CURRICULUM DESIGN FOR PRE-REGISTRATION NURSE EDUCATION: MEETING SKILL REQUIREMENTS

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A thesis submitted in partial fulfilment of the requirements of The Robert Gordon University for the Degree of Doctor of Philosophy

March 2008

CHINESE PROVERBS

To nurse educators:

"Do not fear going forward slowly; fear only standing still"

To students and teachers of skills:

"I hear and I forget. I see I remember. I do I understand"

To learners everywhere:

"The journey is the reward"

ACKNOWLEDGEMENTS

The journey has not always seemed like the "reward" in my experience. There were good times and bad. Throughout the study I have learned many things - 'perseverance' being one.

I have valued the tremendous support given by my supervisors, Dr. Charles Juwah, Mrs. Jennie Parry, Dr. Alex Wilson, Dr. Iain Pirie and Professor John Baldacchino. Their constant encouragement and constructive critique has led to the completion of this thesis.

Dr. Bernice West also gave me inspiration, confidence and valuable coaching and encouragement throughout the PhD process.

My nursing colleagues have been exemplary role models in sharing with me the ups and downs of part-time PhD study balanced with full time work and family commitments.

To all the newly qualified nurses and all participants of this study I give my sincere thanks. Thanks also to the collaborating establishment, NHS Grampian for granting access to their staff.

To Evelyn Pirie and Alison Allan - you have my admiration and appreciation for your patient attention to detail and your skills in compiling lengthy documents.

Finally to my family and friends, thank you so much for your love and prayers of support over the last seven years.

On reflection, the journey has been very REWARDING!

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GLOSSARY OF TERMS FOR SKILLS

IV Bolus Injection:	Injection into vein via a venflon
Venepuncture:	The procedure of entering a vein with a needle to obtain a blood sample
Cannulation:	Placement of a cannula or venflon into a vein
SC needle insertion:	Insertion of a needle into the sub-cutaneous tissue for the administration of pain relief or anticoagulants
Gastrostomy tube re-insertion:	Re-insertion of the gastrostomy tube when it has inadvertently come out
Ear syringing:	Irrigation of the external auditory canal of the ear with water using an ear syringe or electronic pulsed water unit to remove wax
Fine Bore NG tube insertion:	Passing a tube into the stomach via the nose
First Aid:	Emergency treatment carried out before medical aid is available
Suturing:	Applying a stitch or series of stitches to close a wound
Prescribing medication:	Writing a medication which directs the administration of the medicine using a protocol
Chemotherapy:	The specific treatment of disease by the administration of medicines particularly for the treatment of cancers
Male Catheterisation:	The insertion of a urinary catheter into a male urethra for the free flow of urine from the body
ECG recording:	The application of an electrocardiograph (ECG) machine to record the electrical contraction of the heart
Advanced life support:	Progression from basic life support in a resuscitation situation
Verification of Expected Death:	To verify that death has occurred before certification by a medical doctor

Mentorship:	To mentor a student nurse to achieve learning on clinical placement
Preceptorship:	To nurture a newly qualified nurse for the first six months of his/her new post
Violence and Aggression:	To apply de-escalation techniques aiming to prevent violence and aggression in clinical areas
Customer Care:	Applying strategies which ensure that consumers of health services are satisfied with their experiences
Quality Issues:	Applying strategies which ensure that patients' healthcare experience is of a high quality standard and that any issues are dealt with satisfactorily
Counselling:	To counsel patients and visitors on issues related to patients' care
Key Handler:	The role of monitoring and role modelling a high standard of moving and handling skills. This skill requires a higher level of performance whereby nurses demonstrate exemplary moving and handling and are responsible for the maintenance of standards in a clinical area. It may be a specific term to the geographical area of the researcher.
Supervisory Management:	The supervision of junior staff by newly qualified nurses (NQNs)
Budgeting:	Assessing and monitoring supplies for patient care related to a budget
Research and Audit:	Application of research based care and implementation of audit practices within clinical areas
Other Skills:	Any other skill not mentioned within this list which are pertinent to NQNs

ABSTRACT

The preparation of newly qualified nurses has raised many professional debates and yet the 'end product' of nurse education, the qualified nurse continues to demonstrate knowledge and skill deficits in areas considered essential to patient care. Technological advances in an ever-changing and complex clinical environment mean that certain acute clinical skills have become routine for the qualified nurse and yet few educational institutions and NHS Trusts in the UK have seen the need to address this within the pre-registration nursing curricula.

This study, questions whether the pre-registration nursing curricula is failing newly qualified nurses by not adequately preparing them to cope with the complexities of practical skills within the clinical environment. This skill deficit is rectified on qualifying when nurses rapidly equip themselves with skills that are considered essential for practice.

Using a constructivist paradigm and a mixed methods research approach, the opinion of key stakeholders in pre-registration nurse education was sought. Focus groups and surveys were conducted with skills teachers to ascertain essential skills. Constructive alignment theory (Biggs 1999) was tested with two student cohorts from a pre-registration nursing programme (n=58). Comparisons were made between an experimental group who acquired certain skills during their pre-registration programme and a control group who had not acquired those additional skills. The programme was evaluated using Stake's (1967) countenance model of evaluation. Data were analysed using SPSS, constant comparative analysis and triangulation.

The findings confirmed that nurses should acquire the skills investigated in this study, but differences of opinion were found as to when this was acceptable. Favourable results for the experimental group were demonstrated indicating the need to provide nurses with the additional skills prior to qualifying. The study also identified other like-minded UK nurse educators who had been innovative with their skills' curricula. Nursing curricula can be successfully underpinned by an educational theory such as constructive alignment providing added value to the learner and enabling

nurses to enter the profession fit for practice and purpose.

To further enhance the quality and standard of provision, the following are recommended: strengthening the collaborative relationships between the key stakeholders for nurse education, as well as promoting inter-professional learning and skills development. This will help improve the international credibility for the UK skills curricula.

KEYWORDS

Nurse education; curriculum development; pre-registration skill acquisition.

CHAPTER 1 INTRODUCTION

1.0 The Nursing Profession and Skill Acquisition

Nursing is an applied academic and practice orientated profession with an emphasis on knowledge and skills for patient care and the purpose of pre-registration nurse education is to prepare nurses who are 'fit-for-practice'. However, evidence from nursing literature suggests that newly qualified nurses (NQNs) do not possess some of the necessary knowledge and skills to enable them to perform some essential skills for patient care (Runciman *et al.* 1998 and 2000, Alavi *et al.* 1991, Holloway 1999). This lack of knowledge and skill creates difficulties and stress for the nurse in an already complex experience, i.e. that of new employment (Tolley 1994, Wright 1995, Fox 1995 and Casey 1997). This is a crucial time period in a newly qualified nurse's (NQN) career and can sometimes determine whether or not he/she remains in the profession (Holland 1999, Buchan 1995). There is evidence of a declining registered nurse population in the UK as the numbers entering the profession are lower than the numbers leaving (Buchan and Seccombe 2002). The UK nursing register indicates that sixty per cent of nurses are over forty years old and eleven per cent are under thirty years old. Whilst some of these nurses could be mature entrants, statistics show that greater percentages of the new entrants are below thirty years old (Rankin 2006). This has significant impact on sustainable nursing populations beyond 2030 and as yet there is little known about why nurses fail to renew their registration (Buchan and Seccombe 2002). What is known is that the highest attrition rates for nurses leaving the profession are amongst the NQNs (Gardner 1992) and that 35% - 60% of new graduates change their place of employment within the first year (Kelly *et al.* 2002).

Could lack of preparation for practice be one of the root causes of nurses leaving the profession? Finlayson *et al.* (2002) suggested that one of the factors was the changing nature of the job but lack of preparation for employment is one issue not addressed by the studies reviewed.

The researcher's interest in skill acquisition stems from a career in which nursing and education have been a key focus. The researcher found herself teaching many of the skills investigated by this PhD study to nurses who had recently qualified. This experience begged the question:

If these skills are required so quickly after qualifying why are they not part of the pre-registration nursing curriculum?

The nursing profession has implemented support strategies such as preceptorship and clinical supervision (UKCC 1992c and 1994), which are expected to cushion the transition from student nurse to qualified nurse. These strategies are explained in Chapter 2. However during this period of adjustment, as well as consolidation of learning from Higher Education, nurses are expected to undertake new learning. This learning focuses on the acquisition of additional practical and technical skills, which in the UK are introduced and learned during the immediate post-registration period. The skills in question are wide ranging but in the main are technical psychomotor skills of a complex nature which enable the patient to progress through their journey more quickly and are skills required for investigation, treatment and the alleviation of symptoms.

They may include:

- Intravenous skills including venepuncture; cannulation; intravenous bolus injection and continuous infusion via a syringe pump
- Male catheterisation
- Moving and Handling skills with the key handler skill. The name of this skill may be contextual to the geographical area of this study but has its equivalence in other areas of the UK.

The publication of the document 'Scope of Professional Practice' (UKCC 1992a) enabled qualified nurses to 'add on' skills with incredible speed and expand their professional opportunities. This was because for the first time nurses could decide for themselves

which skills were required for their own area of clinical practice. They could either deem themselves as competent to practice the skill or acquire training to gain competence. The number and complexity of these types of skills is on the increase (Bjork 1995). This is continually changing and challenging the role boundaries of the UK health professionals. Traditionally these skills have been delivered by the medical profession and the reasons for changes to this practice have been debated as economic and professional. It is suggested that role boundaries should change as technological advances encourage doctors and nurses to share the delivery of technical skills and work as a team (Tolley 1994; Wright 1995; Fox 1995; Pearson 2003; Coombs 2004).

The pre-registration nursing curricula in the UK however appeared to have failed to recognise that these types of skills are widespread and are considered 'essential' in the workplace. They have been 'added on' for many years, by qualified nurses often within the first year of qualifying. This PhD study provides evidence for the existence of a 'deficit' model in nurse education possibly stemming from differences in opinion between educators and clinicians regarding what comprises core skills for newly qualified nurses. Some evidence for core skill deficits are reported in recent studies by Runciman *et al.* (1998 and 2000); Alavi *et al.* (1991) and Holloway (1999). These studies are reviewed in Chapter 3 - The Literature Review.

1.1 The Triangle of needs

The evidence from these studies (Runciman *et al.* 1998 and 2000; Alavi *et al.* 1991 and Holloway 1999) indicated that some of the core skills that nurses are required to possess on qualifying are lacking and furthermore agreement between nurses and educators in defining the core skills for nursing is fraught with difficulties. This has implications for the many stakeholders involved in nurse education and can be expressed as the triangle of needs (Figure 1.1). This triangle represents the three main contributors to the NQN's role, namely the student, the educator and the employer.

It illustrates that there can be different needs or requirements from the stakeholders involved.

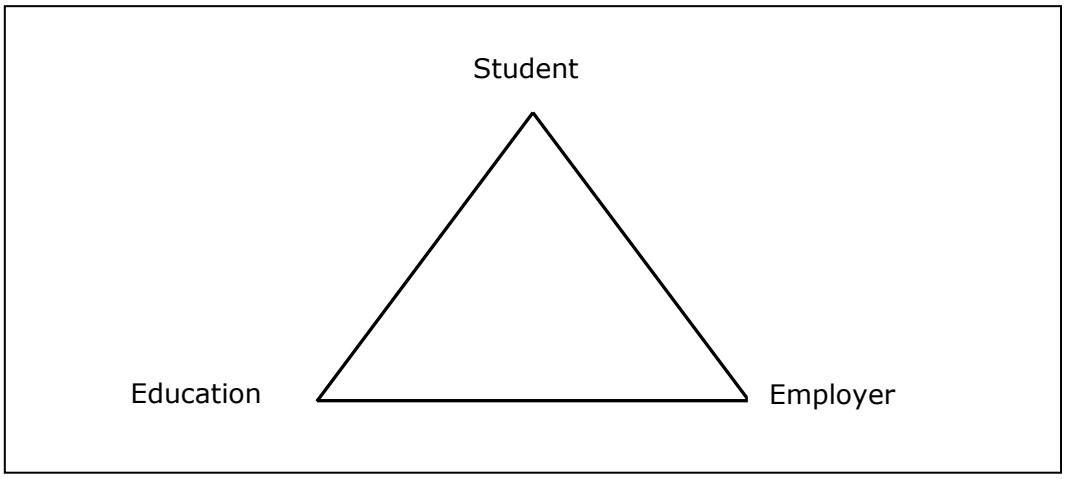


Figure 1.1 Triangle of needs

Addressing the balance within the triangle of needs (Figure 1.1) begs the questions:

- What effects if any is the existence of a deficit model having on the student nurse?
- How is this deficit being dealt with by the nurse on qualifying?

The nursing curriculum is one area to begin searching for the answers to these questions and the world of educational research may provide the answers to shape future nursing curriculum design. It could be argued that nursing curricula have not kept up-to-date in the changing world of clinical practice and this is why deficits are noted. The need for curricula to reflect changes in the world of employment is not unique to nursing. Educators are constantly trying to recognise how a curriculum remains current and up to date. One theory which sheds light on this, is constructive alignment, a theory put forward by Biggs (2002a and 2002b). It focuses on the mechanisms for aligning all the components of learning activity, i.e. the systems of teaching, learning and assessing. To begin curriculum design using constructive alignment theory the question which is posed is:

"What do we want the students to be able to do as a result of learning?
(Biggs 2002a, p.1)

This is a fundamental question for curriculum development and was explicit in the recommendations for the Fitness for Practice report (UKCC 1999a). This report differentiated between fitness for practice and fitness for purpose, claiming the former to be the responsibility of the educational institution and the latter that of the employer. This notion perpetuates the deficit model's existence and prevents a holistic approach towards the learner and practitioner. If cognisance was paid to the fact that teaching and learning takes place in a system, it would be possible to embrace the divide between higher educational institutions and clinical practice.

As Biggs (2002b) explained:
"Teaching and learning take place in a whole system, embracing classroom, department and institutional levels. In a poor system, the components (curriculum, teaching and assessment tasks) are not necessarily integrated and tuned to support learning, so that only 'academic' students spontaneously use higher-order learning processes. In an integrated system, all aspects of teaching and assessment are tuned to support high level learning. Constructive alignment is such a system. It is an approach to curriculum design that optimises the conditions for quality learning."
(Biggs 2002b, p.1)

Jackson and Shaw (2002) have analysed the activities of academics developing curricula and have identified that most academics commence with aims and objectives and shape curriculum based on their knowledge of the subject. They called this a 'rational curriculum model'. The ineffectiveness of this model is perpetuated if knowledge and skills become modularised into specific units of learning. This is the case with pre-registration nurse education as described in this PhD study. Constructive alignment offers a different approach for curriculum developers, enabling educators to

consider the end product (outcomes) and then form teaching, learning and assessment activities which match. In defining constructive alignment for curriculum developers, Biggs (2002b) stated:

"The 'constructive' aspect refers to what the learner does, which is to construct meaning through relevant learning activities. The 'alignment' aspect refers to what the teacher does, which is to set up a learning environment that supports the learning activities appropriate to achieving the desired learning outcomes. The key is that the components in the teaching system, especially the teaching methods used and the assessment tasks are aligned to the learning activities assumed in the intended outcomes. The learner is 'trapped', and cannot escape without learning what is intended".
(Biggs 2002b, pp. 1-2)

The student nurse needs to construct meaning through the learning activities provided within a pre-registration nursing course. This "meaning" will relate to the wider perspectives within the world of nursing, which can be complex.

During the researcher's career within the NHS, training programmes were required to be developed and delivered. These programmes included the essential skills which employers considered imperative for a qualified nurse's practice. There was an element of frustration on the researcher's part in delivering essential training to NQNs so soon after they had left higher education. There was a feeling that what was being implemented for NQNs could potentially be detrimental for the main stakeholders involved because the employer's priority and that of the newly qualified nurses' were at variance (Figure 1.1). The priority for the NQN was consolidation of pre-registration learning in the clinical setting not the acquisition of new skills. However for the employer the necessity of this skill acquisition was paramount. This was because without it the NQN could not be considered a fully 'fledged member' of the nursing team and additional agency or bank nurses would have to be

employed to implement these skills if the NQN could not do them. Anecdotal information from NQNs at this time demonstrated that they felt inadequate as a team member and wanted to resolve this by gaining skill acquisition as early as possible. Therefore, there were conflicts relating to their attendance at training programmes tailor made to meet this skill deficit. They wanted to be there to satisfy their employers' requirements and yet they wanted to be in their clinical setting consolidating all that they had learned in Higher Education.

For the researcher this was an interesting dilemma which was worthy of investigation. It provoked many issues surrounding the context in which learning occurs and the drivers and restrainers for this learning. The key stakeholder relationship between higher education and clinical environments was thought to be crucial in deciding who teaches what and when and more crucially what should be taught in the first place?

1.2 Aim of the Study and Research Question

The study was generated with the following aim:
This study aims to inform nurse education on the content and development of pre-registration nursing curriculum and to enhance the collaborative relationship between education and service by addressing the question:

"What is the current practice with respect to 'additional' skills education and training and should and could these skills be introduced during pre-registration nurse education in the United Kingdom"?

In order to begin to address this question the complexities in a learner's world must be explored. Figure 1.2 below was designed by the researcher to assist in exploring the complexities.

1.3 Complexities in the learner's world

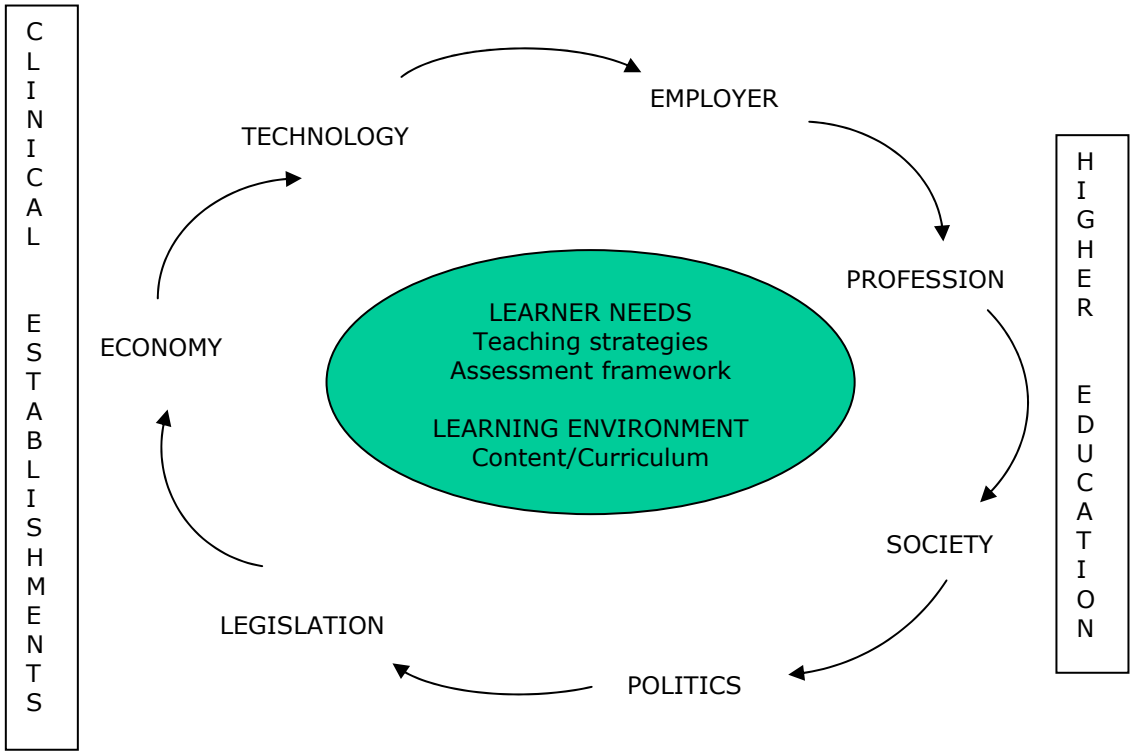


Figure 1.2 Complexities in the learner's world

Figure 1.2 has been synthesised by the researcher from the literature surrounding learner issues. The figure attempts to highlight the external forces, which create complexity for the student nurse trying to match learning within what appears to be a "chaotic" framework. Indeed for the nurse educator as well, this is a complex and changing world in which to create a curriculum which best fits the needs of the learner. One author who has tried to make sense of complexities and chaos is Tosey (2002a). By considering the branches of "new science" there have been different ways of thinking about the behaviour of natural systems and Tosey's (2002a) attempt to define the phenomenon of complexity included consideration of the universe. The universe is too complex for us to understand in a simple way and we have to develop principles and patterns to explain various parts of it. Tosey (2002a) concluded that educators and learners have to explain the irrationalities that can sometimes occur when planning educational programmes.

Whilst educators attempt to do this as effectively as possible, the plan does not always work due to the complexities which exist.

When making comparisons between the complexities in the universe to the complexities within education Tosey (2002a) stated that:
"Complexity theory would apply to many aspects of this professional context, from the 'micro' behavioural level of teacher-learner interactions to the 'macro' level of national policy and system change. All these levels are learning systems".
(Tosey 2002a, p.5)

When considering Figure 1.2, the external forces, which create drivers and restrainers for curriculum development, can be compared to complexity theory as highlighted by Tosey (2002a and 2002b). The theory also explained that there is a margin between stasis and chaos where systems operate best, because at this margin change can occur easily and spontaneously. Whereas, in the realm of stasis, things are safe and orderly and unable to change and in the realm of chaos the opposite is true.

There has perhaps been an element of 'stasis' in nursing curricula development whereby the skills curricula have remained the same for many years, not recognising the changes occurring in clinical practice. When applying complexity theory to education, it has to be noted that learning systems, within educational institutions exist within the context of national policy frameworks, professional body regulations, political, legal, economic, employment needs, and societal changes (Jackson 2002a). Educational institutions can be seen within this context to be on the "edge of chaos" and must recognise the limitations of this position but must take advantage of it as being at the forefront of developmental change.

In nurse education the notion of additional learning occurring so quickly following qualification is recognised and accepted as the norm but not challenged as a 'deficit' in learning creating 'a realm of chaos' for learners who have to navigate their way through the

necessity of skill acquisition. The complexities faced by the NQN are also described by Speedling *et al.* (1981) as "strong and competing social forces". Grossman and Valiga (2000) promoting nurse leadership strategies also compared the complexities encompassed in the clinical environment to the new science theories relating to the universe. They like Speedling *et al.* (1981) described the clinical environment as becoming more and more complex and confusing. Their solution for nurses was to observe for patterns within the complexity and learn to work with those patterns. Many of their ideas were similar to Tosey's (2002a and 2002b) operating on the 'edge of chaos' ideas. This is further explained in Chapter 3.

Deficits in learning and skill acquisition within this chaotic environment have continued unchallenged in the UK for many years and continue as a "hidden" or "grey" area within the complexities of nurse education and clinical practice.

However, the way forward for educators is to recognise that whilst coping with the complexities in a 'zone of chaos' is not easy there are approaches which can be helpful. Cuthbert (2002) and Webster (2002) suggested such an approach. They proposed that educational institutions should consider their local environments and management structures and identify resource implications which could prevent educators operating constructively aligned curricula. Cuthbert (2002) provided a more balanced perspective on constructive alignment and suggested that each organisation will operate differently depending on its location. Webster (2002) agreed and suggested that local subjective knowledge is required by educators in order to identify the constraints and optimise constructive alignment. This is a more realistic way of dealing with complexity and curriculum development using constructive alignment principles as it enables scaling the issues to the local context.

The notion of constructively aligning curricula relates well to the higher education Quality Assurance framework adopted in the UK.

Jackson (2002d) alerted educators to the fact that the United Kingdom has developed and is now implementing a significant policy infrastructure that encourages approaches such as constructive alignment. Higher education teachers are encouraged to use a theory of education in curriculum design and teaching processes. This is evident in Quality Assurance Agency documents and the subject benchmarking exercises (QAA 2001a and QAA 2001b).

Nurse education needs to identify with the theories in educational research and embrace the new developments occurring in higher education in order to provide the learner with the knowledge and skills necessary for tomorrow's nurses.

1.4 From a 'Deficit' Model to a 'Developmental' Model

Figure 1.3 has been synthesised by the researcher following consideration of the issues discussed and proposes a process for change from a deficit model to a developmental model.

The left-hand side of Figure 1.3 depicts the learner entering higher education and acquiring the core skills for registration, over which there has been much dubiety from the profession (Runciman *et al.* 2000). The learner then leaves higher education as a qualified nurse who then has to acquire "additional" skills predominantly within the first year of qualifying. As differences between educators and clinicians continue the deficit model gains prominence creating further complexity and chaos for all stakeholders.

