors to find time to be interviewed and this resulted in one interview being done at the nurses' station as (even though it was a weekend and quiet) the sister could not leave the ward, as other staff were away from the ward. Sometimes, the interviews would be interrupted as they were held in staff rooms and offices on the ward, but the interviews were resumed and this did not seem to interfere with the flow when the interruption was over.

The interview data was transcribed verbatim as soon as possible after the interview to ensure accuracy of the transcription. Transcription of data from sixteen interviews enhanced the researcher's familiarity with the data and

enabled additional detail about gestures and non-verbal communication to be added to interview data.

The researcher decided after discussion with her supervisors not to use member checking for validation of the interview data. Hammersley (1992) speculated that we never know the reality, so we must base validity on the evidence offered against the described phenomena. He considered that credibility, centrality and relevance all contributed to the validity of evidence. The data from observations verifies the interview data, which is one of the strengths of having multiple sources of evidence showing construct validity (Yin 2009) as described in table 13.

3.11.3 Documentary analysis

Documentary analysis included documents relating to students' learning in the clinical environment. The researcher had scrutinised university documents for reference to students' learning of clinical decision-making in practice. These documents were the curriculum validation document relating to the pre-registration nursing programme and the practice learning guidelines, but only the PAD was found to be relevant. The PAD is used to record each student's attainment during a placement. A copy is available in all practice placements in a document file, and on the Trust and university intranets. Therefore, it is within the public domain and widely accessible. According to Silverman (2006 p.158) documentary evidence may offer insights into the culture of the organisation, and this should be considered during analysis. Students' completed PADs were included in the documentary analysis; permission was obtained from each student in the consent form.

3.11.4 The role and position of the researcher

The study involved a complex three-fold consent process as it included ward-based nursing staff, students and patients. In addition, the researcher is

connected to the university where the students were studying, although she was not directly connected to these students, so no conflict of interest was present.

The researcher had reflected on her role in data collection as researcher, educationalist and practitioner. A concern was whether the researcher would have to intervene if she witnessed poor practice by a member of staff or student and this was described as a concern in the researcher's reflexive diary. These issues had been included in the ethical approval process. In addition, the researcher had considered her intervention if she had evidence of students having a poor learning experience.

The researcher was aware of potential role conflict during the fieldwork and used the reflective diary to identify occasions when she was aware of the conflict. This enhanced reflexivity. Using this approach, during data collection, the researcher was aware of the situations when she changed from being a researcher to an educationalist or practitioner. The change to practitioner took place in situations where she perceived a potential patient safety issue and these were recognised in her diary. There was one occasion in a shower room, as the student was about to assist a patient to a standing position. The researcher became aware that the patient might slip if she pulled on her zimmer frame and that the student was not in a good position to assist and support her. The researcher moved rapidly to hold the zimmer frame and avert a potential slip. This was the first day that the researcher was observing on the ward and she was aware of her role as practitioner in maintaining patient safety and wondered how often this would occur in subsequent periods of observation (box 1). Although on subsequent occasions, she was aware of her proximity offering security to students and identified potential patient safety situations but she did not need to intervene in a similar way again with a student.

Box 1 Example of excerpt from reflexive diary

"I am conscious I moved from researcher to practitioner to demonstrate the best way of helping the patient to stand up safely with Student B. The patient immediately seemed less anxious following my intervention and understood how to stand up safely, subsequently the manoeuvre was easily performed with no risk to the patient."

She did acknowledge her relief in her diary when a student had not cleaned the trolley prior to a dressing and at the moment she realised she needed to intervene, the staff nurse checked with the student that she had cleaned the trolley so in this instance the researcher did not need to cross the line from researcher to practitioner. The researcher was aware of first year's feelings of anxiety during some care delivery. An occasion when she was aware of her presence as a support to the student as an educationalist and practitioner is evidenced in box 2.

Box 2 Example of excerpt from reflexive diary

" I was struck by the amount of time the first years spent giving care by themselves such as feeding patients and deciding how much encouragement to give patients they are feeding or when they have eaten enough, especially the lady observed with specific instructions on her swallowing and requirement for soft food. I was conscious that one of the first years gained support from my presence while feeding this lady although I was not saying very much to her I think she know I would intervene if necessary. She seemed anxious and needed support nearby".

The occasions when she behaved as an educationalist or practitioner were when she wanted the student to understand something better or problem solve a situation. For example if she considered it appropriate for the student's learning to ask a probing question to encourage them to think more deeply and understand the rationale, hence developing their clinical decision-making.

There were also the situations that required creative thinking as a practitioner when normal processes did not work. These occasions were documented with humour in her reflexive notes, demonstrating awareness of her changing

role (box 3). Although in this example it was the student that identified the solution.

Box 3 Example of excerpt from reflexive diary

Laughter collecting a stool sample- the first year was trying to collect a stool sample with a spatula without success. We giggled and I suggested using 2 spatulas and got a second one from the cupboard. No it didn't work, the student said "I need a spoon!" Success with 2 small plastic spoons from the kitchen - Creativity, teamwork and laughter in the practitioner role!

Observation on a weekday, it is slightly more difficult to be there in uniform as people think you know what is happening! Weekends are good as the pace of the ward is different and staff work and support students in different ways, less demands from doctors' rounds and more focus on patient care. Possibly students should do more weekends!

Sometimes the role of practitioner in supporting staff and care on the ward became an overriding demand and was valuable in forging relationships with the ward staff. Usually, it was making beds and fetching and carrying to support the ward, but on one occasion, a male mental health nurse was caring for a patient with a mental health problem. The patient needed to use the bathroom and wanted a female in attendance. A registered nurse not a student was needed and some staff were away from the ward. The researcher was able to be the registered nurse and to demonstrate her willingness to contribute to the team as a practitioner, illustrated in the extract from her reflexive diary (box 4).

Box 4 Example of excerpt from reflexive diary

"I am aware when I move to practitioner or educationalist from my researcher role. Each time I make a conscious choice to do it. Actually I enjoy being able to contribute to the ward's work and not feel a burden or spare part. I don't think it impacts on my researcher role and of course I am more accepted by the ward team and patients".

Prior to the period of data collection, the researcher discussed the potential bias of observation with her supervisors and how to maintain rigour. As the data were collected over a period of five months any concerns about the process were discussed; however it was acknowledged that the interpretation of data is the researcher's but a clear account of the researcher's theoretical position adds credibility and allows others to assess its contribution (Lewis and Ritchie 2003).

3.12 Data analysis

Yin (2009) acknowledged that qualitative data analysis is difficult and techniques have not been clearly defined. However, he also asserts that the case study has a story to tell through the data, although there needs to be structure and strategy to do this. Therefore, the researcher selected a structured approach to analyse the data. According to Crowe et al. (2011), framework analysis (Ritchie and Spencer 1994) is a practical approach to organising and coding data. Framework analysis is an emerging method of qualitative thematic data analysis that is increasingly popular in healthcare studies as it may be shaped by existing ideas rather than generating new theory (Ward et al. 2013). This view by Ward et al. (2013) makes the use of framework analysis particularly relevant to use for this study.

Baillie (2007 p.113) recommended Ritchie and Spencer's (1994) more detailed analysis structure in lieu of Miles and Huberman's (1994) three-stage structure. In a qualitative study where volume and complexity of data can hinder presenting an audit trail, framework analysis is a systematic and rigorous data-analysis method (Ward et al. 2013). Therefore, with a large volume of data from three collection methods framework analysis was selected as an appropriate analytical method and used according to Ritchie and Spencer's (1994) approach. The framework analysis method to analyse data is an iterative analytical approach consisting of the five stages (Ritchie and Spencer 1994) set out in table 15.

Initially during data collection, analysis and collection were taking place concurrently but when the data collection was completed, analysis continued. It was essential to manage the data effectively as there was a large quantity generated but the richness needed to be maintained. The data were analysed in relation to the research questions (Thorarinsdottir and Kristjansson 2014).

Table 15 Framework approach to data analysis (Ritchie and Spencer 1994)

Key stage	Description of activity
Familiarisation	Becoming familiar with the data by listening to recordings, transcribing, reading and studying notes, and identifying themes.
Identifying a thematic framework	Starting to process the data, identifying themes, abstracting ideas and concepts enabling identification of key and recurrent themes.
Indexing	Thematic framework is systematically applied to the data in its textual form, and coded in accordance with the index. Patterns are identified within the coding.
Charting	The coded data is arranged in charts of headings and sub-headings.
Mapping and interpretation	Through review of the charts, patterns are identified and used to define concepts, identify links and associations between phenomena and explanations sought.

3.12.1 Familiarisation

During the data collection, the researcher was involved in writing up field notes and transcribing interviews, which facilitated familiarisation and an in-depth understanding of the data. Reading and re-reading transcripts alongside field and reflexive notes promoted initial identification of themes, ideas and commonalities (Thorarinsdottir and Kristjansson 2014). This process continued as more data were collected and re-read. Reflection on periods of observation especially when the students were observed for a second time enabled the researcher to see changes in their ability and development of their decision-making skills. The recurring themes were identified and stage 2 commenced.

3.12.2 Identifying a thematic framework

As the recurring themes and then subthemes were identified they were charted on paper (Ward et al. 2013) and set out in mind maps (Appendix 9). As described by Ritchie et al. (2003), ideas about initial and recurring themes were marked on the interview transcripts and observation notes that were set out in columns to allow notation (Appendix 10).

The literature review and propositions informed and guided the development of the themes, and terminology was used that linked where appropriate with existing terminology. These were, as stated, set out in mind maps (Appendix 9) that stimulated justification of the themes and subthemes through discussion and debate with the supervision team, promoting rigour and auditability. Ritchie et al. (2003) warn against abstract concepts and collapsing themes and subthemes too early in the analysis. So although the thematic framework grew and felt quite unwieldy at this point, as more data was collected and included in the analysis, it was important not to start reducing the number of themes and subthemes as this would be undertaken in the next stages.

The themes and subthemes were applied to all the transcripts and field notes. However, the PADs were not available until later so these were analysed later. Srivastava and Thomson (2009) stated that with a large volume of data in qualitative research not every piece of material might be reviewed at this stage.

3.12.3 Indexing

The framework was applied to all the data and all significant statements were identified and coded (Appendix 10). As the themes developed it was possible to link these together into a hierarchy with themes and subthemes (Appendix 11). During this stage of the analysis, some process charts of the developing themes were created which demonstrated crossover of some themes and subthemes. The process of indexing commenced alongside the development

of the thematic framework as it assisted development. Initially, the indexing was indicated on individual transcripts and field notes but this became too complex so a draft framework was developed on an Excel spreadsheet that allowed indexing and tracing all data sources to ensure validity (Appendix 11).

As part of the indexing stage, themes and subthemes were refined, combined and developed. This process involved re-reading transcript data and noting the related theme on the draft framework. The source was also identified so the origin was known to be interview or observation data. During this stage, discussion with the supervision team assisted the researcher in use of terminology, interpretation and framework development (Appendix 12).

3.12.4 Charting

This stage involved the development of a matrix with all the data identified. An Excel spreadsheet was used and data from the PAD, each observation and interview were charted next to each other, in separate columns. One of the benefits of framework analysis is the transparency of results that can be related back to original data (Johnston et al. 2011). According to Ward et al. (2013), charting the optimal amount of summary information is crucial. The researcher was aware that despite using reference to its location in transcripts or field notes so they could be checked and retrieved, some of the annotations made when charting were lengthy.

3.12.5 Mapping and interpretation

As the interpretation continued, the themes and subthemes were refined. A period of time elapsed when data analysis was interrupted. Moreover, this was beneficial as during the intervening period the researcher was able to consider meanings and look at the data with a fresh view after the interruption. The whole data set was reviewed and the meanings of the themes and subthemes checked. This was discussed with the supervision team who sought detail of decisions made during consideration and

development of the framework. The raw data transcripts and field notes were continually referred to during this stage to ensure the meaning was not lost or changed. It was a systematic process that was valuable with a data set that was rich with meanings and detail. The mapping of data meant that it could be re-examined to check meaning and interpretation that according to Ward et al. (2013) enhanced the auditability and transparency of the framework analysis. The selection of quotes for the findings chapter was from identification of suitable quotes on the spreadsheet that were illustrative of the theme or subtheme. As these were clearly identified by the line in the transcript they were auditable enhancing trustworthiness.

3.13 Chapter summary

This chapter has justified the decision to use case study (Yin 2009) methodology for this thesis. The selection of the study ward and therefore staff and mentor participants was through gatekeepers within the Trust. The ward selected by the gatekeepers was paramount to the progress of the study, as all staff volunteered to participate in the study. The gatekeepers also identified the patients who could be invited to participate. A complex consent process was used which could have been a barrier to recruiting. However this did not prevent the recruitment or progress, but did require organisation prior to data collection periods.

The use of three collection methods enabled checking of the researcher's interpretation of observation data in interviews with students and mentors. The documentary analysis did not yield as much data as expected about learning clinical decision-making but it did allow triangulation of some findings. Use of a structured framework approach for data analysis assisted the data management and audit trail of the data origin. It enabled many interpretations and a complex detailed data set to be managed effectively. As the themes were developed and collapsed into the final themes and subthemes, an audit trail of the origins of the data and themes could be maintained.

The next chapter will present the findings from the data provided through the observation in practice, interviews with students and mentors and through the documentary analysis of the students PADs.

Chapter 4 Findings

4.1 Introduction

This chapter presents the findings about how pre-registration adult students learn clinical decision-making in practice, and the influences on learning clinical decision-making. In addition, the differences between first and third year students' decision-making and how they learn clinical decision-making are considered.

All the data ascribed to participants are coded to maintain anonymity. All the patients were female and are referred to as the patient, the lady or she. All the students were female and either first or third year students. A letter identified the individual students and the origin of the data is shown. The data from practice assessment documents (PADS), observations and interviews is formatted differently to identify the sources (*Interview in italic*, Observation in non italic Arial narrow and PAD in Calibri). While there were some male members of staff, they have all been given female pronouns to maintain anonymity. The observation data also included quoted verbal data as it was documented during care delivery or interaction between student, mentors, staff and patients.

Field notes from observations in practice were written up on the day of the observation while the detail was fresh and initial interpretation of data commenced. In addition the researcher's reflexive diary was written alongside the observation notes documenting her views and feelings about the observations.

As the PADs were not available until the students had completed their placement, these were the last components of data to be analysed. Of the six students, four of their PADs were made available for analysis (table 11). The data obtained from the documentary analysis was analysed using the framework analysis. The data was less significant than the rich interview and

observation data but contributed additional information in relation to students' learning decision-making. The reason the data was less significant was probably because students' learning about clinical decision-making was not specifically requested as part of the document.

Quotations from the data are used throughout the chapter to support the findings. The quotations from interviews and examples from field notes are to support the findings. This may be by offering evidence, explanation and illustration of the findings, or to deepen understanding or to give the participant's voice.

4.2 Themes and subthemes

Table 16 identifies themes and within the themes there are subthemes that contribute to the theme. The themes and subthemes were developed using an iterative process as described in the methodology chapter (section 3.12). There is an overarching theme of the Community.

Table 16 Table of the themes and subthemes

Overarching Theme: Community			
Themes		Subthemes	
1	Dignity for all	1.1	Compassion and humour
		1.2	Part of a caring team
		1.3	Respect, support and feedback
2	Practicing	2.1	Observing and being observed
		2.2	Doing it
3	Understanding risk	3.1	Assuring patient safety
		3.2	Having confidence
4	Developing knowing	4.1	I want to learn this
		4.2	I can do this
5	Making decisions	5.1	Assessing and prioritising
		5.2	Progress in decision-making
		5.3	"Tools assisting decision-making"

The findings are reported throughout this chapter. They are explained and illustrated within the themes and subthemes supported by evidence from the data.

4.3 Overarching theme “Community”

There was an overarching theme of “Community” which had an impact on students learning decision-making. On the ward, mentorship was a community activity. The themes and subthemes all related to the “Community”. The role of the mentor was important but the nursing staff on the whole ward considered the role of supporting students to be their responsibility.

“My mentor and co-mentor are not always around but I work with everyone” (Student A, Interview 2, line 39).

The “Community” was of paramount importance to students’ learning. As learning clinical decision-making was an implicit part of their learning, threaded through every aspect of their participation in care delivery, it was a key component of their experience. Students felt valued by the community and part of the team; a first year on her first ward said:

“Day by day I looked forward to coming in the next day” (Student B, Interview 1, line 18).

A third year student talked about working with a mentor saying that she cared about her learning and being part of the ward, she was patient and always checked Student E was alright. The same student also said she would check with staff before she made decisions:

“I’m learning so I think it’s important to ask....I don’t just want to hear it from any person, so if it will help me make a decision, my motto is ask, they don’t mind.” (Student E, Interview 2, line 230).

Mentors understood the importance of students feeling comfortable in the ward and belonging:

“Students should have a welcome environment” (Mentor 1, line 390).

A positive relationship with mentors and support for learning by all staff enhanced the students' experience. The usual model of one-to-one mentorship in nursing was adhered to in that all students had an identified mentor; however, a team approach to mentoring was informally adopted on the ward with staff saying students' learning was everybody's business. As illustrated by a first year student saying:

"I have learnt decision-making from almost all the nurses" (Student A, Interview 2, line 61).

As is illustrated later in the subtheme "Part of a caring team", the students felt part of the community and also described it as being part of the family. The community shared the responsibility for students' learning and supporting their development in clinical decision-making.

4.4 Theme 1 Dignity for all

The NMC (NMC 2012) emphasised the role of nurses and doctors in treating individuals with dignity. It also stated that as well as having knowledge and skills that health care professionals need to give compassionate care. The study ward demonstrated compassion and dignified respectful care to patients. The dignity also extended to staff who cared for each other as they worked together. The study ward had a positive ambience which was not dependent on the leadership or staffing. The staff expected high standards from the nursing students, but this was articulated to them at the commencement of the placement and they were praised for their efforts. A mentor commented that knowledge about dignity was essential for all students.

"Every 1st year should know that, you don't have to be 3rd year to know this, because it's the most important, the protection of patient's privacy. No matter what, we have to respect her privacy and dignity" (Mentor 1, line 370).

Respect and dignity was shown to everyone on the study ward, both staff and patients. On the study ward all patients were called by the name they wished for, and patients' dignity and privacy were respected. An example of this was

the care of several bariatric patients who were observed, where enough staff members were assembled to guarantee dignified care to these ladies. The mentor demonstrated clinical decision-making, ensuring safe and dignified care when transferring the patient to a suitable bed, which had been delivered to the ward:

The team were working with an obese patient to transfer her to a bariatric bed. The Sister managed the team quietly, planning and directing their activity and telling the patient what was happening and what she needed to do to assist. Everyone knew what they were doing as they manoeuvred the patient who was managed with dignity and safety (Student B, Observation 1, line 102).

The calm approach shown by this Sister was reflected in the manner of staff towards the students. The nursing students felt safe during their practice learning placement. A third year student explained this in relation to a staff nurse:

"I think it's crucial to have someone like that, that you're not afraid to ask" (Student E, Interview 2, line 257).

She also related the care she felt as being extended to other students by the staff nurse. The approach of staff to students developed their confidence, which enhanced their ability to learn and developed positive attitudes to learning.

4.4.1 Subtheme 1.1 Compassion and humour

Compassion encompasses feelings of empathy and understanding of individuals that motivates a desire to help them. An integral part of the students' learning environment was the care environment and whether patients' dignity was respected and valued. These are values that are essential components of learning decision-making. The ward had a compassionate feeling where staff had positive attitudes to care and promoted independence where appropriate. The communication with patients was suitable and even when the ward was busy there was a calm atmosphere. A third year described the staff as having a positive attitude

(*Student E, Observation 2, line 144*). Patients were treated with dignity and their appreciation was evident in some of the comments they made. A first year said a patient had told her she felt as though the student treated her as her daughter would treat her.

“She treated her like a daughter” (Student B, Interview 1, line 75).

Mentors were important in demonstrating the values associated with compassion and this was frequently seen during data collection observations. The mentor in the example was role modelling to the first year how she took the opportunity to assess the patients while making them comfortable. Both of these activities were demonstrated as important in caring for patients on the study ward, placing value on decisions about patients' comfort as well as their physical assessment:

The mentor covered them [the patients] with blankets to keep them warm. She covered one lady who is confused with a blanket and tucked it round her as she was in danger of exposing herself. They also helped some patients back to bed for a rest (*Student B, Observation 1, line 52*).

The researcher commented in field notes on the first day of data collection about the calm atmosphere in the ward (*Student B, Observation 1, line 182*). There was an atmosphere of collaborative working as staff settled patients and recorded observations of patients' vital signs. The relationships between staff and patients were respectful but there was also a sense of fun and humour when appropriate.

A younger patient who is a frequent inpatient was in conversation with a third year student and the researcher. The student asked whether she had a good day out on Saturday, then commented that she is not reading her book today. The patient said she was "read out" as she has been in a week and she was going to "ward watch" today so be careful. She laughed with the student (*Student F, Observation 1, line 86*).

Humour was an implicit part of the ward atmosphere, often displayed by the facial expressions of staff in conversation or when greeting people. There was frequently laughter between staff, students and patients.

A student was helping a lady to shower and the patient recounted how on a previous day another student had got soaked helping her to shower as they did not know how to work the new shower (*Student A, Observation 1, line 30*).

There was also humour between students and mentors and other members of staff.

A student was following an HCA, who was always good humoured and willing to support students, saying I'm tagging [HCA's name]. They both laughed, and the HCA asked if the student would mind helping to change a patient (Student C, Observation 1, line 186).

A first year also understood the effect her demeanour had on patients and staff, and how important a smile could be:

“Yes I like it if I can make someone smile” (Student B, Interview 1, line 78).

The students also showed their concern for patients by their communication with them, and one student showed empathy as she spoke about discharging a patient who lived alone:

A first year student was talking to a patient who was going home later and asked how she will manage at home as she has little support. The patient said she is happy to be going home and she can manage to look after herself although it is difficult (Student B, Observation 1, line 66).

The student had explained to the researcher that the patient would not have carers as that was her decision, as she liked to be independent although everyday activities were tiring for her. Understanding clinical decision-making in relation to patient wishes was an aspect of compassion that students developed by their communication with patients. A third year also expressed the importance of patients in her learning about clinical decision-making and understanding the patient experience. She said:

“Without the patients you can't learn anything! Some of them will talk to you about how it is, they'll explain how many years they have this, how they feel, and the drugs as well...So when you listen to a patient you understand a little how it works... as they tell you the experience they get, and how they feel when they take it” (Student F, Interview 1, line 252).

There were usually patients on the ward with learning difficulties or dementia. Staff modelling appropriate behaviour with these patients is paramount to student learning. One day, a lady with learning difficulties who was mobile

was very agitated. The problem causing her concern was how her discharge was being managed, but the lady did not remember and was constantly asking staff for assistance. Throughout the day all the staff demonstrated patience and an exemplary professional manner ensuring everyone understood the correct interventions for her discharge had been put in place.

One student talked about her anxiety looking after a patient who was dying and whose family were present. She felt the family were judging the care given; although in reality the family were actively involved in the clinical decisions made about their mother's care:

"I'm not comfortable when I look after her, it's not because of her condition, it's because I feel the family are, it's as if they are not satisfied" (Student E, Interview 2, line 110).

However, the student recognised it was challenging both physically and mentally looking after this lady and remained professional, learning appropriate communication from the staff. The staff were aware of these difficulties and the researcher noted that students never cared for this lady without the support of a registered nurse. The researcher's understanding of the family was they were experiencing a very stressful, sad time and wished to participate in their mother's care and decisions related to her care.

The nurses delivered high standards of care, which demonstrated dignity and compassion. The students' learning about the patient experience and empathy was an important aspect of the development of decision-making processes to take account of the family's need to participate in care delivery.

4.4.2 Subtheme 1.2 Part of a caring team

The ward team not only cared for the patients but for each other. The students felt included in the ward team and the mentors unanimously voiced the view that students should be included as part of the team. More than one mentor and a student used the phrase "like a family" when describing the ward team. The "Community" was inclusive of students and the friendly

banter that is seen in families was also seen in the ward. One of the sisters said she tells students not to be shy, and be like a part of, like a member of the family (Mentor 1, line 556). Another mentor said:

“We introduce all the staff to them and then the doctors and the MDT, everyone and we welcome them like a family, a team” (Mentor 2, line 21).

A first year student said:

“Sister said we work as a team, we are like a family and the students are part of the team” (Student C, Observation 2, line 99).

An example of the team approach to supporting students was seen in a PAD that indicated the mentor had discussed her assessment with other mentors.

The team has watched her develop over her placement, she is always professional (Mentor comment in Student C’s PAD).

A sense of belonging is important for students’ learning (Levett-Jones et al. 2009). The ward had a structured introductory session for the student’s first day on the ward. Usually, the sister who took responsibility for the students did this. In addition to the introductions to staff, students were also orientated to the ward environment and layout, and given welcome leaflets. The orientation included the ward’s expectations of students and information about types of patients and medications usually seen. The ward had a structured approach to introducing students to giving care in the ward thus supporting their acquisition of clinical decision-making skills. One of the mentors explained, first we demonstrate and explain the rationale, and if they are confident, we have an agreement with them, so first we show them the procedure, then after that we allow them to do it but with supervision.

“That’s the most important thing, because they’re still students and need our support” (Mentor 1, line 31).

The analogy of a family could be extended in terms of parenting behaviour. When a sister was explaining to the researcher about a student who had been on the ward, she said the student had not enjoyed her first two days on the ward. The sister said she explained to the student that she needed to calm down and change her attitude and it would alter her experience, she

said this just as a parent might advise a child. The researcher had seen the student on her last day on the placement and she had volunteered the information about how much she had enjoyed the ward and how much she had learnt (Student C, Observation 2, line 101).

A sister also referred to the first year students as “babies” in terms of needing guidance, care and nurturing.

“A 1st year, they are babies, so we have to guide them at the beginning, then we have to nurture them, then we have to give them all the benefits of learning” (Mentor 1, line 305).

However, this was the same mentor who set out her expectations of students’ learning decision-making and was describing how she questions them saying:

“Of course, I don’t give them the answer, they have to think and give me answers, because they are not experienced in decision-making” (Mentor 1, line 190).

The relationships demonstrated both trust and support illustrated by a comment from a third year student when the researcher was talking to a staff nurse.

The third year student appeared and said [the staff nurse’s name] is my adoptive mother on the ward! (Student E, Observation 2, line 159).

The third year was working with the staff nurse and they clearly felt safe and had a trusting relationship. The third year asked questions and the staff nurse also checked actions with the student. Another third year student said in interview:

“That a good placement supports students and listens to students...They do try to meet your needs, they try and give you alternatives ... that rather than just leave you to get on with it” (Student F, Interview 1, line 290).

A third year student early in her placement said she did not believe that students were part of the team:

“They always say we are part of the team but you’re not a member of the team, in practice it does not work like that because they are one short when you are gone” (Student F, Interview 1, line 157).