The right-hand side of Figure 1.3 depicts a student entering a higher education institution which is actively negotiating with clinical establishments and professional bodies in a collaborative way. These students can participate in a curriculum which truly matches their needs. On achievement of their qualification the student then enters the world of employment "fit for practice and purpose".

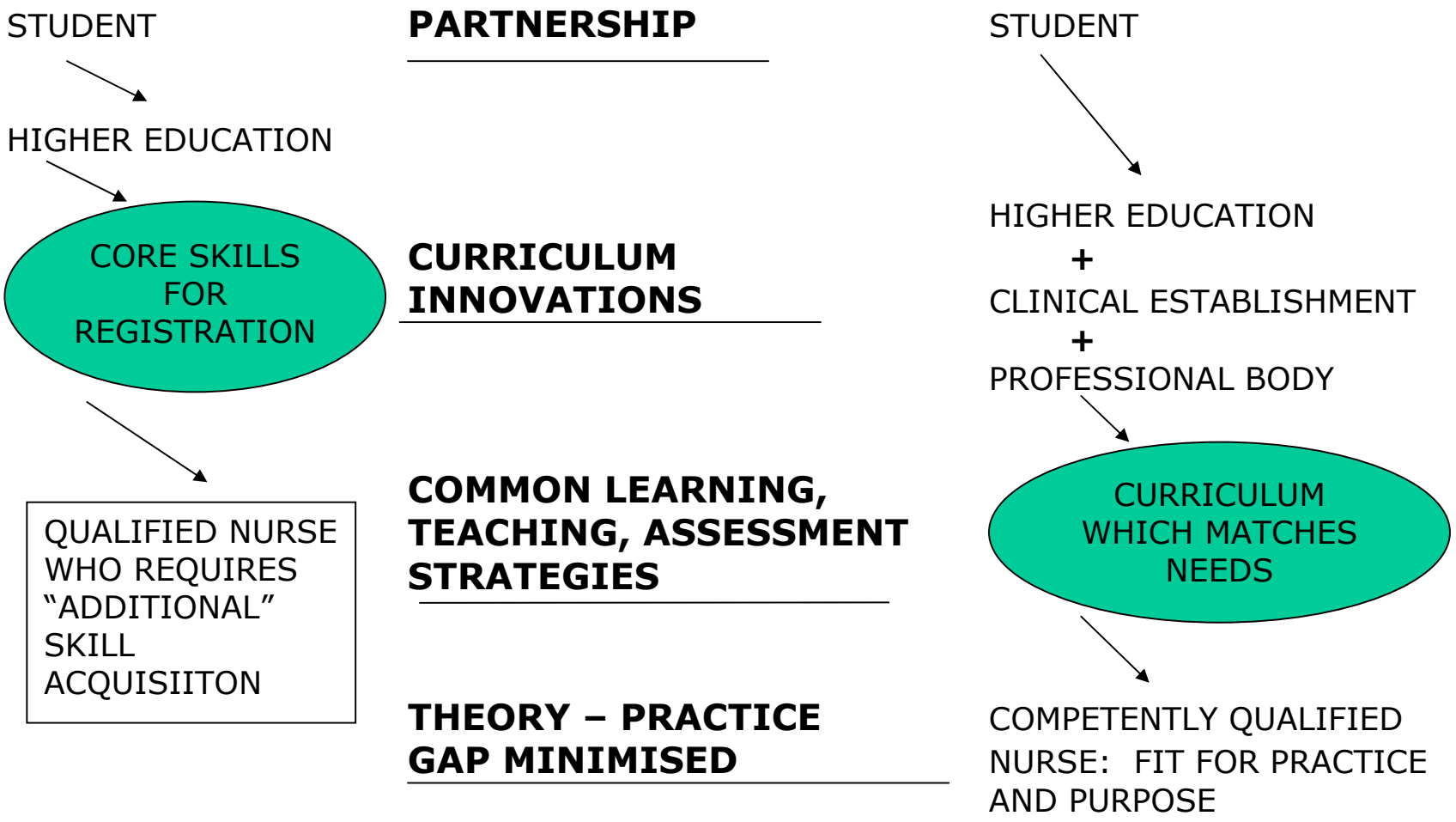


Figure 1.3 Deficit Model to Developmental Model

In order to change from the deficit model to the developmental model, those responsible for curriculum development need to be working in partnership with relevant agencies and especially local clinical environments and professional bodies (Glenn 2000). An imaginative curriculum development team needs to focus on curriculum innovations (Jackson 2003, 2002c), but where is the evidence for a need to change from a deficit model to a developmental model? What is happening to learners in the complex chaotic environments of higher education and clinical practice? Also if the nursing curriculum was constructively aligned (Biggs 2002b) could the well reported theory-practice gap in nursing (Kelly 1991) be minimised? These types of questions are at the centre of the research question to be investigated by this study.

1.5 Original Contribution

It is intended that this study will provide research evidence of the need for change.

The original contribution of this study will be:

- To develop a nursing knowledge base for curriculum development which is informed and underpinned by educational research.

- To test the theory of Constructive Alignment and analyse the implications of setting constructively aligned curricula in the world of complexity that the caring context presents.

- To enable nurse educators to develop nursing curricula, which successfully manages to maintain currency, within the complexities of a changing clinical environment.

- To assist nurse educators to embrace the theories of educational research and develop applications suitable for the academic and practical uniqueness of nursing.

- To evaluate the added value of nurses entering the profession without any essential learning requirements for the first year of practice i.e. "fit for practice and purpose".

- Consequently, it will enable the learner to be represented and decide if essential skills provided within a sound educational framework are better acquired prior to entering the world of employment.

This chapter has introduced the main issues for investigation and presents the original contribution of this study. The subsequent chapters will develop the background for educational developments in nursing; explore and review literature pertaining to the study; explain the conceptual framework for the study; describe the methods chosen; present and analyse the findings and interpret and discuss the findings. Conclusions will be drawn and recommendations will be made.

CHAPTER 2 BACKGROUND

2.0 Introduction

This chapter provides the background to the study by setting its context. The historical perspectives in nurse education are important considerations in identifying current stakeholder influences. This chapter will explore policies and strategies that have changed nursing from apprenticeship training to higher education based learning. It will investigate the partnerships and collaborations that exist for qualified nurse preparation and their influences as drivers and restrainers for change. The international perspectives on nurse education and research will be discussed as well as the developments in educational theories and curricula developments which have been embraced by nurse education. The effects that these policies and strategies have on the changing nurses' role will be summarised.

2.1 Nurse Training versus Nurse Education

Nurse training began with Florence Nightingale in 1860 and nurse registration with Mrs. Bedford Fenwick in 1919. The style of training was that of an apprentice to the medical profession as the medical profession dictated the standards by which nurses were measured and the duties of a nurse were governed by medical opinion. This PhD study will demonstrate that the duties of medical and nursing staff are still intertwined and that some aspects of this traditional relationship have not changed significantly over the years.

In the USA developments to move from hospital based nurse training into HEIs commenced much earlier than in the UK (Bevis 1988). 1898 saw the establishment of university courses for graduate nurses at Columbia University Teacher's College and in 1909 the first School of Nursing was established in the University of Minnesota, USA. This identified the beginnings of nurse education in the USA. The model of education being implemented at this time was Ralph Tyler's behaviourist learning theory with its technical approach and measurable objectives (Bevis 1988). Many nurse

educators will be familiar with this type of educational theory as this was rooted in many UK nursing programmes.

The first university based nursing degree programme in the UK commenced at Manchester University in 1969. By 1989 Colleges of Nursing and Midwifery had been established across the country. The advocates of nursing remaining outside higher education argued that nursing was a practical vocation and not principles based and this was stated in the Robbins report 1963 (Crotty 1993). However the Briggs report (1972) changed this line of argument, finally advocating that able students should be awarded a higher certificate.

Curriculum development in the UK continued to be influenced by the USA. In the 1980s nursing models started to focus on the activities of living and the humanistic approach to patient care became more dominant (Crotty 1993). Combined with Steinaker and Bell's (1979) experiential approach to learning, this became a framework for nurse curriculum development.

This experiential approach to learning and the framework for nurse curriculum development dovetailed with the advent of Project 2000 (UKCC 1986) which envisaged that a new nurse practitioner should be flexible, knowledgeable and able to work in a variety of settings. In 1989 the first of these programmes commenced in England and by 1992 in Scotland. The integration with higher education was recommended by the Project 2000 report, with the intended progression towards having more graduates in the profession. Nurses were finally to be 'educated' and considered true 'students' rather than apprentices. This was a new era for the profession and students were expected to achieve professional socialisation in a very different way (Gray and Smith 1999).

A perspective on the definitions of training and education are needed to appreciate the true meaning of this shift for the profession. Training usually is associated with a specific course with

a definite end point. The focus can be on specific skills and abilities and therefore it is a convergent process. Education is a more divergent process where knowledge, skills and values are developed, creating a critical thinker and a flexible and adaptive person (Burnard and Chapman 1990). Acceptance of nurses moving towards this 'critical thinker' and holding degrees and diplomas was slow to emerge in the UK. Perhaps there are nurses and members of the public who would still question the rationale for this shift. The devaluing of nursing skills within the curriculum and the beginnings of the skills deficit can be traced to the Project 2000 era.

However, a major review of the provisions made by Project 2000 was to come in 1999 with the Peach report (UKCC 1999a). The aim of the review was to propose a way forward for pre-registration education which took cognisance of nurses' fitness for practice and purpose. Consultation was wide and included 84,000 final year students, nurses and midwives. Sixteen key stakeholders were also consulted. Alongside the fitness for practice developments a new curriculum model called 'Making a Difference' (DoH 1999) or the 'partnership curriculum' was also published. Both these reports suggested the development of improved outcomes for pre-registration nursing within a competency based framework. They also stated that building blocks for good practice were already in place but the issues of project 2000 nurses' lack of practical and managerial skills needed to be addressed. The skills deficit was therefore highlighted but the weaknesses of Project 2000 were blamed on various reforms within the NHS, such as the improvements in cost effectiveness in health care provision rather than on poor curriculum planning. However, the curriculum developments emphasised strengthening partnerships between HEIs and the NHS to achieve the outcomes.

Higher Education was also progressing through reforms with the Dearing Report (1997) which set the vision for university education for the next twenty years. It emphasised a commitment to life long learning; a greater demand for higher education; wider

participation; a focus on exit awards and key skills; the involvement of a Quality Assurance Agency; supporting scholarship and research; the creation of regional bodies and a review of the management of higher education institutions. The introduction of student loans and tuition fees were also intimated. Many of these recommendations encouraged the inclusion of professions such as nursing in a higher education setting, especially as bursary funding meant that fees were not an issue for nursing students. It was perhaps a critical time for nursing with its exit award of diploma as well as degree, being recognised as having equal importance in an academic environment.

Having located itself within a higher education setting nursing still had to maintain its partnerships and collaborations with professional bodies and establishments which would provide clinical experience for its students. Before this period collaborations tended to be fairly straightforward in that Schools of Nursing were based in hospital settings and the partnerships were easily maintained with both organisations mutually benefiting. There was pride in attending a Nursing School attached to a hospital with a good reputation. With moves into higher education, the partnerships have had to become more elaborate and complicated. Higher Educational Institutions (HEIs) have had to work at securing clinical placements with their local NHS and private organisations and have developed frameworks for practice with each one. These frameworks protect the interests of each organisation and thereby allow free movement of students into clinical placements for the purpose of education. The fact that fifty per cent of learning takes place in clinical areas has also meant the HEIs taking a stricter view of what is provided for student learning. This has resulted in HEIs conducting audits and reviews of placement areas, changing the nature of the partnership into a more authoritative relationship. However, the complexity of the relationship is such that although HEIs have the authority to withdraw students from a placement if standards are not met, they equally need every placement opportunity given to them in order that students experience clinical learning. Scholes *et al.* (2004)

reviewed the partnerships between HEIs and NHS trusts and found evidence of Trusts taking shared responsibility for learning and involving HEIs with workforce planning. However, Scholes *et al.* (2004) also found concerns that HEIs were sometimes slower at addressing emerging issues within this partnership.

HEIs and organisations providing clinical learning also have other partners to contend with and that is the governing bodies relating to the nursing programme. In Scotland, since 2006 this is the Health and Life Sciences Partnership (HLSP) and Nursing and Midwifery Council (NMC) and for HEIs the Quality Assurance Agency for Higher Education (QAA). All these relationships need to be worked on in order for nurse education to function effectively and to develop. Each organisation brings its own sanctions, ethos and regulations to nurse education. There are many areas where the relationships between the various organisations are fraught with difficulties and it is often because of the networking and nurturing skills of key individuals that disharmony is prevented and growth and development encouraged (Scholes *et al.* 2004, Grossman and Valiga 2000). When partnerships are nurtured in this way the nurse education curriculum can be enhanced. Another partnership and collaboration which should be encouraged is that of nurse educators and educationalists who generate theories of education. By encouraging this, the promotion of links between nursing and other university departments will be enabled and nurse educators could share good practice and also to adopt new curriculum developments.

2.2 Mini Doctors versus Maxi Nurses

The colloquial term for nurses undertaking roles which were historically medical was 'mini-doctor'. However the Royal College of Nursing have recently turned this around and coined the term 'maxi nurse' to emphasis that it is nursing backgrounds rather than medical which are affecting newer ranges of services for patient care (RCN 2005a).

This significant role change for nurses began with the publication of two documents, namely: the UKCC document 'The Scope of Professional Practice (1992a)' and the Department of Health document 'Junior Doctors: The New Deal (NHSME 1991)'. The implementation of the recommendations in both documents has radically changed nursing roles. The former was published to enable nurses and midwives to be more responsive to change and to enable the development of practice. The latter was published to reduce junior doctors working hours in light of protests from the medical profession regarding their long working hours.

The aim of the Scope of Professional Practice (UKCC 1992a) was to develop responsive and flexible health care services into the 21st century by allowing nurses to equip themselves with the necessary skills for the jobs they undertake. The document was closely linked to the code of professional conduct (UKCC 1992b) and stressed accountability and educational responsibilities.

There were some standards within the Scope of Professional Practice (UKCC 1992a) to be addressed in relation to patient/client safety and nurses were instructed to recognise their limits in terms of knowledge and skills. The document included the principle that existing nursing care should not be compromised by new developments and responsibilities.

Prior to Scope of Professional Practice (UKCC 1992a), nurses were extending their roles with the accumulation of extended role certificates. This was seen as predominantly the accumulation of tasks (Tolley 1994) and not professionally acceptable. However, in spite of the positive intentions of 'Scope' (UKCC 1992a) as it was affectionately called, the fact that the two documents were published around the same time fuelled the debate that nurses were equipping themselves with skills that the medical profession were discarding as 'lesser skills'. The reduction in junior doctors working hours meant that junior doctors were no longer available in the same numbers especially during unsocial working hours and nurses

were 'left' to undertake these skills. This is how the perception of 'mini-doctor' arose.

Authors at this time (Castledine 1993 and Dowling *et al.* 1996) warned that nurses should not take on tasks that doctors did not want to do and advocated a protection of professional boundaries. There was concern that uncertainties existed regarding accountability and legislative issues between the professions. Also the changing expectations of the public could result in nurses and doctors being drawn into difficult situations (Read 1998).

When considering the climate under which Scope of Professional Practice (UKCC 1992a) was introduced, it could be argued that professional boundaries had been compromised. The reduction of junior doctors' hours did result in nurses undertaking more of the skills traditionally associated with medical staff to the detriment of 'basic' nursing in spite of the original documents warning against this (UKCC 1992a, NHSME 1991). There were other initiatives at the time which had bearing on how nurses reacted to 'Scope' and may have affected the compromises to professional boundaries, namely: Health of a Nation; GP fund holding; disease management programmes and the improvements in cost effectiveness in health care provision (Fox 1995).

In 1999 the UKCC commissioned a study to determine how the implementation of 'Scope of Professional Practice' was progressing (UKCC 1999b). The findings proved that Scope had a very positive role to play in the delivery of health care and that the practice boundaries of nurses, midwives and health visitors were being challenged. Continuity of care was a recurrent theme in the findings, whereby nurses could practice skills which maintained continuity of care. However, the study highlighted concerns about the education, training and management support for nurses undertaking changes in care delivery.

The outcomes of this review were that 'Scope' was seen as part of the initiatives for the developments occurring in health care. It set out a framework of principles for nurses to follow and accepted that a change to professional boundaries was inevitable. Nurse and doctors' workloads overlap in many different areas and there had been caution amongst nurses to pick up roles which contributed to the quality of patient care (Read 1998). For 'Scope' to work nurses interdependence with medical staff needed to be recognised and a partnership developed between nurses and junior doctors in order to deliver high quality health care (Wright 1995, Casey 1997). Therefore cementing and strengthening the historical relationship alluded to earlier in this chapter.

Fox (1995) identified a number of core tasks which could become a part of the role for a large number of nurses. These were: venepuncture; IV cannulation; drug administration; ECG; male catheterisation; blood glucose measurement and verification of death. Many of these were the remit of the junior doctor and some of the skills are investigated by this PhD study. Many nurses writing at this time (Tolley 1994, Wright 1995, Fox 1995, Casey 1997) emphasised the point that nurses were not doing this to take over medical staff roles but to improve continuity of care and develop themselves professionally.

The medical/nursing partnership could be strengthened by learning together as advocated by Casey (1997) who stressed the importance of medical and nursing students learning skills together. This is highlighted by a greater interest in inter-professional skill acquisition at the present time (Skills for Health 2007). However, Dowling *et al.* (1996) stressed that any dual medical/nursing roles should demonstrate equal partnerships.

This was one of the findings of the survey of RCN members in 'Maxi Nurses': Advanced and specialist nursing roles (RCN 2005a), where respondents played an important role in developing and setting up their posts. They saw a nursing background rather than a medical

background as essential to their roles and definitely saw themselves as 'maxi nurses and not mini doctors'. This study coined the title 'Maxi Nurses' for nurses who were practising in advanced and specialist roles. It surveyed 758 nurses working in such roles in the UK and resulted in a response rate of 70%. The division of the nurses' time between clinical activity, education, management and research was noted. For a majority of the maxi nurses 60% of their time was spent in clinically related activities. Although specific skills were not reported by this study the maxi nurses were involved in a number of skills which had been the domain of medical staff in the past. Those skills included 'taking comprehensive patient histories; undertaking physical examinations; ordering investigations and undertaking specialist procedures'. Many of these specialist procedures included the type of skills being investigated by this PhD study. The RCN's study concluded that nurses felt fulfilled in these posts and practiced autonomously to co-ordinate care across multi-disciplinary teams. Nurses in these roles were often at the centre of a 'web of services' and followed the patient throughout their journey providing knowledge and expertise which has a positive impact on patient care.

These were the original aims of 'Scope' but the relatively new breed of 'maxi nurses' have been bold enough to take this to a new skill level, challenging the original definitions of nursing (RCN 2005). This requires an understanding of skill development and professional development for qualified nurses in the UK.

2.3 Learning during the NQN period

The practice of re-registering and the monitoring of continuous professional development (CPD), post qualifying, was a relatively recent phenomenon for the profession. After 1990, nurses were encouraged to demonstrate 'new learning' prior to re-registering with their governing body, then the UKCC. The project commissioned by the UKCC was known as the Post Registration Education and Practice Project (PREPP, UKCC 1990). This required all practising nurses to maintain a portfolio of evidence for CPD and

stipulated a minimum number of hours for CPD in order to maintain registration every three years.

This was an ambitious proposal which had good intentions to promote a mandatory approach to professional development but the practicalities were challenging. Hogston (1993) raised questions regarding the financing of the CPD and what the format of the portfolios should take, but she also expressed concerns that the essential skills relating to clinical competence were not being monitored. Therefore, whilst a record of CPD kept by nurses and monitored by their professional body seemed like a positive step, nurses were often left to fund their own CPD and employers were left to monitor clinical competence. These concerns will continue to be important for the profession as an annual registration process is implemented (NMC 2005b).

There were also concerns regarding the early part of a nurses' career i.e. the transition from student nurse to qualified nurse (Kelly 1991, Kramer 1974 and Maben and Macleod Clark 1998). This led to the introduction of Preceptorship (UKCC 1992c). A preceptor was generally a more experienced nurse in the same clinical area and employers were expected to equip NQNs with a preceptor for the first six months on commencement of their new posts. The preceptor was required to assist NQNs bridge the gap from student to qualified nurse by enabling them to achieve objectives appropriate to their needs. The purpose was to continue the process of mentoring and nurturing, which NQNs would recognise from their student days.

It is during the preceptorship time that NQNs acquire most of the skills researched by this PhD study. However in practice there were concerns that preceptorship is not being practised effectively (Bick 2000 and Bain 1996). These related to the recruitment and training of the preceptor and Bain (1996) argued that educationalists and clinicians should explore issues such as role definition; preceptorship selection; preceptorship programmes and the preceptorship

experience. Preceptors' views were important to this PhD study as a stakeholder in post-registration education.

In 2006 a new development for NQNs was implemented from the Scottish Executive Health Department (SEHD). They commissioned NHS Education Scotland (NES) to launch a national programme called 'Flying Start' (NES 2007b) to support new practitioners in their first year of joining NHS Scotland. This programme applied to nurses, midwives and Allied Health Professionals (AHPs) and its aim was to support the transition from student to newly qualified health professional. Flying start consists of online learning and blended learning strategies in the workplace and is mandatory for all NQNs. This necessitated the need for 'flying start' mentors or preceptors who in some NHS Trusts have special programmes themselves to 'nurture the novice'. This training for mentors has the potential to address some of the previous concerns on preceptorship (Bain 1996) and should complement the new standards for mentors, known as 'Supporting Learning in Practice' (NMC 2006b). The latter aimed to provide a career structure for teachers of clinical learning. It introduced improved standards for mentor preparation and created the title 'sign-off mentor'. These mentors would have additional learning and experience as they would be accountable for verifying a final placement pre-registration student was fit for registration. These measures for developing mentors can only provide added value for the students' clinical experiences and in the newly qualified period provide the 'nurturing' that is required.

2.3.1 Developments since the implementation of Fitness for Practice (UKCC 1999)

Evaluations of the fitness for practice programme at the point of registration have reported their findings in England and Wales. The Department of Health commissioned an evaluation of the nurse education partnership (Scholes *et al.* 2004). The aim of this study for England and Wales, was to evaluate if the changes implemented by 'Making a Difference' (DoH 1999) and 'Fitness for Practice' (UKCC 1999a) enhanced the knowledge and skills of students undertaking

these programmes and the effects on the quality of practice education. The study also examined the partnerships between HEIs and the NHS. Using a mixed methods study design, curriculum documents from 16 participating HEI sites were analysed. Case studies, surveys and interviews with key stakeholders and student nurses were conducted and observational visits made. There were many findings which related to this PhD study including deficits found in pedagogy, specifically around the area of physiology and pharmacology. There were also concerns about the quantity of curriculum time devoted to enquiry based learning (EBL) but there was confirmation that simulated learning and OSCE assessment are effective learning strategies.

Some of the acute skills described in this PhD study which are practised more often in critical care areas would correlate with Scholes *et al'*s (2004) view that a separate branch of adult nursing is required. This would split the adult branch students into critical care or primary care nurses. In spite of the efforts of the 'fitness for practice' and 'making a difference' curricular developments there appear to be gaps in knowledge and skills at this early stage of programme evaluation.

In Scotland, NES have commissioned a study which has reported some preliminary findings (NES 2007a). Their focus also considered Scottish Executive reports such as 'Delivering Care, Enabling Health' (Scottish Executive 2006) and 'Modernising nursing careers' (DoH 2006) which are felt to have an impact on pre-registration nurse education. This research as with the English study (Scholes *et al.* 2004) aims to identify the extent of the perceived impact of increased flexibility achieving fitness for practice. This was to be specifically aimed at the skills and competence areas of NQNs and midwives. The NES study also aims to evaluate the 'flying start' programme and build the evidence base for nurse and midwifery education (NES 2007a). The study is to report in 2008, however some initial findings which link to this PhD study have confirmed that the transition from student nurse to NQN is still considered a

culture shock and the technical aspects of nursing are where students tend to focus. Perhaps students are recognising that this is essence of the work remit of their role models, i.e. qualified nurses. Another major development within the NHS has been the pay modernisation strategy 'Agenda for Change' (DoH 2004a) and more importantly for this PhD study the 'NHS Knowledge and Skills Framework (which is abbreviated to KSF, DoH 2004b)'. This strategy defines and describes the knowledge and skills which NHS staff (except for doctors and dentists) require in order to fulfil the requirements of their jobs. The purpose was to better meet the needs of users and the public by recognising the knowledge and skills necessary and to improve staff development. KSF is a development tool which provides post outlines of knowledge and skills and these contribute to pay and progression. HEIs need to consider the implications for curriculum development of health service posts which have been defined in terms of the knowledge and skill requirements for the first 12 months of being in the post and known as the foundation KSF post outline. This PhD study is investigating the skill requirements of NQNs particularly in their first twelve months and such post outlines will be crucial to the development of nurse education programmes in the future.

Along with this development which affects the whole of the UK another government initiative on skill development is the emerging work of Skills for Health (2007). The aim of this development is to develop National Occupational Standards (NOS) and National Workforce Competencies (NWC) for use within the health sector. These competencies will prove useful for individuals, employers and education providers when designing skills curricula. This should complement the work already commenced by the Scottish Clinical Skills Network to standardise clinical skills practised by different professionals (SCSN 2007).

Another study which has importance for this PhD is the LiNEA project (Miller *et al.* 2005). This research was commissioned by the Teaching and Learning Research Programme of the UK Economic

and Social Research Council. It involves nurses, engineers and accountants in their first posts and aims to identify what is being learned in the workplace, how it is learned as well as the prior knowledge and skills brought to employment from HEI and other life experiences. The nursing component of this project has involved interviews and observations of 40 NQNs in acute settings in 8 hospital sites during their first few months in post. An interim report has been published (Miller *et al.* 2005) and this study has the potential to create useful comparisons between professional groups and enable the building of the evidence base for nurse education.

There are various interesting new developments occurring which have implications for the context of this PhD study. This is the current UK context for NQNs and in order to appreciate this more fully the international perspectives on nurses' role developments need to be explored.

2.4 The International Scene versus the UK Scene

Whilst different countries' practice of new developments in nursing roles may vary, there are many issues which have global impacts. Indeed Holloway (2000) remarked on the commonalities on issues of concern within nurse education across the globe and how this reinforces the need for the global village concept when considering health care workforce planning and educational preparation. The issues of recruitment and access to education, retention, clinical assessments and placements, clinical skill acquisition and partnerships raised by the UKCC's fitness for practice report (1999a) have commonalities across the globe as well as the UK (Holloway 2000). Wright *et al.* (2005) also commented on the changing global economy affecting the different countries health sectors' ability to respond to needs.

The two main issues emerging from worldwide nursing practices are the need to respond to advancing technology and the changes in practice associated with more and more care being provided in the home and community environment (Lawson 1998). Added to this is the significant increase in the age of the populations across all

countries except Africa, the Middle East and the Indian Sub-Continent. Internationally nursing curricula need to take cognisance of these issues and there is evidence of countries implementing related topics within their nurse education programmes (Clift 1997, Ehrenfeld 1998, Andrews *et al.* 1996 and Wright *et al.* 2005).

In 1995, a poll of nursing issues carried out by the International Council of Nurses foundation ranked nurse education as the most important issue facing countries worldwide (Lawson 1998). Governments are heavily involved in resourcing health care and by doing this there is an assumption that they are also addressing nursing issues. Continued education is also seen as vital in order for nurses to keep up with technology and specialise in order to deliver quality care.

2.4.1 Defining nursing and developing curricula

The views of nurse educators in other countries regarding defining and developing curricula need to be explored but this area of literature proved difficult to acquire. Nursing models define nursing by attempting to address the philosophical underpinning of nursing in terms of values and beliefs (Pearson *et al.* 1996; Roper, Logan and Tierney 1998). This part of the PhD study however is aiming to review nursing curricula rather than the influence of nursing models. Some reviews for Switzerland and New Mexico, USA were noted. Switzerland defined 5 functions of the nurse as: supporting and substituting activities of daily living; care of people in crisis or dying; preventive, diagnostic and therapeutic measures; maintaining health and preventing illness and also quality and research (Clift 1997). In New Mexico, USA the following areas of focus are defined: direct care; relationships; membership which relates to accountability and professionalism; the environmental context within which nursing is practised; competencies which relate to politics, resource management

and technology; the scope of the role and also research (Stephens 1999).

These countries use these areas of focus to define nursing and to inform their nurse education programmes. Whilst the definitions are varied there is an assumption that they are appropriate to the needs of the country. However a WHO study (Fleming and Homes 2005) which is described later suggests this is not always the case. There are some generic areas which are common to both Switzerland and New Mexico, USA and there is consistency with the specified standards of proficiency in the UK (NMC 2004a), but defining nursing for curriculum development has not been achieved everywhere. In many countries nursing is a new and emerging profession. For example, in the Russian language there was no word for 'nursing' until the late 1990s (Bjornsson *et al.* 1998). In Albania the first nursing textbook has only recently been written in Albanian (Wright *et al.* 2005).

However, with the collapse of communism in Eastern Europe in 1989 newer countries, such as Slovenia can review the international scene and be more radical in their role and educational developments for nursing as they do not have traditional boundaries and barriers with which to contend. Also countries such as Poland, Hungary and the Czech Republic are rapidly adopting western styles of practice in their health sectors (Clift *et al.* 1996 and Wright *et al.* 2005). The creation of 'health technicians' who perform most of the 'tasks' which many professionals would consider common to nursing also resulted (Clift *et al.* 1996). In China a three-tiered health care system operates (Neumann 1998). The most rural are village stations staffed with health care providers with three to six months training. The towns have 'health centres' with 10 - 20 beds and 'doctors' with 3 years training. There are also county and district hospitals with

250 beds and nurses, technicians and 5 year trained doctors, demonstrating how different parts of the workforce can be developed to deliver specific aspects of care. This enables a breakdown of the knowledge and skills framework required for each role and perhaps makes it more manageable for the government to deliver.

This trend of training other parts of the workforce to deliver what was 'traditional' nursing so that nursing roles can develop in different ways is not new to the UK scene. There are opportunities within university and college settings to acquire National Vocational Qualifications and Scottish Vocational Qualifications in healthcare areas and then work as assistants to the fully qualified professional. Generic health care workers have been employed across the UK and are able to free up qualified nurses to undertake the newer professional demands, including some skills investigated by this PhD study. Also the development of NHS health centres with GPs providing minor surgery and NHS community hospitals providing consultant services within rural communities in the UK is not far removed from the Chinese concept of service organisation.

2.4.2 Medicine led nursing versus nurse led nursing

The medical dominance which prevailed during early nursing development in the UK has a more recent history in many countries today. For example, in Germany, Austria and Switzerland until 1990 nursing practice was primarily technical and there was a heavy dependence on physicians but nurse led initiatives such as the nursing process, team nursing and primary nursing have been implemented in hospitals (Clift 1997). Since 1984 Chinese nursing has been based on a medical model of care with many physicians teaching nurses. There is also a career progression from nursing into medicine (Neuman 1998), which is not the case in many other countries. Until 1994 nurses in Russia were

taught by female physicians (Bjornsson *et al.* 1998). The influence of medical teaching in UK nursing programmes is limited to specialised topics with a medical focus or information giving sessions to appreciate individual roles. Indeed, in the UK there is greater emphasis on professional respect between medicine and nursing compared to countries where nursing is considered a 'low status' occupation. In fact the emergence of newer roles within the nursing profession is commanding greater respect for nurses from the medical profession and other health professionals (RCN 2005a).

There is evidence of 'maxi nursing' type roles in other countries however many have to focus on basic education in order to develop initial nurse education for their country. Ketefian *et al.* (2001) found this to be true when they considered the development of advanced practice roles in Brazil, Thailand, UK and USA. In Brazil the term advanced practice nursing is not used as the emphasis is on basic education for nurses. The education system in all these countries has graduate nurses at its focus but the end products are different. Ketefian *et al.* (2001) discussed the influences of the socio-political environment; external forces; the degree of consumer involvement in nursing practice; the health needs of the society as well as many other facets affecting the role of advanced practice. Their conclusions were that there were similar patterns within these countries and that nursing is in a dynamic state. The evidence suggested that nurses in these roles were better able to provide care and services compared to other professionals. Working in this way nurses take on roles which are very much nurse led and this changes the relationship with medical colleagues into partnerships and fellow team workers as opposed to a hierarchical style which dominated before.

The USA advocates specialist nurse teams for intravenous therapy requiring further expertise and education. However, practices vary between states and there are many who equip newly qualified practitioners with intravenous skills. This is borne out by anecdotal evidence from pre-registration students on exchange visits between the UK to USA and newly qualified graduates entering the USA for employment. In an attempt to explore this further the researcher utilised a bulletin board on a US nursing website and asked the questions:

When in your country do nurses start to learn the skills of intravenous therapy?
Is this taught in the student nurse stage?
If so when? In your opinion when should it be taught?

Whilst responses were limited (4 responses) they did confirm that some pre-registration programmes in USA do cover IV skills teaching. This demonstrated that US nurses can gain pre-registration skill acquisition of the IV skills investigated by this PhD study.

2.4.3 International co-operation for nurse education

When countries co-operate with each other there can be positive benefits for nurse education. There have been exemplary developments made by nurse educators in the European Union, which facilitate movement of students and qualified nurses across these countries without the requirements for re-qualifying. The requirements of the member countries of the European Union for nurse registration have been incorporated into their pre-registration programmes and are considered mandatory. There was agreement to mutually recognise diplomas and an agreed minimum time of 4,600 hours for the completion of a programme of learning (Bologna 1999). This continues to be the case.

However, there are differences in content particularly pertaining to skill acquisition. The European pre-registration programmes just like the UK do not specify the skill requirements for NQNs. Although specific literature relating to the teaching of the skills investigated by this PhD study was lacking, there is anecdotal evidence of practice of these skills by pre-registration students of nursing during exchange visits between the UK and European countries and through discussions at the European Nursing Networks (ENNE 2007). This information suggested that the skills: IV bolus injection, cannulation and venepuncture are taught in the second year of a pre-registration course and male catheterisation is taught in the first year, in most European countries. So whilst there is an understanding between the European Union member countries that these types of skills are incorporated within pre-registration programmes this PhD study will provide evidence that the UK is not implementing this consistently.

Further research to ascertain the content of nurse education programmes is required. Indeed a 4 year longitudinal study of nursing and midwifery education programmes in Europe was undertaken by the WHO (Fleming and Holmes 2005) via the collaborating centre based in Glasgow Caledonian University. Using Prospective Analysis Methodology (PAM) which involved the use of self administered questionnaires, chief nursing officers in fifty two countries were surveyed. Prospective analysis is defined as a methodology that examines an actual issue and/or through a step-by-step analysis proposes changes for the future (of a project) by taking into account all consequences of the proposed changes (Bowling 1997). The study confirmed that EU countries were practising according to agreements made at the Declaration of Bologna (1999) and that these countries

are recognising each others' educational programmes. This allows student exchanges between EU countries.

However countries within Eastern Europe had very basic programmes often at secondary school level. The WHO study aimed primarily, to develop a data base to record the initial preparation requirements of nurses and midwives within WHO's European region. Once this data had been acquired the implementation of WHO strategies for nursing and midwifery education could be tracked over a 4 year period. Major differences were found between Eastern and Western European countries in relation to the provision of basic nursing and midwifery education, but there was confidence that progression is being made towards achievement of the WHO strategies. Another finding of this study was that nursing and midwifery curricula did not always reflect the health needs of the country and that curricula were not always scientific or competency based. Therefore if there are attempts being made to identify the clinical needs within a country's healthcare system then this is not always being reflected in the education curricula. This has implications for this PhD study which is striving to achieve evidence based curricula for nurse education.

Whilst this WHO study adds importance and value to the debate around the European content of pre-registration nursing programmes, skill acquisition was described in very general terms. However it has the potential to influence further data base development into skill acquisition. Further plans from this initial WHO study are to produce global standards for initial nursing and midwifery education which will be published in January 2008. The work of the WHO through its collaborating centre at Glasgow Caledonian University is providing an important starting point for the evaluation of pre-registration programmes in Scotland (NES 2007a).

The need for such research is vital for continued collaboration of the international nurse community. This will depend on the research awareness of the nurses within different countries. Tierney (1998) commented on the developments in nursing research in Europe as being very similar across the countries in spite of some countries having a thirty year history in nursing research. In 1978 the formation of the Workgroup of European Nurse Researchers (WENR) led to collaborative working. However, European strategies for nursing research only emerged in the 1990s.

Many countries are actively collaborating with the WHO. This was found to be true for Poland (Ehrenfield 1998); Slovenia (Clift *et al.* 1996); Uganda (dinotshe Tlou 1998) and India (Kim 1998). This collaboration enabled each country to focus on research strategies which directly benefit improvements to health for their country. The WHO collaboration provided the financial resource and the research expertise necessary to action the strategies.

The articles reviewed did not specifically discuss research skill acquisition within pre-registration programmes but there was an inference that graduate programmes and nurse educators provided the drive for research initiatives within any country. Bleinkinsop (2003) advocated that undergraduate nursing programmes should pay just as much importance to research skills as they do to clinical skills. The justification for this would be that research skills provide transferable skills expected by any employer and that such skills are necessary for the changing roles within the profession.

Providing a research basis for curriculum development is the key theme of studies by Alavi *et al.* (1991) and Holloway (1999). These are Australian and New Zealand studies and

are detailed in Chapter 3. The National League for Nursing (NLN) in USA has also made recent position statements in the debate about curriculum development, stating that in the past too much has been about 'switching and swapping' the content around rather than complete innovation. The NLN (2007) state that true innovation requires that traditional pedagogies are overhauled. They argue that there is a need to reform the way in which the nursing workforce is educated. Because of recent nursing strategies suggesting that nurses are required to champion health promotion and disease prevention, function effectively in complex environments, demonstrate critical thinking and flexibility, educators need to partner these changes and think beyond current curricular practices. The NLN echo the call for an evidence base for nurse education.

2.4.4 Overseas nurses entering the UK

Another perspective on skill acquisition in other countries is to consider overseas nurses entering the UK. Nurses from other countries find that their practice in the UK is often stifled as they are prevented from undertaking skills such as IV cannulation which is routine in their countries (Gerrish and Griffith 2004). These authors (Gerrish and Griffith 2004) found that overseas nurses often felt frustrated that they could not demonstrate their competence in advanced technical nursing skills with which they were already familiar and advocated that these should be skills that are built upon rather than constrained. It is obvious that nursing roles are changing in the UK and internationally and by doing so, improvements in patient care can result. However, studies such as Gerrish and Griffith (2004) indicate how far the UK needs to shift in order that nurse education maintains its currency in this changing environment. This view is explored by this PhD study but first it is important to describe the current and local nurse education perspectives.

2.5 First year and final year at The Robert Gordon University, Aberdeen

Currently students in the UK enter courses within higher education institutions and follow programmes to diploma in higher education level (3 years), ordinary degree (3 years) or honours degree levels (4 years). The entry requirements are five subjects at standard grade or five subjects at General Certificate of Secondary Education (GCSE) for diploma or ordinary degree, with many institutions requiring Advanced levels or Higher level qualifications or their equivalent. Students can also enter through wider access programmes or initiatives with college based 'Access to nursing courses' or Higher National Certificates in caring, thus creating another stakeholder in nurse education i.e. 'further education' institutions. The honours route requires four Scottish Highers or two Advanced Level qualifications. The completion of a diploma or degree course leads to registration with the Nursing and Midwifery Council within the branch of nursing chosen i.e. adult; mental health; child health and learning disabilities. The choice of branch is decided by the candidate prior to entry on the course. Following the first foundation year for nursing the course follows a branch specific route. Midwifery education has direct entry to its undergraduate programmes. Many institutions offer part-time or flexible routes as well as full time programmes.

Students in Scotland following an honours route complete an additional fourth year. During this particular year the skills investigated by this PhD study were acquired. Learning during honours year at The Robert Gordon University (RGU) focuses on research; management and leadership and inter-professional learning. A final clinical placement is also undertaken. Recognising that nursing is an applied academic and practice based profession, the researcher introduced a clinical skills component to the honours programme since it first commenced at RGU, Aberdeen in 1994. The final year i.e. the first honours year was 1997 - 1998 and this cohort were encouraged to participate in an optional programme of skill acquisition. Most students chose to acquire skills related to

their choice of first nursing post and this optional programme has continued to be a feature of honours' years with successive cohorts of students. The researcher has been involved with this optional programme since its first inception in 1997 and has amended the skills programme over time. This was to maintain up to date skill acquisition and required collaboration with relevant stakeholders including the future employers of nursing graduates.

In order to contextualise the study further, relevant literature pertaining to skill development has been reviewed within the next chapter.

CHAPTER 3 LITERATURE REVIEW

3.0 Introduction

This chapter serves to further contextualise the study by reviewing previous studies and literature related to skill acquisition and the requirements for newly qualified nurses (NQNs). The evidence for skill deficits in NQNs and the questions regarding which professionals should practice certain skills will be explored. The devaluing of skills teaching as well as curricula developments will be discussed. Comparisons between medical and nursing students' education will be made. Definitions of 'skill' and in particular 'clinical skill' need to be clarified before the debate can be pursued.

3.1 The nature of skills and their importance to the nursing profession

Farley and Hendry (1997) defined 'skill' as a level of performance or expertise and cited definitions of 'skill' by Harrow (1972) and Bachman (1990) as an activity which involved human motions with forethought and outcomes for the actions. A skill therefore brings together theory and practice elements and is not just a task.

More recently, at the inaugural meeting of the Clinical Skills Network Scotland (June 2001), Professor Paul Bradley defined a clinical skill as being any action undertaken by a health care professional which is intended to bring about an improvement in patient outcome (Bradley 2002). This type of definition broadens the previous definitions and enables the outcome of the skill as it relates to patients to be recognised.

Nursing is an applied academic and practice based profession which is heavily dependent on skill proficiency. It requires skills within cognitive, psychomotor and affective domains. The teaching of clinical skills should be according to Bradley (2001 page 1) "early, planned, intensive, integrated, assessed, innovative, appropriate, progressive and structured".

In order to explore clinical skills within a nurse education programme it is necessary to clarify the statutory requirements.

3.2 Statutory skill requirements for nurse education

In the United Kingdom, the Nursing and Midwifery Council (NMC) regulates the standards for pre-registration nursing courses offered within higher education institutions. It is mandatory to have an external professional body validate courses and programmes and a requirement of statutory legislation (The Nursing and Midwifery Order 2001). Just recently the HLSP took over from NES to validate courses and programmes within Scotland. The NMC specified standards of proficiency (NMC 2004a) which newly qualified nurses must have achieved in order to gain registration. There were seventeen standards specified, one of which stated, "Demonstrate key skills". These skills are not explained or described in any way. The NMC (2004) further described "guiding principles" for fitness for practice orientated pre-registration nursing programmes as being "practice-centred learning; theory practice integration; evidence-based practice learning" which they stated as achieving fitness for practice and based on the findings of the UKCC Fitness for Practice research (1999a). Guiding principles for "fitness for purpose" were also included in the NMC standards (2004) which were: provision of care; management of care; a health orientation for all; life long learning; quality and excellence. Their recommendations for programmes of learning were stipulated in terms of length and balance of theory and practice, but this document did not specify skills content. Therefore it was left to researchers, educators and clinicians to gauge the content and structure of pre-registration and post-registration skills curricula.

The QAA subject benchmark statement for nursing states that nurse education programmes should encompass the large and complex nature of the profession by including a common foundation programme followed by four branch programmes, preparing nurses to work in adult nursing; children's nursing; learning disabilities

nursing; or mental health nursing (QAA 2001b). The benchmark statement speaks of skills in the following way:

"Nursing competence requires the development of technical, cognitive and interpersonal skills and involves a variety of different ways of knowing and understanding. Technical skills are the most visible part of some branches of nursing while for other branches interpersonal skills are the primary focus. Interpersonal and interactive skills are needed to enable nurses to form appropriate professional relationships and for some branches the depth and breadth of interpersonal skills required is greater".

(QAA 2001b, p.1)

Because the technical focus of care is increasing this requires nurses who are proficient in technical nursing skills (Koh 1996). This requires a curriculum content which clearly defines the type of skills required but in the UK there is a lack of prescribed skills content for pre-registration curricula.

However, moves are afoot to rectify this through the consultation process which the NMC is undertaking to review fitness for practice at the point of registration (NMC 2005a). This review will question the flexibility within curriculum development given to providers of pre-registration education and has arisen due to concerns relating to deficits in competence at the point of registration. The proposal by the NMC is to introduce "Essential Skills Clusters" (ESCs) to be implemented within UK pre-registration programmes by 2008. The NMC (2007a) agreed that originally the outcomes and proficiencies for pre-registration programmes had been broadly defined. Weaknesses in this strategy were identified by the review (NMC 2005a) in that key practice requirements could be overlooked. The skills clusters do not include all skills required for practice but address potential areas of deficit. These essential skills clusters will focus on skills relating to "care and compassion; communication; organisational aspects of care; infection prevention and control; nutrition and fluid maintenance and medicines management across all fields of practice" (NMC 2006a p.2). The NMC are keen to ensure

public reassurance that every pre-registration nursing programme in the UK has taught and assessed these essential skills. The rationale for the inclusion of these skills and not others is not clarified by the NMC to date.

It is intended that following the consultation process an NMC circular will be issued and that this will become an addendum to the Standards of Proficiency for Pre-Registration Nursing Education (NMC 2004a). The NMC expect that this addition will determine the level of competence required for safe and effective practice (NMC 2005a) and that these skills clusters will be reviewed to ensure they remain current and appropriate. Using research evidence to design skills curricula would progress nurse education forward. How or when an evidence based skills curriculum will be achieved as a result of the NMC's review of skills clusters once they are implemented requires further clarification. ESCs will be monitored and evaluated through the NMC's quality assurance processes but they also stipulate that the ESC statements have not been pre-tested for reliability and validity (NMC 2007b). Therefore there does not appear to be an evidence based rationale for the skills chosen and HEIs are expected to develop this.

To pursue the development of an evidence basis for skills curricula it is important to review the current research available.

3.3 Developing an evidence based skills curricula

To develop an evidence based curriculum it is important to critically review research which has been conducted on the newly qualified nurses' skill requirements. The identification of the core skill requirements for a qualified nurse has been researched by Runciman *et al.* (1998 and 2000), Alavi *et al.* (1991) and Holloway (1999).

Runciman *et al.* (2000) identified the essential, desirable and core skills required by NQNs by developing skills booklets and consensus judgements regarding the skills within the booklets. One hundred

and seventy nurses in Scotland participated in the survey of which 44% were newly qualified. Levels of agreement on skills choices were pre-determined at 70% and above as high agreement, and below 50% as low. There were differences of opinion between newly qualified staff and experienced staff as to what were "essential core skills", and it was noted that none of the skills were rated at 100% consensus level. This provided evidence for the fact that nurses cannot agree unanimously on skill requirements even when they are categorised as "essential" and "core". The Runciman *et al.* (2000) study identified skills pertaining to this PhD study such as male catheterisation; intravenous additives; and venepuncture. These were identified as "new" skills. Only a small number of respondents identified these skills hence the consensus levels were low.

Alavi *et al.* (1991) conducted a small study with a good response rate in Australia and provided the concept of evidence based practice for skills curriculum design (see Table 3.1). Using questionnaires they listed 84 psychomotor skills, from Reilly and Oermann (1985) which clinicians were asked to rate for inclusion in the pre-registration curricula. A frequency rating of 65% or above meant that the skill would be included in the curricula. However, this method of requesting nurses to rate pre-determined skills lists could be seen as a limitation to this study and a modification could have been for staff to generate their own list. This would have enhanced ownership of the data and the implementation of change, but the consistency of data collection is enhanced with a pre-determined list is of value. University staff in this study designed the curricula and incorporated the highly rated skills. Whilst this had benefits for curriculum development, educators and clinicians were not working in complete partnership and collaboration. Conducting focus groups at this stage of the study would have encouraged collaborative working and would have further enhanced curriculum development. Without adopting such an approach one highly rated skill missed being incorporated into the curricula. Intravenous management was seen as a necessary skill by hospital

and community staff and had a frequency rating of 90% in hospitals but due to protocols which prevented student involvement in such skills, acquisition was restricted to skills laboratory teaching only. It would have been appropriate to explore this issue further as it had such a high frequency rating. Cooperation between the HEI and the clinical staff to review the restricting protocols would have been beneficial. It was interesting to note that some educators found it difficult to 'let go' of topics which had been taught consistently for years, concurring with the views of Jackson (2002) and the rational curriculum model.