However, at the end of her placement her view had changed and she regarded herself to be included in the team:

“Yes they include us in the team, especially me and [named the other 3rd year student in her final placement]. They include us even more because we are management students not that they don't include the others, but they make sure we gain as we are nearing the end” (Student F, Interview 2, line 425).

The mentors believed that in including the students as part of the team they would be more motivated to learn and gain more from their placement. A mentor said:

“If you welcome them then you are removing the barriers so the more they will be involved and participate in every learning opportunity available” (Mentor 2, line 33).

It was not only the registered nurses who were important in students' learning but also HCAs who worked alongside students, acting as role models and problem solving minor issues with them.

A first year student could not get the temperature probe to work so she asked an HCA who was nearby taking another patient's observations (Student C, Observation 1, line 99).

Usually, the HCAs offered positive role models but on one occasion a student role modelled communication skills to the HCA. Even this was done in a non-judgemental way with no comment about the poor communication, just a clear demonstration of good practice.

The HCA asked a lady if she was cold but the lady did not seem to understand, a student intervenes and asks the lady again - she says yes she is cold so the student goes to collect a blanket. The HCA then said to the patient in a rather abrupt manner that she had already asked her. The student returns with the blanket and role models good communication to the HCA who joins in and asks the patient if she feels warmer (Student B, Observation 1, line 195).

The other members of staff involved in students' learning were doctors on the ward. Although the junior students did not approach them, they listened to doctors' ward rounds and understood the relationship between decision-making by doctors and changes in patient management.

"I've gone round with the doctor listening to them talking to the patient and telling them their diagnosis and the plan for their care" (Student D, Observation 1, line 125).

One of the third year students was learning to participate in the doctors' round when she was first observed, and was reluctant to be included even though the staff nurse had asked her. However, by the end of her placement she was at the point of registration and was more confident, participating in decision-making about the patient's management:

The third year student went into a side room with the respiratory consultant and Sister. She did this without prompting which demonstrated progress from the previous observation when she had not gone round with the doctor. When asked, she said she goes on doctors' rounds and updates notes herself and gets them countersigned (Student F, Observation 2, line 26).

The students also regularly saw physiotherapists and occupational therapists working on the ward. They would sometimes include students to teach them about their work.

"The OT or physio sometimes when she comes says you can come and see what I am doing. She is helping with their mobility. Sometimes if I have a question I ask them" (Student B, Interview 2, line 90).

One of the first year student's PADs mentioned the MDT as contributing to her learning. The following was documented in her PAD.

I have got involved with other MDT members and understand how they contribute to the wellbeing of the patient (Student C comment in PAD).

The mentor's comment in the PAD reflected the MDT contribution to her assessment.

I have had lots of positive feedback from all members of the MDT (Mentor comment in Student E's PAD)

Following a decision to mobilise a patient during a conversation with one of the doctors, the third year student made a referral to the ward physiotherapist herself. Although the decision to mobilise the patient was made by the doctors, the student knew her role in the decision-making process was to refer the patient. She knew how to make the referral and had previously been

shown how to do this by the nursing team and as the MDT worked closely together, it was a safe environment for a student to complete this process. Students also made reference to making referrals to dieticians and speech and language therapists.

The third year also made a referral to the speech and language therapist herself under the guidance of the staff nurse, and was interested when she found she was making the referral to a speech and language therapy student on the phone (Student E, Observation 2, line 220).

Occasionally, students witnessed examples of others from the team participating in patient care.

A third year was preparing breakfast for a patient who did not speak English. The ward clerk was called as she spoke the patient's language, and she checked whether the patient wanted Weetabix instead of porridge. The consequence of this intervention was that it was evident the patient enjoyed her chosen breakfast as she smiled and opened her mouth for the next mouthful as the student fed her (Student F, Observation 1, line 51).

The students were accepted as part of the ward team. The team was an MDT who supported each other; like a family, the students were expected to give as well as receive in the relationship. They were included in all aspects of the ward activities with individuals as role models for learning clinical decision-making.

4.4.3 Subtheme 1.3 Respect, support and feedback

The same dignity that was given to patients was also exhibited with students. The respect offered to students was demonstrated in the support they received for their learning. When learning as a student, support and feedback go hand in hand. There was a large community of staff supporting the students' learning. When asked whom they learnt from, the students identified not only their mentors but also other nurses on the ward.

"I learnt from Sister [name] who was my mentor as she always asks where I am and what I have done and am I learning. She is always checking on me" (Student A, Interview 2, line 52).

Another student said:

“I have learnt from almost all the nurses” (Student B, Interview 2, line 61).

The mentors saw it was their role to teach students well, regarding it as an investment in the future of nursing.

“I think that if we teach them, and if the mentors are really very good mentors who teach and supervise the students, then we will have good nurses in the future” (Mentor 2, line 350).

A first year described one of the sisters supporting her learning but the sister always asks questions ensuring the students learn the rationale for care to develop their decision-making.

“I can go to them and they are ready to help, Sister [name] will say come and do my B/P, and ask why do you have to do it, and what is the normal range? (Student B, Interview 2, line 123).

Mentors also made sure the students experienced a range of learning opportunities, and found the students when a more unusual opportunity was available.

“I try my best to call them whenever there is a procedure or anything I feel that they have to learn and observe, like I did with Student D earlier, so I showed her how to suction a patient” (Mentor 2, line 100).

Apart from teaching, supporting and assessing students, mentors knew they were also role models for students in terms of linking care delivery to clinical decision-making.

“We have to be good role models.... they will always copy us” (Mentor 1, line 106).

There was one occasion when a sister was working with a first year. The sister role modelled many aspects of essential care and clinical decision-making including using appropriate communication, and ensuring patient safety by applying the fall prevention strategy.

The student and Sister cared for a sick patient and whilst blanket bathing the lady, the Sister described making clinical decisions about the patient including assessing the

patient's consciousness, and monitoring her vital signs and pressure areas. She also talked about maintaining her dignity by not exposing too much of her and keeping her warm (Student B, Observation 2, line 70).

This example showed the way the ward sister was able to assess patients whilst giving care and so make decisions about them. If students did not have the opportunity to work closely with senior members of staff, they would not have learnt from this experience.

The researcher was aware that the sister took the opportunity to work with the student due to the presence of the researcher. She asked the student if the sister usually spent time working with her and the student said not in so much detail as today. The sister also agreed she was not able to work with students often, but as it was a Saturday she could work with her and she considered it an important aspect of her mentoring role.

“If I’m on with more junior staff, I do the bedside care. It’s my way, not to lose my skills, so I teach the students... to practice and also to impart the skills to students” (Mentor 1, line 74).

A student was describing a staff nurse's behaviour during an emergency situation demonstrating her clinical decision-making in a stressful situation:

“I have learnt... I observed how relaxed [the nurse] was she was obviously frightened but she was more relaxed than I was” (Student F, Interview 2, line 312).

Some mentors demonstrated patience and awareness of students' feelings in new situations. This was illustrated in field notes when the sister told the student what she needed to check in preparation for a patient's discharge.

She asked the student to phone the pharmacy to check whether the patient's drugs were ready. Sister talked to the student to prepare her for what to say to the pharmacy. Sister then asked the student if she is happy to talk to the patient (Student E, Observation 1, line 278).

Students expressed feeling supported but also that the staff had high expectations of them.

“There is a lot of pressure, not in a negative way, there is more expected from you. It’s good I am being stretched... I am eager to learn” (Student E, Interview 1, line 250).

Some of the students identified that they preferred the way some mentors worked with them. The third years were able to align themselves to the mentors they preferred.

“I try to work... not just with my mentor but with other staff. I pick who I want to work with because of how they teach... you have little things that you gain from this one that you won't get from another” (Student E, Interview 2, line 450).

Another student identified a member of staff she found supportive to her learning.

“S/N [name] is really good, she does care about what I am doing here, she will come back and ask me, to all the students as well - she's like that” (Student E, Interview 2, line 236).

One of the first years summarised it when talking about learning from mentors.

“They know what they are doing, so you really want to be like them” (Student D, Interview 1, line 126).

However, mentors did not all get it right all the time. Occasionally, students discovered when asking questions that availability of time and demands on staff affected the response. They learnt early in their course to recognise non-verbal as well as verbal cues. For example, a first year said:

“I tried to ask Sister before but she was too busy” (Student D, Observation 1, line 113).

Similarly a third year said:

“Sometimes you are working with someone and you feel absolutely you are in their way that you're a bother “ (Student E, Interview 2, line 244).

The respect given to students was demonstrated when one of the mentors explained the need to be sensitive when giving students feedback.

“We need to respect their privacy... if you correct them directly in front of the patient, the patient might think that it’s wrong” (Mentor 1, line 43).

She described talking to them privately and identifying the areas for improvement, and that there is always an opportunity for students to try again and improve.

The way mentors elicited information from students seemed to vary with their experience. The sisters tended to use probing questions to make students think about the rationale for care they were giving, focussing them on the decisions they were making about care. A mentor spoke about encouraging students to learn by asking questions;

“Ask questions, it’s free of charge, you’re here to learn” (Mentor 1, line 390).

It was noted that the staff nurses tended to ask fewer questions about knowledge. Although they advised about how to manage a situation better as shown in the example:

A staff nurse had a different technique with a third year student by giving her information and advising on better ways of doing it (Student E, Observation 2, line 191).

One of the sisters, who participated in the study but declined to be interviewed, was particularly skilled at asking probing questions, which encouraged acquisition of clinical decision-making skills. Some of the students found her manner challenging, as, if they did not know the answer, she would expect them to find out and tell her another day.

“I have been told to go home and look up medication and do some of my own reading and come back and feedback to them” (Student E, Interview 1, line 222).

However, she was also one of the sisters who monitored students caring for sicker patients by close supervision offering further opportunity for progression in decision-making. A mentor described how they encourage students to self-evaluate and discuss progress with other members of staff.

"I ask the student and I ask the staff so then I get feedback... that is how we work in this ward - we communicate" (Mentor 2 Line 233).

At their annual mentor update, mentors received guidance on working with students who might need specific support. However, they are only able to implement the suggested strategies if students inform them about their needs. A third year student had disclosed to the researcher she had dyslexia but also said she had not told her mentor. The researcher recommended she disclose this to her mentor. The student explained a previous placement had considered dyslexia an excuse. Therefore, when the researcher heard mentors raising concern about the student she was alerted to their views in the light of the student's disclosure.

"I don't know, she is very good but she does not tell you if she doesn't know something, she is afraid of not knowing" (Mentor 4, line 57).

The mentor also recounted a conversation with another staff nurse about the student.

"Yesterday [another S/N] and I were talking saying she is good but she does not know as much as she should know" (Mentor 4, line 106)

The researcher discussed the student, not disclosing her dyslexia and the mentor's comments about the student, as a concern with her supervisors and decided to keep an eye on the student's progress. When the researcher was in contact with the student to arrange the second observation date, she asked how she was progressing and how she had done in her mid-point interview. The student was doing well and had no referred areas in her mid-point interview. At her second interview she told the researcher she had also disclosed her dyslexia to the staff on the ward.

"I was not scared of telling them I was dyslexic... I thought whether it's an excuse or not an excuse.... I need to let them know it's not because I am not reading, it's because that's a weakness for me.... so they work at my pace" (Student F, Interview 2, line 113).

The student understood her specific learning need and that it had an impact on the way, she needed support to learn clinical decision-making.

The mentors understood their role and offered support to students in a range of ways developing the students' skills at decision-making by challenging and questioning them. The students recognised the support but some of them preferred one mentor's style to another.

The students usually regarded feedback in a positive way, even though it may have identified areas for improvement. The researcher did not hear many examples of feedback being given, but equally students had a clear idea of their progress and did not say they were not receiving feedback. When asked if she received feedback, a first year student laughed as she told the researcher:

"Well I am told if I am not doing it right!" (Student C, Observation 1, Line 147).

Although she said this, Student C was usually enquiring and was not afraid to challenge if she thought something was wrong. For example, when she asked whether a side room door needed to be open or closed.

The mentors were important in helping students to understand the rationale for care. Students found some mentor's style of teaching more effective than others. A third year student said about one of the staff nurses;

"I think she's got it (skills at teaching) because she will teach you and not lose her patience, she will always come back and ask you if you understood" (Student E, Interview 2, line 242).

Both first and third year students were also self-aware and able to critique their learning to identify improvements and progress.

"I'm learning gradually. Gradually everything makes sense, when we go for handover, some of the things they say seem less strange. Sometimes I ask and sometimes they're too busy to really give you answers" (Student B, Interview 1, line 23).

The students received verbal and non-verbal feedback. The mentors were expansive and good verbal communicators, with the exception of one mentor

who had a quieter style of management. The researcher did not hear anyone criticised or spoken to in a humiliating or inappropriate manner during observation periods. However, students did indicate they received developmental feedback in a supportive way.

4.5 Theme 2 “Practising”

Practice comprises 50 per cent of pre-registration nursing courses. Therefore, practice is an important element in students’ learning. Practice may take several forms and this was observed and described by participants.

A first year student who had attended a skills session in the Trust with her peers was examining the resuscitation trolley with a staff nurse when she returned to the ward.

The student picks up the ambu bag and says this is the one we practised with this morning (Student A, Observation 1, line 241).

“Practising” often involved activity with others in the ward who prompted or supervised students.

The S/N asks the student if she knows how to empty a catheter bag and how to chart the contents on the fluid chart. Student C says she does so the S/N asks her to do this and she will return to take the catheter out with her. Student C is able to describe the need for infection control when emptying the catheter bag (Student C, Observation 1, line 138).

The importance of understanding the rationale for care when participating in skills is essential for development of clinical decision-making. This element may be lost if students do not have someone working with them supporting their learning, unless they have the skill to reflect on their actions as they practise.

Within the theme of “Practising”, “Observing and being observed” identifies the importance of observation and being observed by individuals with experience and knowledge. Following “Observing and being observed”,

students need to do it and this is reported in the subtheme “Doing it”. This may be observed practice but implicit in doing it is self-regulation.

4.5.1 Subtheme 2.1 “Observing and being observed”

Learning by observation is acknowledged as one of the key aims of practice, and was identified by mentors as crucial in students’ learning decision-making. There were two aspects of observation identified by participants; observing and being observed. According to one of the mentors, learning by observing is especially important with first year students.

“They [students] learn by example, they learn by direct observation and they also learn by, when there’s a procedure and they’re not familiar with, or we can show them directly” (Mentor 2, line 72).

The first year student also echoed this commitment to learning through observation.

“Yes if there is something to do, so while she is doing it I’ll be with her (the mentor) and observe” (Student D, Interview 2, line 71).

Another mentor’s comment related to observing and being observed, saying they wanted to be like a shadow to guide third year students.

“So they should be like, with a shadow, so that’s the way I guide them” (Mentor 3, line 176).

Equally, a third year student also introduced the importance of understanding what you are observing to learn from it.

“You have to be able to observe and know what you are looking at” (Student F, Interview 2, line 383).

One of the first year students understood the importance of learning the rationale for care to develop her clinical decision-making skills and expressed how sometimes she had to wait to have the explanation to accompany her observation.

“I’m learning the basics... by observation and asking questions. Sometimes I am asked to wait until it is quiet and they can explain to me” (Student C, Observation 2, line 6).

A mentor said how she thought students needed to learn observation with all of their senses to enhance their clinical decision-making:

“When they assess patients, I think we have to tell them also regarding their use of the senses when observing patients, because although they are first years, they have eyes, they have ears, and can smell” (Mentor 1, line 334).

It was evident that students perceived that they learn from observation and make these opportunities themselves. Students demonstrated motivation to learn and a willingness to seek out learning opportunities.

‘When it’s quiet I just go to the other side (other end of the ward) to see what’s happening and if there’s anything I am interested in I’ll just ask to watch and learn from that” (Student C, Interview 2, line 78).

Following handover one morning, a third year student asked the two sisters on duty if she could watch them checking the Controlled Drugs (CDs). She did not only observe but was also given explanation that would enable her to make clinical decisions in the future. They gave her examples of difficulties that can be encountered and how to trouble shoot these:

They explained to her how to check, order and dispose of CDs. What to do if anything is missing or broken and how difficult it is to assess the quantity of CDs that are liquids (Student F, Observation 2, line 169).

Interestingly, one mentor expressed the view that students needed constant observation. However, the prime role of the nurse is caring for patients, and mentoring is secondary:

“I want the students really to learn, they need someone to be there all the time, which nurses cannot give all the time” (Mentor 2, line 373).

The researcher observed an example of this when she observed a student preparing the trolley to do a dressing with the staff nurse. The staff nurse was not present and the student omitted to clean the trolley. The researcher knew she would need to intervene and stop the student prior to commencing the dressing, but decided to wait. The staff nurse returned and asked the student

if she had cleaned the trolley; when the student said no, she told the student the trolley did need to be cleaned.

Part of the mentor's role is to facilitate students reaching a stage where they are self-regulating. None of the students gave any indication about feeling uncomfortable being observed. A first year student gave a clear indication of how observation benefited her learning.

"I think it's better when they just say do this and then do it with you and then like they show you the first time and the second time they'll make you do it and they will watch you as long as you feel OK to do it and the patient's alright with it" (Student C, Interview 2, line 102).

Close supervision can give students different learning opportunities. A mentor enabled a first year student to care for a sicker patient by working with her.

Sister said "You will work with me, as you need supervising with these sicker patients" (Student B, Observation 2, line 11).

A little later the student is trying to take the patient's pulse with her gloves on, the sister notices and gently corrects her. She says "you are doing it with your gloves on it is better to do it without them on you can feel better" (Student B, Observation 2, line 49).

The sisters would ensure third year students had a range of experience by allocating them the sicker patients and observing part of the care:

Sister watched the student as she sat the patient up and carefully gave her 2 sips of water, she coughed so Sister said to give her a little porridge carefully but no water and to remove the water until the doctors has listened to her chest, adding she might need thickened fluids (Student E, Observation 2, line 56).

The sister then followed up on this interaction with the student to make sure she understood the rationale for the decisions made in relation to the patient's condition.

"Being observed" is the only way third year students can gain practice at medicine management. The skill of the mentor enables third year students

safe practice by allowing the student to make the clinical decisions and prepare the prescribed medicines but halting them if an error has been made.

The student puts the nebuliser solution in the nebuliser under Sister's supervision and took off the patient's oxygen mask and put on the nebuliser mask (Student F, Observation 1, line 54).

“Observing and being observed” were fundamental parts of the learning experience for students. When undertaking complex care, mentors observed students closely, allowing them to explain the rationale and key factors supporting development of decision-making skills.

An aspect of “observing” is demonstration. Sometimes a student was clearly being shown a skill or task by example, to enable them to perform better in the future. A mentor explained the development from demonstration to supervision:

“First we demonstrate, then if they're confident, we have to have an agreement with them, so first we show them the procedure, then after that we allow them to do it but with observation” (Mentor 1, line 31).

A range of staff were involved in demonstration, including mentors, staff nurses, unqualified staff and other healthcare professionals. A first year student asked a health care assistant (HCA) to show her how to make a bed.

The HCA shows the student how to make the bed demonstrating folding the sheets and how to fold back for a pack bed to receive a patient from A&E (Student C, Observation 1, line 182).

The HCA enlightened the student to the way of preparing a bed for a patient from A&E illuminating a situation where simple decision-making is undertaken. Often demonstration was a formalised arrangement to observe as indicated by a student requesting to see what the S/N was about to do (Student A, Interview 12, line 19). Staff used demonstration to familiarise students with equipment, for example, helping the first year students become familiar and handle resuscitation equipment and talking them through how it would be used and the decisions to be made as it is implemented.

A staff nurse used demonstration to follow up a session on resuscitation that the student had attended in the morning:

The staff nurse showed the oxygen cylinder to the student and how to turn it on and off and how to assess if it is full. As she demonstrates the checking procedure she tells the student that tomorrow she would like her to check the trolley with her mentor so she sees it being done again (Student A, Observation 1, line 236).

This showed the mentor understood the importance of repetition when learning decision-making skills. The staff nurse did not give too much information but planned with the student to repeat it and learn more in the future.

The staff nurse picks up the electrodes for the defibrillator and says we will look at the defibrillator another day. Have a go with the mask and bag as this is what you did this morning (Student A, Observation 1, line 244).

Staff would use demonstration with explanation when they had established a student had not previously practised a skill supporting their learning decision-making alongside the skill development, for example giving an injection.

The staff nurse asked if the first year student had ever given insulin, when the student replied she had not the staff nurse said - ok then I shall do it today and show you (Student C, Observation 1, line 182).

There were also occasions when demonstration was by visitors to the usual ward team. One example was the technical support team for a specialist bariatric bed who demonstrated and explained how to use the bed to ward staff including two students. This demonstration was observed by most of the ward team.

Sometimes the mentors instigated the demonstration and they gave the rationale at the same time. Learning the rationale enabled students to put the theory into context that is essential for future decision-making. An example of demonstration where the student was taught decision-making was when a Sister was suctioning the airway of a lady who was receiving end of life care set out on the Liverpool Care Pathway (LCP). The LCP was an end of life care pathway that was used prior to 2013 when its use was withdrawn. She

took a first year student with her to show her the skill whilst giving her information to problem solve and make decisions about the lady's care:

There is a problem with the suction apparatus and as the sister problem solves this she talks the student through what she is doing and tells her this is how you work out the problem. She also includes patient assessment within the dialogue explaining the secretions are too deep to suction and that they will administer some medication to dry the secretions instead. This will make her more comfortable (Student C, Observation 2, line 58).

The mentor spoke about how she used this opportunity to give the student theoretical knowledge alongside the skill development.

"I showed her how to suction a patient, suctioning especially with a sick patient and I asked her what is her understanding, what is her view about it, just give her some knowledge, and also the way we set up the suction, of course they don't know that" (Mentor 2, line 48).

Occasionally, demonstration took place away from the patient as it enabled more information to be given to the student without the presence of a patient. However, sometimes this allows only a part of the process to be understood. A mentor suggested using written instruction alongside demonstration if a student does not understand.

"If you're in doubt, you can always write down, for example teaching an inhaler technique, because we cannot demonstrate the whole of the process" (Mentor 1, Line 92).

There was a clear commitment to including students and demonstrating to them. A mentor spoke of an occasion when there was an opportunity to demonstrate to a student but no student available.

"She (a staff member) called me to give a hand and I couldn't see any students around at that moment so I just went in there" (Mentor 3, line 61).

Demonstration frequently occurred on an ad hoc basis with mentors seeking out students when less familiar or unusual care was being given that they knew was a learning opportunity for students.

Unsurprisingly, care where students were not observed was the essential care first year students gave, for example feeding patients. Essential care often involved decision-making that was not valued or recognised by the nurses themselves. Therefore it was considered that students did not need to be observed and they were told to seek help if required. This leads to the next subtheme of “Doing it” and sometimes doing it alone.

4.5.2 Subtheme 2.2 “Doing it”

Practice is a constant aspect of the time students spend in the ward. Students were involved in making clinical decisions related to the skills they were undertaking. For mentors, preparing students for “doing it” is a balance between assessing patient risk and particularly when “doing it” alone, the student’s ability to self-regulate. Rehearsal was sometimes used in preparation for a skill or task, using questioning.

Student B is working with Sister and Sister asks her, “How do we do a respiratory rate?” Student B says you look at the heart moving. Sister asks what exactly is she looking at. Student B says the chest moving so Sister says this is the breathing movement and says also to look for use of accessory muscles which she then describes (Student B, Observation 2, line 4).

Mentors were important in making opportunities for rehearsal and ensuring a positive outcome by their preparation with the student, as a mentor described:

“They also learn by giving them the chance to do it right, like handover, and you are behind them, and they get it, and you can also just guide at some points, but what I do usually is to brief them what to do, it’s different if you do it yourself “ (Mentor 1, Line 125).

Rehearsal in preparation to do it seemed to be different between first years, where it was supervised, and third years, where it was the opportunity to practise with direct or indirect supervision as required, but within a safe environment. Student F articulated this:

“Getting the chance to do things, hands on they give me the chance to do things.... I ask a lot of questions” (Student F, Interview 1, line 148).

Sometimes it was the student who had to overcome reluctance for a task and rehearsal could be the preparation for a task that was daunting.

“I have to overcome that ... I try to avoid it, when S/N went I thought to myself you have to do it even if you don't like it, I will come across things like this in the future (Student E, Interview 2, Line 113).

For the students, actually having hands-on experience was essential to their learning and subsequent decision-making skills. They needed to manipulate equipment or to be in the position of deciding the best way to manage a situation or whether something was unusual. Usually, they were very keen to participate in tasks but occasionally they needed persuasion from their mentor. An example of this is seen as a third year student was starting to relate theory to practice and therefore to understand the rationale for care.

She is observed “checking the cannula site and asks the patient if she has any pain at the site, she also checks the drug chart to see if she is still prescribed IV antibiotics” (Student E, Observation 1, line 212).

Integration is the process of making something whole; sometimes, practising a skill or giving care enabled students to understand the component parts of the care they were delivering or to link theory to practice:

The student encouraged one lady to sit out of bed... she has seen her back looked red and knows this is due to her lying on it (Student A, Observation 1, line 23).

A first year student showed her ability to integrate cues to make a decision about a patient’s management. The lady had been unwell the previous day and too weak to get out of bed, but the student had said she looked better although she had felt nauseated in the morning and had slept. Later in the day, the patient requested to get out of bed and when speaking to the researcher in an interview later the first year student had been able to rationalise her decision to sit the patient out of bed. This was based on the

patient initiating conversation, being alert and saying her back was aching in bed. The student said:

“She’s orientated, alert and she’s been in bed for three days. She is not feeling sick and so I think she could sit out for a little”

(Student C, Interview 2, line 195)

For another first year student, the opportunity to participate in giving patients’ medicines helped her to link the relationship between patient conditions and prescribed medications.

“I had the opportunity to do the medicines and why the person's been given that medication and to try to understand some of the medication” (Student D, Observation 1, Line 70).

During interview the student is able to describe the integration of theory to practice:

“I used to try to just do the reading, now I do more observing and when I observe certain things I try to put the two together”

(Student E, Interview 1, line 205).

Integration of understanding was documented during an observation of a first year and then subsequent discussion with her mentor and others showing how knowledge is pooled from evidence of a range of sources. A patient was having frequent bowel actions, the researcher and student were talking about the stools, and the student then spoke to her mentor about them as well.

“Then she went to her mentor and the mentor mentioned that the drugs that the patient was prescribed might cause the diarrhoea. So with this conversation and her recognising that the stool was not normal, she’s actually learnt about a patient developing loose and frequent stools. The student said the doctor had mentioned about the drugs causing it as well. After this she knew she needed to complete the nursing care plan for the patient and she was asking the 3rd year how to do this for the patient” (Student D, Observation 2, line 125 and Mentor 2 Line 295).

As identified by one of the students, bringing together the seeing and doing of skills under the guidance of a mentor is an aid to learning clinical decision-

making more rapidly. It removes the trial and error learning, which is risky in practice, and offers the chance for integration of theory and practice.