Holloway (1999) in New Zealand, replicated Alavi *et al.'s* (1991) work and attempted to provide an evidence base for selecting the content for a clinical skills curriculum, in an undergraduate nursing programme. Holloway's study challenged the responsibility of nurse educators to prepare nurses with relevant practical skills. Senior Nurse Clinicians from medical-surgical areas in two large hospitals were surveyed using Alavi *et al's* (1991) frequency rating (see Table 3.1). Twenty-six practical nursing skills were rated as having a frequency of 65% or above. Nurses were also asked to identify the ten most important skills and the expected level of competence for these skills for a NQN. By combining these results two skills were discovered which were not in the pre-determined list within Holloway's (1999) survey but were included in the top ten skills list. These were: nursing assessment and documentation. Thus by adapting Alavi *et al's* (1991) methodology further identification of essential skills was possible. Some of these skills would be deemed 'additional skills' in the UK. By asking the question a different way Holloway (1999) found that there were differences between the ratings and the expectations of senior nurses of skill performance in newly qualified nurses. However, she was able to identify the skills which required inclusion within the curriculum. The top ten skills identified were: vital signs; hygiene care; nursing assessment; aseptic technique; drug administration; communication; documentation; lifting/transferring; universal precautions and IV therapy management. This study as with Alavi *et al's*. (1991) has

focussed on local needs with a small sample (n=33). However, both studies have progressed the debate regarding providing an evidence basis to skills curricula development.

Also researching in Australia, Boxer and Kluge (2000) surveyed newly qualified nurses to determine the essential skills they performed daily. These were universal precautions for infection control; vital signs assessment; administration of all forms of medication and patient hygiene related skills. Many skills that were rated as essential in the Boxer and Kluge (2000) study were not always rated as performed frequently. These were reported as skills which had to be drawn upon in emergency situations and therefore were considered essential. Whilst the sample size was large (n=206) the authors themselves felt that reliability of their findings would be assured with a larger sample. However, by identifying essential skills in this way nursing curricula can be developed. When comparing these two studies to the ESCs (NMC 2007b) there is some evidence from Australia for the inclusion of the skills identified in the clusters, however supporting evidence from the UK would have assured the contextual appropriateness.

Whilst there is some international research available for the development of an evidence based skills curricula, it would seem that nurse education programmes in the UK are not taking cognisance of this. It is also noted that Alavi *et al* (1991) and Holloway (1999) set about adapting their studies to their countries' contexts. It is important to understand the 'Australian' and 'New Zealand' contexts before applying their findings to the UK context. The resultant implication for not engaging or undertaking research within the UK is that skill deficits within newly qualified nurses (NQNs) would continue to exist. The research evidence for this is described in Section 3.4. A summary of the key studies described is found in Table 3.1.

Table 3.1 Summary of studies focussing on developing evidence based curricula

Authors	Year	Context	Sample	Methods	Findings
Runciman *et al*	2000	Scotland	170 qualified nurses	Skills booklets with descriptions of skills	Determined ratings for essential and core skills. Noted differences between NQN and experienced nurses responses. No skill had 100% consensus
Alavi *et al*	1991	Australia	Nurses from 59 agencies where students had clinical placements	Survey of 84 psychomotor skills adapted from Reilly and Oermann (1985) designed. Response rate 81%	Determined ratings for skills. If rating was over 65% it was included in curriculum.
Holloway	1999	New Zealand	33 Senior nurse clinicians in medical surgical areas in 2 large hospitals	Replicated Alavi's study, but senior nurses also asked to identify the top ten skills for NQNs. Response rate 87.5%	26 skills rated as having a frequency of 65% or above. Identified top ten skills for inclusion into the curriculum
Boxer and Kluge	2000	Australia	206 NQNs	Survey response rate 64%	Identified essential skills which are performed daily by NQNs for inclusion into curriculum
Runciman *et al*	1998	Scotland	80 preceptors surveyed 17 preceptors interviewed 43 managers interviewed	Survey (27% response rate) and interviews. Analysis of job descriptions	Findings presented in five themes: knowledge and its use; practical skills; managerial and organisational skills; communication and interpersonal skills; professional attitudes and attributes. Two areas identified as deficits: practical skills and managerial and organisational skills

3.4 Evidence for skills deficit in newly qualified nurses

Before the UKCC Fitness for practice (UKCC 1999a) research, Runciman *et al.* (1998, see Table 3.1) confirmed the existence of a skills deficit and the theory-practice gap by conducting focus groups, interviews and questionnaires with managers and preceptors supporting NQNs from the Project 2000 programmes.

This study set in Scotland, identified similarities with Luker *et al.* (1996) study of Project 2000 diplomates in England. The main areas of 'deficit' by both studies were identified as practical, managerial and organisational skills. The practical skills were categorised as being "core, technical and specialist new skills". Deficits in core skills were seen as most concerning. Core skills included: managing and organising; direct clinical care; communication skills; teamwork; teaching skills; professional skills and attributes and research skills. The skills under investigation within this PhD study were categorised as specialist new skills in the Runciman *et al.* (1998) study and were acknowledged as being acquired after registration.

The evaluations of the fitness for practice programmes in the UK are highlighting knowledge and skill deficits. The English study (Scholes *et al.* 2004) demonstrated deficits in physiology and pharmacology and that widened access had seen an increase in students with poor numeracy skills and students with an increased likelihood of dyslexia. The increased capacity of student intakes to achieve government targets for nurse recruitment was also found to place an untenable burden on clinical staff and consequently the number of hours students spend in placement was not always equated to achieving meaningful learning. Specific comments on skill competence by Scholes *et al.* (2004) during the NQN phase have not yet been possible as the evaluations from this study are ongoing. A mismatch between HEIs and clinical staffs' perceptions of student learning is being identified with the data gathered. To

alleviate the gaps within their skill acquisition NQNs undertake post-registration skill training.

3.5 Post-registration skill acquisition

Post-registration nursing skills within the UK are acquired under the continuous professional development framework and under the guidance of the UKCC Scope of Professional Practice (UKCC 1992a). As with pre-registration there is no attempt to specify the skills which can be acquired post-registration. In the UK the post-registration period is the time when most of the skills being investigated by this PhD study are acquired. The UKCC through Scope of Professional Practice (1992a) recognised that every nurse, midwife and health visitor is accountable for their practice and left it to an individual's professional judgement to provide 'innovative' solutions to meeting the needs of patients and clients.

Ketefian *et al.* (2001) observed that this reflects the unique position of nursing in the UK compared to other countries in that it has a statutory definition which is broad and non-restrictive. It is this Ketefian *et al.* (2001) state that enables nurses in the UK to become involved in almost any area of health care practice provided they accept the accountability that this affords.

However, the broadness of this UK phenomenon also leads to ambiguity in skill acquisition. It is this ambiguity that the introduction of essential skills clusters within pre-registration are attempting to address (NMC 2007b).

The issue of whether certain skills should be practised by certain professionals is being challenged as professional role boundaries merge. The existing literature relating to this is reviewed in an attempt to address the challenge.

3.6 Who should practice these skills?

As discussed in Chapter 2 The reduction of junior doctors' hours (DoH 1989 and NHSME 1991) did have a profound effect on which

skills nurses started to acquire and these were the type of skills which junior doctors were finding time consuming within their roles. Within the document "Junior Doctors the New Deal" (NHSME 1991) it was stated that local policies should be developed to encourage appropriately qualified nurses and midwives to undertake patient care normally performed by a junior doctor. No specific list of skills was generated as it was thought this would go against the development of practice as necessitated by patient need. However skills such as the administration of intravenous drugs were mentioned. A shared role between doctors and nurses for patient care was advocated by this report.

Other authors also recognised this need for nurses' role development. Greenhalgh (1994) identified these as: patient history taking; phlebotomy; cannulation; IV drug administration; referrals for investigations; and discharge letters. This report also confirmed that nurses and doctors should work together and develop partnerships on these areas of overlap, however the exact method by which skill identification took place was not reported.

Fox (1995) also identified core skills for nurses' role development in a study with Trust nurse executives. These included venepuncture, intravenous cannulation and drug administration, ECG recording, male catheterisation, blood glucose monitoring and verification of expected death. He argued that these could become the role of large numbers of nurses. There were concerns regarding the training of professionals for these types of skills in that medical staff who currently practised them had not 'officially' been trained and yet nurses who might practice them expected training. Joint training was recommended by this study. The Trust executives expressed concerns regarding professional boundaries in particular that the practice of "bedside care" might be jeopardised at the expense of "high tech" skills. However, these fears were not realised as the skills in the study were specific to the area within which nurses were to practice e.g. skills relating to theatre assistants and emergency nurse practitioners. The skills therefore

contributed to nurse' role expansion and had positive benefits for patient care (Fox 1995).

3.7 Benefits of skill acquisition for nurses and patients

A number of benefits and concerns for nurses undertaking these skills have been alluded to within the studies already reviewed. The benefits of specific skill acquisition will be explored further.

Grundy (1996) conducted an audit of a 45 bedded unit in the UK to ascertain if doctors or nurses performed better IV drug administration. Observation of handwashing, cannula flushing, and documentation of the drug had significant results for nurses performing the skill better than doctors. The time taken by nurses to perform the skill was longer on an average of five minutes for preparation, three minutes for administration. The audit demonstrated the adherence to policies and protocols by nursing staff. The training programmes for nurses were more substantial than for doctors. Doctors were relying on the traditional method of "see one, do one, teach one" (Gorman *et al.* 2000 p.1). A recommendation from the Grundy (1996) study was implemented to increase the number of pre-constituted preparations in order to reduce ward preparation time and on second audit a reduction in nursing time was noted. However the lengthier time duration can be seen as favourable as well in terms of accuracy of administration; adherence to strict protocols and increased patient contact time. This study has added to the debate that nurse administration of IV medications can be better than doctor administration.

Investigating which professional group should undertake which skills becomes interesting when new practices emerge which have not been the domain of one particular profession. An example of this is Gabriel (2000) who explained that the introduction of Peripherally Inserted Central Catheters (PICC) was a new innovation of IV therapy in 1995, which fitted neither the nurses nor the doctors' domain of responsibility. In a nurse-led initiative Gabriel (2000)

commenced a PICC clinic within a hospital in the UK establishing it as a successful nurses' role offering quality patient care.

Because of the complex nature within which patient care is practised there are specific aspects to each skill which need to be considered in more detail. Grundy's (1996) and Gabriel's (2000) studies were based in the UK and it is interesting to note the international perspectives evident in the studies which follow.

3.8 Intravenous skills

The skills relating to the management of intravenous (IV) devices are undertaken by nurses in the UK usually during the post-registration phase of their careers. These include venepuncture, cannulation and intravenous bolus injection and reflect the increase in the number of patients undergoing intravenous cannulation. The choice of qualified nurse professionals undertaking IV skills is perhaps an obvious one due to the continuity of care it affords the patient but also because of the background knowledge and skills already gained by the nurse by virtue of nurse registration.

However the skill of venepuncture is often performed by phlebotomists or doctors. A study by Jenkins (2000) in USA demonstrated how staffing shortages in laboratory staff led to the skill of venepuncture being transferred to nursing. Concerns were anticipated regarding the quality of the blood specimens. A training programme was developed which included video, lecture and practice on each other. This was followed by phlebotomist shadowing and the completion of a competency based assessment. The findings suggested that phlebotomy skills were an asset to nurses and enabled positive collaboration between nursing and laboratory staff. The concerns regarding quality of specimens did not materialise. The reasons for nurses undertaking the skill of venepuncture in this study was due to staff shortages and is comparable to the reasons for UK nurses undertaking skills when medical staffing shortages arose (NHSME 1991). Whilst this is not a sound rationale for developing skills both Grundy (1996) and

Jenkins (2000) studies have demonstrated that nurses can perform skills which were the domain of another professional in a highly competent manner.

The importance of training and adherence to protocols was stressed by Karadag and Gorgulu (2000) and Bajati (2001b). Karadag and Gorgulu (2000) studied 37 nurses in a coronary care unit in Turkey and observed their adherence to a locally devised protocol aimed to standardise the performance of IV therapy skills. Their findings demonstrated significant associations between training and the implementation of the protocol and improved nurse performances. They recommended that protocols should be implemented in all areas as practice dramatically improves. Bajati (2001b) supported this notion by developing an intravenous check list and added that complications of IV therapy can also be prevented in this way. These studies as with Grundy (1996) proved that where protocols are in use for skills competence nurses as a professional group will generally follow them.

Some variance to this was found by Godin *et al.* (2000). They considered nurses' adherence to universal precautions during venepunctures. Using a self administered questionnaire, 156 registered nurses in Canada were surveyed. The findings demonstrated that nurses had high intentions to follow universal precautions but that they did not always follow through this intention. The reasons given were that it depended on the training given on universal precautions prior to qualifying and the working conditions encountered at the time of performing the venepuncture. It would have been interesting to compare these results with other professionals' adherence to universal precautions for venepuncture. However, in general there is evidence for nurses complying with training requirements (Inwood 1996; Karadag and Gorgulu 2000 and Bajati 2001b) and having a direct benefit to patient care when involved with invasive procedures such as cannulation (Davies 1998).

Workman (2000) writing in the UK explains how crucial and frequent intravenous therapy has become in modern nursing care and set about devising standards of best practice for nurses to appraise themselves. Using an interactive style of journal article (whereby the reader can pause to participate in activities within the article), including scenarios and assessments, knowledge of the skills involved can be tested, encouraging continuous professional development. It urged nurses to acquire training via their employer and understand local guidelines for the management of intravenous devices. This type of article was published in nursing journals in the UK specifically with Scope of Professional Practice (UKCC 1992a) in mind.

For some authors the importance of training, development and proficiency is such that they advocate specialist nurses for the performance of intravenous skills. Weinstein (2001) described the need for a collaborative role of the nurse with IV therapy and recommended intravenous nursing teams as the best way to provide clinical expertise and cost-effective care. Weinstein (2001) argued that by specialising in IV therapy, nurses are freed from other responsibilities and develop high standards of performance thus enhancing quality care. This IV nursing team would also be responsible for the ongoing education of other staff. This ideology is common within American nursing requiring assessment by examination. This was supported by evidence that phlebitis rates can be significantly reduced when IV teams cannulate patients compared to ward nurses or doctors. However this has not been implemented in the UK in the same way despite some authors advocating this. Dougherty (2000) and Davies (1998) argued for specialist nurses in the field of IV therapy in the UK. Davies (1998) noted that there was sufficient evidence to suggest that peripheral IV cannulation is a nursing role but stressed that this should occur within an IV team. The first UK IV therapy team was set up in 1977 and to this day only a few such teams exist (Davies 1998).

The RCN IV therapy forum in the UK has published standards for infusion therapy (RCN 2005b). It recognised the contribution of Scope of professional practice (UKCC 1992a) and the revised Code of Conduct (NMC 2004b) which encouraged nurses to expand their practice provided they had appropriate knowledge and skills and accepted their accountability. The Standards from the RCN (RCN 2005b) stipulated the specific criteria for theoretical and practical training.

In the UK most specialist IV nurses are found training and teaching IV skills and their roles can also incorporate practice development or infection control. (Hanchett 2001) also found IV nurses involved with the measurement of outcomes of performance. This type of information it is argued can validate the specialist IV roles for nurses as nurses gain further skill acquisition in data management and measurement as well as interpretative and analytical skills.

3.9 Male catheterisation

Pre-registration nursing education incorporates the skill of female catheterisation but very rarely includes male catheterisation. Historically, male catheterisation has not only been the domain of medical staff but has also had gender issues in that male nurses were enabled to perform this skill more often than female nurses. (Pomfret 1993a, Winn and Thompson 1997).

Using survey method Pomfret *et al.* (2002) found it relevant for nurses to perform the skill of male catheterisation, in that timely nursing intervention avoided hospital admissions. Community nurses in Pomfret *et al*'s (2002) study, identified the need for appropriate catheters, the necessity for a call out, bladder washouts, and re-catheterisations. Out of a total of 91 visits by community nurses to 43 patients, the nursing interventions resulted in none of these patients requiring hospital admission. The question that arises is: how many hospital admissions might have arisen if nurses were not able to perform the skill of male catheterisation? Whilst there were no such comparative figures given within this study, the

patients' medical conditions were sufficient to presume that hospital admissions would have been likely. Colley (1999) also advocated the need for nurses to carry out the skill of male catheterisation but emphasised the need for appropriate levels of competence to ensure quality patient care.

These studies demonstrated that qualified nurses can perform male catheterisation competently and this consequently adds benefit to patient care. The role of NQNs in relation to male catheterisation was not addressed in the research reviewed but this PhD study aims to discover the effects of NQNs acquiring this skill.

3.10 Skills teaching within pre-registration programmes

The majority of the literature reviewed under this heading described the devalued nature of skills teaching within an academic programme until the end of the 1990s (Bjork 1999 and Koh 1996). When, nurse education in the UK was based in Nursing Schools within hospitals a high value on skills teaching was obvious whereas in higher educational institutions the academic aspects of nursing gained more recognition. Koh (1996) described how the teaching of clinical skills was left to clinical staff and formed a very small part of classroom based teaching. This was based on the assumption that practical skills are best learned in the clinical area but Koh (1996) challenged this assumption and questioned the quality of teaching students received in the clinical area. The work of researchers such as Bjork (1999) and Runciman *et al.* (1998 and 2000) have put the spotlight on and challenged the view of skills teaching within higher education.

Bjork (1999) writing in Norway challenged the existing view that nursing skills are simple manual/technical procedures which are learned in an educational setting and then transferred into the clinical setting. The transfer of skills from an educational environment to a clinical setting itself requires skill on the part of the learner and as mentioned in earlier chapters, is full of complexities. It is also dependent on the way in which the skills

were taught and the ability of the learner. Bjork (1999) demonstrated this by conducting a longitudinal study on NQNs working in two Norwegian hospitals. The sample size was small and video recordings were used to capture the practice of specific skills. These included skills within a surgical setting relating to patient ambulation and wound dressings, allowing study of gross motor and fine motor skill acquisition. Interviews with nurses and patients were also conducted to review expectations and experiences. Bjork (1999) utilised a model of practical skill performance to describe her findings, describing skill performance as layers of a circle, including the terms, substance and sequence; accuracy; fluency; integration; and caring comportment (see Appendix 3). The findings charted the nurses' individual "developmental trajectory" in practical skill development through the first twelve months of employment. Whilst there was improvement in some of the motor actions of the skills i.e. fluency and speed, there were deficits in some of the logic used and some of the caring and information giving aspects. Interview data suggested that expectations to perform well were high and that professional feedback on performance was not easily available in the work environment. Bjork (1999) concluded that as well as requiring a sound knowledge base, skills require verbal content to be added and co-ordinated with motor movement and all this takes place in a changing clinical environment, making skill performance very complex. Bjork (1999) challenged the ideas relating to curricula content of pre-registration programmes with their emphasis on the theoretical and professional approaches to learning. She questioned the level of preparation for the role nurses would have on registration when there is reduced emphasis on the teaching and learning of practical skills within nursing curricula.

Prior to Bjork's work (Bjork 1999), Gomez and Gomez (1984) were advocating a behaviourist approach to skills teaching in the USA. This correlates with the Tyler model of behaviourist learning theories within curriculum development (Bevis 1988), as discussed in Chapter 2. Gomez and Gomez (1984) adapted a model for skill acquisition by Gentile (1972) for teachers within nurse education.

This model took a behavioural perspective and suggested that motor skills start with a goal for example, taking blood pressure. This goal is conducted in a particular setting which they called "Population of stimuli" and asserted that not all the stimuli related to the goal. Therefore, the learner must exert "Selective Attention" i.e. be alert to the stimuli that are relevant to the goal. Their step by step process for the learning of a skill included: formulation of a motor plan; "execution" of this plan; "feedback" i.e. whether or not the goal was achieved; "the decision" to continue with the motor plan or not and finally the "next response". Here the learner makes a decision as to how to proceed. They suggested that repeating this sequence either as a whole or in parts which are practised separately and later combined enhances learning. Gomez and Gomez (1984) also discussed the theory of open and closed motor skills which categorised skills according to environments. Where the environment is variable the skills performed were described as "open" and when the environment is stationary skills were "closed". Most nursing skills are categorised as "open" because the 'regulatory conditions' are moving and variable during the performance of the skill. That is there is nothing usually static regarding a nursing skill. They also argued that retention of the skill is more greatly enhanced if practice occurs soon after the teaching of the skill. The authors did not give sufficient information on how they determined the adaptation of this teaching model or its research evidence. Further discussion on the clinical impact of the model would be required. However, the need for skill components to be broken down and practiced repeatedly is a teaching strategy which is sound and has agreement with other authors (Bjork 1999).

The notion that skills must be practised soon after acquisition is one which is supported by Ramritu and Barnard (2001) writing in Australia. They also found differences between higher education skill acquisition and clinical setting acquisition. By conducting a phenomenological study on newly qualified paediatric nurses they found that the skills learned at university were primarily to achieve assessments and there was a time lag between learning skills and

then practising them. Many forgot their skills and this led to low self esteem and lack of confidence. The outcome of this research demonstrated that nurse education programmes should implement and evaluate strategies which enhance the ability to perform skills in the clinical setting. This concurs with Biggs's (1999) constructively aligned curriculum where teaching, learning and assessment activities are aligned. It reinforced the need for better collaboration between educators and employers when developing skills curricula and the ability to practice skill acquisition in a clinical setting. This again concurs with Biggs (1999) who stated that teaching and learning take place within a system and for nursing that includes the clinical learning environment. Given the evidence arising from fitness for practice evaluation it is concerning that placement opportunities for learning vital nursing skills was seen to be lacking in quality (Scholes *et al.* 2004). However an encouraging facet was the emergence of practice educator and clinical demonstrator roles to assist practice learning and the strengthening of mentor preparation programmes (NMC 2006).

Randomised control trials are rare in this field of research however Love *et al.* (1989) achieved this when evaluating how skills are taught. Love *et al.* (1989) compared self-directed learning methods to teach psychomotor skills with face to face taught sessions in a laboratory setting. The sample group were 77 second year student nurses in a Canadian university. Using learning packages for ten psychomotor skills required for registration, students were randomly assigned to either the control group for self-directed learning of these skills or the experimental group for taught sessions. An Objective Structured Clinical Examination (OSCE) was used to test the achievement of learning outcomes and the OSCE was repeated after a period of clinical placement. No significant differences were found between the two groups after two OSCEs. They concluded that there is merit in a self-directed learning approach and this would certainly assist with the resourcing of clinical skills teaching. The use of OSCE in assessment is also advocated positively by this

study and is supported by the evaluation of fitness for practice programmes (Scholes *et al.* 2004).

Skill measurement is a related issue when considering skill acquisition. There have been many attempts to devise accurate competency rating tools. For example, Fitzpatrick *et al.* (1997) observed 99 senior student nurses in the clinical environment using non-participant observation and the King's Nurse Performance Scale. This scale consisted of a 53 item instrument set within seven domains of nursing practice and rated with Bondy's (1983) five point criteria. The scale was tested for reliability and validity and subject to review by a panel of experts. Three separate observations were made and a total mean performance score was calculated for each domain for each student. Internal consistency of the instrument tested favourably using Cronbach's alpha coefficient. The findings of the study were reported by While (1994) and was part of a larger project commissioned by the English National Board. The study outcomes confirmed the need for educators to enable students' skill performance in real-life situations and that the key outcome measure for any educational programme should be the 'product' of the education. While (1994) stated that educationalists should be alerted to "potential nurses who do not perform adequately when registered" and alluded to the problem that assessment measures within educational programmes, favoured competence but not performance. This concept of the "end product" of any educational programme is the view of constructive alignment theorist Biggs (1999) and forms the conceptual framework for this PhD study (Chapter 4).

The search for a tool to measure performance was also reported by Dunn and Burnett (1995), working in Australia. They devised a Clinical Learning Environment Scale of 23 items and sub-scales which included staff-student relationships; nurse manager commitment; patient relationships; interpersonal relationships and student satisfaction. Validity and reliability were tested and the scale was implemented with a sample group of student nurses and

clinical facilitators as a self-administered survey. The sample group of volunteers totalled 423 with 90% being students and 10% facilitators. Factor analysis was adopted as a statistical technique using SPSS. Their experience of using the scale suggested that it could be used to gauge the achievement of students' learning outcomes in a clinical environment. It also highlighted the different parameters involved in measuring learning within the clinical setting. The context was Australian and therefore there are limitations in generalisation but this study demonstrated the possibilities of developing an objective measurement of students' learning.

The teaching of skills and the measuring of skill performance is a complex area of nurse education but nursing is not unique in the challenges it faces when developing skills curricula. In order to examine this further it was important to review how other professions address these issues.

3.11 Skills teaching within other professions

Coinciding with changes in nurse education, medical education is also undergoing major changes. The General Medical Council (GMC 1993) document "Tomorrow's Doctors" outlined how future generations of medical students will be taught. This stipulated the early exposure to clinical skills and the increased use of non-hospital sites for teaching. In his study with medical students, Lam *et al.* (2002) found that 87% agreed that early introduction to clinical skills was important.

The impact of non-hospital sites teaching was confirmed positively by Johnston and Boohan (2000). They compared medical students' perceptions of teaching in community and hospital settings in Belfast. The study concluded that clinical skills can be taught early to medical students by General Practitioner (GP) tutors and also by others e.g. nurses and allied health professionals. OSCEs were used for examination and no differences were noted in the results between the students' skill acquisition at hospitals or health centres.

After the publication of the GMC document (GMC 1993), many medical schools introduced new curricula which included early skill acquisition in 1st and 2nd year. The teaching of skills within medical curricula is also fairly recent in that prior to this many students learned skills within the clinical setting using the technique: "see one, do one, teach one" (Gorman *et al.* 2000). Recommendations from this study included the introduction of holographic and robotic techniques for learning. The use of visual aids in teaching was also advocated by Pinsky and Wipf (2000) who found it advantageous to use videotapes in clinical teaching for medical students. They found that visual images in conjunction with verbal teaching were valuable for the learner. The use of clinical skills laboratories is greatly enhancing skills teaching, by providing a technical focus to learning and the ability to practice in a safe environment (Radhakrishnan *et al.* 2007, Wellard *et al.*2007).

Continuing Medical Education (CME) represents the final and most poorly understood stage of physician education (Amin 2000). Amin's (2000) study found that physician learning is very much self-directed and individual and any CME programmes need to address this in order to be effective. Post graduate learning in medicine is often the result of an experienced doctor passing on knowledge and skills to a junior doctor. MacDonald (1998) reported this concept as medical craft knowledge whereby senior doctors pass on their "craft" of diagnosis and patient management to junior doctors.

However, the need for more specific teaching within the post-registration or post-graduate stage is supported by medical practitioners. Jackson *et al.* (2000) studied the teaching of ophthalmology for Australian GPs. They concluded that participants strongly valued workshop style learning on their ability to detect and treat and make referrals for eye problems. Whilst this may seem an obvious teaching strategy to adopt in other professions it is still perhaps a fairly new method of post graduate teaching for the medical profession. There is evidence that medical curricula should

incorporate different teaching methods for skill acquisition (Kay and Walker 1998). The use of problem based learning (PBL) and self directed learning is another method which can be used effectively. This was advocated by Liu *et al.* (2000) within occupational therapy undergraduate curricula in Canada.

O'Sullivan *et al.* (2000) agreed with different teaching strategies for skill acquisition and also concurred with Johnston and Boohan (2000) that community based teaching should form a greater part of the medical curriculum. Demonstrating competence once qualified is important to the role of a medical practitioner and CME programmes need to include this. Peer review is another method of post-graduate learning which was recommended by Ward (2000) and was suggested as gaining the respect of the medical profession.

Evidence based medical curricula like nursing is still in its developmental stages. Some authors such as Lennox and Diggens (1999); Hayes *et al.* (1999) and Swenson and Rothstein (1996) have attempted to provide this. Lennox and Diggens (1999) considered the knowledge skills and attitudes medical students should have on completion of their undergraduate programme. This Australian study focussed on skills acquisition relating to patients with intellectual disability. They found that an 'ideal' curriculum which would be best suited for medical students could be created by analysing questionnaires from medical students and interviewing staff. Once this 'ideal' was recognised gaps in curricula relating to this specialism could be rectified.

When evaluating the teaching of end-of-life decision making skills in medical students' curricula Hayes *et al.* (1999) found that there were conflicts in the experiences and attitudes of students. They recommended that future skills curricula on this topic should be consistent with ethical guidelines and legislation relating to end of life care. Role modelling and mentoring from senior medical staff was also seen as advantageous, concurring with MacDonald (1998).

Lennox and Diggens (1999) and Hayes *et al's.* (1999) studies enabled the deficits within the curriculum to be rectified.

Swenson and Rothstein (1996) also found that the teaching on ethical behaviour was lacking within medical programmes but occurred on the wards. They argued that this was a deficit within the educational programme. This concurs with Koh (1996) writing at the same time that clinical teaching within nurse education occurs in clinical areas but should be further emphasised in the educational programme.

It would seem from the literature reviewed that when comparing medical and nursing skills' curricula that medical skills teaching is recently emerging as an area requiring emphasis in the curriculum. Within nurse education skills teaching was heavily emphasised, then lost this emphasis and is now regaining importance. In medical education the focus was on academic learning and more recently has become skills focussed. The two professions could assist each other in recognising the balance between the theory and practice aspects of their curricula. Perhaps the inter-professional approaches such as Skills for Health (2007) can move this further forward.

3.12 The complex clinical learning environment

Having debated the issues of skill acquisition, skills curricula, skill deficits and the evidence basis for skill development, it is imperative that the context within which skills are practised is examined i.e. the clinical learning environment. This environment is constantly changing and appears more and more complex and confusing (Grossman and Valiga 2000). The evidence for this has been mentioned earlier and also in Chapter 2.

Grossman and Valiga (2000) suggested that the current health environment is chaotic but that this chaos can lead to positive developments which provide challenges and enable growth. As professionals and educators nurses have to discover new ways of working and learning in this complex environment and this requires

an extensive knowledge base and the ability to perform highly sophisticated technical skills. Grossman and Valiga (2000) also added decision making and critical thinking skills as essential to practice, concurring with Burnard and Chapman's (1990) notion of being educated rather than trained.

Grossman and Valiga's (2000) views on chaos theory are similar to Tosey's (2002b) complexity theory as explained in Chapter 1. Using the analogy of computers they explain how computers have awakened us to the true meaning of "chaos" because they store mega amounts of data and the technology allows this chaos to take an orderly shape. In the same way in the clinical environment when there are complex issues to deal with highly skilled nurses find solutions. Grossman and Valiga (2000) give examples such as an emergency situation where order comes out of chaos when the right approach is taken. The right approach may have to be a new and innovative one rather than a tried and tested approach because of the rapidly changing nature of the environment. By using a new science philosophy nurses of the future can find more creative ways to provide high quality care and this involves developing new skills such as: creativity, patient centredness, co-ordination, multiple priority management, problem solving, critical thinking and system navigation (Grossman and Valiga 2000). The importance of strong leadership to achieve the positive benefits from chaos and change is emphasised in this theory and principles to guide this style of leadership are advocated. There are many educational strands to moving forward in this way and there is a suggestion that those individuals with the right skills thrive on chaos and are motivated, enthusiastic and successful (Grossman and Valiga 2000).

As Tosey (2002a and 2002b) argued there is a margin between stasis and chaos where systems operate best and it is this margin within which nurses and educators have to focus to create the most effective environment for learning.

The next chapter (Chapter 4) develops the study design by explaining its conceptual framework.

CHAPTER 4 CONCEPTUAL FRAMEWORK

4.0 Introduction

This chapter details the study's conceptual framework and the research design. The conceptual framework was developed using a combination of evaluation research, the constructivist paradigm and mixed methods design. Stake's Countenance Model of Evaluation (1967) is the framework chosen for the evaluation of a skills' programme and Biggs' (1999) Constructive Alignment theory informed and underpinned teaching, learning and assessment. A mixed methods design was chosen. Figure 4.1 demonstrates the conceptual framework for the study.

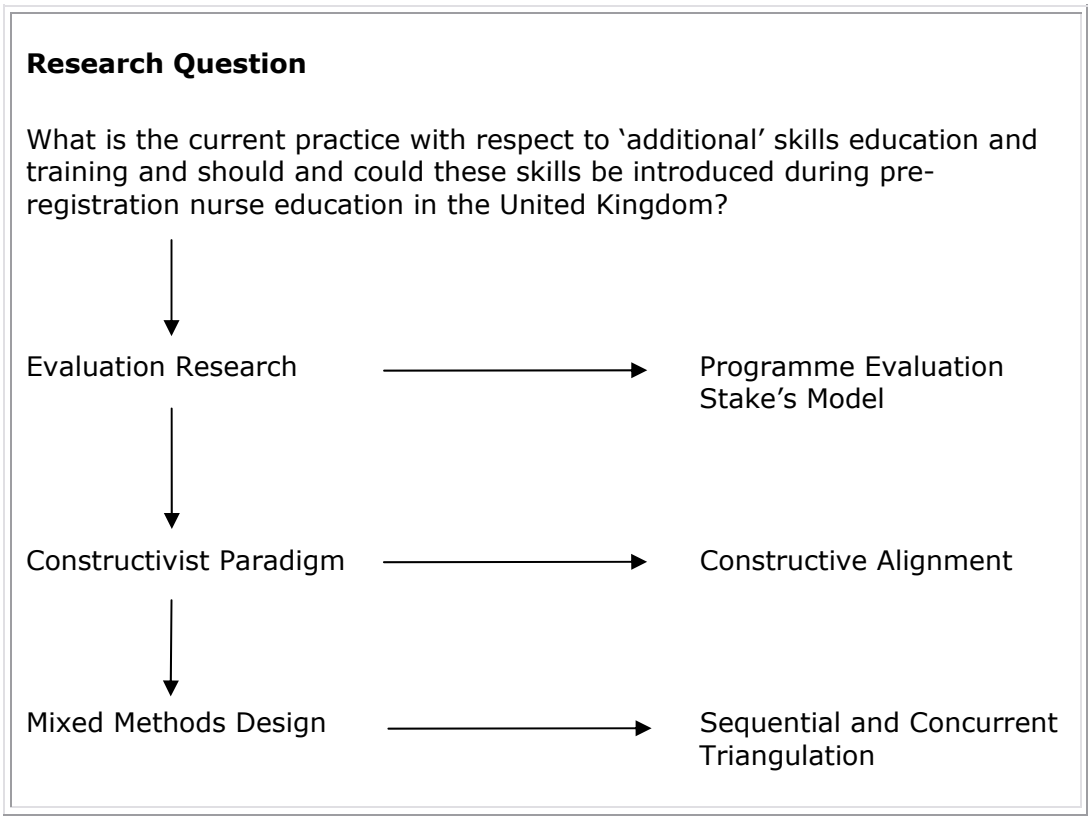


Figure 4.1 The conceptual framework for the study

Each component of this framework will be described in this chapter.

4.1 Evaluation Research

This study has adopted evaluation research and in particular programme evaluation as it's over arching philosophy and the rationale for this is explained.

Evaluation research is a fairly modern development, stemming from scientific method and emerging into a discipline of its own (Clarke and Dawson 1999). There are many different definitions reported in the literature. Rossi and Freeman (1993) described it as the assessment of a concept, a design or an implementation using systematic applications of social research methods. In their view, evaluation research was a way of judging and improving the implementation of services and programmes. Scriven (1991) described it as research which determined the merit, worth or value of something or some process. He differentiated various categories of evaluation research, namely: product evaluation; personnel evaluation; programme evaluation and policy evaluation. By arguing that evaluation is a key analytical process in all intellectual and practical endeavours Scriven (1991) came close to describing a paradigm of evaluation known as the "transdisciplinary view" or the "transdisciplinary model" of evaluation. In this model Scriven (1991) suggested that evaluation research is applied research which permeates through all disciplines. Clarke and Dawson (1999) concurred with this view and stated that there is no specific methodology for evaluation research rather that it draws on combined methods.

When considering the research question for this PhD study, Stake (1974) and Guba and Lincoln's (1989) notions of evaluation research are the most relevant to this study's design in that they proposed a "responsive constructivist evaluation". This type of evaluation enabled all stakeholders to be involved in any evaluation research, giving everyone who has a stake in the programme a viewpoint.

4.1.1 Programme Evaluation

Programme evaluation entered a new era in the late 1960s when many countries undertook educational programme evaluations. The criminal justice system, healthcare and schools all adopted evaluation research commonly using mixed-method approaches at this time. As Rossi and Freeman (1993) stated it was important to know what took place in order to explain or hypothesise why a programme did or did not work. Evaluation research also provided a method for monitoring programmes for accountability purposes. Many different models of programme evaluation were postulated (Scriven 1967 and 1972; Guba and Lincoln 1981; Stufflebeam *et al.* 1971 and Parlet and Hamilton 1972).

Scriven (1967) described formative and summative evaluation, whereby programmes did not have to be completed before evaluation could occur and removed barriers to evaluation such as "goals" or "objectives". He called this goal-free evaluation Scriven (1972). The advantages and disadvantages of these models were considered and for this PhD study the research question leant itself to the use of Stake's model of evaluation.

4.1.2 Stake's Model

Robert Stake is respected by many authors of evaluation research including Patton (1990); Clarke and Dawson (1999) and Redfern (1998). In the early 1970s Parlett and Hamilton (1972), Macdonald (1971) and Stake (1974) challenged the existing debate on programme evaluation research which had focused on measurement of the outcomes of learning rather than on educational processes. Stake's countenance model of evaluation (Stake 1967) considered the need for description and judgement in the data gathered and advocated the use of gathering data in

several different ways. This concurred with Parlett and Hamilton's (1972) "Illuminative Evaluation" model. Stake (1974) argued that there is no one way which is the correct way to evaluate programmes and some evaluation procedures can be insensitive to the uniqueness of the local conditions or the quality of the learning environment. Inevitably Stake (1974) argued each way of evaluating emphasises one aspect of a programme and places less emphasis on another. The underpinning nature of Stake's evaluation models is that he aimed to deliver a service to the person or organisation commissioning the evaluation. In spite of the era in which he was writing his models are still valuable today. Indeed the evaluation of the fitness for practice programme for England has used Stake's responsive evaluation model (Stake 1974 and Scholes *et al.* 2004). When developing this model Stake reinforced his countenance model (Stake 1967) as being one of the building blocks for educational evaluation and the matrix he designed can emphasise different aspects of a programme (Figure 4.2).

Stake's (1967) countenance model of evaluation enabled focus on the stakeholders of education. For the purpose of educational evaluation a "stakeholder" is defined as anyone who is positively or negatively affected by the programme. Stakeholder views were also important to Guba and Lincoln (1989) in their "fourth generation evaluation" model where the collaboration and negotiation with stakeholders mutually defined the most desirable outcome.

Stake's countenance model explained the use of antecedents, transactions and outcomes and further developed these into matrices representing judgement and description. Because of this type of terminology authors have described Stake's model as complex and unmanageable, especially as he added key areas of

contingency and congruence and applied these to the above mentioned facets of his model (Whiteley 1992). However, Stake's model was applied to this PhD study, particularly the involvement of stakeholders and the application of description and judgement. The incorporation of these particular aspects of the model enhanced meaningful evaluation as stakeholders with a 'stake' in the programme expressed their views. It also meant that evaluation could be considered as a consensus of multiple viewpoints and not just comparisons (Redfern 1998). Stake (1967) also did not preclude measurement and analysis but incorporated these into the understanding and meaning components of evaluation. So although for many this model may be seen as too complex to be workable, the main components of the model were workable in relation to the research question and an amended framework from Stake's (1967) original work was designed for this PhD study (see Figure 4.2).

Rationale	***Intent***	***Observation***		***Standards***	***Judgements***
To identify and recognise the skills which NQNs are acquiring soon after qualifying and to incorporate them within a pre-registration nursing programme in order to better equip nurses for practice.	Undergraduates in final year honours programme invited to undertake optional skills module.	Not all students acquired skill acquisition due to optional nature of module.	Antecedents	Six clinical skills were introduced with instruction in small groups and skills laboratory practice.	Most students in honours year chose at least one skill which they considered to be most important for their employment.
	Skills choice agreed with NHS Trusts in partnership with HEI.	1-3 hours theoretical instruction followed by 3 hours skills laboratory practice was allocated per skill.	Transactions	Instruction was given by clinical teachers from the Trust currently teaching the skills to qualified nurses or by nursing lecturers who had updated their practice.	Teaching strategies evaluated well by students and instructors.
	Students will be equipped with clinical skills necessary for immediate nursing practice with exemption from Trust courses. Employability and career prospects will be enhanced.	All students who attended achieved learning outcomes and were provided with documentation to demonstrate skill acquisition to new employer.	Outcomes	Students expected to meet Fitness for Practice and Purpose expectations and Scope of Professional Practice recommendations.	Encouragement to practice skill acquisition not consistent in all employment areas.
DESCRIPTION MATRIX			**JUDGEMENT MATRIX**		

Figure 4.2 An amended framework of Stake's Countenance of Evaluation Model pertaining to the educational programme being evaluated.

Stake described 'antecedents' as conditions which existed prior to the programme's intervention. For this PhD study these included the fact that students had already completed three years of an honours degree in nursing and had prior knowledge of the subject areas during their clinical placements and also that this skill acquisition was optional and not a necessary component of their education.

'Transactions' are described as the encounters with the students whilst they are engaged in the programme. This is the dynamic part of the process whereas the others are static. For this PhD study this was the implementation of the skill acquisition in the form of face to face sessions with classroom presentations. The content of these included research evidence for each skill. This was followed by practical application within a skills laboratory. There were also written assessments for each skill.

Stake (1967) described 'outcomes' as the consequences of learning and these could be "immediate, long-range, cognitive and conative, personal and community wide" (Stake 1967 p.528). For this PhD study this could relate to a number of outcomes which are discussed in detail in later chapters but could include: personal satisfaction in acquiring skills which are within the domain of a NQN; improved continuity of patient care; and professional development.

Stake's (1967) model also developed the issues of congruence and consistency. He stated that "the data for a curriculum are congruent if what was intended actually happened" (Stake 1967 p.532). In order to be fully congruent the antecedents, transactions and outcomes would have occurred as intended and Stake rationalises this by stating that this would rarely happen and in many instances should not happen. Stake's (1967) view on consistency related to whether there is a logical connection

between the intended transaction and the intended outcome. For this PhD study this would relate to whether the study has answered the research question. The specific question relating to the NQN research was expressed as:

If student nurses acquire all the essential practical and technical skills required for the first twelve months of clinical practice, during a pre-registration programme (intended transaction), are they better equipped and "fit for practice and purpose" (intended outcome)?

Therefore the contingency issue would be whether or not the line of enquiry chosen actually achieved what it intended. This is debated in the discussion Chapter 9.

4.1.3 Summary of Evaluation Research

To rationalise the use of evaluation research as part of this PhD study's conceptual framework it was necessary to define it and examine various views within the literature. This resulted in presenting a brief overview of the different models in existence and the rationale for the choice of one or the other depending on the research question. Because the focus of this study's research question involved stakeholders of the educational programme being evaluated, Stake's model was chosen. An explanation of Stake's model and its application to this study has been given. A research paradigm from evaluation research has been alluded to from the 1960s onwards (Scriven 1991 and Guba and Lincoln 1989). For this PhD study the constructivist paradigm has been chosen as it creates conceptual links between evaluation and constructive alignment.

4.2 Constructivism and Evaluation Research

The choice of a paradigm provides a philosophical framework for the study. It provides a world view, a general perspective and can clarify complexities (Patton 1986). The relationship between

evaluation research and constructivist theory need to be explored in order to rationalise their choice within this PhD study. Three aspects of this are explained, namely: their views on the theories of knowledge; their differences with objectivism in their views of the learner and their acceptance of multiple viewpoints.

Constructivism which has its origins in the writings of Plato, Spinoza, Kant and Nietzsche (Candy 1989) can be considered an exercise in epistemology (von Glaserfeld 1993) i.e. the perspective of 'knowing'. Constructivist theory suggests that to 'know' the world it is necessary to 'experience' it (Peters 2000). This therefore balances the two perspectives of epistemology and ontology (reality). In the same way evaluation research has been reported as providing effective insight into ontological and epistemological perspectives (Shadish *et al.* 1991). Therefore the two approaches, evaluation research and constructivism complement each other in this way. This provides a balanced design for this PhD study.

Another area of agreement for these two perspectives is their opposition to objectivism's view of the learner. Objectivism argues that knowledge is learned from experts and does not lie within an individual. The learner in a constructivist paradigm is taught to pay attention to what he or she already 'knows' and therefore remains 'active' and not 'passive' in the learning process and has a true understanding of the knowledge they are constructing. The constructivist paradigm is therefore a competent alternative to the objective viewpoint and is the paradigm of choice for many evaluative studies (Guba and Lincoln 1989). This was an important difference of opinion and enabled the choice for the constructivist paradigm for this PhD study.

The final aspect of evaluation research and constructivist theory which was explored was their acceptance of complex and multiple viewpoints. Since the research question relates to gauging different stakeholders opinions multiple and possibly complex views would be elicited by this PhD study. Philosophical frameworks which

encouraged the use of multiple views were therefore fundamental in providing a sound foundation.

By choosing a constructivist paradigm the research could focus on the participants' views of the research question. Criticisms of constructivism are related to its lack of clarity on 'realism' but others would argue that the constructivist view of realism is their own personal and subjective reality (Tobin and Tippins 1993). Also there is a view that constructivism created jargon around every day educational language and therefore created barriers to communications with stakeholders (Matthews 2002). However, the essence of its philosophy holds firm for this PhD study and its limitations are further discussed in the discussion Chapter 9.

4.2.1 Constructivism and Education

Constructivism and education came together in the field of cognitive psychology with the work of Piaget (Biggs 1999). Within constructivist education knowledge is 'built' using the construction metaphor, by individuals and it is possible to assign attributes to the teacher and student. The constructivist students it is suggested construct meaning from the discoveries they make about their environments. A constructivist teacher designs learning experiences which are active rather than passive and works at the interface between the curriculum and the student. This in turn creates new knowledge and meaning (Peters 2000). Education can therefore be seen as instigating a conceptual change in students rather than merely the acquisition of information (Biggs 1999). This concurs with the differences between education and training advocated by Burnard and Chapman (1990) and promotes the idea of developing a 'critical thinker'.

Constructivism and phenomenography are two of the main theories related to student centred learning. Both explain learning as that which is created by the learners rather than

by direct instruction alone. However, constructivism is exemplary, in terms of translation into the practice of education (Biggs 1999). Where student centred approaches are practised a comprehensive view of learning and teaching is developed. Biggs (1999) described this in relation to 'surface' and 'deep' learning where surface learning related to learning only basic facts but deep learning related to the understanding of the bigger picture. He developed a '3P model' (Biggs 1991) which showed inter-relationships between student factors; the teaching context; learning activities and learning outcomes. Biggs argued that all these components must work together in perfect alignment. He stated that the critical components of any programme were: the curriculum; the teaching methods; the assessment procedures; the climate created with students and the institutional climate which related to rules and procedures which must be followed. This was referred to as the 'whole system' which needed to be kept in balance as it worked towards the outcome of 'deep learning'. By 'aligning' these components Biggs (1999) argued that effective learning would be achieved but recognised that a theory of learning was also necessary in order to verify what it is that is being aligned. This is the constructivist theory of learning because of its understanding of the nature of learning. An aligned design for teaching combined with constructivism created the term 'constructive alignment' (Biggs 1996).

The constructively aligned curriculum design investigated by this PhD study is presented in Figure 4.3.

Teaching and Learning Activities	Curriculum Objectives	Assessment Tasks
Recognition of prior learning	Discuss and reflect on their observation of others performing clinical skills during clinical placements	Formative collation of discussions
Development of learning outcomes for each skill	Develop teaching, learning and assessment activities to match learning outcomes	Written assessment weighted 40% and practical assessment weighted 60% of overall module marks.
Student discussion on skill acquisition including professional issues related to pre-registration acquisition	Evidence students' comprehension of intended learning outcomes within 'journal club' setting and demonstrate research awareness of skills	Formative Collation of discussions
Instruction in skill components including evidence base for practice	Deliver theoretical instruction in classroom setting	Summative written assessment of learning outcomes completed in examination conditions for each skill
Practice of skill in skills laboratory using simulated models and role play	Evidence understanding and ability whilst performing identified skills in a simulated environment	Summative practical assessment of skill, OSCE style, in laboratory
Practice in drug calculations related to IV skills	Demonstrate students' competence in calculations related to IV skills	Drug calculations included in written assessment. 100% pass rate expected

Figure 4.3 Diagram of constructively aligned curriculum in the Honours Year of BSc (Hons) Nursing using Biggs's (1991) framework

Figure 4.3 explains the constructively aligned curriculum design for honours students on the BSc (Hons) Nursing course. In line with constructivist theory the learners' prior learning was recognised by discussion in classroom settings. Learning outcomes were written for each skill and learners were given documentation relating to their expectations during and after skill acquisition. The implementation of a weekly 'journal club' facilitated discussion on skill acquisition whilst critiquing local, national and international research evidence of each skill. These discussions were informal

and provided formative assessments for the learners. As indicated in Figure 4.3 the teaching components comprised theoretical instruction in a classroom setting and practical instruction in a skills laboratory setting.