According to the NMC Standards for Education (2010), students should be practising and making decisions under supervision. This does not mean students are constantly watched, but adequately supervised for their level of competence. At some point, every nurse and student has to do it alone, as was articulated by one of the mentors talking about a third year student:

“She managed to observe me, but definitely later on, when she is qualified, she will do it, she has to do it, when she’s on her own, especially” (Mentor 2, line 57).

Some comments by students indicate anxiety about being alone while making clinical decisions:

“I don’t want to do it on my own because I am not yet qualified to make that decision you know I always need someone there to supervise me.... you know ask - what do you think? (Student E, Interview 1, line 84).

For first year students, doing it alone was frequently a reality. Their choice was to ask someone to be with them or to undertake activities by themselves. They needed to assess what required additional supervision. A student who was in their fifth week of their first placement said:

“It was hard the first time....I think you learn by everything you do, I really learnt and understood by helping her [a patient] to shower” (Student A, Interview 1, line 13).

The observation field notes recorded that:

A staff nurse checked if the student could do this and said to call if she needed her (Student A, Observation 1, line 14).

Part of feeling comfortable doing it alone is based on whether the student “knows what to do” and is able to feel confident with the decisions they are making and that the patient is safe. One of the first year students said:

“Yes since the second week I have been doing it and I know what to do” (Student D, Observation 1, line 104).

Another first year was observed making a phone call to a patient's family, however, the mentor had used rehearsal to prepare her:

The researcher had seen the mentor talk through the process with the student and then left her so she was not listened to while she made the call (Student C, Observation 1, line 177).

The ward did hourly rounds to check patients' comfort and if they needed anything. The researcher observed a first year student doing the hourly round:

As she progressed through the ward she seemed to be confident, stopping to tidy a patient's bedding as she spoke to her, and pouring water for another lady as she asked if she needed anything else (Student C, Observation 1, line 20).

However, the same student was "doing it alone" again later but with less confidence when feeding a patient her breakfast. As a researcher, I was aware of my presence and role as both a nurse and nurse educationalist during this period as documented in the field notes:

The first year student is waiting for the porridge to cool down and wonders how she will know when it is not too hot. She asks me and I suggest she drops a little on the back of her hand. She does this and says "yes it is still too hot". The student waits a little longer then feeds the lady the porridge slowly, making sure she does not choke and persuading her to have some more. (Student C, Observation 1, Line 54).

This was a good example of an essential skill being more complex than thought by staff, potentially putting the patient's safety at risk. As documented in the field notes:

The student needed support to give the patient her breakfast as the patient is moaning and the student thinks she is in pain. I can sense the student's anxiety and I think my presence nearby helps her to feel confident to feed the patient. The student said she thought the lady was in pain and told the staff nurse (Student C, Observation 1, Line 54).

The student made a clinical decision by telling the staff nurse who was nearby doing the medicines for some other patients. However, she was concentrating and although available by proximity, was not aware of the student's feelings of anxiety:

The patient is moaning and talking but is difficult to understand, the student looks at the S/N for reassurance but she is doing the medicines. S/N is not looking and is concentrating on another patient's drugs (Student C, Observation 1, line 43).

Later, another first year was also feeding the same patient her lunch, but her experience was entirely different. She had fed this patient before and knew what to do. When she had fed the lady she told the researcher:

"I had to feed her and it is difficult.... you need a lot of patience because she does things in her own time and you need to be talking and encouraging her as much as you can to get her to respond" (Student D, Observation 1, line 312).

First year students spend time doing things for the first time and doing them alone. When they are undertaking more technical skills they were observed but if essential care was considered low risk and simple by the ward staff they were frequently alone. This could be a source of both anxiety and concern for them. However, first year students were required to make clinical decisions that were potentially risky to patients as illustrated by the first year feeding the patient. Third year students were more able to seek and ask for supervision when they needed it, thus enabling them to be self-regulating, emulating a registered practitioner.

4.6 Theme 3 "Understanding risk"

Part of becoming a registered practitioner is for practitioners to be reflective and aware of their own competence and limitations. Moreover, they have a responsibility to support and supervise students (NMC 2008a). Part of this role involves understanding and assessing risk associated with clinical decisions, patient management and facilitating students to work under supervision for their level of competence. Establishing a safe level of risk is related to students' ability and confidence to assess patients, and to prioritise and document care. As a researcher observing care, there were occasions when the potential risk to patients was apparent and decisions by the researcher about the

possible need to intervene were documented in field notes. An experienced mentor said,

“To become confident as a future qualified nurse, students need to exercise their judgement with our support” (Mentor 1, line 187).

Therefore assuring patient safety was an essential element of managing students learning effectively as demonstrated in the next subtheme.

4.6.1 Subtheme 3.1 “Assuring patient safety”

“Assuring patient safety” is paramount in the clinical setting; mentors achieve this through supervision and assessment of students’ competence. One of the mentors when talking about students’ decision-making said:

“Most of all, it is safety. The safety of the patients, I always make sure that the patient’s history is complete, so if a patient has a history, I always make sure that I have stressed the point, ‘what do you think will be our action to prevent a further fall?’” (Mentor 1, line 260).

For first year students, there were occasions when they found themselves in situations where they did not know what to do. So they asked a member of staff, as they were advised. A first year reported that one day a patient was coughing up blood and she was frightened, so she called the sister, as she did not know what to do (Student B, Interview 1, line 5). In fact telling the sister is exactly the right clinical decision for her to make but it was based on fear. Part of “assuring patient safety” relates to students understanding their own proficiency, as a third year said:

“I don’t want to go outside my capability and endanger the patients” (Student E, Interview 1, line 23).

When a first year student was asked about a decision she had made she said;

“If it is something that could harm a patient I ask, emptying a catheter bag is OK”.
(Student C, Observation 1, line 28).

But I ask about a drink if I am unsure, for example the Fortisip - some are more concentrated so I did not know if she (a patient) could have another or a different one and I asked” (Student C, Interview 1, line 12).

On another occasion, the same first year showed she understood her role in decision-making and “assuring patient safety” as she asked the sister:

If she should walk a patient out to the toilet as this patient had fallen three days previously. Sister said she should accompany the lady (Student C, Observation 2, line 223).

By asking the sister, it indicated that she was aware the patient was at risk and needed more thoughtful assessment. This was a situation where a less competent or confident student might not have asked but allowed the patient to walk unaccompanied resulting in a fall.

Mentors were also able to correct students when they were closely supervising them:

Sister called over a third year student and together they look at the chart of the patient who was admitted overnight. The student later revealed to the researcher that Sister had told her she had a sick patient to look after and should have gone to her straight after handover to assess her condition and identify her priorities (Student E, Observation 2, line 17).

On another day, the same sister was working with a first year student and they were with a dying patient. The sister explained the rationale for her actions in relation to the patient’s comfort and loss of function:

“Sister explained the importance of mouth care for dying patients, but not to use a wet swap but squeeze it so the fluid does not collect in her throat as she is not swallowing” (Student C, Observation 2, line 60).

Students were aware of patient safety and risk-assessed the impact of their intervention with the likelihood of something untoward occurring. There was no formula for this except the student’s decision-making ability, whether it was embryonic or advanced.

4.6.2 Subtheme 3.2 “Having confidence”

“Having confidence” is an important facet of a student’s development as a practitioner. However, alongside “having confidence”, is development of self-awareness. The first year students in the study often said they did not know what to do, but when they did, it was not difficult. This is illustrated by one student’s comment about a lady’s bandaged leg, particularly as when she understood how to manage it she said she would be able to do so in the future:

“Because she had a bandaged leg I did not know what to do ... I did not know but now I know it is not as difficult so when I do it again it will not be hard” (Student A, Observation 1, line 45).

At the end of her twelve-week placement, the same first year student had gained confidence by understanding the sequence of care and the decisions she was involved in. She said:

“There is so much more to learn but with the basics I am confident.... Everyday you get to learn something new, I have really enjoyed it, now I know what to do next” (Student A, Interview 2, Line 7).

Another first year also verbalised similar feelings whilst acknowledging she still felt fear. This also demonstrates the student’s understanding of the potential risk to patients as a consequence of her actions and decisions.

“I’m getting more confidence...If you know what you are doing it empowers you and you are able to do it even when you are a bit scared” (Student B, Interview 1, line 65).

Mentors showed an awareness of the lack of confidence students feel at the start of a new placement and described strategies to support developing their confidence.

“They will not feel confident. So we’ll give them learning, and tell them - you know your limitations, don’t do anything without supervision” (Mentor 1, line 570).

However, the mentors did not appear to understand the anxiety associated with the essential and basic care they allowed students to undertake unsupervised as previously identified.

Another mentor also discussed the preparation of new third year students on the ward, recognising that their previous clinical experience may have led to the development of different priorities in decision-making, dependent on the environment and context of previous placements, for example, the palliative care centre or accident and emergency department. She described the incremental stages she used to ensure a third year student's competence at the beginning of their placement.

"We have an initial interview, so I ask them how far are you with your course, have you done many admissions, and discharges. So, for the first week, they have to do admissions, and then if they're ok with admissions plus referrals then in the second week simple discharges, then complex ones" (Mentor 2, line 200).

During observation, the researcher documented several occasions when first year students appeared hesitant and uncertain of the equipment they were using. A first year was recording a patient's blood pressure and needed to record her respiratory rate, but the patient was quite agitated.

The student continues taking observations and seems lacking in confidence when manipulating the B/P cuff. She asks me (the researcher) about taking the respiratory rate, as the lady seemed quite agitated at the time. I suggested waiting a little until the patient has settled down and doing it then (Student C, Observation 1, line 105).

This is an example of when a student did not have the decision-making skills to problem-solve a situation. In addition, the field notes also documented a lack of confidence to ask questions by the student. She would ask the researcher questions when she was with her, but appeared to prepare herself to ask the ward staff questions. Presumably this was due to anxiety. However, the same first year student who was lacking confidence with some skills demonstrated confidence communicating with patients. The researcher documented hearing the first year student behind the curtain with a patient.

She was helping the patient return to bed and she was able to direct the patient on the best way to move and showed her initiative (Student C, Observation 1, line 103).

This shows the same student was able to demonstrate clinical decision-making skills in relation to that patient's mobility. It may be because she had previously been shown how to do this.

The third year students talked about their confidence, knowing this was an aspect of development they needed to achieve for successful registration, and also they were expected to demonstrate confidence to mentors. One student talked about the difference between how people saw her and how she felt.

"Sometimes I suppose I seem really confident... sometimes they [ward staff] give me something to do... I suppose it's because I seem confident but I might not be that confident that's the thing"
(Student C, Interview 1, line 81).

The researcher had just observed this student explaining a post nebuliser peak flow result with a patient very confidently so although her perception was that she lacked confidence, she communicated with confidence to patients. A mentor was concerned about another third year's level of confidence doing a procedure. She considered the student should have been able to problem solve, and make the required decisions about the procedure, she said:

"She's a bit cautious" (Mentor 4, line 69).

At the end of her placement, the same third year student exhibited more confidence and said to the researcher when she (the student) had been asked to make a referral to a speech and language therapist

"There is a form and I don't think it's too difficult" (Student E, Observation 2, line 82).

The reference to it not being difficult indicated that the student was able to make any clinical decisions related to the referral and was not anxious about doing it unsupervised. Earlier in the placement this would have caused her anxiety.

Another third year student, who was about to complete her final practice placement, recognised the support of her mentor but in addition how the mentor had challenged her to undertake activities and decisions she found difficult.

“Well I have been taking more managerial duties feeling more confident, making more decisions, obviously my mentor confirms whether it’s the right decision or not but yeah much more confident now” (Student F, Interview 2, line 10).

Building a student’s confidence was part of the development that took place during students’ practice placement. Confidence is both a positive and negative attribute for students; it was easy to be criticised for having too much or too little confidence. Usually, mentors wanted students to have a go and challenged them but were supportive helping them develop their confidence. Understanding their limitations and the associated risks with the decisions they made was an implicit part of learning clinical decision-making and was supported by the mentors’ approach. Mentors helped students to develop their confidence, which also enabled them to prioritise care and this was a key aspect of development of self-awareness, an essential component of learning clinical decision-making.

4.7 Theme 4 “Developing knowing”

The students were motivated to learn and they employed a range of strategies to develop their knowledge. Frequently, they were clear what they needed to learn to develop their decision-making skills and they set their own objectives. One of the first years said

“I am ready and I want to learn” (Student A, Interview 2, Line 118).

Another student was motivated to learn by an academic assessment:

“I am working for my assessment on discharge plans... that’s what I want to understand” (Student D, Interview 1, line 177).

Developing understanding of discharge planning is an important element of developing decision-making skills. Mentors also had a plan for students learning on the ward:

“We’ve got expectations that have been discussed from the very beginning; they will focus on their objectives, and on their personal objectives” (Mentor 1, line 324).

The students wanted to learn but also understood the importance of mentors seeing their motivation to learn. They knew that mentors would invest in their learning if they demonstrated their motivation:

“The more self motivated the more interest they (mentors) put in you as well (Student F, Interview 1, line 246).

4.7.1 Subtheme 4.1 “I want to learn this”

The students had ideas about their learning and were motivated. Some of the students’ descriptions demonstrated focussed, self-directed study. They had developed their own style of study to support learning decision-making in placements. A third year student said:

“I will go and look it up myself to clarify, that’s just me” (Student E, Interview 1, line 329).

Another third year was very clear about her personal learning style. She enjoyed the probing questions that were used by some of the mentors with third year students:

“No I thrive on pressure ... I get nervous and I remember [example] but the pressure is off” (Student F, Interview 2, line 91).

The first year students had been learning new theoretical knowledge in university and wanted to contextualise it. They started to understand the relevance of the learning in university and needed to revise it in relation to the patients for whom they were caring:

“I need to learn the A&P and I have to study that” (Student C, Observation 2, line 49).

There was a sense of urgency in their learning illustrated by a first year saying:

"I have 2 weeks left and I need to learn about medicine management as I have not done it yet" (Student A, Interview 2, line 22).

Another first year learnt by observing the activity on the ward and learning about medications. The learning was moving from being an observer to an active participant in the care-related activity:

"She looks up medicines and observes the care of patients" (Student C, Observation 1 Line 133).

The student knew that medicine management was an essential skill and key component of learning clinical decision-making. However, the same student knew how to ensure she observed new skills and increased her ability to make decisions related to these skills. When she was asked how she made the most of opportunities she said:

"Well if I see someone going with a sharps bin or bowl I follow to watch" (Student C, Interview 2, line 155).

She was able to relate the observed activity to her theoretical knowledge and so begin to understand the decisions related to the care. Mentors and staff were supportive but one first year understood that the development of decision-making was related to understanding the rationale for care and she sometimes needed to do this for herself:

"Sometimes they are not able to answer questions as they are busy so I just look things up at home" (Student B, Interview 2, line 49).

Another first year quoted the mentor as she started the placement saying:

"She said don't wait around, if you want to learn something. So right from the beginning I don't rely on them (the mentors) I learn from everyone" (Student A, Interview 2, line 40).

The third year students knew the competences they needed to achieve and demonstrate. A third year outlined her objectives that were related to learning decision-making in relation to the patient's journey:

"I have also got my personal objectives I want to administer medications safely under supervision, I also want to follow a patient's journey from admission to discharge" (Student E, Interview 1, line 240).

Another third year student knew that performing medicine management under supervision was a key competence on her final placement as this was an area in which she lacked confidence and needed to develop her knowledge.

She asked if she could take about 30 minutes a day on the ward to work on learning about the drugs (Student F, Observation 1, line 20).

The sister said she should get in the habit of writing the drugs down, then reading about them when she gets home (Student F, Interview 1, line 155).

The student needed to contextualise medicine management and for it to become a component part of her decision-making in relation to patients' management. In this instance, how she wished to achieve this was in conflict with the mentor's wishes. By the second observation, this student had achieved this goal and her confidence and decision-making ability was evident.

How students would achieve competence seemed to be passed on from more senior students. One of the first year students recounted how a second year student had advised her to learn on the ward and so develop her clinical decision-making skills:

"The student was very good she was in the second year and I learnt a lot from her. She told me don't just come, have a plan and decide each day what I am going to learn" (Student A, Interview 2, line 72).

The student described the advice in more detail:

"She (the second year student) comes in early and she has her notebook and she looked through her pack (PAD) and noted down what she does not know, and she notes the things she wants to learn today. I said - I just come and she said don't just come - you have objectives, so make sure you learn and grab every chance..... you must be proactive" (Student A, Interview 2, line 75).

The evidence of such a proactive and planned approach to learning showed the students' motivation, and a focussed plan had a positive impact on learning clinical decision-making. Some of the students discussed how they

studied away from the ward. A first year student discussed her study after work when she reviewed decisions made about patients and understood their care enhancing her skill in clinical decision-making:

“Sometimes when I get home I just scribble things down. I just write it down then I begin to think- this is what her problem is, this is the reason why they're giving her this, this is what she is having this is why she is reacting like this” (Student B Observation 1, line 28).

The link lecturer also commented about another student’s additional study in her PAD recording:

Enjoying placement and learning. Demonstrated additional learning through self-directed learning initiatives when not on duty (Link lecturer about student A, PAD).

The mentors expected an autonomous learning philosophy. However one of the first year students said she found studying independently quite difficult as she described herself to be a kinesthetic learner. The students used books to look up new material that was unfamiliar.

One student was observed in her break reading about something new in her nurse's dictionary (Student B, Observation 2, line 101).

A third year student had bought a new book, which was enhancing her understanding of observations and investigations thus impacting on her knowledge to inform the clinical decisions she would make about them. She was learning the connection between warfarin and clotting times in relation to a patient.

“I bought a new book to tell me what the ranges are, she takes warfarin and INR and I'll read about it at the weekend” (Student E, Interview 1, line 329).

The same student was also expounding her understanding of postural hypertension and a patient’s investigations.

The student had looked up lying and standing blood pressure in her new book and was keen to tell the researcher the normal limits and that the patient’s recording were within this (Student E, Observation 1, line 296).

The mentors also valued the students' self-direction and enthusiasm. One mentor said:

"Yes, we have a very good batch of first years here.... they are really eager to learn" (Mentor 2, line 295).

The students' motivation to learn was commented on in two of the first year students' PADs:

She is more confident and very keen to learn more than her objectives
(Mentor comment about student A, PAD)

As identified earlier, other students were influential in students' learning; students were involved in learning from peers and more senior students. Sometimes this was observed in practice:

The first year student asked the second year student to show her how to change a lady's pad. Together they helped the lady and changed the pad and her nightgown
(Student A, Observation 2, Line 39).

A first year asks another first year student about filling in a chart for a patient
(Student C, Observation 1, line 191).

The students requested support with these relatively simple activities, as their peers would offer information related to clinical decision-making and problem-solving. On one occasion, a third year offered unsolicited information to a first year student.

Before handover started, a third year student explained a list of frequently used abbreviations to a first year student (Student C, Observation 1, line 5).

Clearly understanding abbreviations assists the student's comprehension about handover and enhances clinical decision-making development. A similar example of support from a student enhancing decision-making is shown when during an observation, a third year was helping a first year to complete nursing documentation for a lady who had developed diarrhoea and the first year student was trying to answer the questions on the form:

The first year asked: "How do I know if there is blood and mucus in it?" The third year replied: "Did you see any blood?" "No it was black." The third year says "That might be because of her medication if she was on iron? What did it look like?"

The phone ringing interrupted this interaction, but later the third year showed the first year how to look in the A&E notes to find information from the patient's admission (Student C, Observation 2, line 165).

Following this observation during the interview the first year student told the researcher:

"I asked the third year student about filling in the bladder and bowel standard as I did not know what to write down and she (the third year) said that they should have done a urinalysis in A&E. Then she showed me where I should fill that in and how to complete the standard. " (Student C, Interview 2, line 56).

Other first year students also talked about how they learnt from more senior students:

"Yes I learnt from 2nd year students - they are a step ahead of me. Sometimes I go to them and they tell you what they know and what they have learnt. Having (name) here was helpful, someone to talk to and share what we are supposed to do" (Student B, Interview 2, line 130).

There was mutuality in the students working together and learning together. The first years learnt from the third year students' knowledge and understanding of how to do things thus supporting the first years learning decision-making. The third years were willing to share their knowledge as they remembered the experience of being a first year student. The motivation of students to learn was a shared experience between all the students on the study ward. The ward was an inspiring learning environment and the students demonstrated motivation during their placement.

4.7.2 Subtheme 4.2 "I can do this"

Students' motivation to learn was bound up with their experience and needing to use opportunities effectively as they arose. Sometimes, new experiences were anxiety provoking, but students would push themselves to participate

and were involved in making clinical decisions although they were not necessarily aware of them:

The first year student was anxious about showering a patient alone for the first time, (Student A, Observation 1, line 125).

Students recognising learning opportunities helped their experience. They understood that they should seize every opportunity to learn decision-making as it occurred:

“Last week I was with Sister and said I need to do an admission. Then we had an admission to the ward and I told Sister I needed to go to the other end (of the ward) as they have an admission and I need to do one” (Student A, Interview 2, line 89).

Mentors were also important in helping students to gain experience in decision-making and observing others making decisions:

“It’s good experience for them to discharge patients so [Patient name] is discharged and then we go on the doctor’s round and they (the student) can watch the plan and find out what is the next thing that needs to be done” (Mentor 3, line 94).

One of the mentors considered her role was ensuring students were guided and learnt decision-making from their experience in clinical practice:

“I know that they could not think spontaneously because they haven’t had the experience but we can guide them, but using their experience” (Mentor 1, line 246).

Moreover, mentors also understood some students had valuable previous experience working as carers. The mentors helped students to contextualise their previous experience aiding their learning clinical decision-making. One of the third year students commented that she realised how much she was able to learn on the ward, compared to her peers on other wards.

“I tell friends from the cohort.... I tell them I have done this and they say ‘I’ve never done that’, there’s lots of things they don’t know” (Student F, Interview 2, line 298).

One of the mentors also discussed a student’s previous experience and practice learning opportunities affecting their knowledge and performance.

She highlighted that the ward was acute, and if students had been in specialist but less acute areas, they might not have had the opportunities to learn clinical decision-making relevant to this environment:

“My problem sometimes is if they’re a 3rd year management student, and they come from, lets say, A & E, community or palliative care, it’s hard to be in this placement and they need support” (Mentor 2, line 195).

The example of a mentor facilitating a student gaining experience and developing decision-making skills is evident in this observation field notes:

A first year student had just participated in her first patient discharge with the sister. There was also another lady who was to be discharged so Sister asks the students to do her discharge form as well. The Sister explains this is a different type of discharge as she has carers and family at home. Sister asks the student to complete the form and she will check it (Student A, Observation 2, line 201).

Occasionally, a student’s lack of experience caused them to encounter negative experiences and these were then managed by ward staff to ensure students learnt from the experience. A first year said:

“Once I got shouted at by a patient, sister had asked me to weigh him, he did not want to sit on the scales and he shouted at me. I told him I was here to help him. He just screamed at me. I was scared and went to Sister. The sister spoke to him and he agreed to sit on the chair of the scales. I did not know what he was capable of doing. The sister told him he had scared me and said that she is in her first year. He said he was sorry; I’m not normally like this he said I guess I ’m too tired. I was touched by this and I looked at him and realised he was really going through it” (Student B, Interview 1, line 101).

The example showed how the student was able to empathise with the patient when she understood his experience and this enriched her learning decision-making. Separating the students’ motivation to learn from the exceptional mentor support is difficult as students’ motivation was certainly linked to the community in which they were learning.

4.8 Theme 5 “Making decisions”

Learning clinical decision-making is imperative for a student to reach the required standard of competence for registration. The mentors understood that developing decision-making in students was an important element of their role with students. One sister said

“We need them (students) to exercise their judgement with our support” (Mentor 1, line 205).

It was evident through the periods of observation and in interviews that decision-making skills were developing. For students to be able to make clinical decisions, they needed to understand the rationale for care. As students developed greater understanding and linked theory to practice, they explained a patient’s presentation in terms of the signs and symptoms, enabling them to be involved in assessing and prioritising. Students were linking their learning to the theoretical component of their course that was valuable for learning clinical decision-making.

4.8.1 Subtheme 5.1 “Assessing and prioritising”

The acuity of patients was variable on the ward; usually there were several higher risk patients. On every occasion the researcher observed care, there was at least one bariatric patient requiring specialist equipment and management. Therefore, students’ ability to understand “assessing and prioritising” care was a key component of their learning and developing decision-making skills.

The students on the ward had an awareness of patient assessment from the outset of their practice placement. For first year students this was related to theory and simulation teaching in university. The patient handover at the beginning of every shift was a verbal handover of each patient with a written handover sheet. This was not always understood by first year students and was often not a forum for questions although they would sometimes seek clarification of information they did not understand from their mentor after

handover. However, students knew they needed to reach a point where this important part of the daily routine was understood.

“I am not too sure about A-G assessment so I am hoping if it is quiet and we have an admission I can find out about it” (Student A, Interview 2, Line 32).

Students rapidly became able to make basic assessments of patients and so were able to respond appropriately:

“Even though she can't talk you can pick up the body language. As you could see, she did not like the tea, but she enjoyed the breakfast..... She stroked my hand and that's her way of saying thank you” (Student F, Interview 1, line 76).

They also knew when to call for assistance from a member of the ward staff:

“A patient today, I noticed they had diarrhoea so I kept a sample and documented she had it, but it happened again so I notified Sister to make sure we do things for infection control” (Student D, Interview 2, line 10).

The third year students' ability to assess depended on their experience, but assessing jointly with mentors and then deciding the priorities developed their decision-making. A third year student worked with a staff nurse doing a dressing:

The staff nurse told the student what she would do to dress the lady's pressure sores later. Together they assessed the pressure sore as she had been admitted to the ward overnight. The staff nurse said she thought it was a size and grade of a 3 and quite sloughy (Student E, Observation 2, line 41).

The same student was also learning decision-making skills with close supervision from a sister.

The student asked the patient if she would like some porridge. Sister came over and asked the student whether she thought the patient would manage to swallow porridge. The student said, “Oh yes she is quite chesty.” Sister said to try some sips of water first (Student E, Observation 2, line 52).

The researcher observed one of the sisters working with a first year student as they cared for a sick patient. The sister talked the student

through what she was doing, giving the rationale for the care. The sister demonstrated A-G assessment of the patient's condition talking her through decisions made in relation to each element of the patient assessment. In addition, she identified the priorities in her care and they progressed through the assessment. The sister supervised the student recording the patient's observations and then demonstrated giving the care required by the patient as she was having oxygen therapy. The sister was able to give so much information as they delivered care to this patient, explaining positioning and checking pressure areas, checking oxygen, and gathering equipment for washing. During the process of washing the lady, the sister described the Exposure part of A-G assessment that relates to skin integrity in the hospital:

"How to check E - exposure of A-G assessment, look at the cannulas to check for oozing, and signs of soreness, ECG electrodes, disconnect them before washing and check any other sites like pressure sores if the patient has any" (Student B, Observation 2, line 72).

Another example of teaching by a mentor exhibited the importance of patient assessment. It would not have been noticed by an inexperienced nurse and demonstrated the importance of students spending time learning decision-making with experienced nurses.