The summative assessments comprised theoretical and practical components, with 40% and 60% weightings respectively for the overall module marks. There was a 100% pass rate expected for the drug calculations. It is interesting to note that the NMC (2007b) are advocating this for their essential skill achievement prior to registration.

Greater emphasis was given to the practical component i.e. the OSCE because the practical simulation was comparable to the clinical environment. This is consistent with Biggs's (1999) views in that this is ultimately what the learner is expected to do in a patient context. By aligning the teaching, learning and assessment activities in this way the educator is more certain that the intended learning will be achieved.

4.3 Mixed Methods Approaches

Considering the multiple dimensions and factors which impact on teaching and learning, a single design approach for this PhD study would not suffice. Hence a mixed methods approach was the method adopted (Cresswell 2003).

"A mixed methods study involves the collection or analysis of both quantitative and or qualitative data in a single study in which the data are collected concurrently or sequentially, are given a priority and involve the integration of the data at one or more stages in the process of research"

Cresswell cited in Tashakorri and Teddlie (2003, p. 212)

Purists argue that combining quantitative and qualitative perspectives is not possible (Guba and Lincoln 1984 and Smith

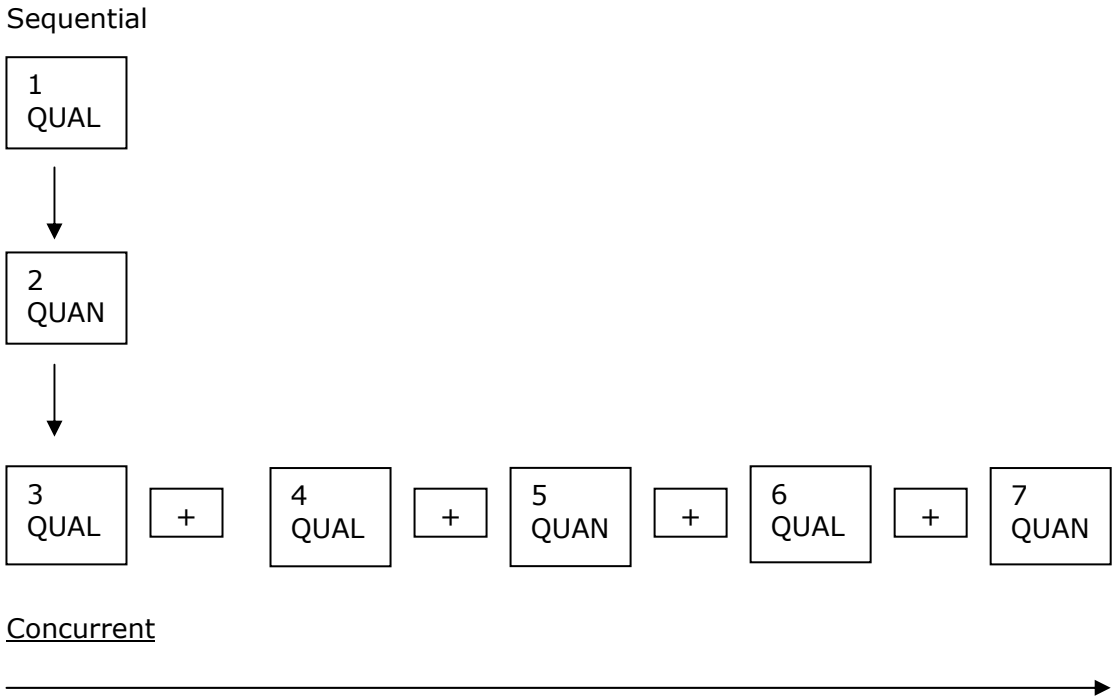
1983). It would not seem possible for some to combine lines of enquiry unless separate paradigmatic stances are taken for each phase of the enquiry i.e. a post-positivistic paradigm stance for the quantitative part of the study and interpretive paradigm stance for the qualitative part (Greene *et al.* 1989). Others for example, Cresswell (2003) and Tashakkori and Teddlie (2003) have demonstrated that it is possible to combine paradigms by producing successful mixed methods studies. Pragmatists consider the research question to be more important than either the method or the paradigm and reject the forced choice between post-positivism and constructivism but would embrace both (Tashakkori and Teddlie 2003). They advocate a single paradigm within mixed methods research or multiple paradigms as a foundation. This PhD study adopted these viewpoints and has described constructivism as a supportive theoretical framework.

Mixed Methods research is a new and emerging strategy of enquiry which combines quantitative and qualitative approaches, but probably originated in 1959 when Campbell and Fiske (1959) implemented multiple methods for psychological studies. This led to other researchers opting to mix methods. The rationale for the choice of mixed methods studies is because of the inherent biases that a single method introduces to a study and the limitations this then poses. There are many different terms used for this approach e.g. integrating, synthesis, multimethod and multimethodology. More recently the term "mixed methods" has been adopted. Within mixed methods approaches Cresswell (2003) and Morse (1991) described three general strategies, namely sequential procedures; concurrent procedures and transformative procedures.

This PhD study has adopted sequential procedures at the start, whereby one method seeks to elaborate on or expand on the findings of another method. This began with a qualitative method for exploratory purposes and then a quantitative method with a larger sample. The research question was well suited to this design approach. Concurrent procedures, whereby different data collection

methods were implemented concurrently, were then designed using further qualitative and quantitative methods as new data emerged. The theoretical perspective of the constructivist approach, where multiple viewpoints needed to be sought as well as the need to implement programme evaluation using Stake's (1967) model created the need for this concurrent design. Therefore there was merit in considering a study design which suited the research question and was based on function and purpose (Greene and Caracelli 1997b).

The challenges inherent in this mixed methods approach were the need for extensive data collection; greater time scales; analysis of both quantitative and qualitative data and the need to be familiar with both of the traditional perspectives of research methodology. Assessing the priority or weighting of one method compared to another is an important factor discussed in mixed methods research. Cresswell (2003) also described this as the 'dominant' and 'less dominant' features of a study. An attempt to keep priority or dominance equal has been made within this PhD study but it may be perceived to be skewed towards the quantitative method at the beginning of the study, as the sample size was larger. However, as the study progressed to concurrent procedures, the methods were prioritised equally. A pictorial representation of the research design explains the different methods involved (see Figure 4.4).



1	Focus Groups
2	Skills Teachers' survey
3	Newly Qualified Nurse Interviews
4	Observational Visits to Newly Qualified Nurses
5	Preceptors' survey
6	Manager's Interviews
7	Survey of Educationalists delivering skills teaching on the specific skills investigated

Figure 4.4 Research design showing sequential and concurrent strategies of mixed methods approach

The advantages of using mixed methods designs is the quality of inferences that can be made from one study (Tashakkori and Teddlie 2003).

4.4 Triangulation

Triangulation is a process to improve the information obtained and provide a more holistic view (Begley 1996). The term originated from the nautical world to describe three points of measurements for navigation (Denzin 1989). The term was adopted to describe research data and different types of triangulation were identified. Two types were investigator triangulation which involved two or more skilled researchers

examining data and comparing their findings and theoretical triangulation which developed competing hypotheses, tested against each other. Other types of triangulation include: data triangulation; methodological triangulation; across methods triangulation; within methods triangulation and analysis triangulation.

All of these types of triangulation have some bearing on this PhD study in particular 'across methods' and 'analysis' triangulation. The former is a sub division of methodological triangulation and involves the combining of strategies from two or more research traditions within one study. Analysis triangulation involves the use of two or more approaches to analyse the same data and enhances validity.

Some authors described mixed methods research through the concept of triangulation (Greene *et al.* 1989). Some mixed methods studies used triangulation as their conceptual framework in order to strengthen the validity of the enquiry. By using different methods intentionally within a study to address the same phenomenon, biases of one method are counteracted and the validity of the enquiry findings is enhanced (Greene *et al.* 1989). However, there are other advantages to mixed methods studies apart from triangulation as discussed previously.

The concept of triangulation where the researcher looks for convergence across qualitative and quantitative methods was introduced as mixed methods studies grew in popularity. The term "integration" is given to the mixing of the data (Cresswell 2003) and within mixed methods research this can occur at various stages. Within this PhD study it occurred during the data analysis and interpretation phases. This involved combining quantitative data sets and triangulating data from qualitative and quantitative methods.

Some disadvantages of triangulation have been explained by Begley (1996) as being an inability to guarantee internal and external validity; the possibility of compounding error; the unit of analysis may not be the same for all the methods chosen and the difficulty of study replication. The issue of units of analysis referred to the use of different sample groups within the same study and this was advocated as permissible by later authors (Cresswell 2003, Tashakkori and Teddlie 2003). The advantages are reported as improving confidence in the results and any divergent results being used to enrich the explanation. Triangulation also enables complex issues to be interpreted and enables the researcher to explore the breadth, depth, richness and wholeness of data. This can be argued as bringing completeness to the data analysis (Adami and Kiger 2005). It also has the potential to bring new perspectives to the phenomenon under investigation (Foss and Ellefsen 2002). The advantages outweighed the disadvantages and advocated its use in this study.

4.5 Summary of Conceptual Framework

The conceptual framework for this PhD study is complex but straightforward in that it fits the research question. A programme has been evaluated and therefore the choice of an evaluation research framework was appropriate. The specific area of programme evaluation using Stake's (1967) Countenance model of evaluation had sound research rigour and although described as complex model by some researchers, it proved to be appropriate for a programme evaluation where stakeholders' views were sought. The value of Stake's model is supported by many authors. The rationale for choosing this framework in turn led to the constructivist paradigm due to its ability to accommodate differing viewpoints and it being reported as the paradigm of choice for evaluative studies. Added to this**,** the choice of Bigg's (1999) constructive alignment theory was appropriate for analysing the ways in which meaning is constructed from the programme. It was necessary to design

a mixed methods study to address the many components of this PhD study and indeed this is recommended by evaluation researchers. Thus the conceptual framework was designed to suit the research question and proved valuable in addressing the issues identified by this PhD study.

The limitations of the study design are debated in Chapter 9. The next chapter (Chapter 5) addresses the methods used.

CHAPTER 5 METHODS

5.0 Introduction

This chapter focuses on the methods used in the study. It describes the sampling strategies, and the determination of sample sizes. The sequential and concurrent phases of the mixed methods approach (see Table 4.8) are described. Ethical issues, methods of analysis and reliability and validity issues are also addressed.

The research question addressed in sections 5.1-5.6 is as expressed in Figure 4.1:
What is the current practice with respect to 'additional' skills education and training and should and could these skills be introduced during pre-registration nurse education in the United Kingdom?

The research question addressed in sections 5.7-5.11 is as expressed in Section 5.7.1:
If student nurses acquire all the essential practical and technical skills required for the first twelve months of clinical practice, during a pre-registration programme, are they better equipped and "fit for practice and purpose"?

The methods and sample populations are presented in Table 5.1.

5.1 Sampling strategies

Table 5.1 Methods and sample populations

Sequential	*Timeline*	*Method*	*Sample Populations*	*No.*	*Further details are found in*
1	Jan 2001	Focus Groups	Nursing Lecturers; Newly Qualified Staff Nurses; Nurse Managers; Clinical Educators and Trainers.	48	Table 6.1
2	2001-2002	**Survey 1** Clinical Skills Teachers' Survey	Teachers of skills within Educational Institutions (EIs) and Clinical Establishments (CEs) **Note:** These codes were used on the questionnaires as abbreviations for Higher Educational Institutions and Clinical Establishments	530	Table 6.2a and 6.2b
			Concurrent		
3	2003-2004	**Interview 1** Newly Qualified Nurses	NQNs from 2 groups: Those who had skill acquisition during pre-registration programme (Experimental group) and those who had not gained this during pre-registration (Control Group)	60	Tables in Chapter 7
4	2003-2004	Observations	NQN observations during work time, in clinical areas	60	Tables in Chapter 7
5	2003-2004	**Survey 2** Preceptors' Survey	Preceptors of NQNs from experimental and control groups	60	Tables in Chapter 7
6	2003-2004	**Interview 2** Nurse Managers	Nurse Managers within areas NQNs were practising	16	Table 7.15
7	2003-2004	**Survey 3** Specific teachers from Clinical Skills Teachers' Survey	Teachers within EIs who were teaching skills being investigated	11	Table 7.16

The overall strategy used was purposive and convenience sampling. Purposive sampling was chosen in order to ensure that participants reflected the range of the stakeholders involved with pre-registration nurse education. These stakeholders are listed as the sample populations in Table 5.1.

The sample populations were convenient samples because they would be expected to have an opinion on the research question and were directly or indirectly involved in the skills being investigated. The preceptors and the nurse managers were purposively and conveniently sampled as those individuals responsible for the NQNs from the experimental and control groups (see Sections 5.9 and 5.10). Survey 3 involved a percentage of survey 1's sample group i.e. those who had responded in a particular way to survey 1 (see Section 5.11).

The focus groups also demonstrated homogeneity sampling, in that like groups were formed according to job titles and roles within the collaborating Trust. A form of snowball sampling was evident for survey 1, whereby the initial recipient of the questionnaire could make a decision to pass on the questionnaire to another person. If the recipient was not the appropriate person or if there were others who were appropriate, the recipient was invited to photocopy the questionnaire for survey 1 and pass it on. This is not true snowball sampling but has some resemblance to it (Fink 2002).

Quota sampling (Oppenheim 2000) which involves taking a specific number of a certain group is another aspect of purposive sampling that was adopted for the NQN interview method.

5.1.1 Determining sample sizes

Eligibility criteria were decided for each sample (see Appendix 4) and recruits for the study were volunteers.

Focus group sizes are recommended to be between 6-12 participants (Kruger 1994, Clark *et al.* 1996, and Morgan

1988). Twelve individuals from the sample populations listed in Table 5.1 were invited for each focus group and six groups resulted.

The sample population for survey 1 was an unknown number and this population database had to be created before the survey could progress. A pilot study demonstrated that the initial contacts given for creating the mailing lists were inaccurate and the task of consulting the Universities and Colleges Admission Services (UCAS) directory for HEIs delivering nurse education in the UK and the NHS directory of Trusts was the way forward. From these directories telephone numbers were obtained and each organisation was telephoned to ascertain the name and address of skills teachers employed. This sample population numbered 530, comprising 211 lecturers and 319 clinicians (see Tables 6.2a and 6.2b).

The NQN sample size was determined by statistical analysis using Minitab. A power analysis was carried out for a range of meaningful differences between two groups, based on a one-tailed t-test. The one-tailed t-test is more powerful and the value yielded by the statistical test does not need to be so large to be significant at a given p level (Munro 2001). The power analysis was based on a significance level of 0.05 and a standard deviation of results of 1. The term 'power' in this context is the probability of obtaining a significant rejection of the null hypothesis. The power analysis resulted in a range from 0.1035- 0.9973. A sample size of 30 would give a power of 0.7427 and since numbers greater than 0.7 were considered 'reasonable', this sample size was thought appropriate. Therefore two groups of 30 NQNs, totalling 60, formed the sample population.

Sample sizes for the preceptors and nurse managers were determined by the work location of the NQNs. Potentially 60 preceptors and 60 nurse managers could have been targeted

but some NQNs could have had the same preceptor and nurse managers cover a few ward areas and therefore the sample sizes are lower.

5.1.2 Gaining access to sample populations

The focus groups were conducted within the researcher's geographical area and access was primarily via a letter of invitation and e-mail contact for the lecturer groups. For the NQNs focus group access was via the Professional development co-ordinator of the collaborating clinical establishment. Clark *et al.* (1996) described this as negotiating with gatekeepers who may conscript participants as part of their own agenda. The researcher was unaware of this occurring within this study and relied on the goodwill of the 'gatekeepers' for NQN access later in the study.

Access to the skills teachers in survey 1 was gained by telephoning their work departments and asking for names and addresses. In some cases this required up to four phone calls per organisation as the researcher was passed from person to person to verify access. Access to the preceptors was gained via the NQN at the observational visits, as the preceptor contact details were not known to the researcher and the NQN was in direct contact with their preceptor.

Nurse Managers for NQNs within the study were e-mailed and access for interviews was gained in this way.

5.2 Addressing ethical issues

The proposal for the study and a copy of the questionnaire for survey 1 was submitted to the Grampian Research Ethics Committee (GREC) and the response was that no further ethical submission was required. At the time of submitting for the research degree there were no university or school ethics panels to which the proposal should have been submitted, as GREC had representation from all organisations concerned. The letter of response from GREC is

appended (see Appendix 2).

Further contact was made with the collaborating establishment's director of nursing to verify permission to access NQNs working in the main hospitals. A summarised response from GREC was included in the introductory letter for survey 1 and NQNs were informed that permission to conduct the study during work time had been gained from the Director of Nursing.

For the NQN interviews and observations it was recognised that no harm should come to the respondents as a result of participating in the study. There was no deception and the observations were overt because the NQNs knew the researcher from the interviews and they had agreed to have observational visits in their clinical setting (Patton 1990, Robson 2002). There were no attempts made to give rewards for participation and no coercion was practised, described by Oppenheim (2000) as extrinsic motivating factors. However, Oppenheim's (2000) intrinsic motivators were relied upon as enabling participation. This is where the participants' desire for example to influence changes in nurse education would be the main reason for volunteering their participation. Indeed, the fact that the introductory letter mentioned the value of the study to nurse education, suggested that intrinsic motivation was certainly more likely for choosing to volunteer.

Anonymity and confidentiality was guaranteed to all participants and all were recruited on a voluntary basis with the facility to disengage from the study at any time. Information and data gathering tools (e.g. audio-tapes, questionnaires, interview schedules, observation checklists etc.) were coded by number and colour but no individual names or identifying items were retained once contacts had been made. Audio tapes were stored in locked and secure areas within the university.

5.3 Methods of analysis

In this study with its mixed methods design the methods of analysis varied according to the method being implemented. The focus

groups, interviews and observations are of the qualitative paradigm and leant themselves to content or narrative analysis (Bowling 1997 and Fielding 1993). The surveys are of the quantitative paradigm and leant themselves to numerical processing and statistical analysis. However there were qualitative and quantitative perspectives to each method used as in true mixed methods design (Cresswell 2003).

5.3.1 Statistical analysis

SPSS version 11 was used for the analysis of data. For each year of the study the software was updated, concluding with SPSS version 15. Also Minitab was used for merging and stacking data sets as this was an easier and user friendly process using Minitab compared to SPSS.

The numerical data for surveys 1 and 2 and the data from the interviews and observations were entered onto SPSS data sets. Open questions which revealed qualitative data were entered onto SPSS in the form of "strings" and frequency of responses were elicited but this data were also subject to content analysis.

Two data sets were created on SPSS:

- Survey 1 containing data from Education Institutions (EIs) and Clinical Establishments (CEs).
- NQN data from interviews and observations along with survey 2 data from preceptors. This data set was coded into two groups i.e. experimental group and control group.

Descriptive statistics were produced for the 4 groups and are presented as tables and figures with bar charts and pie charts in Chapters 6, 7 and 8.

By coding the data into two data sets it was possible to analyse results based on the individual data set but also to merge the two together and triangulate the findings. This

was only possible for certain parts of the data where ordinal responses were elicited. For example, question 5 in survey 1 elicited responses 'essential', 'desirable' and 'not necessary' and in the NQN interview data where responses for skill acquisition were ranked as 'yes' (1); 'yes in the future' (2) and 'no' (3). Merging and stacking data in this way is referred to as 'concatenating' files (UCLA 2008) and resulted in 5323 responses for the four groups in relation to the 26 skills investigated. This was performed using Minitab and SPSS. However, care and attention must be given to the analysis of merged data because the data contained multiple responses from the same individual. This meant that measures were not strictly independent of each other and this would invalidate some statistical tests such as Chi Square. For this reason some of the merged data are analysed as frequencies only with bar chart representations (Figures 8.1, 8.2, 8.3).

Other merged data elicited 'yes' or 'no' responses only and elicited single responses from each individual (Figures 8.4 and 8.5). Chi square tests were appropriate and applied for these data.

5.3.2 Use of statistical tests

Non-parametric tests were used. These tests depend on not making assumptions regarding the distribution of the variables being measured within the sample population. Non-parametric tests are also necessary to note the differences between the groups on an outcome measure (Munro 2001). The research question is trying to answer whether or not a relationship exists between the groups investigated i.e. EIs, CEs, experimental and control groups, in relation to the skills investigated and therefore these tests were appropriate.

5.3.2a Chi Square

Chi Square was one of the statistical tests chosen because it is the most commonly reported non-parametric statistic. It compares the actual number or frequency in each group with the expected number. The question it answers is whether the expected number differs significantly from the actual number. Chi square is also used when data are nominal and therefore could be applied to questions such as 'acceptability of skills' and 'stage of skill acquisition'. Chi Square was appropriate for the findings presented in Tables 6.4, 6.5a, 7.2, 7.3, 7.5, 7.9, 7.10 and Figures 8.4 and 8.5 because responses were independent of each other, i.e one participant's response did not affect the other and the same participant did not respond more than once.

5.3.2b Fisher's Exact test and Pearson Chi Square Exact test

This test is recommended when sample sizes are small and when too many cells have expected counts of less than 5 when using Chi Square. Fisher's Exact Test calculates probability directly. In most cases it is possible to draw the same conclusions form Fisher's exact Test and from Pearson Chi Square Exact Test and by using both and making comparisons there is greater accuracy of the result. For the findings presented in Tables 7.2, 7.3, 7.5, 7.9 and 7.10 Fisher's Exact Test and Pearson Chi Square Exact Test were computed using SPSS version 15.

5.3.2c Kruskal Wallis test

This is a one way analysis of variance where there are three or more independent groups. In these tests the groups mean scores are converted into ranks and the analyses compares the mean ranks in each group (Munro 2001). It was particularly useful for analysing the merged triangulated data where the responses were ranked (1, 2 and 3). The groups' mean responses were first computed and then the sum of the ranks for each skills category was computed.

This is presented in Table 8.1. The aim of the test was to determine if the groups were significantly different from each other in terms of their responses.

5.3.2d Mann Whitney tests

Following the Kruskal Wallis test, the Mann-Whitney tests were used to further analyse the groups' responses between two groups (i.e. pair-wise comparisons). If pair-wise comparisons had been made repeatedly amongst the four groups the chance of introducing a type one error would need to be considered. For this reason pair-wise comparisons were used with limitations for each triangulated category of skills. These are represented in Tables 8.2, 8.3 and 8.4.

5.3.3 Content Analysis

The qualitative data from the focus groups, surveys, interviews and observations were subjected to content analysis using Strauss and Corbin's process (1990 and 1998) which was later refined by Cresswell (2003). This required deciphering categories, themes and concepts by constantly listening to the audio tapes from the focus groups and interviews, as well as reading transcripts many times.

The audio tapes were transcribed verbatim by a member of secretarial staff using the interview schedule as a template. These transcribed interviews were verified as accurate by the respondents during the observational visits. Each respondent's answers to the open questions in survey 1 were written out manually and colour coded for the different groups. Then it was possible to organise the data into "chunks" (Cresswell 2003) and thus enabled the segmenting of sentences and labelling of categories with a term. Strauss and Corbin's (1998) define this as 'open coding'. Coding was achieved by constantly reviewing the data and noting both evidence which confirmed and contradicted the research question (Simpson and Tuson 1995). The latter

was important as it provided deeper insights into the original assertions and ensured objectivity.

To progress into higher levels of analysis the following techniques were employed: noting frequency of occurrences; noting patterns; and cluster development or selective coding (Cresswell 2003) when a story is explicated from the interconnection of the categories and represented as the main findings.

5.3.4 Making generalisations from the data

Sim (1998) and Guba and Lincoln (1994) reported different types of generalisations e.g. empirical and theoretical. An empirical generalisation, in order to be valid will require statistical representation of the sample with respect to the target population. Statistical analysis was possible for most of the data and was representative of the target populations, enabling empirical generalisations to be made.