The ward sister has been checking if a patient understood the changes to her medication before her discharge. However, Sister was concerned as the patient seemed vague and not to understand well. After a conversation, it was apparent the patient wore glasses and could not follow the sister's explanation, as she was not wearing them. When this was rectified she was able show that she knew her medicine regime (Student A, Observation 2, line 144).

It seemed responses to "assessing and prioritising" were different for first and third years. For the first year students, their decision-making was identifying what needed immediate reporting to the registered nurse. One first year described how she made the decision to report something immediately.

"If it is to do with the patients, or something that can't wait till later I ask" (Student D, Interview 2, line 71).

The third year students were using their assessment skills to prioritise their patients' needs. This was achieved variably and supervision by mentors was therefore sometimes important, and mentors identified the importance of their intervention and closely supervised students to assure patient safety. One mentor was talking about a third year student and the group of patients she was allocated to manage:

“To become confident in future, as a qualified nurse we need them to exercise their judgement with our support, like for example, I assigned her to four patients, ok; among the four is one critical patient” (Mentor 1, line 187).

Another mentor also identified that an important aspect of decision-making about patients' management was prioritisation and said:

“The job that needs to be done after the handover is to prioritise patients who need more care” (Mentor 3, line 54).

Sometimes, students would continue to undertake aspects of care they felt familiar with, rather than those that were a priority. A mentor recounted a conversation with a third year student who was developing skills in discharge planning, which was a priority on the ward. The student asked:

“Can I do the care plans? I (the mentor) said, no, the discharges are far more important” (Mentor 4, line 108).

The ward community was a key component to enable students to learn prioritisation. The mentors worked alongside students caring for sicker patients demonstrating care and decision-making that helped students to learn. Equally, first year students needed to know which patients required intervention, so they could learn to prioritise their needs.

The researcher noted how frequently first year students were alone and making decisions about patients that had a potential impact in terms of patient safety. An example of this was previously described when a student fed porridge to a lady who was at risk of choking (Section 4.6.2 Subtheme 2.2 “Doing it”).

In a field note written during the observation the researcher wrote

The student needs support to give the patient her breakfast as she (the patient) is moaning and in some pain (Student C, Observation 1, line 80).

The researcher was aware that her presence influenced the student's confidence to feed the patient. The researcher reflected on how often first year students feel isolated making decisions due to their inexperience in assessment of patients. The first years were able to identify when they made clinical decisions, such as reporting when a patient had a raised temperature and checking they knew the intervention they should make.

The temperature is 37.5 and Student C tells the S/N that they should not put the fan on but take the counterpane off to cool the patient (Student C, Observation 1, line 101).

When the same first year student was observed some weeks later she spoke about making telephone calls when discussing making clinical decisions.

I know it's not big but just calling the porter to say there are samples to collect, to make sure it gets sent off in time to get a result. In case it's infectious and she needs a side room (Student C, Observation 2, line 16).

This example demonstrated the student's understanding of the role she could play in prioritisation by ensuring the results of the patient's specimen would be available as soon as possible.

Another first year also identified she understood a clinical decision that was clearly related to her developing skills in patient assessment, when she had used her knowledge of a patient and the effects of pyrexia to understand the patient was apyrexial:

"I think that I understand a clinical decision, I went to do an observation yesterday on a lady, and her temperature was high and she was feeling sick. Today I said to her 'How do you feel today? Yesterday you were vomiting'. She said she felt better. I agreed as yesterday her temperature was high and it looks as though today it is better as she looks better" (Student A, Interview 2, line 83).

This shows evidence of the student linking theory to practice and reflecting on her experience of the patient's presentation the previous day to make a

decision. A third year student was risk assessing a lady in relation to circulation, and was trying to work out whether the previous assessment of her was accurate. The student was using her knowledge of the patient to inform her decision-making.

The patient had been in ITU with asthma; the student is trying to assess her risk of circulatory problems as her assessment says she is not at risk but the student thinks she is at risk of a DVT as she is not moving around (Student E, Observation 1, line 229).

A mentor also identified an occasion when a third year student needed reassurance about her decision-making:

She has the outward appearance of confidence but is also unsure and checks facts before documenting (Student E, Observation 2, line 223).

The expectation of the mentor was not in line with the third year student's decision-making ability on this occasion as she thought she should be able to make the decision without reassurance, although registered nurses in Currey's (2006) study also required this support.

On another occasion, a third year student was able to contribute to morning handover as she had been the only member of the team who had been on duty the previous evening as well when a patient was admitted. She was able to say how the patient's reported condition overnight differed from her observed condition the previous evening.

Student E was able to describe at handover how a patient admitted the evening before, and the night nurse said had very poor mobility and needed assistance to move around the bed, had been able to assist in transferring to the bed and chair the previous evening on admission. She was the only member of the team who had been on the ward the previous evening and then that morning (Student E, Observation 2, line 9).

This demonstrated the contribution the students could make to the ward community's care and management as they developed the skills of assessment and prioritisation as components of decision-making.

4.8.2 Subtheme 5.2 “Progress in decision-making”

As the students made “progress in decision-making” they also became involved in more complex decisions. The mentors considered that complex decision-making involved making decisions about prioritisation of a number of patients’ needs and balancing these simultaneously. This is one of the competences that students need to achieve for successful completion of their final practice placement. The progression of decision-making skills was not always dependent on the student’s stage in their course. The first years in the study also demonstrated the ability to discern decisions in patient management.

One mentor identified managing complex discharges as a skill that is hard for final placement students if they have not had involvement in this type of decision-making in their previous practice placements:

“We’ve got very ill patients, sometimes you get six discharges, challenging complex discharges, and it’s hard for them to cope as they don’t know how to handle complex discharges” (Mentor 1, line 195).

It was usually third year students that were involved in complex decision-making, but one of the first year students was putting together information about patient care from a range of sources. She was developing her ability to document care effectively starting to make more complex decisions. The researcher asked her about this during an interview:

“Yes since the second week I have been doing it (documenting care) and I know what to do” (Student C, Interview 2, line 179).

The researcher saw an example of a student’s decision-making when a patient’s blood pressure was not within normal limits but the patient appeared well:

So the researcher asked the student about the patient’s B/P and why she had talked to Sister. The student explained that the B/P was lower than normal limits, and there were not parameters set for this patient on her documentation. The pulse was high and irregular. So she decided she should tell Sister (Student F, Observation 1 line 137).

One of the mentors discussed how they develop a student's decision-making skills by progressive development:

"I have to give her more decision-making situations. Like drugs, there are so many challenges to drugs, challenges where patients are refusing, challenges where there are life-threatening situations, challenges with relatives and patients, you know, conflict things, which is common to all qualified nurses" (Mentor 2, line 235).

Mentors were constantly asking questions to develop student's skills in decision-making. During an observation, a mentor told a first year student about warfarin, but also asked her to look up more information so she understood how it worked and the need for patients to understand a variable dose in relation to the regular blood tests:

Sister checks the warfarin and says to the student this is for atrial fibrillation. She suggests the student reads about it tonight saying it is an anticoagulant as well for treatment of a clot and patients need to understand the variable dose (Student A, Observation 2, line 164).

When asked how her decision-making had developed during her placement, a first year student was able to identify an occasion when she had initiated an intervention. She noticed when documenting care that a patient's cannula had been in situ for two days and was due to be changed.

"I went to look at the cannula site when I realised it should have been changed and it was swollen and although the patient had not noticed she said it was sore when I touched near it. So I told the nurse who looked at it and said we need to remove it. She watched me taking the cannula out. It has been replaced now." (Student D, Interview 2, line 74).

Another first year student also described how her ability to make decisions had developed during the placement. The areas of her decision-making were relatively simple but also crucial to patient safety.

"It is based on my knowledge of what is going on with them (patients), knowledge of their history, and if they have improved. Their mobility and ability to wash themselves, if they can go to the

toilet by themselves, sit in a chair, and whether they need bed-sides or not” (Student B, Interview 2, line 109).

Mentors who spent time giving direct care with students were able to describe practices that will help their decision-making in the future:

“Sister is always describing the best way to do things and problem solve as they do the patient's pulse, Sister says to the student if the patient is awake you can do it together with the respiratory rate” (Student B, Observation 2, line 47).

An important aspect of students' developing decision-making was their ability to prioritise care and patient needs. One of the third years demonstrated this development during the course of her placement. During the first observation, the student was cautious about engaging with patients and was concerned about staff thinking she was confident, as she did not feel confident. By the end of her placement, although she still made some errors, she had confidence in her care delivery. The researcher noted this in her field notes on the second observation with the student:

Student E works with confidence and demonstrates smooth delivery of care – it is easier for me to observe care as the 3rd year has the confidence to lead the care in my presence and understands my role is as a researcher and observer (Student E, Observation 2, line 29).

This student's progress was recognised by both mentor and the student in her PAD in relation to her ability to care for a group of patients. At mid-point, her document stated:

Still in need of supervision at all times (Mentor comment at mid-point interview about student E, PAD).

At the end of the placement the student had commented on her progress:

I made progress with patient assessment with minimal supervision, and undertook all aspects of patient care maintaining safety as all times (Student E's comment, PAD).

This comment is not about clinical decision-making although it is an implicit part of patient assessment. The mentor had already told the researcher how impressed she was with Student E's decision-making:

She (the mentor) said 'She is able to manage decisions and knows what she is doing but also asks questions' (Student E, Observation 2, line 249)

The mentor does not mention clinical decision-making in her comments in the PAD:

She can manage to care for 4-5 patients with minimal supervision
(Mentor comment about student E, PAD).

However clinical decision-making is an inherent aspect of the management of the patient care as reflected in the domain nursing and decision-making in the Standards for education (NMC 2010). The term clinical decision-making was not used regularly on the ward in relation to activity about the management of patients' care. There were clear examples of decision-making during each period of observation. The third year students understood the process of clinical decision-making and the influences on their learning. A third year said:

"I think I learn clinical decision-making by looking at the evidence I just don't do things because" (Student E, Interview 1, line 160).

One of the first year students was discussing taking out a urinary catheter. She understood that the decision-making was not only about the removal of the catheter, but the care of the patient following the removal of their urinary catheter. She understood there were specific procedures guiding the patient's care and her role was to ensure the procedure was adhered to, managed and the patient's progress documented:

"Then I know like that you have to know they're passing urine afterwards, and how much they pass, and let the patient know for a time they may not have got full control of their bladder but that's just normal" (Student D, Interview 2, line 109).

When the staff nurses worked with third year students, sometimes there was a more collaborative approach to decision-making. This type of decision-making allowed progression by a student understanding and discussing the rationale for care.

One day, a staff nurse and third year student had two patients with pressure ulcers that required dressing. One patient needed two nurses in attendance and the second patient was a new admission so the ulcer needed assessment. The staff nurse discussed the dressing with the student before they did the dressing

together, identifying the best way to approach it. One of the ladies was very obese and therefore, doing the dressing was particularly difficult. S/N and student E discuss the dressing and the best way to do it; it is another sacral ulcer and hard to access. Student E is helped by S/N encouraging her and talking her through the process and assisting her with the dressing (Student E, Observation 2, line 148).

One of the third year students described her development in decision-making in relation to her theoretical learning in university, which demonstrated the importance of linking theory to practice. She described her decision-making in relation to making decisions about a patient's dressing as trying to think about what is going on in relation to her knowledge. She demonstrated linking together the knowledge she has and the cues from the patient:

“You know and then you look at the wound, what type, you're using your observation skills, and also the signs and symptoms of the person that has the wound, what they're telling you and that is how you make the decision (about the dressing)” (Student E, Interview 1, line 68).

A third year, who was about to register, identified changes in the way she was supervised as staff were encouraging her to make decisions.

“I'm able to make decisions on my own, and when they (registered nurses) confirm... that's the right decision. While before I was more supervised rather than making decisions.... they have more confidence in us now..... which is good. I feel like I am ready for this ” (Student F, Interview 2, line 434).

However, there was also a lack of understanding from students about how they learnt clinical decision-making. A third year student, reflecting on her actions with regard to a patient's pain management, believed her action was based only on experience and did not link this to her ability to make clinical decisions.

“The pain one is more experience than clinical decision-making, you know it's me going and also I have shadowed the pain specialist team... if someone's in pain they shouldn't suffer through the pain” (Student E, Interview 2 line 196).

For third year students approaching the end of their course, being able to practise with supervision enables the decision-making process to develop to the level of competence required for registration, as was described by a student in her last week as a student in practice.

“Well I have been taking more management duties, feeling more confident, making more decisions, obviously my mentor confirms whether it’s the right decision or not but yeah much more confident now” (Student F, Interview 2, line 3).

There was progression demonstrated in students decision-making during a placement as demonstrated in student E’s mid-point and final comments in her PAD. Mentors supported students’ development by encouraging and challenging them, which fostered their progression in decision-making.

4.8.3 Subtheme 5.3 “Tools for assisting decision-making”

As students started to make independent decisions, they needed to understand the rationale and potential risk associated with their decisions and associated procedures. There were several “tools for assisting decision-making”. These included procedures and frameworks developed for consistency of patient assessment.

The students were also able to problem solve, which led to an increased understanding of the rationale for care. Sometimes, students had a partial understanding and knew there were policies informing practice. An example of this was a first year checking the policy about infection control for a patient isolated in a side room with their mentor:

A first year asked the S/N if the side room door should be closed as previously it was. The patient had something the student could not remember which meant her immune system did not function properly she understood the patient needed to be protected. The staff nurse agreed that it should probably be closed so they closed the door (Student C, Observation 1, line 36).

Students showed their understanding that patient assessment and differential diagnosis is not an exact science, as described by a third year. She was describing the decision-making about a lady whose diagnosis was unclear, but was trying to respond to the unfolding picture of the patient's needs. An example of bringing together cues to manage the patient's care:

"Its just like investigative work isn't it nursing, you are trying to join the pieces together looking for clues making sure that you give the person the best care... like a jigsaw puzzle trying to pick out the missing pieces" (Student E, Interview 2, line 76).

There are procedural tools that assisted decision-making processes. They set out parameters for decision-making and they give clear guidance for all staff. The Modified Early Warning Score (MEWS) or Early Warning Score (EWS) (National Patient Safety Agency 2007) is used to identify patients whose condition is worsening and needs intervention. It offers a clear level at which nursing staff need to inform medical staff of a patient's deterioration and also prescribes interventions to implement until the patient is assessed by medical staff. When closely supervising students, mentors were able to give students rules about what to do or when to report situations. As an example, together, the Sister and a first year were looking after a patient who was particularly unwell. Using EWS as a tool, the Sister said:

"If her oxygen saturation is below 88 we will need to inform the doctor," She then asks the student why. The student says she will need to have blood gases done. (Student B, Observation 2, line 26).

On another occasion, also using EWS as a tool for assistance, a first year student was able to demonstrate a higher level of decision-making, as she weighed up whether she needed to inform Sister when a patient's respiratory rate was higher than normal:

I did not do her obs but I noticed that at 9.00 her respiratory rate was 26, which is orange, so you have got to notify Sister straight away. But as I did not do the obs I did not know if Sister had been notified. So because it was so many hours ago and the patient looked her normal self, I did not go straight to the nurse I wanted the patient to wait to finish her dinner. I thought, she had oxygen on so wait till she finished her dinner then check her respiratory rate again. Then if it is still high

I'll go and notify Sister and if it's normal then I will probably still notify Sister and just say - Just letting you know earlier it was really high so keep an eye. Just to let people know to monitor her (Student C, Observation 2, line 88).

This level of clinical decision-making demonstrated an understanding of the factors affecting a patient's respiratory rate and knowledge of the critical factors and how to assess the patient's condition in relation to their recorded vital signs. The student was able to assess the patient's appearance in relation to her pulse rate. She used the 'think aloud' technique (Banning 2008b) to problem solve the situation and make a clinical decision.

In addition to EWS and the infection policy, other assessment tools were employed on the study ward although not highlighted in the data collected. A first year student used the Bristol stool assessment tool (Lewis and Heaton 1997) during the decision-making related to the patient who has diarrhoea.

4.9 Chapter summary

The themes and sub themes (table 16) demonstrate the multi-factorial nature of students' learning clinical decision-making in practice placements. The themes were derived from the data and subthemes came from the themes. There was an overarching theme of "Community" which encompassed all the influences on students' learning clinical decision-making. The "Community" was found to be a crucial factor for students' experience in their practice placement. The community included the ward culture and staff, and the person-centred approach, which was an implicit part of the study ward. Using observation, a data collection method that was rarely used in other studies about clinical decision-making, enabled the importance of the community to be demonstrated, and how the community was embedded in all the themes in the framework: "Dignity for all", "Practising", "Understanding risk", "Developing knowing", and "Making decisions".

The first theme, “Dignity for all” illustrated how students learnt through witnessing respectful and compassionate care by the community. The compassion and humour (Subtheme 1.1) was evident in all elements of care delivery across the whole team. This demonstrated how the development of students’ decision-making processes is influenced by high standards of care, dignity and compassion and when appropriate, humour. These standards were set and maintained by the community.

Being “Part of a caring team” was important to the students and the ward staff believed in the inclusion of students in the community, as articulated by mentors, but more importantly it was observed behaviour not just reported, which strengthened the community theme. There were examples of the team shaping the behaviour of students through role modelling.

For effective learning to occur, students needed “Respect, support and feedback” (Subtheme 1.3). The mentors understood their role and offered support to students in a range of ways. The support was not always comfortable for students as some of the mentors were challenging in their approach and had high expectations yet they felt supported and the challenging questions developed their decision-making skills. However, even if it was not comfortable feedback, it was given respectfully without demeaning the student.

The second theme “Practising”, showed that practice is at the heart of students learning to be nurses. “Practising” was seen to take several forms and the importance of observation was shown to be a key factor in the development of decision-making skills. “Observing and being observed” (subtheme 2.1) was the essence of learning in practice and led to integration of skills. It was the dialogue from the community alongside the demonstration and observation that informed clinical decision-making. However, there were occasions when first year students were not observed. Sometimes this left them feeling vulnerable and anxious, although, if a member of the team had prepared them, and offered support if it was needed, the students would frequently manage to do it alone.

Mentors were of the opinion that students learn by “Doing it” (Subtheme 2.2). This included being observed and also the next step of doing it alone, which involved students understanding their own limitations. Supervision is part of the partnership between mentors and students. It was essential to provide a balance between opportunity for learning clinical decision-making and patient safety. This is a complex equation for mentors supervising first year students and enabling third year students to have opportunities to make clinical decisions. However, the community on the study ward managed this balance effectively without compromising patient safety and the experience of the sisters enhanced the opportunities offered to students.

Balancing these complex elements was illustrated by “Understanding risk” (Theme 3). This theme identified the complexity of managing patient safety in an environment where students are delivering care. There are components of learning decision-making that are key constituents to reducing and understanding risk in decision-making. “Assuring patient safety” (Subtheme 3.1) is paramount when understanding risk. Students assessed the impact of their intervention with the likelihood of an adverse occurrence however this was based on their limited knowledge and experience. “Having confidence” (Subtheme 3.2) showed that mentors helped students to develop their confidence. The more experienced mentors showed students how to care for sicker patients, helping them problem solve and seek solutions, and enhancing their decision-making skills. The observation of students in practice gave a unique picture of risk management associated with patient care delivery, instead of reported risk by students at interview.

“Developing knowing” (Theme 4) demonstrated how students learnt and participated in their learning. The students needed to understand the rationale for care to make clinical decisions; evidence showed that understanding the rationale for care was facilitated by mentors, and learning from a good role model “on the job” was an effective way to learn. It was observed how mentors passed on not only their scientific knowledge, but also their know-how that is the praxis and art of nursing. The community supported the

learning culture and students demonstrated inherent motivation in “I want to learn this” (Subtheme 4.1). It is proposed this was attributable to the community as an inspiring learning environment. Part of this community was the other students who supported peer learning of clinical decision-making. The first year students respected third year students’ knowledge and understanding, the third year students were willing to share this as they remembered being a first year student.

“I can do this” (Subtheme 4.2) also demonstrated the importance of learning the rationale for care to make clinical decisions. However, students had to decide which members of the community to select to verify decisions: a registered nurse, another student or other team member. Their confidence and understanding of their own limitations were salient factors in their ability to make safe clinical decisions, however, mentors had inculcated this knowledge.

The final theme “Making decisions” was broken down into three subthemes. Learning clinical decision-making is imperative for a student to reach the required standard of competence for registration. “Assessing and prioritising” (Subtheme 5.1) illustrated the importance of developing these skills for the development of decision-making. More complex decision-making was based on prioritisation and simultaneously managing activities. Moreover, the development of complex decisions was not always dependent on the student’s stage in their course. Some of the first year students demonstrated the ability to discern decisions about patients’ management. The uniqueness of the data collection methods of observation of students’ learning in practice with follow up interviews gave a depth of understanding of how student nurses learn clinical decision-making. Learning prioritisation was a key aspect in the development of self-awareness and first year students needed to learn to prioritise patients’ needs and give the required intervention.

Subtheme 5.2 illustrated how “Progress in decision-making” was fostered through mentors’ encouragement and challenges. The progression of

students from simple to complex decision-making was observed and articulated by students and mentors and clearly evidenced through the data.

There were processes around decision-making to ensure patient safety and risk management. Subtheme 5.3 “Tools assisting decision-making” identified some of the processes used by all health care professionals to maintain patient safety. The use of these tools was observed assisting the development of clinical decision-making skills in the students. The protocols guiding care pathways and supporting identification of deterioration in patients were used effectively by first year students therefore mitigating risk associated with clinical decision-making. The use of the tools assisted students to safely exercise judgement in high-risk situations as they would as a qualified nurse in the future.

In addition to motivation, developing an understanding of a patient’s presentation and the rationale for specific care interventions was key to the decision-making process. Problem solving is linked to understanding the rationale for care and is part of learning decision-making. The researcher’s ability to link observed practice with the students’ thoughts about their interventions and problem solving in situations gave a unique understanding of how clinical decision-making developed. The significance of the “Community” to the enhancement of students learning clinical decision-making in practice was evident. In the study ward, it was the whole ward team and ward ethos that contributed to students’ learning.

In the next chapter, the findings of the study are discussed in relation to relevant literature. The discussion is structured around the themes from the framework and relates the findings to the study questions.

Chapter 5 Discussion

5.1 Chapter overview

This chapter discusses the study findings in relation to relevant literature about clinical decision-making and students learning in practice. The research questions based on the literature review have been discussed within the themes. The themes have been used to structure the discussion chapter. The subthemes are identified by sub headings that relate back to the appropriate subtheme section in the findings. In the final section 5.8 some tools for decision-making identified in the literature have been mapped against each other to propose a framework for clinical decision-making in the future.

5.2 Introduction

The thesis explored how students learn to make clinical decisions in practice placements and the influences on their learning clinical decision-making in practice placements. The study examined how students made clinical decisions and how they learnt to make clinical decisions in their placement on the study ward. The influences to making clinical decisions were identified and also any differences between first and third year students appraised.

The findings demonstrated the importance of students learning by doing, and this aided their involvement in decision-making from early in their practice placements. On the study ward students' learning was everybody's business. The findings have shown the community was an overarching theme that was the single most important factor in students' learning clinical decision-making in practice. The community, through working with the students, showed them how to assess and prioritise care, understand the rationale for care and learn clinical decision-making.

The importance of the learning environment and culture was identified in the literature review (Chapter 2). As in previous research, essential factors for

successful learning by students were mentors and the ward culture (Myall et al. 2008, Henderson 2010). The importance of students' sense of belonging has been previously described as beneficial for their learning in practice (Levett-Jones and Lathlean 2008). In this study, the whole ward community took responsibility for students' learning, significantly enhancing their learning opportunities and experience, so developing their clinical decision-making skills. In addition to the mentors who support students' learning (NMC 2008b), all the nurses and health care assistants supported students' learning.

5.3 Community

The community (discussed in section 4.3) represented the context of the learning environment that included the mentors, nursing staff, other students and the MDT. The word community was selected as most appropriate for the overarching theme as it encompasses the shared ethos of care for each other and support for student learning, a role that was accepted by everyone. The community was committed to students' practice learning, and members of the community gave support, teaching and supervision. These are the key functions of a mentor (NMC 2008b) but on the study ward unusually the whole community participated in this role and took responsibility for the student nurses' learning. Each student had an individual mentor identified as required by the NMC (2008b) but in reality mentoring was a team activity.

The overwhelming influence on students' learning about clinical decision-making was the overarching theme of the "Community". Previous studies have identified the importance of students knowing how to build relationships with staff to learn clinical decision-making (Etheridge 2007, Baxter and Rideout 2006). On the study ward the use of observation to understand students' learning clinical decision-making in practice is unique and showed that an essential component for students to learn clinical decision-making in practice was their participation in the community. Observation in practice had been used in studies of registered nurses (Bucknall 2003, Deegan 2013) but not with students' learning. The support and supervision of the community

enabled students to practise the component skills of clinical decision-making. In an Australian study of six students in their second year learning in practice, Nolan (1998) proposed that the unfamiliarity of new practice placements could hinder students' ability to develop clinical decision-making skills. Contrary to this, on the study ward it is proposed that the "Community" reversed this with the welcome and support given to the students, which enhanced their ability to learn clinical decision-making. Manley et al. (2009) recognised enabling factors for practice learning as a learning culture which values a patient-focussed culture, fostering creativity and reflexivity.

Other studies identified similar components that were important for students' learning in practice; belongingness (Levett-Jones et al. 2009), being included as part of the team (Chesser-Smyth 2005), being welcomed to the community and prepared for the community (Bradbury-Jones 2010), and good mentoring (Spouse 2001). These components were all valued by students on the study ward and had not previously been linked to students' learning clinical decision-making.

The mentors were key contributors to the students' learning on the study ward as previous studies have reported (Spouse 2001, Beskine 2009, Chesser-Smyth 2005). However, in this study it was the ward community, including all members of staff taking responsibility for students' learning that enhanced their clinical decision-making development. This had not been described in other studies about learning clinical decision-making.

On the study ward, the students were not bound to their mentor to access learning. The sister responsible for the students told them they would and should learn from all staff. It was evident that staff shared responsibility for students' learning. The nursing staff had different styles of working with the students and all staff contributed to their learning clinical decision-making and they seemed to enjoy their role in supporting students. The students knew how different members of staff could support their learning decision-making and approached sisters and health care assistants to learn. The health care assistants supported students with practical skills of essential care as

proposed in Caldwell's paper (2008) about team mentoring. In doing this, they assisted the students to problem solve new situations with patients related to positioning or moving patients.

Previous research has identified that building staff relationships and being valued were powerful for students' learning (Gray and Smith 2000, White 2003, Etheridge 2007, Baxter and Rideout 2006, Levett-Jones et al. 2009, Bradbury-Jones 2011, Henderson et al. 2012). In one study, the importance of the practitioners' influence on students' learning was a surprise to the researchers (Baxter and Rideout 2006, Baxter and Boblin 2008). In the UK, the history of nurse education as an apprenticeship model (Anderson and Kiger 2008) has long recognised the importance of the practitioners' role in supporting practice learning.

The importance of mentors as good role models for students in practice has been widely discussed in enhancing the quality of students' practice experience (Baillie 1993, Gray and Smith 2000, Myall et al. 2008). While these studies pointed to the importance of mentors being good role models, on the study ward this was actually observed in practice and influenced students' learning of clinical decision-making.

Caldwell's paper (2008) predicted potential issues in team mentoring of students not knowing who their supervisor was each day and feeling unsupported. The evidence from the study ward does not support these views. The findings from the study ward indicated that the students learnt from all staff and were also able to self-select the staff from whom they enjoyed learning so enhancing their learning decision-making. The students on the study ward benefitted from the community ethos of students' learning being everybody's business. It is postulated that using Caldwell's approach to team mentoring it would be possible to develop team mentoring within the NMC's recommendations.

It is speculated that the high standard of mentoring and support for learning enhanced students' learning clinical decision-making. However, it is not

possible to know how students would have learnt clinical decision-making in a less supportive community. However, previous evidence about learning indicates that students learn better in a positive environment (Baillie 1993, Gray and Smith 2000, Myall et al. 2008).

5.4 Dignity for all

The community ethos of the ward as a caring environment pervaded all aspects of the ward. The ward staff demonstrated professionalism and dignified patient-focussed care where patients appeared to be secure and feel respected.

The section 4.4 and 4.4.1 the ward and mentors' ethos of compassionate care and respect for patients' dignity extended to their attitude to students as well. Students were mutually respected and treated with dignity. The importance of positive attitudes to professional behaviour for student learning has been recognised (Mackintosh 2006, Carlson 2010). Carlson (2010) talked about the importance of students learning ethical practice through role models and how the profession was mediated through practice learning. It is proposed that the community had a positive influence on their learning and was at the centre of their learning clinical decision-making.

5.4.1 Compassion and humour

The ward had a stable staff team with strong leadership by band 6 sisters. As an acute respiratory ward, it was frequently busy but even then respect and dignity was maintained which is important for students learning these values (Baillie 2007). The students' sense of safety certainly enhanced their ability to learn and therefore learning clinical decision-making.

The study findings illustrated the respect that was shown to the students. The students' appreciation of the importance of respect and dignity was evident from their behaviour and comments. Through the community of the study

ward the students learnt in mutually deferential partnerships and articulated that they experienced relationships with staff on the ward based on respect and caring. It is the opinion of McKenna and Slevin (2008), that experiencing respect as a student enhanced students' understanding of the importance of demonstrating respect and dignity to patients.

Learning clinical decision-making is not only based on theoretical knowledge but also practical knowledge based on experience (Benner et al. 2009). All staff role modelled dignified and compassionate care to students. Baillie (2007) expected senior staff would do this but on the study ward all staff including health care assistants demonstrated these values that permeated the whole ward community.

Even the first year students demonstrated empathic behaviour when they were first observed which was after four weeks on the placement. None of the first year students had previous health care experience so if empathy is a learned behaviour (Ward 2102), this could be related to their exposure to empathic role models on the study ward or in their previous life experience. Other studies do not report students exhibiting empathic behaviour early in their first practice placement.

Although the ward was frequently busy, there was also a calm and unrushed pace of the care delivery. This enhanced the environment and maintained a stress-free ward for the patients with breathing difficulties but also for the students' learning. During the first observation, some students were conscious of their communication and their development in communication during the placement. They were transferring their ability in social communication into therapeutic communication skills (Standing 2007). White (2003) described the development of reflexive and empathic skills as "connecting with patients". These were identified as important elements of the development of decision-making skills, which was reliant on good relationships with staff and patients.

In a longitudinal study to examine undergraduate students' development of empathy during an academic year, Ward et al. (2012) used a validated survey questionnaire as a pre- and post-test. Ward et al. (2012) adapted the questionnaire for use by students, which might have been a limitation although it had high reliability when used with medical students (Hojat 2009). Empathy was found to decrease over the study period particularly with students spending more time in practice.

Ward et al. (2012) asserted that empathy was a learned behaviour that is dependent on a good learning environment and high standard role modelling, and is important for learning decision-making skills (White 2003, Standing 2007). Moreover, it is important for students to experience working with role models who demonstrate empathy, to support development of this essential nursing quality (Jokelainen et al. 2011, Ward et al. 2012).

The findings of Mackintosh's (2006) longitudinal study of students in the UK showed a concerning progression of students' views about caring between their first year as a student and soon after registration. Their views about caring were explored by interview at the two points, and the findings showed after a period of socialisation to the profession a decrease in their attitude to caring and their ability to cope with the role of being a nurse. There was no evidence of a lack of caring in third year students on the study ward as they were observed to be empathic and responsive to patients.

Ward et al. (2012) believed that empathy may be negatively impacted and declines when there is time pressure on care of patients. Mackintosh (2006) also asserted that the decline in caring behaviour was a protective mechanism. Such negative behaviours were not observed in the study ward where the first and third year students demonstrated caring behaviours. Ward et al.'s (2012) findings were therefore not supported on the study ward as students did not demonstrate a lack of empathy in their practice. It is proposed that this was related to the positive empathic behaviour role modelled on the ward.

Mentors and patients often used humour to encourage students in new or stressful situations. Practice placements are stressful for students and humour can effectively reduce stress and focus students on learning (Moscaritolo 2009). Some of the regular patients in the ward used humour with staff and students, showing greater familiarity with the nurses. There was also an atmosphere of “family” humour and fun, which developed relationships with mentors and students or between patients and students. Under the guidance of their mentors, students learnt to use humour appropriately. When used empathically, humour can reduce stress, or embarrassment, and show compassion or relax patients (Olsson et al. 2002). It can also be posited that humour can assist in clinical decision-making by assessing a patient’s response to humorous remarks; students developing this ability were under the auspices of their role models. However, it should also be acknowledged that humour is culturally sensitive and may be construed in different ways by different cultural groups (Astedt-Kurki and Isola 2001). It was evident on the study ward that humour was not used with all patients although a humorous rapport developed with some patients even where language was a barrier.

5.4.2 Part of a caring team

The prominence of the ward culture and feeling part of the team was demonstrated by the findings of this study in section 4.4.2. The students described their inclusion in the team and the feeling that they belonged.

Moreover, in this study, uniquely, mentors and students used the words “being like a family” to describe how students and the ward staff worked together in the ward team. Wittgenstein (1975 p.17) referred to “family” as a set of overlapping likenesses or resemblances in his philosophical work about language. However, the interpretation of the use of the family analogy by both nurses and students is interesting as it places the highest value on the relationships with students within the ward.

The importance of the student nurse/staff relationship has been widely documented in other research studies (Smith and Gray 2000, Spouse 2001). Within the mentor relationship collegiality (Myall 2008) and friendship (Jokelainen 2011) were expected but according to Bray and Nettleton (2007) seldom actually happened. The findings from this study demonstrate the power of positive relationships on students' learning clinical decision-making in practice.

The community's inclusion of students in the team enhanced students' belonging (Levett-Jones et al. 2009) and feeling part of their clinical placement team (Webb and Shakespeare 2008). According to Henderson (2010) when students feel part of the team they are able to express their opinions. On the study ward, the third year students were apprehensive about voicing their opinions early in the placement based on their experience in previous placements. However, this had changed by the end of the placement when they understood they really were part of the team.

Trevillion and Bedford (2003) used the term "family" when describing inter-professionalism. This relates to the study ward where "family", although used by nurses, was in relation to the interprofessional ward team. To continue the interpretation of the family, mothering was also mentioned. In parenting, the responsibility of the parent is to lead a child to independence and competence, through a secure relationship where clear boundaries are identified. These were also facets of the relationships exemplified between students and mentors on the study ward. A student used the term mothering about her relationship with her mentor; this implied a nurturing relationship. Moreover, it has been shown that mothers also espouse their views and values about compassion to their progeny (Wray-Lake et al. 2012). Standing (2007) found that positive relationships with mentors had a positive influence on students' learning clinical decision-making, but the family analogy in the mentoring relationship and ward team is unique to this study, as no evidence of reference to this relationship has been made in other studies.

The importance of welcoming students was recognised in the study ward as found in other studies (Chesser-Smyth 2005, Levett-Jones et al. 2009). The study ward students did not feel discomfort during their settling in period; they just needed time to “know what to do”. This was helped by a structured approach to orientation that identified the ward’s expectations of the students’ learning at different stages in their programme as previously described in Levett-Jones et al.’s (2009) work.

On the study ward, some first year students said they wondered whether “nursing was right for them”, or wondered if they could “do it” before they commenced their placement. However, they found the positive response to the care they gave was motivating. Some of the patients knew them as individuals and described the care and kindness they had shown and the students showed their security with patients by spending time with the patients when they were unsure what to do. This was supported by Standing’s (2007) work that identified the perceived positive influence on students’ learning clinical decision-making from caring for patients and learning practical procedures.

When the first year students were observed at the end of their placement, they described, “knowing they could do it”. The comprehension of the reality of nursing is part of the development of professional identity and socialisation of nursing (Spouse 2001). Learning to feel like a nurse has been described in American literature as occurring at registration (Etheridge 2007). However, on the study ward the first year students, while not clinically competent understood what it meant to be a nurse. This is likely to be different in the UK as students spend 50per cent of their course learning in practice. It is postulated that the community on the study ward accelerated this process.

Chesser-Smyth (2005) found students on their first placement valued the positive welcome on their first day and felt part of the team, which improved their self-esteem. The acceptance into the study ward community was crucial to the students’ learning and was seen previously in nursing when students learnt through an apprenticeship model (Lave and Wenger 1991). The power

of the knowledgeable master in facilitating learning opportunities for the learner (Lave and Wenger 1991) has clear parallels with mentors in contemporary nursing. In this study, although power was apparent there was no evidence that mentors withheld information, and through observation the students learnt both the practice and the culture of the community.

According to Lave and Wenger (1991), a community of practice occurs with a group of people that share craft or occupational knowledge, and through sharing knowledge they become more proficient. Lave and Wenger (1991) questioned when learners can legitimately participate in their work community but this study shows evidence with observational data that students were participating in the community by the end of their first twelve-week placement.

A twelve-week placement is unusual for first year students as most universities have shorter first year placements (Ford 2010). Nolan (1998) suggested that fewer and longer placements may be beneficial for students' learning to give more time for learning and reducing the need to "settle in" as often. On the study ward, the first year students identified their development during the placement and that they "knew what to do" as they progressed through the placement. Therefore, it would suggest that the first year students benefitted from a twelve-week placement as it enabled them to participate and become part of the community, enhancing learning of clinical decision-making.

There is also evidence that demonstrates short placements are disruptive for practice learning as it takes time to settle into a new placement (Spouse 2001). In addition, longer placements foster a sense of belonging, which enhances students' confidence and motivation (Levett-Jones and Lathlean 2008). Recently, the Francis report (2013) has also recommended students having a three-month period prior to the commencement of a nursing course to assess their compassion and aptitude for nursing. This research study indicates that the first year students showed their aptitude and demonstrated their capability in compassion. However, it is also acknowledged these findings are within the ward used for the study and may not be transferable.

5.4.3 Respectful support and feedback

The importance of mentoring for a student learning clinical decision-making is irrefutable (Smith and Gray 2001). In a systematic review of mentoring (Jokelainen et al. 2011) a joint British/Finnish team tried to identify a unified approach to mentoring for future organisational and workforce development. The results lacked references and therefore clarity about attributing results to a study. The role of mentoring was divided into two subthemes; the first, facilitating learning in practice, has been clearly illustrated in the results from the study ward. The second was strengthening students' professionalism.

Jokelainen et al. (2011) identified the change in studies from creating a learning environment (Pearcey and Elliott 2004) to the current view of a learning culture on a ward (Levett-Jones 2010). Jokelainen et al. (2011) debated the importance of a one to one mentor relationship versus nursing leadership. The findings on the study ward in section 4.4.3 indicated the importance of nursing leadership and management, prioritising students' learning within the ward culture. This aligns to the community of the study ward that was crucial to students learning clinical decision-making. Crombie et al. (2013) in their study of factors affecting retention progression and attrition of students reported the importance of ward managers in creating a kind and caring culture with a supportive and proactive approach towards students' learning. Therefore, the value of relationships on the study ward to development of decision-making skills is in keeping with these studies and the leadership of the sisters was key to the culture and community of the study ward.

In a study of mentoring, the term sponsorship was used to describe the coaching and protection given to the student by mentorship from an experienced clinician (Spouse 2001). The mentors on the study ward demonstrated protection of students and showed investment in their learning, Furthermore, they also had expectations of the students in relation to participation and motivation to learning.

According to Christiansen and Bell's study (2010), practice placement is a stressful event for first year students. It is recognised that this is a time when attrition on nursing courses is high and support essential (Chesser-Smyth 2005). However, the students on the study ward did not support the negative views of practice learning described by students in Christiansen and Bell's study (2010). It is possible that the focus groups used as the data collection method accounted for the negative bias of the students in Christiansen and Bell's study (2010). A study into attrition on nursing programmes indicated that practice placements and support in practice had the greatest influence on students (Crombie et al. 2013); although, as the authors acknowledged, this was a small ethnographic study of ten participants from one cohort in one HEI. Crombie et al. (2013) investigated factors that influenced students remaining on the programme and the findings cited the negative impact of mentors' negativity and prejudice in students' placements. This negativity was not seen on the study ward but students alluded to different experiences on other wards which were less positive, and impacted on their learning.

On the study ward, students commented on the approachability of the mentors, a positive attitude towards mentoring was apparent throughout the team. Mentors did not describe any additional burden imposed by being a mentor and no negative comments about mentoring or students were heard. However, evidence from other studies indicates this is not always the case (Pearcey and Elliott 2004, Christiansen and Bell 2010). There are no studies that analyse the burden of mentoring but there is anecdotal evidence in the contemporary nursing press about mentoring where many consider supporting students to be a burden which impacts on their care delivery (Middleton 2012).

The major difference observed between first and third year students was that third year students were expected to balance a series of more acute patients' needs simultaneously in preparation for their future practice as a registered nurse. During the course of the students' placement, the researcher was able to see progression in individual student's decision-making by observing them on two occasions and talking to them about their learning. Both the third year

students in the study showed areas for development when first observed on the study ward. They lacked confidence, which impacted on their decision-making. One of the third year students had been clear about her learning style and needs throughout the placement. At the end of the placement she was confident, demonstrated the ability to make decisions and discussed patients' management with the "Community". The development of students is reported in other studies through interviews with students (Bradbury-Jones 2010, Spouse 2001). However, there is no other evidence of this through observational data in other studies of students' learning in practice.

The way first and third year students asked questions was different. The third year students were more able to ask questions of appropriate staff to check their actions and gain support. First year students were more apprehensive about seeking guidance but not to the extent in Baxter and Rideout's (2006) study where second year students were fearful of upsetting the nurses or making them angry. Houghton et al. (2013) described the importance of first year students developing confidence as this facilitates their learning. As other studies have not compared first and third year students' learning clinical decision-making in practice, the evidence from the study ward is new knowledge.

It is asserted that role models were especially good at using a 'think aloud' technique of giving cues and rationale for care while discussing their decision-making processes with students. Spouse (2001) recognised the value of this technique in coaching and challenging students' learning. While 'think aloud' has been identified as an effective method for supporting learning in practice (Spouse 2001, Banning 2008b), it has not previously been observed in practice in relation to students learning clinical decision-making. The use of 'think aloud' as a technique to support clinical decision-making will be discussed further in the section on making decisions.

5.5 Practising

The theme practising included two subthemes, “observing and being observed” in section 4.5.1 and “doing it” in section 4.5.2. These were two important features of students learning to make clinical decisions. Observation of students learning in practice offered a unique picture of the demonstration and rehearsal of skills in practice. Observation and role modelling offered students the opportunity to discern good practice and to pick up the nuances and tricks of the trade that enhanced their practice (Davies 1993). Equally, learning through participation meant they were not passive recipients but actively engaged in their learning. The participation in simple tasks set out the path for learning more complex skills and understanding the rationale for care for development of clinical decision-making skills. The students’ focus on their learning meant they appraised every situation to establish if there was value for them to learn. The students’ focus on learning meant they were constantly alert for any opportunity to observe practice. Eraut’s (2004) work recognised working alongside others was a type of activity that gave rise to learning and frequently this was informal support rather than a designated supervisor, as observed on the study ward.

Students learn clinical decision-making through practice (White 2003, Garrett 2005, Baxter and Rideout 2006) although it is not always overt. In order to make clinical decisions they bring together information about patients that they have gained through a range of sources (Taylor 1997, Garrett 2005). On the study ward, the use of all the senses to assess patients was encouraged by one mentor, including listening and the use of smell. The students’ ability to use the information was dependant on their experience both in terms of the stage in their course and also the clinical experiences they had encountered (Baxter and Boblin 2008, Etheridge 2007). The contribution of willing and enthusiastic mentors enhanced opportunities for students to observe and be observed, as they did not feel a burden. According to Pearcey and Elliott (2004), this enhanced students’ caring skills, and the findings on the study ward show it also enhanced their clinical decision-making skills.

Davies (1993) considered that the knowledge learnt by first year students through observation of practice were the caring and problem solving aspects of care, not scientific knowledge. This is not supported by the findings on the study ward as the experienced nurses showed the student nurses how patient assessment identified deterioration in patients and the rationale and associated interventions. Clinical decision-making tools were used to assist this on the study ward in section 4.8.2.

Etheridge (2007) reported that students felt unprepared and overwhelmed by the thinking required in patient care; in addition, her study found that students in this US study had little idea of what was involved in being a nurse until after they had registered, particularly the reality of caring for a number of sick patients and making clinical decisions about their care. Learning to be a nurse in the UK is different because students spend 50 per cent of their course in practice learning where they see the reality of caring for sick patients and learn to make decisions about their care alongside their mentors. On the study ward, the first years understood the importance of practice, making clinical decisions both with their mentors and independently. The third year students' demonstrated development of good decision-making skills and the student who was qualifying said she was prepared for her future.

The students had the opportunity to "do it alone" and mentors had a plan of how students would achieve clinical decision-making skills. It is postulated that they would have benefitted from having a more defined plan that highlighted clinical decision-making, which could be shared with students and used to document their progress. In addition, some first years found the transition from "doing it" to "doing it alone" difficult, and, while they did not put any patient at risk, a more formalised structure to achieve this progression might have been beneficial.

The students' participation in decision-making included deciding what needed to be reported to mentors about patients, and feeling anxious that they did not know if it was important information to report. The first years were able to describe their increasing ability to discern what information was necessary to

escalate. This is clear evidence of their development in clinical decision-making during their first placement. Nevertheless, it is essential that students have the opportunity to work alongside expert practitioners to enhance their decision-making skills for their future safe practice. It is through this experience that they are able to understand the autonomy of decision-making (Baxter and Boblin 2008).

Benner's work (2001) with novice and expert registered nurses found that novice nurses responded to fewer cues and even single cues to form a hypothesis (Benner and Tanner 1987, Tanner 2006). In Tschikota's (1993) study of clinical decision-making processes in simulation environments, novices were found to rely on facts for making decisions and regarded all information as equally important. However, in keeping with Benner's work the novices found remembering the theory helped them select and use data during decision-making (Tschikota 1993). In a discussion paper Gillespie (2010) presented a framework to support novice nurses' clinical decision-making. The paper highlighted the difficulties of novice nurses thinking processes as identified by Etheridge (2007). This would indicate that the first year students' ability to make decisions on the study ward was related to the supervision and support while they practised. Standing's (2007) work would indicate that this is also related to the theoretical component of the programme developing decision-making skills.

It was asserted by Gillespie (2010) that more experienced nurses were able to make clinical decisions based on the breadth of data available, but there is no evidence from the implementation of the framework in Gillespie's paper (2010) to justify its use. In the studies about clinical decision-making in registered nurses both Bucknall (2003) and Deegan (2013) found the experience of the registered nurses influenced their ability to integrate cues while making clinical decisions. However, they also found that nurses used colleagues to support decisions where they needed support, emphasising the importance of support from mentors in students' learning clinical decision-making in practice placements.

5.6 Understanding risk

Patient safety needed to be the primary concern of staff supervising the students. In section 4.6 it was found that the students' competence to undertake skills safely was usually assessed by mentors, but there were examples when supervision did not occur, especially for first year students with skills and tasks that were viewed as simpler. The students would seek support if they needed it but were also aware of the pressure on qualified staff and would often "do it alone".

There can be no substitute for the first time a student nurse has to perform a skill and make clinical decisions alone despite having support nearby. The ability to make clinical decisions, as a registered practitioner, is a developmental process. Therefore, being able to assess her own limitations was part of the student's journey to becoming an autonomous practitioner. Moreover, the students needed to be confident enough to know when they could make decisions. Nevertheless, mentors needed to trust the student to know they would seek help when they were unsure.

A study appraised in the literature review (Baxter and Boblin 2008) highlighted how students' care decisions changed over the four years of their programme. Although the Canadian nurse education system is significantly different to the UK, there are parallels about students needing to discuss their decision-making processes so supervisors can give encouragement and support.

Making decisions affects patients' safety and potentially, poor decisions are hazardous to patients. Attree et al. (2008), in a UK based study, interviewed 15 students and 6 key informants from service and education to ascertain their views on how patient safety was taught and assessed in the nursing curriculum. In a similar Iranian study, Vaismoradi et al. (2011) interviewed students about their views of patient safety, and the role of education in improving their capability to provide safe care. Both studies (Attree et al. 2008, Vaismoradi et al. 2011), despite being set in different cultures found

patient safety was poorly addressed in the nursing curriculum but students identified patients as being at the heart of patient safety in terms of compassionate care (Vaismoradi et al. 2011) and systems and processes to protect patients (Attree et al. 2008). Despite both being small studies, the results are similar. Moreover, in Attree et al.'s (2008) study students' focussed on "real life" safety situations in practice, reporting a blame culture on the wards from staff and poor supervision from mentors, in addition to being involved in drug errors and patient's falls. Evidence of poor practice described in Attree et al.'s study (2008) was not found on the study ward but the Francis report (2013) calls for a shared culture of caring and compassion; where patients are put first and poor practice reported. Students in practice placements should be learning to protect themselves from the situations such as those reported in Attree et al.'s study (2008).

In a small-scale post intervention pilot survey, (Desborough 2012) assessed the effectiveness of a partnership between practice and the university in teaching awareness of patient safety. Although it was a small study, the students were aware of patient safety and they appraised the risk of making decisions independently with their impact on patient care outcomes. This is congruent with the practice observed on the study ward although the other studies of students behaviours related to patient safety are based on student reporting in interviews, not observed behaviour as in this study.

Patient safety is protected when students know which information to convey and when to raise concerns about a patient's condition, as is illustrated in section 4.6.1. This is also dependent on effective communication, teamwork and the presence of mentors who predict high-risk patient situations and potential complications (McCallum et al. 2013). There was evidence of this on the study ward through close supervision with sicker patients and the availability of sisters to the students. In addition, observation of the students indicated they were educationally prepared regarding patient safety, unlike in other studies where more theoretical preparation was required (Attree et al. 2008 and Vaismoradi et al. 2011).

Students were concerned about not escalating unnecessary information, but bringing information to the attention of the right level staff in a timely manner. They felt more confident as they made correct decisions about escalation and were supported by staff. Moreover, by making simple decisions and early interventions in patient management, they could support the staff. This involved interventions not likely to put the patient at risk.

There was no recognition of the first year students' role in maintaining patient safety in the study that investigated students' lived experience of learning in their first placement (Chesser-Smyth 2005). There have been no other studies found that explored or observed first year students learning clinical decision-making in practice. Therefore, this study brings new understanding of first years learning clinical decision-making in practice and their role in maintaining patient safety.

5.7 Developing Knowing

The philosophy of learning in the university is for students to be self-directed and autonomous learners (LSBU 2011 p.35). It was expected that students would be motivated to learn, develop skills of self-directed learning, and be able to relate learning to the context of practice. The findings in section 4.7 suggest that the motivation of the students was a response to the culture of the community that enthused and equipped the students to learn in practice and develop clinical decision-making skills. In a review of learning in clinical placements Henderson et al. (2012) supported the view that students' attitudes to learning are shaped by the clinical context. The expectation of learning inculcated by the university may also have influenced the study ward students' learning but this was not explored in the study. In this study, the students described and documented what they would learn in a day. Students were driven to seek learning opportunities to achieve personal objectives.

Self-directed study time contributed to the students' confidence and gave the opportunity to reflect on their learning. The development of metacognitive

processes is a pre-requisite to learning problem solving skills (Higgs 2008 p.250); the development of these decision-making skills was evident in the students participating in this study.

In order to understand the rationale for care, students in the study would read and study books and other information sources to understand the conditions, interventions and care. They were determined to learn and took control of their learning by studying in their free time on and off the ward. They frequently had the books with them on the ward to check information. There were examples of both first and third year students actively using textbooks to understand what was occurring that day. This has not previously been documented; the only related study was in the USA (Williams and Dittmer 2009) that described the use of personal digital assistant (PDA) devices. The study used a quasi-experimental design involving 61 students in five experimental and five control groups which researched the use of e-books and PDAs by nursing students but this was not related to their use in clinical practice although they were recommended for future use in clinical practice. The importance of resources being available in practice placements is accepted as an important element of a learning environment (NMC 2008a), but seeing a number of students regularly using their own textbooks to learn on the placement has not been described in previous studies. This is likely to be related to the lack of practice focussed observation studies.

In an inconclusive UK study, Regan (2003) used a questionnaire that investigated factors motivating students to self-directed study although learning in practice was not specifically addressed. The 97 respondents reported intrinsic and extrinsic factors influenced self-directed learning, and having clear guidance with feedback was important. Students rated good mentors and wanting to be a nurse as motivating them to self-directed study (Regan 2003). On the study ward, the students wanted to be nurses and it can be asserted that this was a motivating factor for their self-directed study. There were occasions when the students' self-directed learning enabled them to make decisions about patient care and to understand the measurements of vital signs they had recorded.

The level of motivation exhibited by the students in the study showed a resolve and autonomy in relation to their learning. On the study ward the students took responsibility for their learning encompassing reading, researching, reporting, reflecting on, and self-assessing. This self-directed learning approach has been described as heutagogy (Hase and Kenyon 2000). Blaschke (2012) explains heutagogy as an extension of andragogy focusing on development of capability as well as competence. The students sought experiences and identified what and how they wanted to learn. The achievement of heutagogy (Blaschke 2012, McAuliffe 2009) is through double loop learning and reflective processes (Schön 1983, Argyris and Schön 1996). The importance of reflective processes in learning clinical decision-making is previously acknowledged (Standing 2009, Spouse and Scott 2013). With heutagogy, the learner is self-directing and is process-driven, with students setting their assessment goals (McAuliffe 2009).

On the study ward, there was evidence that the students were using heutagogical skills and demonstrated ownership of their learning with the intention of capturing every opportunity available. It has been suggested in several discussion papers that heutagogy is a concept that has relevance to nurse education (Bhoyrub et al. 2010, Blaschke, 2012). Bhoyrub et al. (2010) asserted that students learn in dynamic and unpredictable situations where a heutagogical approach would enable them to become lifelong learners, in addition to making sense of the “uncertainties that defined nursing” (Bhoyrub et al. 2010 p.326). Previously, there was no documented evidence found in research studies relating to nursing students and heutagogy.