Theoretical generalisations involve reviewing the study logically and conceptually in order to make projections from the viewpoints expressed. This was possible for this study as the methods of analysis employed were sufficiently detailed, from quantitative and qualitative paradigms and triangulation of data were achieved.

5.3.5 Triangulation of data

Certain similar questions within the SPSS data sets were recoded and merged together. This meant that data relating to EIs, CEs and NQNs could be cross correlated and statistical tests applied. The skills analysed for the four groups were categorised into IV skills, acute skills and professional skills and the findings are presented in Chapter 8. Other data from the EIs, CEs and NQNs analysed in this way were from the questions "should nurses undertake the skills investigated?" and "should this be within a pre-registration programme?"

Findings from the qualitative sources of data were also triangulated by making comparisons of the data from questions which were similar. This was possible for the data from focus groups, open questions from surveys, interviews and observations.

5.4 Reliability and Validity

In order to make generalisations from the findings the reliability and validity of the data needed to be verified. If survey tools are reliable then over time the results should be consistent and near identical (Fink 2002 and Oppenheim 2000). Reliability is therefore enhanced if the same information is being returned by the same instrument. With survey 1 there were one or two returned questionnaires where one question was misinterpreted (see later in Chapter 6: survey 1) but apart from this all survey responses were consistent.

Quasi experiments (see Section 5.7) as designed for the NQN part of the study have tendencies to leave some "threats" to validity uncontrolled but as long as these were recognised in the study then satisfactory conclusions can be drawn (Wiess 1972; Robson 2002).

For the qualitative data reliability can be determined by observing consistent patterns in theme development within the analysis and one interview/observation can be checked against another interview/observation (Robson 2002). However, it is validity which is considered one of the strengths of qualitative research in terms of determining the accuracy of findings. The terms "trustworthiness, authenticity and credibility" are more commonly attributed to validity within qualitative research (Robson 2002) and the methods to verify this are: triangulation; member-checking; an open and honest narrative from the researcher to clarify bias; a rich thick description to convey the findings; presenting negative or discrepant information that negates the theme; spending prolonged time in the field; the use of peer de-briefing to enhance the accuracy of the account and an external auditor to review the entire project (Robson

2002). Within this study most of these methods have been employed with the exception of spending prolonged time in the field. Peer de-briefing and external auditing has been achieved through the supervision process for this PhD study.

5.4.1 Accuracy and consistency of tools

Content validity has been enhanced throughout the study by its mixed methods design, whereby one method's findings validated the next method's content. This was especially true for the focus group method followed by the survey method. Participants in the focus groups having the same or similar job titles strengthened the validity of the findings. The group dynamics and consequently the disclosure of information can be affected if there had been hierarchical differences (Kitzinger 1995).

In order to check the validity of the survey tool for survey 1, i.e. that it was measuring what was supposed to be measured and was accurate, Cronbach's coefficient alpha was attempted. This is a respected method of assessing validity and reliability but did not prove effective for the entire survey tool as the majority of questions were not ordinal in nature. The question which did have ordinal responses (question 5) i.e. "essential, desirable and not necessary" was proved valid by the analysis undertaken.

Enhancing validity and reliability was attempted, within all the survey tools by using short and longer answer questions; careful sequencing of questions; using filter questions and asking the same question in different ways.

For the observational visits, reliability involved obtaining the same results when measuring the same behaviour on different occasions and this was possible with one observer who was also the researcher who understood the study. Having more than one observer was not an option as the researcher was conducting her own research. The use of the

observation schedule; the rating scale and the NQN's narrative increased objectivity.

The self- assessed confidence rating scale (see later in Chapter 5 Section 5.8 Observational visits to NQNs) which was used for the NQN observations and the preceptors' survey (Survey 2) was kept simple and linear in order to ensure accuracy and consistency. It was familiar in that it resembled other ratings' scales used by nurses i.e. to assess pain, pressure ulcers and continence. Observer consistency was achieved (Robson 2002). The reliability and validity of the rating scale could be seen as a limitation of the study as it had not been tried and tested before. However, its use within this study provided consistent results for three separate sample groups, namely the experimental and control groups and the preceptor group. This enhances its reliability as these groups responded over a time period from 2003-2004. There were also very similar results from two of the groups namely, the experimental group and the preceptor group. This enhances the rating scales' validity as the tool is measuring what it is expected to measure. These results are found in Chapter 7.

5.4.2 Pilot Study

The implementation of a pilot study enabled the checking of accuracy and consistency of the survey method. When considering the UK as a whole, Northern Ireland was a suitable geographical area to pilot. Five Directors of Nursing within clinical establishments and six Heads of School or Nursing Departments within educational institutions were identified as the people who could access the teachers of clinical skills in Northern Ireland. They were instructed to pass on questionnaires to an appropriate member of staff. The mailing to these eleven contacts included an introductory letter, the questionnaire, and a freepost envelope for the return of the questionnaire. After a three week interval for the return only three replies were elicited.

One reply stated that the respondent was no longer involved with nurse education. Of the other two from clinical areas, one was completed very well the other was not completed appropriately. The Northern Irish contacts who had not replied were e-mailed and telephoned and messages were left. Fifteen contacts including previously known ones were identified and 11 questionnaires were returned on second mailing.

This pilot study demonstrated errors in the sampling strategy, access to the sample populations and the survey tool. By making amendments following the pilot study the research could progress.

5.4.3 Minimising error and bias

Due to chance variations in sample choice there will be a deviation from the true nature of the population and this is termed 'sampling error' (Munro 2001). This can lead to 'inference error' whereby the wrong conclusion is drawn for the target population. By painstakingly checking with each organisation and creating the mailing lists for survey 1, any obvious sampling errors have been avoided, although one hundred per cent certainty can never be achieved.

A factor to consider in attitude measurement and "measurement error" is stability or test-re-test reliability. This indicates that a measure is stable if the correlation between scores from one time to another is high (Fink 2002). If too much time elapses, external events might influence responses, if the survey for example was administered a second time. The researcher considered this carefully, due to the topical nature of this project. Events were changing rapidly with the implementation of the UKCC's Fitness for Practice Report (UKCC 1999a). The mailing list for the CE sample in England and Wales took a considerable time to finalise and it delayed the distribution of the questionnaires to these regions to the latter part of the

year (i.e. November 2001 see Table 5.2). This could have affected the test-re-test reliability when correlating these results with questionnaires to the Scottish CEs and the UK EIs. The latter were distributed earlier in the year.

The use of statistical analysis for determining sample size for the NQNs, enhanced validity and minimised sampling error for this population.

The use of triangulation can perpetuate an error made with one set of data as it is triangulated with another, creating a systematic error. It is systematic errors which have the most serious effects and would have caused the findings to be a mixture of true answers and researcher effects or bias (Oppenheim 2000). Careful attention to data encoding on SPSS and checking was adopted by the researcher in order to avoid any such errors.

Bias is the most difficult issue to rule out (Robson 2002) but by using a respected style and format for designing and implementing research tools, as recommended in the literature and by adopting a professional manner, bias was minimised. The researcher had prior to the focus group preparation searched the literature related to the "acquisition of skills" and had views on the subject, which could have given a biased perspective on the research and the development of the questionnaire. By conducting focus groups there was confirmation for the research enquiry with other members of the nursing profession.

The question of volunteering for a study also raises issues of bias, because although volunteers would be cooperative participants they could also be individuals with a reason for being involved with the topic being studied, either with an over enthusiastic verve or an entrenched position (Drever 1995). The researcher had the option to include or not include the participant if this was felt to be the case but with

all the tools utilised it seemed apparent that people had participated due to their own intrinsic motivators.

Observer bias was a possible issue in relation to the validity of the observational visits. Minimising this bias was attempted by first conducting the focus groups, the survey and the interviews which enabled assumptions pertaining to the research question to be explored. This indicated what might have been observed differently (Simpson and Tuson 1995). The second observation helped to validate the first one as checks on accuracy of recording could be made with the NQN. The observation schedule from the first visit was verified by the NQN on the second visit.

5.5 Implementing Focus Groups

The rationale to use a qualitative method at the start of the study was to provide an exploratory base from which to build more specific tools for the enquiry. The research question addressed at this phase was:

What is the current practice with respect to 'additional' skills education and training and should and could these skills be introduced during pre-registration nurse education in the United Kingdom?

Focus groups are unstructured interviews with small groups of people who interact with each other and the group leader (Bowling 1997). They "focus" on a specific topic, and have gained considerable popularity as a means to gather primarily qualitative data (Sim and Snell 1996, Kruger 1994). By not interviewing on a one-to-one basis, this exploratory phase of the study was achieved quickly and economically (Bartos 1986 and Moran 1986). Attitudes and opinions were expressed more readily than with questionnaires, trends and patterns were identified easily and areas not considered initially were brought to light by the participants (Kruger 1994).

Six focus groups were conducted in the researcher's local area with different numbers of volunteers (6-12) and categories of people (see

Table 5.1) each time. The facilitator i.e. the researcher had previous experience of working with groups; a curiosity for the topic area and respect for the participants (Kruger 1994). Concentration throughout the discussion is paramount and therefore distractions relating to the administrative aspects of the group were avoided by engaging the service of an assistant. An ex-school of nursing administrator was employed who was able to ensure that the hospitality arrangements; the technical recording of the focus group were managed and also acted as a scribe. This enabled the facilitator to focus on moderating the discussion.

The lecturer groups were held at the university at the same campus that the nursing lecturers were based. The clinical staff venue was the Professional Development Department on the site of the collaborating institution. The rooms were comfortable and not too large or over-imposing and not distracting (Clark *et al.* 1996). The seating arrangements were circular with tables for each participant and a central microphone for audio recording. Participants self-selected their seat. The focus groups were held during working hours either in the morning or afternoons and each session lasted about two hours.

The focus groups were audio taped with the assistant and the researcher taking notes during the implementation of the focus groups. The researcher checked out the equipment and monitored sound levels and arranged the environment before the participants arrived in order to ensure that the method of data collection did not have any effect on group interactions.

A letter of invitation had been sent out to participants with a separate sheet of questions to enable some consideration of the topic area prior to arrival (see Appendix 5). This helped participants to start contributing quickly (Kruger 1994). Refreshments were available at the start of the focus group and participants interacted with each other prior to the commencement of the group discussion. The researcher was also aware of the time constraints of the participants and had to balance the necessity of social interaction

with the main reason for meeting.

5.5.1 Summary and Limitations of Focus Groups

It is difficult to analyse how the researcher affected the group interactions due to the personal involvement. Clark *et al.* (1996) stated that the facilitator should have no vested interest in the outcome of the session. However the researcher was conducting research contributing to a research degree and therefore was interested in the outcome of the session. Nyamathi and Shuler (1990) described facilitators as providing "mild, unobtrusive control" over the group. This was the role with which the researcher could identify most.

The conversation flowed well possibly due to the fact that the topic was of interest to the participants and that they were comfortable in expressing their opinions. Also the information given prior to attending enabled the planning of their answers and this had the advantage of stimulating discussion immediately.

Occasionally there was a tendency to stray away from the topic, using the opportunity to air views on other related topics but focus was maintained in order that all the questions were addressed in the given time allocation. The views of the main authors in this area (Kruger 1994, Kitzinger 1994, Clark *et al.* 1996, Bowling 1997, Sim 1998 etc.) influenced the design and construct of the focus groups. The analysis was shortened to enable the progression to the next phase of the study. In so doing the researcher may not have evaluated the focus group findings in the detail that should be afforded them, but the tapes and the written notes were preserved had this been necessary at a later date.

Had the author widened the focus group involvement to other areas of the UK then the statistical representation of

the wider target population would have enhanced validity. However, as has been stated previously, the focus groups created a spring-board on which the rest of this study can build and served to assist in the design of the next phase and add to its content validity. The focus groups generated interesting discussions regardless of the numbers present and the researcher was able to compare the findings with the review of the literature and plan the next stage of the study.

5.6 Skills Teachers' Survey (Survey 1)

A survey method was chosen for this phase of the study and this strategy concurred with Fink (2002) and Cresswell's (1994) views that surveys should have objectives prior to their design and the way to generate these objectives is to hold focus groups or consensus panels.

The research question addressed at this phase was:
What is the current practice with respect to 'additional' skills education and training and should and could these skills be introduced during pre-registration nurse education in the United Kingdom?

Survey method was also appropriate as the numbers were larger and the distances involved were greater. Surveys are a respected and accepted method of data collection. Fink (2002) and Oppenheim's (2000) definitions of surveys were appropriate for this study as opinions and attitudes to skill acquisition needed to be explained and a measurement of this opinion and attitude was required.

Sudman and Bradburn (1974) stated that the context in which the survey takes place is also important and described the survey as a special type of social activity, which involves contact with people who typically are strangers. The context in which these people exist partakes of larger social and cognitive processes, which may affect the results. The sample populations for this PhD study are members

of large organisations: Institutions of Higher Education and National Health Service Trusts and it was easy to see how the macro and micro effects of these organisations could have a bearing on the individuals' completion of the survey. However, a survey was the best method to reach the intended population and satisfy the research question.

5.6.1 Questionnaire design

A self administered postal questionnaire was decided on as e-mail contacts were not available for all contacts at the start of survey implementation.

It was decided to design separate but similar tools for the higher education teachers and the clinical establishment teachers (see Appendices 6a and 6b). This decision was based on the researcher's knowledge of the different types of courses taught within each organisation and the different emphasis each would have on the skills being investigated. Similarity within the questionnaire design would allow comparisons between the organisations. Only the first question regarding the type of courses taught was different for each organisation and the structure of question three was also different. The remaining questions elicited responses regardless of the respondents' organisation.

Both open and closed questions were included within the design. Closed questions provided factual responses and open questions enabled opinion to be sought, (see Appendices 5 and 6) concurring with views on questionnaire design reported by Oppenheim (1984), Fink (2002) and Schuman and Presser (1996).

Nominal and ordinal responses were elicited. Nominal responses related to job titles, location of organisation etc. Ordinal responses included rating skills as "essential, desirable or not necessary". Some numerical questions were also included asking respondents to indicate the number of

months and years they would consider appropriate for skill acquisition.

The length of the questionnaire was considered carefully as it could affect response rates. Six pages resulted with spaces for the open-ended responses and by double siding the questionnaire the appearance of three pages was created. Factual and closed questions were concentrated at the beginning. This concurred with studies by Iglesias and Torgerson (2000), Sitzia and Wood (1998), Hansen and Robinson (1980) and Powers and Alderman (1982).

5.6.2 Amendments following Pilot Study

Based on the results from the pilot study (see Section 5.4.2) amendments were made to the questionnaire. This included changing the title, making it more user friendly, moving the questions relating to the personal information towards the end. Further clarity was required for the skills investigated as some respondents had listed every practical and technical skill which nurses undertake during a pre-registration course.

One major amendment was to take out the word "additional" from the wording of the questions. "Additional" had been used in the research proposal to describe the type of clinical skills to which the researcher was alluding in spite of this description not existing in the literature. Other options would have been "extended skills" or "scope of professional practice" skills but these could conjure up historical connotations of their development. The word "additional" could have been interpreted as "add-ons" or "extra skills" which could then create an unintentional barrier in perception and acceptance of these skills as nursing skills. This was borne out by some of the focus group analysis and conceded with Cresswell (1994) who emphasised the importance of defining terminology and maintaining consistency throughout. The term was defined in the PhD

proposal and it could have been defined at the start of the questionnaire. However, it was thought that defining the term too much would introduce researcher bias into the questionnaire. Also part of the research design was to determine skill identification and the nature and meaning of these skills to nurses. This did lead to some minor problems of interpretation.

One such question which proved ambiguous was question number 2 (see Appendices 6a and 6b). This question was changed to take out the word "additional" and after this it read:
"Do these courses include technical/practical skills normally considered within the UKCC's "Scope of Professional Practice" and outside the requirements for nurse registration in the UK?"

The choice of answer was "Yes" or "No" but this question was ambiguous for some respondents. Two respondents did not understand it. Some scored out both "yes" and "no" and put "some". Some answered "yes" when "no" was apparently meant. This was discernible because of the way question 3 (Appendices 6a and 6b) was then answered. If every clinical skill within the pre-registration curriculum was listed, the researcher knew that the respondent had not understood the question. The majority of respondents did understand the question, but as this question then led them to different parts of the questionnaire, it was a crucial one to understand. This was therefore a "filter" question (Oppenheim 2000).

Colour coding for the educational and clinical questionnaires was also necessary. Blue and green paper was used for the educational institutions and clinical establishments respectively.

5.6.3 Implementation of Survey 1

The questionnaire along with a covering letter was mailed out to the sample population (see Appendix 6). Due to the difficulties encountered with creating mailing lists for the sample populations the questionnaires were dispatched in batches. The dates for dispatch are indicated in Table 5.2.

Table 5.2 Time line for posting Survey 1

	1st Mailing	Number Responded	2nd Mailing	Number Responded
EI (UK wide)	211 May 2001	2	150 June 2001	61
CE (Scotland)	55 June 2001			20
CE England & Wales	264 Nov 2001	34		75

5.6.4 Survey follow-up

For each second mailing the entire package of information and enclosures was re-sent to non-respondents concurring with Becker *et al.* (2000), who found that this yielded a higher response rate.

A number of e-mails and telephone calls were received from some respondents who had been away from work and had not returned the questionnaire on the due date. The researcher encouraged these respondents to return them as soon as possible. Follow-ups are known to significantly increase response rates (Yu and Cooper 1983) as well as monetary incentives (Martin *et al.* 1989). However, a copy of the executive summary for the study was the only incentive offered. This required contact details to be returned by the respondent.

5.6.5 Summary and Limitations of Survey 1

Survey 1 involved the design of a tool to gauge opinion and gained access to the sample population. Whilst the response

rate for the survey was low (see Table 6.2a), some significantly valuable data have been derived from combining the two sample groups of EIs and CEs, giving a combined sample group of 156 professionals teaching clinical skills in the UK. Efforts to encourage response were attempted within various constraints of time and resources. In hindsight the researcher could have sent a post card reminder after three weeks (Dillman 1983) but more than three weeks was given for the first return date and the second mailing did not give a fixed return date but stated "as soon as possible".

The survey has proved to be a vital part of the study and enabled the analysis of some preliminary findings which directed the next phase. These findings were presented in an executive summary and mailed to respondents who had requested this. The survey also provided a UK wide opinion on the research question which together with the global literature search and local opinion has built a considerable amount of information on the subject. The objectives for the survey method and a sound foundation of knowledge for the progression of the study had been achieved.

5.7 Newly Qualified Nurse Interviews: (Interview 1)

The next phase of the study involved gauging the opinion and evaluating the practice of learners of the skills investigated i.e. NQNs. The research question which was addressed at this phase is explained in Section 5.7.1. A quasi experiment was designed because two groups were to be compared. This design did not satisfy the strict requirements of the experimental design but had the advantage of being practical and flexible with a form and logic of its own (Campbell and Stanley 1967).

The time–series design is the most popular type of quasi-experiment. It involves measuring over a period of time intervals and preferably before (pre-test) and after a programme begins and after it ends. This study has attempted to follow a time-series

design but the pre-test option was not adopted because the programme being evaluated had already begun. The quasi-experiment was conducted using interview and observation methods. Although the research question has been addressed at the start of the study it is reiterated again to reflect this phase of a mixed methods approach (Cresswell 2003). Based on the research question a hypothesis was determined in order to further clarify the research question. This in turn guides the choice of the research strategy and the methods (Robson 2002). The research question formulated for this phase of the study is stated below.

5.7.1 Research question and hypotheses

If student nurses acquire all the essential practical and technical skills required for the first twelve months of clinical practice, during a pre-registration programme, are they better equipped and "fit for practice and purpose"?

The null hypothesis was:

There is no difference between nurses acquiring these skills within the pre-registration period or the post-registration period.

The alternative hypothesis was:

Nurses acquiring these skills within a pre-registration course will be better equipped and fit for practice and purpose.

To test these hypotheses interview method was chosen, which included structured and semi-structured elements. Many authors state that interviews give high quality data and an improved response rate compared to postal survey (Drever 1995, Oppenheim 2000, Robson 2002). Another important reason for choosing this method was to meet the recipients of the learning process, i.e. the NQNs, to engage with them and follow them through into the next phase of the study.

5.7.2 Recruitment of NQNs

Based on the statistical prediction to determine sample size semi-structured interviews were planned for 60 NQNs in the experimental and control groups (thirty in each group). The recruitment process was slightly different for each group. Both groups of nurses were acquiring skills in their fourth year of studying nursing. i.e. the experimental group were in their fourth year of an honours programme and the control group had completed three years learning within their pre-registration programme and were now embarking on their fourth year of learning on-the-job. This satisfies the research criteria in that a comparison of like groups has been achieved.

5.7.2a Experimental Group recruitment

Thirty graduates from the BSc (Hons) Nursing course at The Robert Gordon University from the fourth year cohorts of 2003 and 2004 were recruited for the experimental group (15 from each cohort). These NQNs had graduated equipped with potentially six skills which would usually be acquired after qualifying. They were mailed a letter (see Appendix 7) inviting them to participate with a reply slip which they returned directly to the researcher using a self-addressed freepost envelope.

5.7.2b Control Group recruitment

Thirty nurses from the 180 per year attending induction courses within the collaborating Trust were recruited. These NQNs had qualified with a Diploma of Higher Education Nursing and were acquiring the skills investigated by this study. Fifteen NQNs from induction courses in 2003 and 15 from courses during 2004 were recruited. The collaborating establishment assisted in hand delivering a letter of invitation (see Appendix 8), explaining the study and its value to nurse education and encouraging NQN participation. This letter was given on the first morning of a five day

induction course. The researcher collected their reply slips at the time of interview.

5.7.2c Access to participants

Access to the experimental group was arranged by telephone at a mutually convenient time and interviews were conducted at the university or in the clinical setting. Access to the control group was gained during the lunchtimes of their induction course at the collaborating establishment and involved the researcher travelling between two hospital sites. The lunchtime access meant that the induction course content was not interrupted. The interviews were arranged during the middle two days of their five day course. For both groups meeting rooms were booked for privacy and to prevent interruptions.

5.7.3 Interview design

In order to aid triangulation of findings throughout the study similar questions were posed to this sample group. When designing the interview schedule slight variations were needed to reflect the two different groups being interviewed. Nursing graduates from the experimental group required questions on the skills sessions undertaken during their fourth year curriculum in order to evaluate the appropriateness of the constructively aligned curriculum. Nurses from the control group required questions about the appropriateness of skill acquisition at this time in their career. The complexities of skills practice were explored with both groups (see Appendix 9a).

Questions were worded in appropriate clear language with an avoidance of leading questions. The layout of the schedule was easy to use with boxes and lines to distinguish different sections. Codes for recording the data were devised for the closed questions but reliance on the audio tape recorder was necessary for the open questions.

The prompt used was the skills list from survey 1 with columns added where indication as to whether or not interviewees had acquired the skills already could be made and if not whether or not they planned to acquire these skills in the future (see Appendix 10). The prompt was always used at the start of the main body of questions (Drever 1995). Piloting of the interviews was not conducted but Drever's (1995) process of "shredding" the schedule was performed by the supervisor and colleagues. This resulted in amendments being made that included minor restructuring of the schedule and re-ordering of the questions.

5.7.4 Implementation of NQN Interviews

Robson (1993) described the flow of an interview to be an introduction; a warm-up with easy questions; the main body of the interview which included the main purpose and a logical progression; a cool-off which included straightforward questions to deflect any tension that might have arisen and then the closure. This structure was followed with closed questions at the beginning and open questions at the end which allowed the interviewee to speak freely about the subject in their own words. It was important to remember that the order of the questions affected respondents' thought process as each question is answered and this will influence their response (Drever 1995).

The researcher operated in such a way that every respondent had the opportunity to understand the given question in the same way as every other respondent. Oppenheim (1992) described this as 'stimulus equivalence'. Whilst this was not possible for one hundred per cent of the time this was the interviewer's aim. Commencing with a preamble about their new nursing career and thanking them for volunteering for the study created a rapport. Many of them had qualified at The Robert Gordon University and therefore there was common ground to start the

conversation. However, balancing the time between creating a rapport and enabling the interviewee to return to their induction course having had lunch was important. Interviews were kept to 15 minutes durations.

5.7.5 Summary and Limitations of NQN Interviews

The intention to randomly recruit 15 candidates from each cohort was not completely achieved due to the voluntary nature of participation. The experimental group had 16 from the 2003 cohort and 12 from the 2004 cohort giving a total number of 28. This was due to two participants leaving the area part way through the study and these students were not contactable.