The style of support for students and mentoring may need to be reconsidered if students are more self-directed. However, from this case study it is not possible to assess whether this is prevalent in other learning environments or unique to the study ward and the student participants. This study of students learning clinical decision-making supports heutagogy being a concept that is relevant to nursing education and worthy of further investigation.

As students progressed they understood their own abilities and limitations. Moreover, when learning clinical decision-making, understanding one's personal limitations is crucial for patient safety and personal development. This was achieved on the study ward by good mentoring practice and a supportive learning environment. Gray and Smith (2000) identified the attributes of a good mentor, identifying that a good mentor moved a student on from observing to doing, and gave feedback. This progression was facilitated by increasing independence and less supervision, described by Spouse (2001) as "flying solo". The essential factor to enhance critical thinking and learning decision-making was exposure to supportive practice learning (Taylor 1997). Anderson and Kiger (2008) interviewed ten students who had undertaken independent patient visits in their community placements towards the end of their programmes. The findings identified that the students made decisions about patient management, that they reported feeling a valued part of the team and linking theory to practice. Although the purpose of the study was not to explore students learning clinical-decision making in practice, the findings offer a valuable insight into students' decision-making in a location that was very different to the study ward but showed similar findings.

The supportive environment of the study ward did not mean the students were not challenged. The sisters had high expectations about which they informed students when they commenced the placement. The mentors used questioning to stimulate different types of thinking and some students voiced a preference for this style of mentoring. Mentors prompted students' prioritisation of care developing skills of systematic information organisation and analysis (Gillespie 2010). Creative thinking was fostered by some of the trouble shooting advice given by mentors when a problem was encountered, offering solutions for future encounters and development of clinical decision-making.

The improvement in decision-making results when pattern recognition occurs, as the students developed the ability to synthesise and analyse patient information (Benner 2001). Benner's work examined the development of

novices who were newly registered nurses. However, the US education of nurses is different to the UK and it is asserted that at registration, UK and USA nurses may have differing decision-making skills.

On the study ward, students were learning pattern recognition from their mentors who would use their expert knowledge to anticipate changes in patients and highlight these to students. It is called thinking ahead (Gillespie 2010), thus developing the students' ability to learn pattern recognition. Benner (2001) asserted that novice nurses are focussed on present time and anticipatory thinking was a sign of development of competence. In some situations on the study ward the first year students were able to anticipate the impact of their actions and the importance of those decisions, demonstrating their ability to make clinical decisions. These decision-making skills are important in maintaining patient safety.

One of the mentors, who had a gentle non-directive approach, was very clear about the expectations of third year students in line with NMC competencies (NMC 2008a 2008b) and spent time teaching medicine management to third year students particularly. In a study of 165 students' learning medicine management (Hemingway et al. 2011), the questionnaire results indicated that students thought observation of medicine management was one of the key aspects to learning medicine management, although the study did not explore how this was supported within practice placements. It was also found there needed to be a better link between theoretical pharmacology and administration of medication in practice. Students' clinical decision-making was enhanced by learning through reflective, interactive and problem based approaches in practice (Standing 2007). All these contributed to the development of a competent level of practice in medicine management.

The third year final placement student showed safe medicine management as was expected by the mentors on the study ward. It is asserted by Black (2012) that medicine administration is one of the "hallmark" competences of safe competent practice. There is evidence in this study of students' learning clinical decision-making through learning medicine management in both first and third years.

The socio-cultural theoretical approach recognises the contextual nature of practice learning (White 2012). This was evident throughout the exploration of students' learning clinical decision-making on the study ward. The role models and leaders were an implicit part of their learning experience. Students were learning practical knowledge of "knowing how" alongside tacit procedural knowledge dependent on the situation in which they were learning. Participation and engagement in care have been seen as important in the students' development and their journey towards competence (Webb and Shakespeare 2008). Adult learning theory (Knowles et al. 1998) recognises the importance of motivation in learning and the nature of practice learning is driven by the opportunities that arise. Rogers and Horrocks (2010) asserted that learners should participate in setting objectives and evaluating their learning as it takes place in clinical practice. Learning clinical decision-making is deliberate informal learning (Eraut 2004) that takes place as experiences occur. However, it has already been shown that the students were also driving their learning through their heutagogical approach.

The actual opportunities that arise in practice are unplanned so objectives need to be generic and not specific. The students were observed engaged in real-life care activities and one of the difficulties with teasing out how students learnt clinical decision-making was that it was a process that was not always easily identified or assessed. However, mentors were observed to have a plan to guide their students through the process; although this was not a documented plan, it was based on their experience as mentors and taught through the "Community". Equally, students were able to articulate when they made clinical decisions and what they needed or wanted to learn to develop their knowledge.

A trio of intertwined factors proposed by Eraut (2004), confidence, challenge and support, were found to underpin students' learning of clinical decision-making. Support and success in the challenge, and increasing confidence, fuels motivation, as was seen in the students on the study ward. The contextual factors of structure of work, relationships with colleagues and expectations of performance and progress purported to be particularly related

to newly qualified nurses (Eraut 1994). It would seem from the evidence of the study ward that these factors were equally relevant to the students' learning.

5.8 Making Decisions

Knowing when a clinical decision has been made is not always apparent, as it is an on-going process that assimilates all patient information. However, by observing and talking to students, they demonstrated their participation in clinical decision-making as shown in section 4.8. The researcher documented when students linked clinical information and their theoretical knowledge from theoretical teaching and their own study to make decisions about patients. Taylor (1997) believed that novice nurses were not problem solving but copying role models' previous performance. On the study ward, the students were making clinical decisions by choosing "to do or not to do something", which is endorsed by Thompson and Dowding (2009). It was found in a US study that the academic ability of a student influenced their decision-making skills in low complexity tasks. Yet in high complexity tasks decision-making was affected by specific knowledge and experience (Botti and Reeve 2003). It is not possible to say whether the knowledge was learnt on the placement or previously, in theory or preceding placements. However, it does support the importance of students learning alongside role models with knowledge and experience to share.

On the study ward, sometimes apprehension was evident in students as they managed a task or activity for the first time. Levett-Jones et al. (2009) found students sometimes felt overwhelmed by the level of responsibility they were given, but belongingness enabled them to verbalise their anxiety. This was observed on the study ward, as with support nearby, students were confident to participate in decision-making. Initially, by making simple clinical decisions first year students were rehearsing the skills of information gathering and processing (Thompson & Dowding 2009).

Baxter and Boblin (2008) were surprised at their findings that students often needed to “seek out others” during decision-making processes. They recommended that in the future, nurse education should improve students’ ability to be accountable for their decisions. However, studies involving registered nurses and clinical decision-making also found they sought support from colleagues for complex decisions in critical care environments (Bucknall 2003, Currey et al. 2006). On the study ward, students would discriminate the decisions that needed to be escalated successfully.

Being able to recognise signs of illness and deterioration and evaluate their clinical decision-making are competences required to be a registered nurse (NMC 2010). The mentors knew this was a goal they were working towards with third year students. The students on the study ward were involved in decisions about reporting information. The staff wanted students to exercise their judgement but they also preferred students to ask if they were uncertain. While recognising deterioration in patients was essential, knowing what to report was also crucial. Evidence from registered practitioners demonstrates collaboration in decision-making for critically ill patients was valuable especially for less experienced nurses (Bucknall 2003). Equally, learning to prioritise patient management and balance the decisions around the usually occurring care was a key part of the students’ learning.

Chesser-Smyth (2005) asserted that when students ceased being fearful they moved from “passive observers to active participants”. The evidence from the study ward would not corroborate this as the students on the study ward were sometimes observed to be anxious but were active participants. It could be postulated that the family-like care of the community enabled them to feel adequately supported despite being anxious.

A third year student compared the clinical decision-making process about a patient to investigative work, like a jigsaw puzzle piecing together the clues. When students knew a patient, they identified changes in their condition better, but they were less good at interpreting the condition of newly transferred patients. Jenks (1993) also found that knowing patients enhanced

the decision-making process about them. In Jenks' (1993) US study, 23 registered nurses participated in focus groups and participant observation to explore patterns of knowing in decision-making. On the study ward, the students needed the mentors to guide them through their decision-making, yet, the mentors were confident to do this whereas the nurses in Jenks' (1993) study did not have this confidence. There may be several reasons for this; the culture of care and decision-making in the US, that the study took place 20 years ago or that risk assessment tools are more regularly implemented now in the UK (Patient Safety Agency 2007).

On the study ward, it was observed that the more experienced mentors were likely to ask probing questions to identify if the student knew and understood the rationale for care. This illustrates the importance and value of students working with more experienced nurses in practice placement. According to Gray and Smith's study (2000), there is gradual distancing of the mentors as a student progresses in their third year. However, on the study ward the gradual distancing was apparent until a student cared for a higher risk patient when students were closely supervised to maintain patient safety. At this time, mentors remained close so they were cognisant of the student's actions. Students were less good at interpreting the patient cues and did not assimilate all the information into a patient risk assessment, as corroborated by Taylor (1997). Therefore, the proximity of expert nurses was essential for patient safety and also to teach students decision-making.

Mentors and students were pro-active and were focussed on maximising learning opportunities. Mentors would seek out students to demonstrate care or ensure they had the chance to observe care as opportunities arose. Students described following mentors when they thought there was an opportunity. It was on these occasions that mentors also explained the rationale for care. The students were less likely to pick up patient cues and recognise signs and symptoms when they were caring for a patient so the commitment of mentors to "take students with them" ensured these opportunities were maximised. Taylor (1997) found that novice students did very little problem solving and recommended more simulation learning be

utilised in their course. However, this study was fifteen years ago and simulation learning has been utilised more widely in undergraduate programmes in the UK in line with NMC recommendations (NMC 2007b, Baillie and Curzio 2009). All the students on the study ward would have learnt in simulation settings, before their first placement for the first year students and throughout their course for the third years. However, it is not possible to link their decision-making ability to their simulation experience.

There have been no further studies that have observed the totality of first year students' learning in practice as on the study ward. The evidence from this study is unique as it shows first year students' participation in care and clinical decision-making. Evidence from other studies showing first year participation in clinical decision-making has not been found.

Taylor (1997) asserted that expert and novice nurses receive and use information about patients' differently, including information from handover, which involved complex information and was believed to be less useful for first year students. However, on the study ward at the beginning of their placement, the first year students' views on handover corroborated this view but the students reached a point where they did understand. They described their self-directed study to develop their vocabulary so they could understand and participate in handover more effectively. The depth of their understanding was in relation to using the information for complex decision-making is not evident from the data. Studies of registered nurses would indicate that it is unlikely they could do this (Bucknall 2003, Currey et al. 2006).

In addition, third year students were seen explaining patient conditions to first year students, although it has been previously recognised that students contribute to each other's learning and the vulnerability of first year students in practice has been recognised for over 25 years (Melia 1987). There is also contemporary evidence of this occurring in practice; Roberts (2009) observed this in an ethnographic study of 15 students in classroom and practice learning. The study explored the importance of friendships between students in clinical practice. Houghton et al. (2013) also found the collegiality between

students in placement was beneficial as long as there were not too many students thus reducing learning opportunities. Roberts (2009) found that the seniority of students did not designate knowledge but time in the clinical setting was more important. This was not supported by the observation on the study ward, where it was third year students that were informing first year students. However, there were no second year students included on the study ward and this may have changed the dynamic of learning from each other. Roberts (2009) also alluded to a “them and us” culture where students stuck together forming a “parallel community” (Robert 2009 p.370). Again, the study ward did not support this assertion as the “Community” on the study ward was inclusive and students considered themselves to be part of the “family”. The students’ relationships as identified in Robert’s work (2009) extended to the whole ward community on the study ward. Eraut et al. (2004) expressed the view that social relationships are important for informal learning, and the camaraderie of the study ward would support this view. Evidence from the study ward shows that support from third year students is important for first years learning clinical decision-making in practice.

There was an occasion when a third year student was able to contribute to handover, as she was able to describe the condition of a patient who had deteriorated overnight. Taylor (1997) suggested intermediate level nurses struggled to interact during handover as they had insufficient experience. The third year student was confident to describe her knowledge about the patient’s condition with assurance that her opinion would be valued although it conflicted with the report by the night nurse. This does not support the findings of Taylor’s study (1997) although the study was set in Australia and took place 15 years ago. Levett-Jones et al. (2011) found that third year Australian students undertaking a structured observation and assessment of practice (SOAP) frequently had knowledge and clinical skills but did not have clinical decision-making skills to respond to complicated or unplanned situations. On the study ward, the third years were able to articulate the development of their capability to manage unexpected and complex situations, although these students may not be representative of other students.

The mentors on the study ward were all particularly skilled at supervising students to ensure safe practice, and noticed and intervened directly a student had missed a sign that a patient was deteriorating. It is difficult to discern whether this was their skill as a nurse or a mentor but it enabled students to learn safely without risk to patient safety. Gillespie (2010) considered that students might not make sense of patient cues either through lack of knowledge, lack of pattern recognition or not having the “whole picture”. If learning clinical decision-making is based on cues, as suggested by Gillespie (2010), then it may be asserted that a student could only build the bank of experience by having sufficient time or a suitable environment that seizes all these chances as evidenced with registered nurse clinical decision-making development (Currey et al. 2006).

Taylor (1997) described the interpretation of cues by novice nurses, saying they were too engrossed in the procedure to pick up patient cues and a lack of knowledge meant cues were frequently not understood. Taylor (1997) asserted that novices often copy role models but are not taught the decision-making skills to problem solve in the future. On the study ward, mentors were usually observed giving explanations about their decision-making and asking students’ questions about the rationale for care hence supporting their learning clinical decision-making. On some occasions, mentors explained how to trouble shoot some of the regularly occurring problems students might encounter.

Two discussion papers relating to decision-making and learning the skills of decision-making focussed on preparing students to manage at-risk patients (Levett-Jones 2010, McCallum et al. 2013). However, these two discussion papers implied that clinical decisions are only made in life or death situations, whereas Banning’s (2008a) definition of clinical decision-making refers to any decisions made about the management of patients’ care.

In a review of expert practice, Ericsson et al. (2007) deduced that the facets of clinical decision-making that improve performance are a structured

educational model, skills rehearsal and reflection. This was related to critical clinical decision-making, however it could be postulated that all clinical decision-making would improve with these components. Roberts (2013) asserts it is essential for students to demonstrate their clinical decision-making skills as part of their assessment, in addition to practice skills. Evidence from the study ward indicates that this is already an implicit component of third year students' assessment in practice as mentors seek the rationale for the care given.

The students gave the decision-making process as part of the explanation, which demonstrated their ability. It could be suggested that since the implementation of the Standards for pre-registration nursing (NMC 2010), clinical decision-making and the skills associated with development of these skills will be more apparent in the theoretical curriculum. There was little overt evidence of theoretical teaching on the subject in the curriculum that the study ward students were following as described in chapter 1 section 1.5, and this was reflected in contemporary literature.

The students in the study ward were observed to use the elements of Levett-Jones' (2010) discussion paper which presented "five rights" of clinical reasoning; right cues, right patient, right time, right action, right reason. These elements were not verbalised however, and there was not a structured approach to teaching clinical decision making by mentors, as suggested by Ericsson et al. (2007). As Andrews and Roberts (2003) point out, it is for those teaching students to ask the right questions for learning to occur.

Mentors in other studies identified the competences and capabilities students need to succeed (Webb and Shakespeare 2008, Black 2011). On the study ward, mentors were clear about the progress they expected from students learning clinical decision-making. They rehearsed with students as suggested by Ericsson et al. (2007) and reflected on their practice. However, on the study ward the approach to learning clinical-decision making was structured (McCallum et al. 2013, Levett-Jones et al. 2010), but not formalised for students. It is postulated that learning clinical decision-making is dependent

on the expertise of the mentors, and on the study ward, the mentors were consistent as a team with their approach to teaching students' clinical decision-making. However, their approach was unspoken and unrecorded and it is asserted that a more systematic and structured approach with a framework for learning clinical decision-making may benefit students and support less experienced mentors. Moreover, in a different environment where mentors use a different approach to supporting students' learning, a framework may benefit learning decision-making.

The UK model of learning gives the opportunity for students to learn decision-making alongside their mentor, ensuring patient safety and helping students to discern how decisions are made. Mentors on the study ward used these opportunities to assess students' theoretical and conceptual knowledge and offered learning opportunities to extend decision-making. Frequently the learning opportunities were found in self-directed work which extended students' theoretical knowledge to enhance their understanding of the management of patient care. The students in the study appreciated their mentors, who not only offered them new experiences but also prepared them for the experiences. Levett-Jones et al.'s (2009) study about belongingness found students are committed to their learning when they know staff to be supportive; and this was evident on the study ward. According to Steven et al. (2014) students' feelings of belonging are important in maintaining patient safety as students are more able to approach their mentors for support, this would support the findings on the study ward.

5.8.1 Tools to support clinical decision-making

Although there was not a tool to structure progression through learning clinical decision-making on the ward, there were tools used by the care team to assist their decision-making processes. Early Warning Scores (EWS) are recommended for use by the National Patient Safety Agency (2007) in all acute care areas to identify and respond to deterioration in patients. The study ward used the EWS scale as an explicit part of patient assessment. It

helped students to know when they needed to escalate a patient's condition, and was used as a tool by staff to explain the rationale for the assessment of patients.

In a discussion paper, the use of EWS was described as a learning tool to develop students' clinical decision-making skills (McCallum et al. 2013). However, McCallum et al. (2013) considered that the EWS was not helpful in developing student nurses' clinical decision-making skills as it focussed them on patient scores rather than making a holistic assessment of the patient to inform their decision-making. It was suggested the tool may actively discourage independent decision-making and therefore information processing. This conflicts with the findings on the study ward where student nurses used the EWS and were able to analyse why the information was to be escalated. Students rationalised their view why the patient's data was outside the normal parameters demonstrating the importance of contextual knowledge and understanding. As identified by McCallum's (2013) discussion paper this is an area for further investigation.

The role of the mentor as a coach in supporting the development of clinical decision-making was emphasised by Spouse (2001). Spouse's (2001) work applied Vygotsky's (Vygotsky and Luria 1930) theory and identified scaffolding in effective mentors by making an assessment of the student's ability so they were extended and challenged, but not beyond their potential ability. The mentors on the study ward were exemplary mentors who demonstrated these skills. It is suggested that using these principles to develop a framework supporting less experienced mentors would support students' learning for the future.

Banning (2008b) identified 'think aloud' techniques or heuristics from the work of theorists who had used 'think aloud' for articulating cognitive processes in problem-solving situations (Fonteyn and Fisher 1995). On the study ward students used the 'think aloud' approach, either alone, or with mentors who encouraged them to elucidate the rationale for care. Mentors were seen to

informally use the six heuristics of Banning's (2008b) 'think aloud' technique but without articulating that this was a framework they knew and had adopted:

- Making connections to identify possible relationships between cues;
- Describing as a means to present information;
- Evaluating data to compare cues;
- Explaining to provide reasons or a rationale for an action;
- Judging to formulate conclusions on evaluation;
- Planning as a means to predict possible future actions.

These heuristics were implemented differently when supporting a first or a third year student's learning. The mentors gave the students cues by questioning them. They sought third year students understanding of the rationale for care. First year students were asked if they knew what and how to do something rather than why. In the future by developing mentors questioning technique so they are more probing with first years as well as third years, first years' learning of clinical decision-making may be enhanced. First years were allowed to practise in low risk situations whereas third years were closely supervised in caring for more seriously ill patients. Occasionally first years were able to work with their mentor to care for sicker patients. This one to one close supervision was intense learning for first year students but helped them to understand decision-making in relation to changes in individual patient's conditions.

The service improvement tool Situation, Background, Assessment and Recommendation (SBAR) is recommended for use in clinical practice to structure communication especially in critical situations (NHS Institute for Innovation and Improvement 2008). It was implemented based on evidence that it made a difference to patient safety, service delivery and teamwork in a range of contexts (Beckett and Kipris 2009, Crowther et al. 2012). Although SBAR is not a decision making tool, it is a useful framework for organising information and therefore it can assist decision-making. In US studies, it has been used effectively in simulation environments to enhance students' communication (Krautscheid 2008, Deborough 2010). Becket and Kipris

(2009) found that coaching individuals using SBAR assisted in their use of the tool.

Levett-Jones et al. (2010) proposed the use of a clinical reasoning tool, the 5 rights of clinical decision-making framework, to improve students' identification of "at risk" patients. In a review of the literature, Levett-Jones et al. (2010) found that new graduates were expected to make complex decisions and proposed that the use of a decision-making tool would potentially improve the consequences of their decisions and so patient safety.

On the study ward the mentors were clear that a students' ability to make clinical decisions was based on their previous experience (Benner 2001) and this was their rationale for offering students every opportunity possible to practise these skills to prepare them for their future practice. Eraut (1994) described capability as the integration of knowledge and skills, though for knowledge to become an implicit part of the decision-making process it needed to be used. Although previous studies recognised the importance of students' learning clinical decision-making (Standing 2007, Garrett 2005), they asked students' views about learning clinical decision-making rather than asking mentors how students learn. This study has a wealth of rich interview and observational data from mentors and students to contribute to the understanding of students' learning clinical decision-making in practice.

The evidence from the study ward about students learning clinical decision-making in practice would indicate that there maybe benefits from a framework to support students developing decision-making skills and mentors facilitating students learning to make clinical decisions. Gillespie (2010) had developed a tool for this purpose and described its potential use, but there is no evidence of this or its evaluation.

McCallum et al. (2013) suggested that the use of EWS as a tool prevents registered practitioners from interpreting patient cues and will prevent students learning intuitive decision-making skills. Although the evidence from the study ward did not support this view, it is acknowledged the study ward

was an exemplar ward, and other wards may not mirror it. Therefore, McCallum et al. (2013) would appear to support the researcher's view that a decision-making framework may benefit facilitation of students' decision-making skills. Levett-Jones et al. (2010) were also concerned about the novices' ability to make clinical decisions with high-risk patients and failure to rescue, and the discussion paper advocates the five rights model of clinical decision-making.

With evidence from the study ward of the potential benefits of a clinical decision-making framework to support mentors and students, the researcher decided to integrate components of existing decision-making tools to develop a framework for future use with mentors and students.

5.8.2 Development of a decision-making framework

There was evidence of use of tools to support decision-making in the study ward. The use of decision-making tools has been discussed in position papers (Banning 2008b, Levett-Jones et al. 2010, McCallum et al. 2013). Bowen (2006) developed a diagnostic reasoning tool for medical students and their clinical teachers in the USA. The model is based on a medical diagnosis model, encouraging the medical students to hypothesise about the diagnosis and clinical teachers to use a reason aloud technique with the students to verbalise their differential diagnosis. This is equivalent to the 'think aloud' technique. However, to date there has not been a tool or framework implemented to support nursing students' learning clinical decision-making in practice and their mentors helping them. On the study ward, mentors were observed to use an informal structured approach to assisting students to learn clinical decision-making.

In order to identify the appropriate elements of a decision-making framework for nursing students the elements from Banning's (2008a) heuristics, the five rights (Levett-Jones et al. 2010) and the clinical decision-making elements

from the situated decision-making model (Gillespie 2010) were compared, and mapped against each other (table 17).

The terminology was remarkably similar between Gillespie (2010) Levett-Jones et al. (2010). Banning's (2008a) heuristics reflected the same ideas with repetition of the vocabulary.

Table 17 Comparison of the components of the decision-making tools

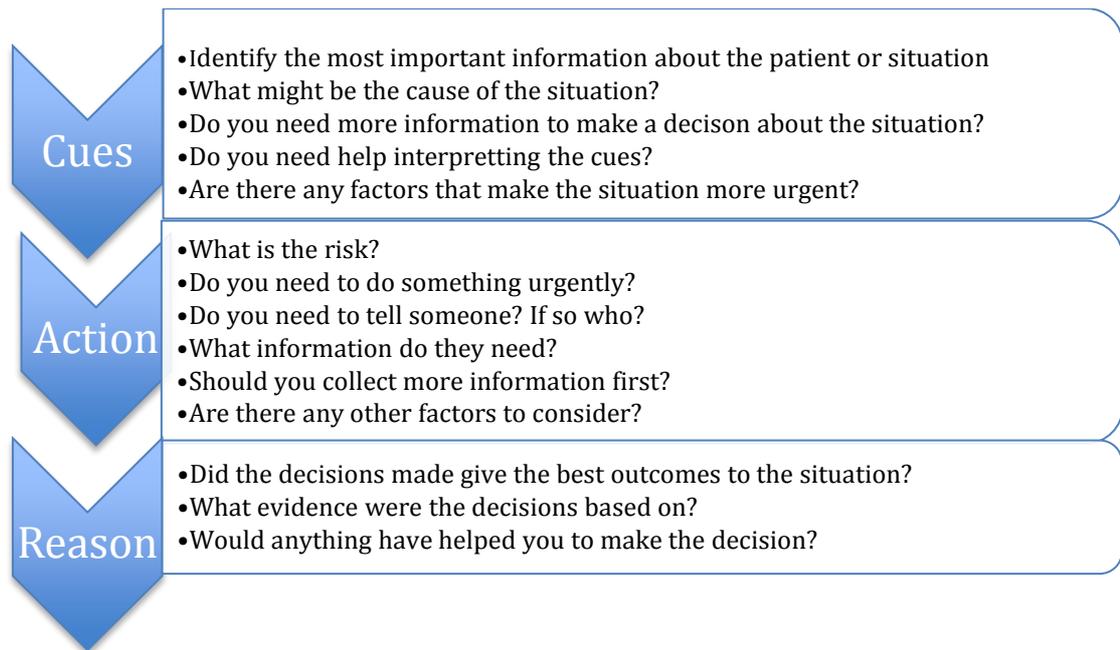
Gillespie (2010)	SBAR (NHS 2008)	Banning (2008a)	Levett-Jones et al. (2010)
Cues	Situation	Making connections to identify possible relationships between cues	Right cues
	Background	Describing as a means to present information	Right patient
Judgement	Assessment	Evaluating data to compare cues	Right time
Decision	Recommendation	Explaining to provide reasons or a rationale for an action	Right action
Evaluation		Judging to formulate conclusions on evaluation	Right reason
		Planning as a means to predict possible future actions	

From the analysis in table 17, three elements emerge: Cues, Action, and Reason. Within each of these elements arise a set of questions that can be used by individuals to guide their clinical decision-making thinking, or by mentors to guide discussion with students learning clinical decision-making, used with the 'think aloud' technique. All of this has been summarised into a Cues, Action, Reason, (CAR) framework that is proposed in figure 2. While the CAR framework has arisen based upon the understandings generated from this study its usefulness in education and practice has yet to be evaluated.

The three elements of the CAR framework: Cue, Action and Reason were developed from the decision-making tools that have been mapped against

each other. The questions are simple but would need evaluation to see whether they facilitate mentors and students learning clinical decision-making.

Figure 2 CAR framework to support students learning clinical decision-making in practice



This section has integrated existing work on clinical decision-making tools and has developed a simple framework. The framework might be implemented to support students' learning clinical decision-making in practice and assist mentors facilitating students' learning of clinical decision-making used in conjunction with the 'think aloud' technique.

5. 9 Chapter summary

In summary, this thesis has enhanced the understanding of students' learning clinical decision-making in practice. Previously, there was little evidence related to how students learnt clinical decision-making in practice; most of this research sought students' opinions about their learning in practice. Therefore, this thesis has brought new understanding to the subject through real-life evidence from observation of students and mentors in practice placements.

The study ward was committed as a community to students' learning and it was everybody's business with a team mentoring approach. The team approach supported students' learning clinical decision-making, as individuals would ensure students were supported. Although there is little written about this approach to mentoring, the study results have demonstrated this to be an appropriate and possibly beneficial method.

The ward being busy did not have a negative impact on student learning and also encouraged students to make clinical decisions when it was safe for them to do so. The mentors understood the importance of the team as role models and they demonstrated empathy, mutual respect and humour appropriately.

While the burden of mentoring had been discussed in previous work, only positive attitudes towards supporting students' learning were articulated by mentors on the study ward. A structured approach to learning clinical decision-making was witnessed although there was no documented plan for this. It is acknowledged that the study was undertaken when clinical decision-making was not explicit in the curriculum before the introduction of the Standards for pre-registration nursing education (NMC 2010).

Maintaining patient safety and making safe decisions is at the heart of learning clinical decision-making. Mentors assessed patients and supported students based on the patients' acuity and their knowledge of the student's ability. There were differences between first and third years' learning of clinical decision-making. Learning by doing was important to both first and third year students but the level of supervision between first and third years varied related to the acuity of the patient rather than the student's experience. The level of supervision was related to the perceived complexity of the decision-making and intervention; with routine low risk care being indirectly supervised at a distance. Even though there was good communication between staff and students, first year students were seen feeling apprehensive and anxious as they made some decisions about patient care. There was always support nearby, but students still had to request

intervention and thought they should be able to manage. The level of supervision given to first year students giving essential care was a concern.

Third year students were supported to care for patients who were higher risk. The mentors would discuss the rationale for decisions and question the student's basis for decisions; the 'think aloud' technique was a useful tool in clinical decision-making used by mentors and some students, although this was not identified as a planned intervention. Mentors were skilled at questioning students and seeking their understanding of the rationale for care hence assessing their underpinning knowledge for clinical decisions.

The students made choices to do or not to do based on their risk assessment of the consequences of their interventions. Therefore, there was a balance of students understanding their limitations and associated risks to interventions. The mentors were constantly reinforcing their availability if students needed them. The triad of confidence, challenge and support were crucial components to the students developing decision-making.

The management of placements also impacted on students learning decision-making. As it takes time for students to settle into a placement, having a longer placement gave a period of consistency that supported students learning decision-making. When students are settled, welcomed and feel they belong in a placement, they are motivated and on the study ward they drove their own learning. There was published evidence of the heutagogical approach to learning (Gardner et al. 2008, Bhoryrub 2010), but this is the first time it has been documented in pre-registration nursing students in practice placements. The students on the study ward were aware of their learning styles. They used books to support their learning clinical decision-making and asked questions and valued the support that was offered by staff.

The importance of students understanding their accountability was imperative for safe patient care and development of decision-making in practice. Students were active participants in learning clinical decision-making supported by exemplary mentors and a unique ward culture, devoted to

student learning and giving high quality care. It is not known whether the study ward as an excellent environment enhanced the students' ability to learn clinical decision-making and how students in a less ideal environment learn clinical decision-making. This is one of the limitations of a case study as the findings from the case ward may not be transferable to other learning environments.

The final chapter of the thesis identifies the strengths and limitations of the study. It sets out the recommendations from this study and summarises the contribution to knowledge made by it. Within the recommendations, it identifies the potential value of a simple decision-making framework that might be implemented to support students' learning clinical decision-making in practice and assist mentors facilitating students' learning of clinical decision-making.

Chapter 6 Conclusion and recommendations

6.1 Introduction

This final chapter of the study and thesis summarises and concludes the study. Initially the study and its findings are summarised and the research questions revisited. Then the strengths and limitations of the study were appraised. Following this the study's contributions to knowledge are summarised. Finally, the thesis' recommendations are considered in relation to practice, policy, education and research.

6.2 Summary of study

This thesis sets out the context and importance of clinical decision-making for nurses and therefore its relevance to students' learning. In chapter two, the factors that influenced students' learning in practice and learning clinical decision-making in pre-existing literature were discussed. Overall, most studies of students' learning of clinical decision-making in practice have been qualitative studies of students, either at one point or at the end of their programmes (White 2003, Chesser-Smyth 2005, Etheridge 2007, Bradbury-Jones 2010, and Levett-Jones et al. 2009). Few studies have included mentors as well as students, for example, Webb and Shakespeare (2008) although this study was about students' learning not learning clinical decision-making. Only two decision-making studies involving students were found to have used observation (Taylor 1997 and Houghton et al. 2013). There were no studies found in pre-registration nursing that used observation followed by interviews of students' learning clinical decision-making in practice as was conducted in this study. This combination of methods was, however, used in studies about clinical decision-making with registered nurses (Bucknall 2003, Rycroft-Malone et al. 2009, Currey et al. 2006, Deegan 2013).

Using a case study approach, students' learning of clinical decision-making on one case ward in a district general hospital was researched. The study propositions were used to frame the research questions and to maintain focus during the case study. Using a range of data collection methods in this case study provided rich data for analysis, and allowed triangulation of findings to build the evidence. The researcher was aware of her position as a participant observer on the study ward and it was a privilege to be accepted by the ward team and to observe the students' learning clinical decision-making.

The findings from this case study support the findings of previous interview and questionnaire studies about students' learning confirming that the community is an essential component of their learning (Gray and Smith 2000, White 2003, Etheridge 2007, Baxter and Rideout 2006, Levett-Jones et al. 2009, Bradbury-Jones 2011, Henderson et al 2012). However, these published studies did not consider how students learnt clinical decision-making, and some of their other findings were not supported by evidence from observation in practice on the study ward.

On the study ward, the students made clinical decisions from early in their first placement. They were able to describe the information they used to make decisions. The decisions were based on their knowledge of patients and their experience of practice and related to their understanding of safety for patients. Students learnt to make clinical decisions through the support of the community, feeling respected and accepted by the ward team. The students actually participating in care and being able to problem-solve alongside mentors aided their learning clinical decision-making. In addition, feeling able to ask questions of mentors was important. The students' own motivation and heutagogical approach to drive their own learning helped them to learn in conjunction with a reflective approach and belief in their ability.

There were differences in the ways mentors asked first and third year students' questions. They expected third year students to be able to articulate the rationale for care prompting them to make clinical decisions. First year students were asked simpler questions related to care with the purpose of

helping them to link their knowledge and actions to develop their clinical decision-making skills.

Students used tools to aid decision-making, particularly the EWS, both independently and with their mentors. There was evidence of the 'think aloud' technique, used in a rudimentary way, to support students learning decision-making. It is postulated that used in a more systematic way this technique would support students learning clinical decision-making. Tools described in discussion papers have been mapped and the Cues, Action, Reason, (CAR) framework (figure 2) proposed for future development. This will be further discussed in the recommendations.

6.3 Strengths and limitations of study

A major strength of this study was that it was conducted in the real world, on an acute respiratory ward in a district general hospital. The students and mentors were interacting together during the period of the research on the study ward with a representative patient population throughout the data collection period. The mentors remained the same during the period of data collection with the exception of one staff nurse who was present in one observation and was subsequently off sick.

A limitation of the study is that it was a case study completed on one ward that was an exemplar ward with a positive attitude to students. Another limitation is that the study involved a small number of students and mentors. The mentors were supportive and experienced and did not regard mentoring as a burden. The student participants were also progressing well and there were no issues identified with their performance in the placement.

Another strength of the study was that a range of data collection sources were employed enabling triangulation of data. Although the documentary analysis of the PADs yielded less data, they were examined and this in itself demonstrates the need for better documentation of students' attainment in

clinical decision-making by mentors. Clinical decision-making is now included in a domain required by the NMC education standards (NMC 2010) so in the future clinical decision-making will be considered as an explicit part of the student's assessment in practice. In retrospect the researcher could have introduced more detailed questions about the think aloud technique into the interviews with mentors and students.

Participant observation allowed closer proximity of the researcher to decisions that were made about patients, yielding rich data. The researcher wore uniform and therefore did not stand out in the ward when she was observing practice (Baillie 2007). There is still the possibility that the presence of the researcher altered the dynamics of the ward and behaviour of students and staff (Richardson 2006). Observation data was an interpretation by the researcher but her understanding of observed behaviour and activity was checked during the interviews with students and mentors, so aspects could be clarified to avoid misinterpretation. There was also congruence between observation data and interview data, which strengthened the findings.

The researcher reflected on the influence of her presence on the ward culture and students. This was generally perceived to be minimal. However, a mentor did appear to make time to work closely with a first year during one observation. The mentor acknowledged that she did not often have time to work closely with first year students but it was a weekend. Hence although the researcher's presence changed behaviour on this occasion it benefitted the students' learning.

The study's contributions to knowledge are discussed prior to the recommendations from the study.

6.4 Contribution to knowledge

This case study has explored students' learning clinical decision-making in practice and the findings offer new insights about how students learn clinical decision-making. Previous studies have not used observation in practice to illustrate the real-life context of first and third year students learning clinical decision-making in practice. This study has illustrated the value of observation of practice as a data collection method used in conjunction with other data collection methods, and analysed using a structured framework approach. It brings understanding to students' learning in practice by real life evidence that had previously only been reported in interviews. These techniques have been used in the past with registrants (Currey et al. 2006, Bucknall 2003, Rycroft-Malone et al. 2009, Deegan 2013) but not with studies of students learning clinical decision-making in practice.

The study has highlighted four areas of new knowledge. These are a team mentoring approach supporting students' learning, heutagogy as a concept relevant to pre-registration students' learning, identification of differences in first and third year students learning clinical decision-making in practice, and development of a clinical decision-making framework incorporating a think aloud approach.

The study has highlighted the support given to students learning clinical decision-making in practice by mentors and the ward community, and offers evidence of the positive impact of a "community" approach to students' learning clinical decision-making. The study gives insight into the benefit students' experience from a team approach to mentoring when all staff gave support to students learning clinical decision-making. Students being part of the ward team and valued by the ward community supported their learning about clinical decision-making. Although team mentoring had been recognised as a valuable approach to mentoring (Phillips et al 2000, Caldwell 2008) there was little other evidence for this approach.

The study supported the findings from previous studies about students' learning, showing that the important factors for learning were also central to students learning clinical decision-making in practice. The study demonstrated the importance of good mentoring (Spouse 2001), students being welcomed (Bradbury-Jones et al. 2010), and included as part of the team (Chesser-Smyth 2005), and feeling they belonged (Levett-Jones et al. 2009) to enhance learning of clinical decision-making skills in practice placements.

Students on the study ward were highly motivated learners; they sought opportunities to learn and decided what they needed to learn. The support for students' learning encouraged a heutagogical approach with students driving their own learning. Previously, discussion papers (Bhojrab et al. 2010, Blaschke, 2012) proposed that heutagogy is a concept that has relevance to nurse education but there was no documented evidence found in research studies relating to nursing students and heutagogy.

The evidence of heutagogy seen in the students' approach to their learning may be attributed to their theoretical learning or preparation for practice in the university. The students' own motivation and heutagogical approach helped them to learn in conjunction with a reflective approach and belief in their ability. With the implementation of the Standards for pre-registration nursing education (NMC 2010) students are degree level students and with this is an expectation that students will be more self-directed.

The study has highlighted differences in clinical decision-making between first and third year students. Through observation in practice it illustrates the real - life experience of first and third year students making clinical decisions in practice. The evidence has shown that first year students on the study ward were able to anticipate the outcomes of their actions and identify those decisions that needed to be escalated to ward staff.

Although the first year students on the study ward were able to identify when to escalate concerns to the ward staff, there were occasions when their

anxiety about making decisions was evident. There were associated risks with their decision-making that were not recognised by ward staff as the first year students were usually caring for lower acuity patients who appeared to be considered by ward staff as at no or low risk. However, there were safety risks for these lower acuity patients that have not been demonstrated in other studies, for example associated with patient assessment, mobility, potential falls, eating and drinking. Steven et al. (2014) reported that students' emotional wellbeing may be affected by decisions involving patient safety and this was elucidated on the ward study.

There was evidence of progression of first and third year students' clinical skills development through the duration of their practice placement, and third year students' were able to articulate their clinical decision-making development. Other studies of students learning clinical decision-making (White 2003, Baxter and Rideout 2006, Baxter and Boblin 2008, Etheridge 2007, Standing 2007) had not compared students at different stages in their programme. Therefore this is the first study that identifies differences between first and third year students learning clinical decision-making. The findings of the study also indicated the value of support from third year students for first years learning clinical decision-making in practice.

The findings demonstrated the use of 'think aloud' techniques by mentors in an unstructured manner. Although proposed as beneficial for learning clinical decision-making (Banning 2008b), this had not previously been reported in students' learning clinical decision-making in practice placements. The study has recognised the usefulness of decision-making tools for students' learning clinical decision-making and the potential benefits to mentors supporting students. The use of a structured approach to learning clinical decision-making was evident although it was carried out informally on the study ward.

The tools identified that could support clinical decision-making (Banning 2008a, NHS 2008, Gillespie 2010, Levett-Jones et al. 2010) have been mapped against each other (table 17). Analysis of this mapping led to

development of a proposed decision-making framework to support learning clinical decision-making in the future as shown in figure 2.

These contributions to knowledge have informed the recommendations made in the following section.

6.5 Recommendations

There is little evidence about how students learn clinical decision-making in practice placements in the UK. The study ward in this case study proved to be an exemplar ward where support for student learning was valued and prioritised. Although it was a small case study recommendations are made for policy, practice, education and research.

6.5.1 Recommendations about team mentoring and support for learning clinical decision-making

The study ward had a group of experienced mentors who had successfully adopted a team mentoring philosophy. The ethos of support for learning was inclusive and involved all staff on the ward. Less experienced mentors received support and students felt well supported by a team of mentors with different mentoring styles.

6.5.1.1 Recommendations for policy makers

The findings from this study warrant policy makers considering new models of mentoring. Mentoring guidance should be reviewed to include team and community mentoring approaches.

6.5.1.2 Recommendations for practice

The development of team or community approaches to mentoring in practice is recommended.

6.5.1.3 Recommendations for education

Team and community mentoring techniques should be included within mentor preparation education and mentor updates.

6.5.1.4 Recommendations for research

As there is little other evidence, it is recommended that further research into a community/team model of mentorship is undertaken.

6.5.2 Heutagogy

The students on the study ward were advanced diploma students who showed evidence of critical thinking that is key to developing clinical decision-making. The development of heutagogy approaches is likely to be beneficial to their learning.

6.5.2.1 Recommendations for education

It is recommended that heutagogy be used to further inform curriculum development, particularly in relation to learning in practice and learning clinical decision-making.

6.5.2.2 Recommendations for research

It is recommended that further research is undertaken to explore the benefits and limitations of heutagogy in pre-registration students learning be undertaken.

6.5.3 Support for first and third years learning in practice

The study highlighted that even in an exemplary learning environment first year students were sometimes learning clinical decision-making without close supervision and support. This is a concern for both patient safety and the first year students' learning. The students sometimes showed anxiety and were faced with the dichotomy of seeking support from busy mentors or making decisions themselves. Evidence from the study shows that support from third

year students is already important for first years learning clinical decision-making in practice. There were differences in the way first and third years learnt clinical decision-making on the study ward.

6.5.3.1 Recommendations for policy

Guidance should be developed for the supervision of first year students to assure patient safety.

6.5.3.2 Recommendation for practice

It is recommended that greater consideration be given for emotional support of first year students in practice settings, and improved processes are developed to support first year students within their first placement. There needs to be greater awareness of the differences between how first and third year students make clinical decisions with an emphasis in practice on support and on ensuring patient safety.

6.5.3.3 Recommendation for education

It is recommended that in the future the curriculum includes a focus on clinical decision-making, and reflects the differences between how first and third year students learning clinical decision-making in practice. There needs to be recognition of the value of trying to have both first and third years in a placement area at the same time when organising placement allocations.

6.5.3.4 Recommendation for research

Further investigation as to how first year student nurses need to be supported in making clinical decisions in practice to best protect patients is recommended as well as research into the effect on clinical decision making of third year support of first year students in practice.

6.5.4 Development of a decision-making framework

Based on evidence from the study the clinical decision-making framework (figure 2) was developed to support learning decision-making in practice

settings. A decision-making framework has the potential to support students' learning of clinical decision-making and also prepare them for professional practice, improve assessment skills, and increase self-awareness. In addition, it could enhance critical thinking skills and foster the heutagogical approach to learning. It is advocated that use of the 'think aloud' technique used in conjunction with the proposed decision-making framework would encourage students to articulate the rationale and explain their decision-making enhancing their learning.

6.5.4.1 Recommendations for policy

Policy makers need to consider supporting the use of the established CAR framework (figure 2) for learning clinical decision-making skills.

6.5.4.2 Recommendations for education

It is recommended that students be introduced to the 'think aloud' technique and the use of the established CAR framework (figure 2) in theoretical teaching prior to commencement of practice placements.

6.5.4.3 Recommendations for research

The usefulness and effectiveness of the proposed clinical decision-making CAR framework (figure2) within practice and academic settings needs to be investigated. It is recommended that an in depth investigation of the effectiveness of 'think aloud' techniques is undertaken across different types of practice settings.

6.6 Chapter summary

In summary, through a case study approach, this thesis has enabled new understanding of how student nurses learn clinical decision-making in practice settings. Although much research has been undertaken previously about support for students and the role of mentors in practice, little research had considered students' learning clinical decision-making in practice. It has also brought an understanding of the differences between first and third year

students' learning of clinical decision-making. The topic of learning about clinical decision-making was previously explored through interviews with students and this study has triangulated data from three sources. Uniquely, this study has observed students learning clinical decision-making in the case study ward and although a small study, it has highlighted distinctive aspects and identified areas for future research. It had demonstrated the value of decision-making tools in supporting students learning clinical decision-making and recommends the development of a clinical decision-making framework to support students learning clinical decision-making in the future.

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APPENDICES

Appendix 1: Nursing practice and decision-making competencies

From Standards for Pre-registration education (NMC 2010)

All nurses must:

- use up-to-date knowledge and evidence to assess, plan, deliver and evaluate care, communicate findings, influence change and promote health and best practice. They must make person-centred, evidence-based judgments and decisions, in partnership with others involved in the care process, to ensure high quality care. They must be able to recognise when the complexity of clinical decisions requires specialist knowledge and expertise, and consult or refer accordingly.
- possess a broad knowledge of the structure and functions of the human body, and other relevant knowledge from the life, behavioural and social sciences as applied to health, ill health, disability, ageing and death. They must have an in-depth knowledge of common physical and mental health problems and treatments in their own field of practice, including co-morbidity and physiological and psychological vulnerability.
- carry out comprehensive, systematic nursing assessments that take account of relevant physical, social, cultural, psychological, spiritual, genetic and environmental factors, in partnership with service users and others through interaction, observation and measurement.
- ascertain and respond to the physical, social and psychological needs of people, groups and communities. They must then plan, deliver and evaluate safe, competent, person-centred care in partnership with them, paying special attention to changing health needs during different life stages, including progressive illness and death, loss and bereavement.
- understand public health principles, priorities and practice in order to recognise and respond to the major causes and social determinants of health, illness and health inequalities. They must use a range of information and data to assess the needs of people, groups, communities and populations, and work to improve health, wellbeing and experiences of healthcare; secure equal access to health screening, health promotion and healthcare; and promote social inclusion.
- practise safely by being aware of the correct use, limitations and hazards of common interventions, including nursing activities, treatments, and the use of medical devices and equipment. The nurse must be able to evaluate their use, report any concerns promptly through appropriate channels and modify care where necessary to maintain safety. They must contribute to the collection of local and national data and formulation of policy on risks, hazards and adverse outcomes.
- be able to recognise and interpret signs of normal and deteriorating mental and physical health and respond promptly to maintain or improve the health and comfort of the service user, acting to keep them and others safe.
- provide educational support, facilitation skills and therapeutic nursing interventions to optimise health and wellbeing. They must promote selfcare and management whenever possible, helping people to make choices about their healthcare needs, involving families and carers where appropriate, to maximise their ability to care for themselves.

- be able to recognise when a person is at risk and in need of extra support and protection and take reasonable steps to protect them from abuse.
- evaluate their care to improve clinical decision-making, quality and outcomes, using a range of methods, amending the plan of care, where necessary, and communicating changes to others.

Appendix 2: Letter of Approval from National Research Ethics Service Local Committee



National Research Ethics Service
Research Ethics Committee

Telephone:
Facsimile:
Email: NHS.UK

06 July 2010

Ms Joanna Mitchell
Principal Lecturer
London South Bank University

Dear Ms Mitchell

Full title of study: How student nurses learn to make clinical decisions during their practice placements
REC reference number: 10/H0701/57
Protocol number: n/a
EudraCT number:

Thank you for your email of 4th July 2010. I can confirm the REC has received the documents listed below as evidence of compliance with the approval conditions detailed in our letter dated 10 June 2010. Please note these documents are for information only and have not been reviewed by the committee.

Documents received

The documents received were as follows:

Document	Version	Date
Protocol	2	03 July 2010
observation schedule	2	03 July 2010
REC application	amended A57	
Covering Letter	email 1	04 July 2010
Interview Schedules/Topic Guides	student nurse' v 2	03 July 2010
Advertisement	2	03 July 2010
Participant Information Sheet: student	2	03 July 2010
Participant Consent Form: patient	2	03 July 2010
Response to Request for Further Information	1	04 July 2010
Participant Information Sheet: staff	2	03 July 2010
Participant Information Sheet: mentor	2	03 July 2010

Participant Information Sheet: patient	2	03 July 2010
Participant Consent Form: student	2	03 July 2010
Participant Consent Form: mentor	2	03 July 2010
Participant Consent Form: staff	2	03 July 2010
topic guide mentor	2	03 July 2010
Gantt chart	2	03 July 2010

You should ensure that the sponsor has a copy of the final documentation for the study. It is the sponsor's responsibility to ensure that the documentation is made available to R&D offices at all participating sites.

10/H0701/57 **Please quote this number on all correspondence**

Yours sincerely



Janett Carter
Committee Co-ordinator

E-mail: janet.carter@ ns.uk

Copy to:

Prof Nicola Crichton,
[R&D office for NHS care organisation at lead site]

Appendix 3: Letter of Approval from Research and Development Department in the Trust

10/08/2010
 Joady Mitchell
 Principal Lecturer
 London South Bank University
 K2
 Keyworth Street
 SE1 6NG



NHS Trust

Tel: _____
 Fax: _____

Direct dial tel: _____
 Direct dial fax: _____

Dear Ms. Mitchell

Re: Ref 834 How student nurses learn to make clinical decisions during their practice placements

The Trust R&D committee reviewed the following documents for this study:

Protocol	Version 2	Dated 03/07/2010
Participant Information Sheet: staff, mentor, patient and student participant	Version 2	Dated 03/07/2010
Participant Consent form: staff, mentor, patient and student participant	Version 2	Dated 03/07/2010

They were able to give full approval for the study on condition of full Ethical Approval. **London Southbank University** will act as a **sponsor** for the research under the Research Governance Framework.
 This letter ensures that you are **indemnified** by the Trust under the DoH (HSG (96) 48) (**Only for non-commercial research**).

Conditions of approval

- Ensure that the research undertaken complies with the standards described in the Research Governance Framework and the terms of the attached Research Agreement
- Comply with the Trust research monitoring and auditing process.
- It is your responsibility to ensure that your research team are fully trained in the operation of the approved study protocol.
- **Any** changes to these documents or others pertaining to the study must be approved by Ethics and the Trust.

The Trust would welcome a copy of your final report in due course and a copy of any research publications arising from this research.

Thank you for your help.

Yours sincerely,



Director of Research & Development
 Hospital NHS Trust







Chairman:
 Chief Executive

Appendix 4: Letter of Approval from the University Research Ethics Committee



Direct line: 020-7815 6024
E-mail: harrism7@lsbu.ac.uk

Ref: UREC 1027

Joady Mitchell,
Room V 502,
K2

20 July 2010

Dear Joady,

Research proposal: *How student nurse learn to make clinical decisions during their practice placements*

Thank you for submitting this application with NRES approval from London REC

I am pleased to tell you that ethical approval has been given by Chair's action on behalf of the University Research Ethics Committee.

I wish you every success with your research.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Mark Harris".

Mark Harris
Deputy University Secretary
Secretary, LSBU Research Ethics Committee

c.c. Professor Ros Edwards, Chair, LSBU Research Ethics Committee

Appendix 5: Participant information sheets

5.1 Student participant information sheet

A study to explore how pre-registration student nurses learn to make clinical decisions during their practice placements

About the study

You are being invited to take part in a research study. Before you decide whether to participate you need to understand why the research is being done and what it would involve for you. If you decide to participate all the information you give will be confidential and anonymised. Please take time to read the following information carefully. Talk to others about the study if you wish. Ask the researcher if there is anything that is not clear or if you would like more information.

The purpose of this study is to explore how you and other student nurses learn clinical decision making skills in a clinical placement, and what influences your learning. The study is being completed as part of a Professional Doctorate in Nursing at London South Bank University.

Why have I been invited to take part?

You have been invited to participate as you are a first or third year student nurse with a clinical placement on this ward during the period of the study.

What it will involve

The researcher will be observing first and third year student nurses on ward during their placement. As you will be undertaking a placement on ward you have been invited to participate. Participating in the study will involve the researcher observing you working with your mentor, and other members of staff on a maximum of 2 shifts and interviewing you. The interviews may be short conversations during the course of the shift being observed, and also a longer interview at a time that is mutually convenient near the end of your placement.

When the researcher is observing you she may also discuss with you what you are doing. This will not take place whilst you are giving direct patient care but in an area away from patients.

The researcher will make notes and with your consent will audio record the interviews with you. The researcher will also ask for permission to take an anonymised copy of your PAD.

Choosing to participate in the study

It is up to you whether or not you take part. If you do, you will be given this information sheet to keep and be asked to sign a consent form. You are still free to withdraw or stop at any time without giving a reason. Your decision will not affect the experience or support you receive during your clinical placement.

Participating in this study should not affect you or your placement. If you feel it is affecting you or your placement at any time you will be able to stop. You are personally unlikely to gain anything from participating in the study, although you may find the discussion about your clinical decision making beneficial in helping you understand how you make decisions. The information will inform future education of student nurses. If you tell the researcher something about your experience or she observes something she thinks is unsafe practice, she will discuss it with you and your mentor. She will follow the university's and Trust's policy to deal with it.

You are free to withdraw from the study at any time.

Confidentiality

All information received from you will be confidential and stored in a locked filing cabinet and on a password protected computer in an environment locked when not occupied. No one except the researcher and supervisors will see the information. In the dissertation and any subsequent publications you will be identified by a code known only to the researcher. This information will be held for seven years.

What if I want more information?

If you have a concern about any aspect of this study, you should ask to speak with the researcher who will do their best to answer your questions. The contact details are Joady Mitchell 0207815 4720. If you wish any further information regarding this study or have any complaints about the way you have been dealt with during the study or other concerns you can contact: Prof Joan Curzio at 0207 815 5901 who is the Academic Supervisor for this study. Finally, if you remain unhappy and wish to complain formally, you can do this through the University's Complaints Procedure. Details can be obtained from the university website: <http://www.lsbu.ac.uk/research>

5.2 Mentor participant information sheet

A study to explore how pre-registration student nurses learn to make clinical decisions during their practice placements

About the study

You are being invited to take part in a research study. Before you decide whether to participate you need to understand why the research is being done and what it would involve for you. If you decide to participate all the information you give will be confidential and anonymised. Please take time to read the following information carefully. Talk to others about the study if you wish. Ask the researcher if there is anything that is not clear or if you would like more information.

The purpose of this study is to explore how student nurses learn clinical decision making skills in a clinical placement, and what influences their learning about clinical decision making. The study is being completed as part of a Professional Doctorate in Nursing at London South Bank University.

You have been invited to participate as you are a mentor on ward.

What it will involve

The researcher will observe students working with mentors, and other members of staff during their placement. If you are willing to participate, you will be observed during some of the time you are working with a student involved in the study at mutually agreeable dates and times for a maximum of 2 shifts. During the time the researcher is observing you she will also discuss with you what you are doing. This will not take place whilst giving direct patient care but in an area away from patients. The interviews may be short conversations during the course of the shift being observed. A longer interview about how students' learn clinical decision making will also take place at a time that is mutually convenient. The researcher will make notes and may ask to audio record the interview when interviewing you.

Choosing to Participate

It is up to you whether or not you take part. If you do, you will be given this information sheet to keep and be asked to sign a consent form. You are still free to withdraw or stop at any time. You can stop without giving a reason. Your decision will not affect your role mentoring students on the ward or any aspect of your employment.

If you feel it is affecting your work at any time you will be able to stop. You are unlikely to personally gain anything from participating in the study, although you may find the discussion about your mentoring role beneficial. The information will inform future education of student nurses. If you tell the

researcher something or she observes something she thinks is unsafe practice, she will discuss it with you. She will follow the university's and Trust's policy to deal with it.

You are free to withdraw from the study and not have your information included, at any time up to the time of completion of the study

Confidentiality

All information received from you will be handled in a confidential manner and stored in a locked filing cabinet and on a password protected computer in an environment locked when not occupied. No one except the researcher and supervisors will see the information. In the dissertation and any subsequent publications you will be identified by a code known only to the researcher. This information will be held for seven years.

What if I want more information?

If you have a concern about any aspect of this study, you should ask to speak with the researcher who will do their best to answer your questions. The contact details are Joady Mitchell 0207815 4720. If you wish any further information regarding this study or have any complaints about the way you have been dealt with during the study or other concerns you can contact: Prof Joan Curzio at 0207 815 5901 who is the Academic Supervisor for this study. Finally, if you remain unhappy and wish to complain formally, you can do this through the University's Complaints Procedure. Details can be obtained from the university website: <http://www.lsbu.ac.uk/research>

5.3 Staff participant information sheet

A study to explore how pre-registration student nurses learn to make clinical decisions during their practice placements

About the study

You are being invited to take part in a research study. Before you decide whether to participate you need to understand why the research is being done and what it would involve for you. If you decide to participate all the information you give will be confidential and anonymised. Please take time to read the following information carefully. Talk to others about the study if you wish. Ask the researcher if there is anything that is not clear or if you would like more information.

The purpose of this study is to explore how student nurses learn clinical decision making skills in a clinical placement, and what influences their learning about clinical decision making. The study is being completed as part of a Professional Doctorate in Nursing at London South Bank University.

You have been invited to participate as you are a mentor or member of the staff team on ward.

What it will involve

The researcher will observe students working with mentors, and other members of staff during their placement. If you are willing to participate, you will be observed on a maximum of 2 occasions when you are working with a student involved in the study at mutually agreeable dates and times. During the time the researcher is observing you she may also discuss with you what you are doing. These will also be short interviews or conversations during the course of the shift being observed. They will not take place whilst giving direct patient care but in an area away from patients. The researcher will make notes and with your consent may audio record when interviewing you.

Choosing to Participate

It is up to you whether or not you take part. If you do, you will be given this information sheet to keep and be asked to sign a consent form. You are still free to withdraw or stop at any time. You can stop without giving a reason. Your decision will not affect your role supervising students on the ward or any aspect of your employment.

If you feel participating in the study it is affecting your work at any time you will be able to stop. You are unlikely to personally gain anything from participating in the study, but the information will inform future education of student nurses. If you tell the researcher something or she observes

something she thinks is unsafe practice, she will discuss it with you. She will follow the university's and Trust's policy to deal with it.

You are free to withdraw from the study at any time.

Confidentiality

All information received from you will be handled in a confidential manner and stored in a locked filing cabinet and on a password protected computer in an environment locked when not occupied. No one except the researcher and supervisors will see the information. In the dissertation and any subsequent publications you will be identified by a code known only to the researcher. This information will be held for seven years.

What if I want more information?

If you have a concern about any aspect of this study, you should ask to speak with the researcher who will do their best to answer your questions. The contact details are Joady Mitchell 0207815 4720. If you wish any further information regarding this study or have any complaints about the way you have been dealt with during the study or other concerns you can contact: Prof Joan Curzio at 0207 815 5901 who is the Academic Supervisor for this study. Finally, if you remain unhappy and wish to complain formally, you can do this through the University's Complaints Procedure. Details can be obtained from the university website: <http://www.lsbu.ac.uk/research>

5.4 Patient information sheet

A study to look at how student nurses learn to make clinical decisions during their practice placements

About the study

You as a patient, are being asked to take part in a research study. Before you decide whether to take part you need to know why it is being done and what it would mean for you. If you decide to take part any information about you will be kept confidential and will not have your name on it.

Please take time to read this information and ask if there is anything that is not clear or if you would like more information. Talk about the study to the staff on the ward and your family if you wish.

The reason for the study is to look at how student nurses learn to make decisions about patient care while they are learning on the ward, and what helps them to learn. The study is being completed as part of a Professional Doctorate in Nursing at London South Bank University.

What does it involve?

You have been asked to take part as you are a patient on ward where the study is taking place. A researcher is watching student nurses while working alongside members of the ward staff.

It is up to you whether or not you decide to take part. Before you agree to take part, the researcher will come to explain the study and answer any questions.

Choosing to take part

If you agree to take part, you will be asked to sign a consent form, before your care is observed by the researcher who is a registered nurse. She will introduce herself and explain what she is doing, she will also write some notes. You are still free to pull out or stop at any time. You can stop without giving a reason. Just tell the researcher or your nurse. Your choice will not affect the care you get during your stay.

Will it affect my treatment?

Joining in this study will not affect your treatment. You are not likely to gain personally from joining in the study but the information will inform future education of student nurses. If you tell the researcher something or she sees something she thinks staff caring for you need to know, she will discuss this with you before informing the team managing your care.

You are free to pull out from the study and not have your information included, in the research at any time up to the end of the study.

If you would like to be informed about the results of the study when it is completed, the researcher will make this information available to you.

Confidentiality

Any information about you will be kept in a confidential manner and stored in a locked filing cabinet and on a password protected computer in a locked room. No one except the researcher and supervisors will see the information. During the research and in any published articles you will only be known by a code. This information will be held until 2015.

If you would like more information

If you are worried about any aspect of this study, you should speak to your nurse or the researcher who will do their best to answer any questions you have.. If you wish for any further information about the study or have any complaints about the study you can contact the project co-ordinator Joady Mitchell Principal lecturer London South Bank University xxxxxxxx London xxxx telephone 0207815 4720 or email mitchejm@lsbu.ac.uk or Prof Joan Curzio academic supervisor on 0207 815 5901.

Finally, if you remain unhappy and wish to complain formally about the study, you can do this through the University's Complaints Procedure. Details can be obtained from the university website: <http://www.lsbu.ac.uk/research>

Thank you for taking part.

Appendix 6 Consent forms

6.1 Consent form for student

A study to look at how student nurses learn to make clinical decisions during their practice placements

Please initial box

- 1 I confirm that I have read and understand the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.
- 2 I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my placement being affected.
- 3 I understand and agree to the researcher having access to my practice assessment document for this placement for the purposes of this study.
- 4 I agree the researcher observing me and interviewing me on my practice placement on a maximum of 2 occasions.
- 5 I agree to take part in and interview with the researcher during the last 2 weeks of my placement. I agree to these being audio recorded.

Name of Participant

Date

Signature

Name of Person
obtaining consent

Date

Signature

6.2 Consent form for staff

A study to look at how student nurses learn to make clinical decisions during their practice placements

Please initial box

1 I confirm that I have read and understand the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

2 I understand that my participation is voluntary and that I am free to withdraw at any time without giving a reason.

4 I agree the researcher observing me and interviewing me while I work with a student nurse on their practice placement on a maximum of 2 occasions.

5 **Mentors only**

I agree to take part in an interview with the researcher during the last 2 weeks of the student's placement. I agree to these being audio recorded.

Name of Participant

Date

Signature

Name of Person
obtaining consent

Date

Signature

6.3 Consent form for patients

A study to look at how student nurses learn to make clinical decisions during their practice placements

Please initial box

1 I confirm that I have read and understand the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

2 I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my care being affected.

4 I agree the researcher observing a student nurse giving me nursing care

Name of Participant

Date

Signature

Name of Person
obtaining consent

Date

Signature

Appendix 7: Observation schedule

For each observation period

Date and time

Environment

Describe who is involved

Staff – discipline, grade, relationship to student's learning

Patient/s - condition, appearance, and care needs

Activity –

Description of activity - preparation for care delivery, direct patient care, discussion of care/ evaluation of intervention, patient handover, and meetings related to patient management

What was done and by whom?

Student activity care giving

Decision-making

Any factors/cues that might have influenced the decision-making?

Patient, staff,
intervention/treatment,

Interactions in relation to decisions – with patient, visitors, other staff members

Verbal

Non- verbal

Anything else notable related to patients/ staff/ students

Appendix 8: Interview schedule

Nursing students:

All nursing students

Follow up on observed activity, ask about care participation, clinical decisions made, and the factors that influenced these.

What do you understand by the term clinical decision-making?

Can you give examples of making clinical decisions?

Examples from observed care, question as appropriate

Explore examples further as needed

Using the terms used by the student the researcher will explore:

Types of clinical decisions the student has been involved in making

How they made the decisions

Were there other people involved in the decision (professionals, relatives, and patients) did they discuss it with anyone?

During the course of your placement can you describe any changes in your decision-making?

Were there any other resources used in making clinical decisions?

If yes what were they?

Can you tell me about the outcome of any decisions made?

Was it the right decision?

How do you know?

What has influenced your learning decision-making in this placement?

Is there a developmental journey?

Is there anything which helps you to learn clinical decision making?

Are there any barriers to learning clinical decision making?

Is there anything else you would like to add?

Only third year students

Are there any differences as a third year to when you were a first year

Types of decisions

How decisions are made?

Mentor

What do you understand by the term clinical decision-making?

Can you give examples of students' involvement in clinical decision-making?

Explore example further as needed

I want you to focus on (the student) what have you done with them to develop their clinical decision-making.

Using the terms used by the member of staff the researcher will explore:

How students learn to make clinical decisions

Anything that facilitates students' learning clinical decision making

Anything that interferes with students' learning clinical decision making

Were there any other resources used in making clinical decisions?

If yes what were they? e.g documents, patients notes, policies, procedures, guidelines,

Can you tell me about the outcome of decisions made?

Was it the right decision?

How did the student know?

Are there any differences between a third year and a first year's decision making?

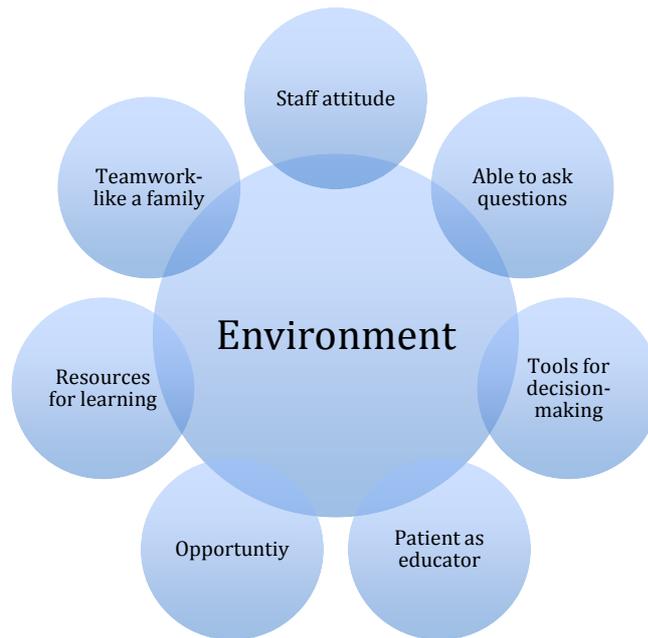
Types of decisions

How decisions are made?

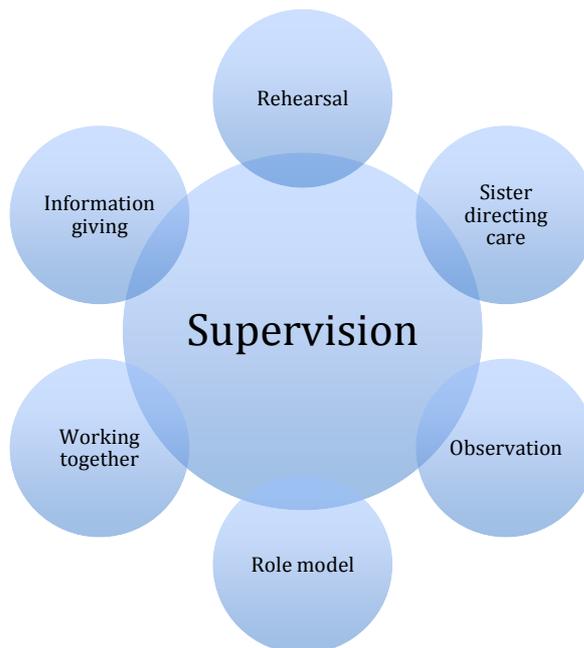
Is there anything else you would like to add?

Appendix 9: Mindmaps for early framework development

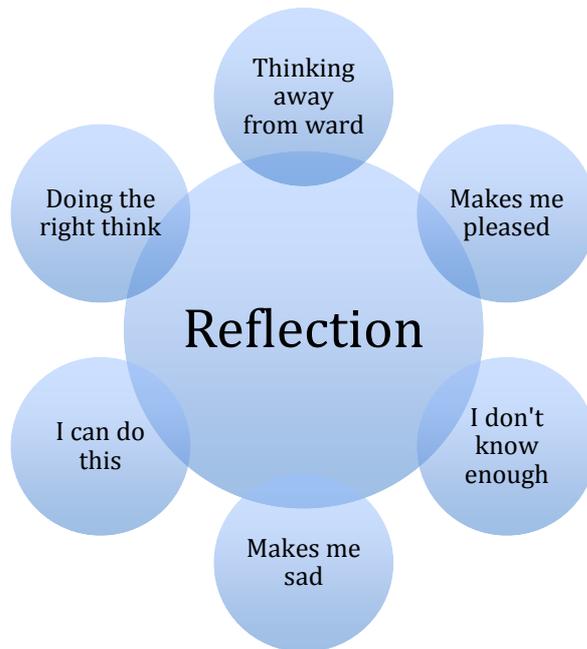
Environment



Supervision



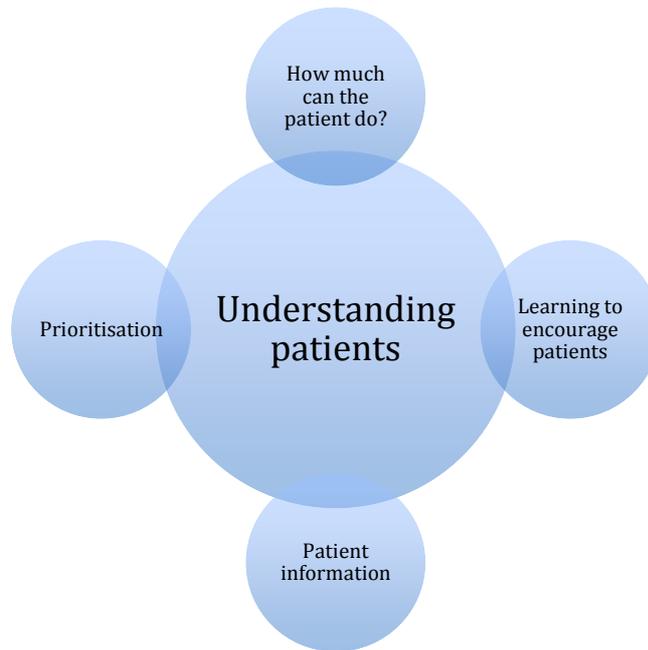
Reflection



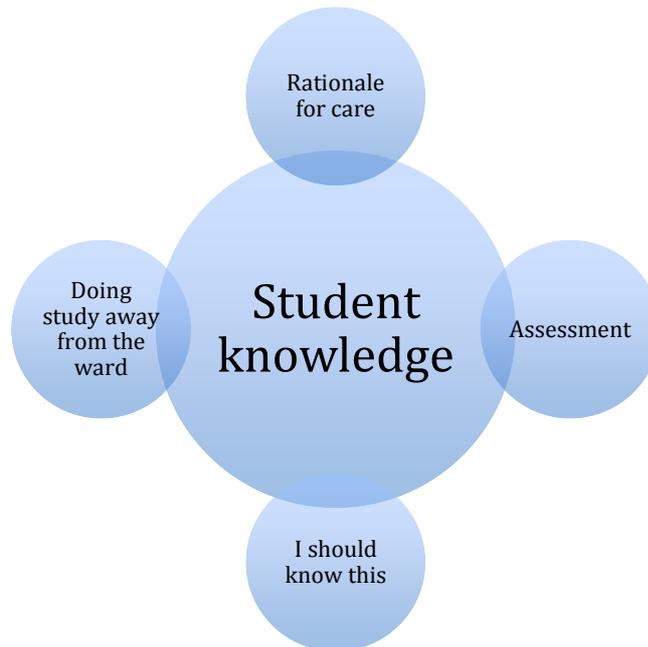
Staff support



Understanding patients



Student knowledge



Appendix 10: Example of initial coding on interview transcript

Second interview with Student A showing coding of text

Colour coding of themes

Practice

Risk

Community and environment

Knowledge

Decision-making

JM What helped you learning and learning clinical decision-making?

Asking questions being proactive saying I want to do this when you ask they can teach you many things when you don't ask them you just end up doing the same things but when you ask they can teach you to do things. So its asking what are you going to do can I watch you can I do this and being involved asking questions and being proactive

That really helped me I have 2 weeks to go and I need to learn about medicine management as I have not done it yet and I have an idea about blood pressure but I need to research the drugs.

I had a pack but at midpoint they realised I did not know anything about drugs Sister asked me.

You know you need to introduce yourself, I asked why am I giving give steroids and I did not know. so they realised I needed to learn more about medicines. You have an idea but I did not know what they were for.

I am not too confident with A-G assessment when they get an admission and I start observing I an not too sure what to do so I am hoping next Saturday if it is quiet and we have an admission I can find out about it.

JM What about the ward has helped you to learn CDM in the ward?

The way they have done it I work in the different areas, meeting different patients and people.

My mentor & co mentor are often not around but I work with everyone. Some other students say they work they did not get a chance to work with their mentor but when we started they said I am your mentor but everyone is like a mentor and you learn from everyone

They said don't wait until I am around if you want to learn something so right from the beginning I don't rely on them I go with the flow

I learn from team 1 and team 2 I just get on with it

You get a chance to work with different people and know where everything is I learn from Sister [name] my mentor as she always asks where I am and what I have done and am I learning. When I go on my break she asks where I am she is always checking on me.

She asks what are you doing now can you do this for me and also the Staff nurses who have just qualified they always want to teach me things and they check and I follow

They give me one patient and then they check I am doing it and say this is how you have to do it.

I have learnt from almost all the nurses

Bed making

I was worried about how to give and put a bedpan I asked the patient if they were comfortable

The HCAs, I get on with everyone they teach you how to do a bed how to clean the bed

How to use the commode I did not know I had to clean and wipe it, I was told I should clean it and I learn this from the HCAs.

Appendix 11: Example of data in themes and subthemes

Theme Understanding Risk	Student A Observation 2
Subtheme Assuring Patient Safety	<p>Line 127 The patient seems a little vague about her medication regime as Sister goes through her medication with her prior to discharge, the sister is concerned and explains the tablet for her thyroid treatment. Sister explains another tablet saying this is the one for your tummy-how often do you take this? - Patient replies once a day, Sister explains it is still the same. Sister asks if she has a dossett box at home, yes my grandson does it for me when I am at home. He will do it tonight if I ask him when I get home.</p> <p>Line 149 Sister explained to the student saying this one is like aspirin. The patient says I'm allergic to aspirin and Sister explains - yes that is why you have this tablet instead of aspirin.</p> <p>Line 168 Sister asks the patient if she understands her medication and the patient replied that when she first started taking her drugs no one had explained them to her like this.</p>
Confidence	<p>Line 19-20 The student comments that thinks she does not know enough about many aspects of pressure ulcers and needs to learn more to understand about them.</p> <p>Line 184 Student A slowly and carefully completes the patient discharge form. She seems pleased to be trusted to do this and asks the S/N who is nearby about one part of the form before completing it. Sister comes and checks she is progressing with the form by talking to her and asking her how she is doing and does she understand everything.</p> <p>Sister returns and they go through the form together checking it is completed correctly. Sister asks if Student A has any questions, she does not have so sister tells her to put the form by the patients' bedside ready for when she is collected. Student A thanks Sister for her help.</p>

<p>Patient assessment</p>	<p>Line 140 Patient says I can do it myself if I have my glasses, sister then realises she has been explaining to the patient without her glasses on and this is why the patient was vague. They help her get the glasses out of her handbag and she puts the glasses on. The patient is now alert and less vague. Sister laughs at her omission to ask the patient is she wore glasses! As they continue the patient is more able to understand as sister explains her requirements to her and Sister asks student A if she can see the difference in the patient now she has her glasses and this is something she (Sister) should have asked and checked when she started talking to the patient to prepare her for discharge.</p>
<p>Documentation</p>	<p>Line 105 Student A collects some patient notes from the trolley to read and tells me she often does this to understand what is going on with patients and relate it to their presentation. She smiles and as she sits she offers a patient a drink of water and chats to them easily.</p> <p>Line 180 Sister says to student A she (the patient) will go to the discharge lounge, to wait for the ambulance to take her home. We need to do this form before her discharge to the lounge- have you done one before? No, who is your mentor? – Ok if you do it I will check it go through it and countersign it so it can be sent with the patient.</p>

Appendix 12: The development of the themes and subthemes during data analysis

First stage

	Themes		Subthemes
1	Practice	1.1	Rehearsal
		1.2	Integration
		1.3	Observation
		1.4	Being observed
		1.5	Problem solving
		1.6	Demonstration
		1.7	Patient education
		1.8	Doing it alone
2	Risk	2.1	Patient safety
		2.2	Confidence
		2.3	Prioritisation
		2.4	Patient assessment
		2.5	Documentation
3	Community	3.1	Support
		3.2	Feeling accepted
		3.3	Working together/having fun
		3.4	Asking questions
		3.5	Feedback
		3.6	Interacting with other HCP
		3.7	Role models
		3.8	Mentors
4	Knowing	4.1	Rationale for care
		4.2	Personal study
		4.3	Asking other students
		4.4	Learnt this in university
		4.5	Experience
		4.6	Assessment of progress
		4.7	Self motivation
5	Decision making	5.1	Simple
		5.2	Complex
		5.3	Joint
		5.4	Progression
		5.5	Procedural

Second stage

	Themes		Subthemes
1	Practice	1.1	Rehearsal
		1.2	Integration
		1.3	Observation
		1.4	Demonstration
		1.5	Doing it alone
2	Risk	2.1	Patient safety
		2.2	Confidence
		2.3	Prioritisation
		2.4	Patient assessment
		2.5	Documentation
3	Community	3.1	Support
		3.2	Feeling accepted
		3.3	Working together
		3.4	Asking questions
		3.5	Feedback
		3.6	Interacting with other HCP
		3.7	Role models
		3.8	Mentors
4	Knowing	4.1	Rationale
		4.2	Personal study
		4.3	Asking other students
		4.4	Learnt this in university
		4.5	Experience
		4.6	Assessment of progress
		4.7	Self motivation
5	Decision making	5.1	Simple
		5.2	Complex
		5.3	Joint
		5.4	Progression
		5.5	Procedural

Third stage

	Themes		Subthemes
1	Practice	1.1	Having a chance to do it
		1.2	Watching and doing
		1.3	Learning by example
		1.4	Show me how
		1.5	Doing it alone
2	Risk	2.1	Patient safety
		2.2	Confidence
		2.3	Prioritisation
		2.4	Patient assessment
3	Community	3.1	"They just treat you like a person"
		3.2	Like a family
		3.3	How am I doing?
4	Knowing	4.1	Rationale for care
		4.2	I want to learn this
		4.3	Asking other students
		4.4	I can do this
5	Decision making	5.1	Simple
		5.2	Complex
		5.3	Joint
		5.4	Progression
		5.5	Procedural

Fourth stage

	Themes		Subthemes
C O M M U N I T Y	1 Giving respect	1.1	"They just treat you like a person"
		1.2	Like a family
		1.3	How am I doing?
	2 Practising	2.1	Observing and being observed
		2.2	Doing it
	3 Understanding Risk	3.1	Assuring patient safety
		3.2	Having confidence
	4 Developing Knowing	4.1	I want to learn this
		4.2	I can do this
	5 Making Decisions	5.1	Assessing and Prioritising
		5.1	Simple
		5.2	Complex
		5.3	Progression
		5.4	Procedural

Fifth stage

C O M M U N I T Y	Themes		Subthemes	
	1	Giving respect	1.1	"They just treat you like a person"
		1.2	Like a family	
		1.3	How am I doing?	
2	Practising	2.1	Observing and being observed	
		2.2	Doing it	
3	Understanding Risk	3.1	Assuring patient safety	
		3.2	Having confidence	
4	Developing Knowing	4.1	I want to learn this	
		4.2	I can do this	
5	Making Decisions	5.1	Assessing and Prioritising	
		5.2	Progress in decision-making	
		5.3	"Tools assisting decision-making"	