Seventeen percent (17%) of the experimental group (n=5) 2004 cohort had to be interviewed over the telephone as they had moved away from the area. Whilst this minimised the information gained from non-verbal cues it was felt to be as valuable in that the researcher was known to the participants and the questions were understood correctly. Telephone interviews were planned by an initial phone call to set up an appointment for the interview and the interviews were audio taped in the same way. The information to participate (appendix 7) and the prompt (appendix 10) which had been shown to the other participants were mailed to the participant in time for the interview.

The control group had 10 recruits from the 2003 cohort and 20 from the 2004 cohort. This change in the numbers recruited from each cohort did not affect the study in terms of its sampling strategy and statistical analysis but individual anomalies related to cohort specific incidents may be apparent within the data.

The NQN interviews were carried out with attention to recommended best practice. Valuable information was

gained and the beginning of a research relationship with those recruited was achieved to further progress the study.

5.8 Observational visits to NQNs

The NQNs who had volunteered to participate in the study were followed up at one month and three month intervals with an observational visit to their work setting. The purpose of this was to further investigate and attempt to answer the research question.

The observational visits followed the interviews and had the potential to encourage participants to explore the research topic in a way that might not have been possible during the interview (Cresswell 2003, Simpson and Tuson 1995). The emphasis of the previous methods was to ascertain views and feelings to gauge opinion, but with observational visits the emphasis was to watch what was done and to listen to what was being said (Robson 2002). Any unusual aspects of the question being investigated could be noticed and the information was recorded as it was revealed.

The 'observer as participant' role (Gold 1969) was adopted because the contact was brief and overt with just two visits to each NQN. To be a 'complete observer' where there would have been no social interaction, would not have been appropriate in this context as a rapport had already been established with the NQN (see Section 5.8.2).

5.8.1 Design of Observation Schedule

To design the observation schedule other similar studies' tools were reviewed. Alavi *et al.* (1991), Runciman *et al.* (1998), Holloway (1999) used surveys and checklists so there were no observation schedules to consider. Macleod's (1996) study had used complete participant observation within a phenomenological design but there were similarities to this PhD study in that skills and knowledge related to nurses coping with practice were explored. Reflecting on these similarities in Macleod's (1996) study the researcher

developed a simpler observation schedule more suited to this PhD study.

The observation schedule was a simple tool using field notes and a confidence rating scale and acted as a prompt for the researcher to record information systematically and accurately (see Appendix 11). The same tool was used for both observational visits with colour coded entries in blue and red ink to distinguish first and second visits. Dates and times of each observation along with the ward and speciality were recorded and the schedule was coded with the same code as at the NQN's interview. The first page indicated the type of skill being undertaken by the NQN, the frequency and the confidence level. The rating scale for confidence levels was a simple one with designated numbers from 1-5, devised by the researcher and indicated in table 5.3 below:

Table 5.3 Confidence level rating scale

Description of confidence level	Rating Level
Not Confident	1
A Little Confident	2
Developing Confidence	3
Some Confidence	4
Confident	5

The categories were of value as they demonstrated the range of behaviours the sample would exhibit (Simpson and Tuson 1995). A five point rating scale was also used by Bondy (1983) and the NQNs in this PhD study did not demonstrate any difficulties with this scale. The respondent had to indicate at which level of confidence they found themselves with the skills they were practising. This self-assessment was recorded on the observation schedule. The observation schedule also identified: time intervals between learning and practice; differences between skills teaching and practice and the identification of other professionals performing the same skills. A final page identified work patterns for a typical shift and was recorded as narrative.

5.8.2 Implementation of Observational Visits

The visits were pre-arranged with the NQN by telephone. The researcher met the NQN in his/her place of work which was a clinical ward setting. The observational visits lasted 15-20 minutes and were conducted by walking around the environment with the NQN and making first hand observations of the procedures involved in skills practice and their context. The visits were informal conversational interviews with opportunistic discussions based on the schedule (Robson 2002, Clarke 2000). Explanations regarding the process for the observational visit were given at the start of the visit and as the relationship had already developed at interview, the researcher was able to create a role for herself so reducing the level of threat and confrontation (Simpson and Tuson 1995). Reassurances were given regarding confidentiality and anonymity by enabling the NQN to view what was being recorded.

During the first visit arrangements were made with the NQN for the second visit. The NQN had often changed wards by the second visit and the timing of the telephone call to pre-arrange the second visit was decided. The interview transcript was shown to the NQN and accepted as an accurate record of the interview. The preceptor questionnaire was given in an envelope to the NQN to pass onto their preceptor.

5.8.3 Summary and Limitations of Observation Method

Fifty-eight NQNs were accessed from the interviews and therefore potentially all these could be followed up at one and three monthly intervals. However because 5 interviews (17%) were conducted by telephone for the experimental group (2004 cohort) these 5 could not be followed up and were questioned on the telephone using the observation schedule. This resulted in 53 NQNs who each received two observational visits.

The timescale for the follow up visits also proved problematic in that the NQNs were often not available to visit due to off duty patterns and night shift patterns which resulted in longer periods of time off. The range of time for the first observational visits was from one month to three to four months. For the second visit the range was from three months to nine months. Part of this time slippage was also due to the researcher's own time commitments to conduct the research. However, follow up data were gathered on all 58 NQNs.

The observational visits enabled the research question to be further investigated from the perspective of the learner's working environment and the lapse of time from their skill acquisition. As they were practising their role as NQN it was possible to have informal conversational interviews which enriched the data gathered from previous methods. Meeting them prior to the observations established a rapport which led to conversation which was not strained.

5.9 Preceptors' Survey (Survey 2)

Preceptors of the NQNs were surveyed using a questionnaire (see Appendix 12a, 12b and 12c). This questionnaire was developed from survey 1 and gauged preceptors' opinion of NQN skill acquisition. Fundamentally it assessed confidence levels of NQNs performing skills, using the same confidence rating scale as the NQN observation schedule. This enabled a comparison of the NQNs perception of confidence levels and strengthened the validity of the confidence measures.

5.9.1 Questionnaire design and implementation

The design included closed and open questions and was kept short to only four questions (see Appendix 12a 12b and 12c). Colour coding was adopted as blue and yellow to identify preceptors from the experimental or control group respectively. Coding matched the respective NQN's code so that the responses could be compared to the NQN's data.

Some demographic data relating to experience and area of work was ascertained at the beginning of the questionnaire. The list of skills from survey 1 was included and numbered identically to enable data set comparisons but the response choices referred to the confidence rating scale. Respondents were asked to rate NQN confidence levels for all 26 skills. The rating scale for assessing confidence was included as shown in Table 5.3. Whilst the NQNs had self-assessed themselves with this scale on observational visits, preceptors completed a self administered questionnaire after the visit and used the rating scale based on their professional assessment of the NQN's confidence. Open questions were inserted towards the end of the questionnaire and these related to the preceptor's views on the NQN's performance and their views on pre-registration skill acquisition.

The preceptor's package included an explanatory letter (see Appendix 12c) assuring confidentiality and anonymity; the questionnaire and a self addressed freepost return envelope. It was given to the NQN at the first observational visit for distribution to their preceptor.

5.9.2 Summary and Limitations of Preceptors' Survey

Preceptors work closely with NQNs for the first few months of their employment and gaining their perceptions as stakeholders was important. This opinion proved to be valuable as differences of opinion between the preceptors and NQNs perceptions of confidence were noted. Also giving the preceptors the full list of questions from survey 1 proved valuable as preceptors evaluated more skills than the NQNs had evaluated on observation. Triangulation of this data were enabled by inputting onto the same SPSS database.

5.10 Managers' Interviews (Interview 2)

Clinical Nurse Managers in the areas where the sample group of NQNs were working were interviewed in order to ascertain their views as another stakeholder in nurse education. Semi-structured

interviews were conducted within the clinical setting, usually in the manager's office.

5.10.1 Interview schedule design and implementation

A short schedule comprising 5 open questions was designed (see Appendix 13a and 13b). The same prompt of the list of skills given at the NQN interviews was used. The interviews were audio-taped and notes were taken.

The duration of the interview was planned to be 15 minutes but ranged from 15 to 30 minutes. Most of the interviews were conducted in privacy and with minimal disturbances. A comfortable desk and chair was available for both interviewer and interviewee and the interviewer chose to sit at the corner of the desk, taking cognisance of the interview environment affecting responses. There was a tendency for some managers to detract from the topic and speak at length about their own interest and the researcher's skill involved bringing the conversation back to the study's topic.

5.10.2 Summary and Limitations of Managers' Interviews

Potentially 16 clinical nurse managers could have participated but 12 (75%) volunteered. Eleven were interviewed face to face and one by self administered postal interview. The latter was due to the distance involved and inability to make a telephone interview time. More managers participating would have enriched the data but those that did brought new and interesting aspects to the data.

5.11 Survey of Educational Institutions incorporating skills investigated (Survey 3)

This survey was a small survey involving a small percentage of the educational institutions which had replied to survey 1. These comprised 11 lecturers from who had responded positively to question 2 (Appendices 14a, 14b and 14c). This indicated that they were teaching the skills under investigation within pre-registration

nursing curricula. Of these 9 (82%) had given their contact details which were optional and they were contacted with a questionnaire to ascertain further details.

5.11.1 Questionnaire design and implementation

The questionnaire coding matched survey 1 for each respondent and white paper was used differentiating it from survey 1. The respondents had listed the skills they were teaching in survey 1 and these skills were listed at the start of the questionnaire for Survey 3 (see Appendix 14a and 14b). This meant that the questionnaires for survey 3 were individualised for each respondent. The remaining questions were common to the entire sample group and concerned the underpinning philosophy for their skills curriculum development; the length of time they had been practising this way and how NQNs linked this skill acquisition to practice. A package containing an explanatory letter, the questionnaire and a freepost return envelope was mailed to the sample group. A return date was specified.

5.11.2 Summary and Limitations of Survey 3

Gauging the depth of this group's opinion on the subject was important as these respondents like the researcher had experience in delivering the specific skill acquisition being investigated. The respondents were practising in geographical areas different to the main study area and as such enabled analysis of different perspectives and validated generalisations of the target populations.

After first mailing 4 (44%) had been returned and on second mailing of the entire package, with a reminder letter and a new return date, a total of 6 (66%) were returned. It would have been valuable to compare the clinical establishments' responses to each of the survey 3's responses but due to the optional choice of disclosing their geographical area, this comparison was only possible for some of the data.

5.12 Summary of Methods Chapter

The methods used in this study reflect the mixed methods design and have been reported following the sequential and concurrent approaches adopted.

The next chapters report on the findings and have been divided into three chapters of evidence.

CHAPTER 6 EVIDENCE FROM FOCUS GROUPS AND SKILLS TEACHERS' SURVEY

6.0 Findings

The findings of the study are presented in three chapters of evidence. Chapter 6 reports the findings from the focus groups and skills teachers' survey (Survey 1). Chapter 7 presents the findings from the interviews with newly-qualified nurses (NQNs); observations of NQNs; preceptors' survey (Survey 2); interviews with clinical nurse managers and the survey of educational institutions who had implemented some of the skills under investigation (Survey 3). Chapter 8 presents the triangulation of the findings. The findings are presented in chronological order in the form of tables, charts and figures. Further interpretation of the findings follows in the discussion section.

6.1 Focus Groups

Six focus groups were conducted with sample populations as indicated in Chapter 5 Table 5.1. The questions presented in this section were posed at the focus groups and content analysis was used to identify key themes and concepts.

6.1.1 Analysis for question: What skills are nurses expected to add-on immediately after qualifying?

A total of 35 skills were identified by the focus groups and these are presented in Table 6.1

Table 6.1 Focus groups' opinions of skills to be acquired immediately post-qualification

Intravenous (IV) Skills	Medication Skills	Surgical Skills	Acute Care Skills	Emergency Skills	Professional/ Management Skills
IV Medicines	Nurse Prescribing for symptomatic relief	X Ray referral	Fine Bore Nasogastric tube insertion	First Aid	Triage system
Venepuncture	Anaphylaxis	Suturing	Critical Skills Nursing	Advanced Life Support	NVQ/SVQ supervisor
Cannulation	Chemotherapy	Ultrasound scanning	Male Catheterisation		Mentorship
Infusion Pumps and PCAs	Depo-Injections	Minor Hand Surgery	Verification of Expected Death		Preceptorship
	Sub-cutaneous needle insertion		Ear Syringing		Supervisory Management
			Enteric Feeding		Care Planning Quality Issues/Clinical governance Violence and Aggression Customer Care Counselling Key Handler Research and Audit Budgeting Accountability

This list informed the list of skills incorporated into the skills teachers' survey (Survey 1).

6.1.2 Analysis for question: Is it acceptable for nurses to take on these skills?

The results below summarise the views from the focus groups regarding the acceptability of these skills for nurses. The key themes derived are presented below:

Key Themes	
Expectations	**Timing**
Higher level of practice expected on qualifying	Okay to take on skills but need to consolidate learning
Vicarious liability has to be considered	Pressurised into doing the skills
Area of focus for skills is necessary	After preceptorship period
Yes, these skills provide the care	

There was recognition of clinical area expectations and therefore further skill acquisition was acceptable. However, there were concerns regarding individuals feeling pressurised to undertake new skills without consolidating previous learning.

6.1.3 Analysis for question: Could this list be extended?

This discussion involved participants reviewing the list they had generated and considering whether or not it could be expanded even more. The key themes derived are presented:

Key Themes		
Yes	**No**	**Yes - but timing is important**
Yes if professional maturity is demonstrated	Skill acquisition does not influence interviews for NQN posts	Competency needs to be assessed
Resources drive encourages skill acquisition		Preceptorship is important and will allow further skill acquisition
Grading v job evaluation promotes skill acquisition		Essential skills need to be acquired e.g. Blood Pressure (BP) measurement
Yes, these skills provide the care		Consolidate for 1 year before acquiring new skills
In some areas first dose of IV given by nurse therefore this is a necessary skill		Skills become a nurse's role
		Clinical supervision can assist in guiding the process of skill acquisition and the issues it raises
		Peer pressure to take on more skills

Whilst there was recognition that many areas will continue adding to the list of skill attainment, the concerns for nurses taking on too much too soon was evident.

6.1.4 Analysis for question: When during a nurse's career is it most appropriate for these skills to be added on?

Much of the previous discussion answered this question as well. There was a divide between the groups with some favouring undertaking skills as and when required but other groups were concerned that a definite time period for consolidation should be executed. The key themes derived are presented:

Key Themes		
Specific Time	**Not appropriate for NQN**	**Not appropriate at all for nurses**
18 months after qualifying is a better time for skill acquisition	Skill acquisition is not necessary straight away	Skill acquisition in this manner is an abuse of profession
Skill acquisition is better when nurse requires to take on the skill i.e. depends where they are working		

6.1.5 Analysis for Question: Would it be appropriate to include these skills during the pre-registration education programme?

There was a definite difference of opinion between the groups of lecturers and clinicians. The lecturer groups were not in favour and presented their views strongly. They were concerned about students' attendance at taught sessions and the continual need to incorporate more and more skills.

The clinicians' groups were equally definite about the necessity for the skills to be incorporated into the curriculum. There were thoughts that incorporating them throughout the course to develop proficiency would be a productive approach but there were concerns regarding overloading of the curriculum, as some aspects of the curriculum would need to be removed to accommodate the new skills. There were also views regarding extending the programme beyond the three years for the diploma.

6.1.6 How exactly will this affect the role of the nurse on qualifying?

This question provoked a mixed response. The main views related to the changing boundaries between the professions, particularly nurses and doctors, but also the changing role of nursing auxiliaries. There were concerns regarding lack of recognition for nurses undertaking these

skills and that nurses' focus for patient care might change adversely. The view that doctors and nurses should share roles relating to the implementation of skills which cross role boundaries was an important one, which addresses workload and teamwork issues. The key themes derived are presented:

Key Themes		
Positive effects on nurses' role	**Negative effects on nurses' role**	**Changing role of nurse/doctor**
In other countries' nurses take on more technical skills	Abuse of profession in that nurses' are taking on more and more	Teaching of doctors on these skills questionable
	Taking on doctors' role but not paid extra	Affects recruitment if nurses have these skills
	No time for patients because of taking on technical skills	Nursing Auxiliaries taking on nurses' skills and nurses taking on doctors' skills
		Should be a shared role rather than nurses acting as mini-doctors

6.1.7 How exactly will this affect the nursing profession?

This discussion encompassed some issues from the previous question but introduced some fundamental issues. These included the importance of stakeholder requirements for changing from the current status quo and recognition of the historical perspectives from which the profession is emerging. The key themes derived are presented:

Key Themes	
Changing Professional Roles	**Educational Requirements**
This skill acquisition alters definition of nursing	Nurses need to be at degree level to undertake this
Creating new breed of nurse with this skill acquisition	Post Registration Education Project should assist
Have to change with the times	Evidence based nursing for skill acquisition
Skill acquisition is driven by the profession	Computer assisted learning could be utilised more
Political influences affect skill acquisition	
Clinical governance applies to doctors as well therefore skills practice should be exemplary	
This type of skill acquisition requires a culture change in the profession	

6.2 Skills teachers' survey (Survey 1)

A sample population of 530 individuals was surveyed. This sample consisted of 211 teachers of skills within 55 educational institutions (EI) and 319 teachers of skills in 257 clinical establishments (CE) for Scotland, England and Wales. A pilot study was carried out in Northern Ireland and the findings were discussed in Chapter 5.

6.2.1 Skills teachers' survey (Survey 1)

Table 6.2a
Survey 1 responses

Respondents: Sample Group	Geographical Breakdown	Clinical Establishments Represented	Educational Institutions Represented
61 out of 211 lecturers /educators responded (29%)	Scotland 5% Wales 0.9% England 23%		45 (82%)
95 out of 319 clinicians responded (30%)	Scotland 6% Wales 0.9% England 23%	82 (32%)	
Total:- 156		**n=257**	**n=55**

Table 6.2b
Survey 1 Job titles and geographical location of respondents

	Geographical Location						
Job Title	**London and Southern England**	**Midlands**	**Northern England**	**Wales**	**North East Scotland**	**Central Scotland**	**Total**
Practice Educator/Clinical Facilitator	8	7	9	1	0	4	29
Lecturer/Practitioner/Clinical Facilitator	9	5	8	0	2	2	26
Professional Practice/Development Facilitator/ Manager	7	5	11	2	5	9	39
Asst. Director of Nursing/Head of Professional Practice	4	0	6	0	1	1	12
Education/Training Officer/Manager	19	6	7	1	1	3	37
Other	2	1	1	0	0	1	5
Total (8 Missing)	**49**	**24**	**42**	**4**	**9**	**20**	**148**

Table 6.2a shows the survey response rates and Table 6.2b shows the job title and geographical locations of the respondents. Although the response rates are low, 82% of all the UK educational institutions delivering pre-registration nursing programmes were represented and 32% of clinical establishments were represented, giving a sample group of 156 skills teachers. The geographical breakdown is fairly representative of institutions and professionals in England, Wales and Scotland. Respondents who gave their job title and location were cross tabulated with their geographical location (n=148). Eight respondents did not give their job titles or locations and are missing from this table. The highest response rates of respondents were from London and Southern England, with Northern England the second highest response rate. There is no logical reason as to why these areas should have responded in higher numbers compared to the other areas. The terms 'Professional' or 'Practice Development Facilitator' or 'Manager' were the most common within the job titles of the respondents, with 'Education' and 'Training' officers/managers as the second highest figure.

6.2.2 Courses provided by representing organisations and inclusion of additional skills

Table 6.3a Courses provided by representing organisations

Organisation	Clinical Establishments Response Rate	Educational Institutions Response Rate
Courses	Intravenous Skills 37% Catheterisation 29% Professional Courses 34% N=246	Degree in Nursing 35% Diploma In Nursing 43% Post Registration Programmes 22% N=87

Table 6.3b Inclusion of additional skills

Organisation	Clinical Establishments No. of responses	Educational Institutions No. of responses
Inclusion of additional skills within courses	Yes 66 (73%) No 25 (27%) N=91 missing data=4	Yes 19 (31%) No 41 (67%) N=61 missing data=1

6.2.2a Courses provided by clinical establishments

Table 6.3a shows the responses to the types of courses provided within CEs. Multiple responses were elicited from each CE respondent and were categorised into intravenous skills, catheterisation and professional courses. The range of intravenous skills courses included five specific topics: venepuncture, intravenous bolus injection, cannulation, continuous infusion via syringe pump and transfusions. On coding into SPSS these were recorded either as single entries or as the number of times a course was mentioned from this list of five. For example: 2 out of listed skills or 3 out of listed skills etc.

The range of catheterisation courses included: male catheterisation, suprapubic catheterisation or both. The same process for coding into SPSS was applied.

The range of professional courses included: Documentation and record keeping; clinical effectiveness; development study days; induction; return to practice; preceptorship; mentorship; clinical supervision and other professional courses. These were coded either as single entries or as for the other skills above.

6.2.2b Courses provided by educational institutions

Table 6.3a also shows the courses provided by educational institutions which were categorised into degree, diploma and post-registration programmes. Multiple responses were elicited from each EI respondent.

The range of courses for the degree category was: 4 year full-time pre-registration nursing degree, 3 year full-time pre-registration nursing degree and part-time pre-registration nursing degree.

The range of courses for the diploma category was: 3 year full time pre-registration diploma in nursing; flexible pre-registration diploma in nursing and part-time pre-registration diploma in nursing.

The range of courses for the post-registration category was: conversion courses; advanced diploma courses; MSc

in Nursing; other post-registration courses; health and social care courses. On coding into SPSS these were entered as single entries as relevant for each respondent. The response rates are represented in Table 6.3a.

These findings are as expected for the different organisations and identified the educational programmes within which the skills being investigated are likely to be found.

6.2.3 Skills which are not required for registration

Table 6.3b shows whether or not skills taught within the courses form a requirement for nurse registration in the United Kingdom. The findings for CEs were as expected as they deal with nurses post-registration and so a high percentage are teaching skills which are outside the requirements for nurse registration. However, the surprising figure from EIs was that 19 responded that they were teaching such skills. This was further analysed to be 11 for the pre-registration nursing course category.

6.2.4 Stage of skill acquisition

For each skill identified, respondents were asked to denote the stage at which the skill is currently taught and also the desired time at which the skill should be taught. The desired time has been categorised as pre or post-registration. The results have been cross tabulated for the representing organisations and are shown in Table 6.4. For the clinical establishments the time intervals represent employment commencement and/or post registration time intervals, i.e. the 0-3 month time interval represents: 0-3 months post registration and/or 0-3 months after commencement of full time employment. For the educational institutions the time intervals represent the stages in years on their pre-registration courses.

Table 6.4 Actual time skills taught cross tabulated with preferred time for CEs and EIs

Skill	Actual Time	Desired Time		Totals for actual time skills were taught
		Pre-Registration	Post-Registration	
Venepuncture Actual Time Taught by CE responses	0-3mths	9	3	12
	4-6mths	3	4	7
	7-12mths	10	9	19
	1-2yrs	2	5	7
	Totals	24	21	45
Percentage preferring pre-reg	**53% n=45 p= 0.231**			
Venepuncture Actual TimeTaught by EI responses	1-2yrs	2	0	2
	3-4yrs	7	2	9
	Totals	9	2	11
Percentage preferring pre-reg	**82% n=11 p=0.461**			
IV Bolus Injection Actual Time Taught by CE responses	0-3mths	7	4	11
	4-6mths	8	8	16
	7-12mths	4	13	17
	1-2yrs	2	2	4
	Totals	21	27	48
Percentage preferring pre-reg	**44% n=48 p=0.179**			
IV Bolus Injection Actual Time Taught by EI responses	1-2yrs	0	0	0
	3-4yrs	6	1	7
	Totals	6	1	7
Percentage preferring pre-reg	**86% n=7 Chi Square not computed as actual time is constant**			

Table 6.4 (contd)

Skill	Actual Time	Desired Time		Totals for actual time skills were taught
		Pre-Registration	Post-Registration	
Cannulation Actual Time Taught by CE responses	0-3mths	3	3	6
	4-6mths	5	5	10
	7-12mths	7	16	23
	1-2yrs	2	5	7
	3-4yrs	0	1	1
	Totals	17	30	47
Percentage preferring pre-reg	**36% n=47 p=0.664**			
Cannulation Actual Time Taught by EI responses	1-2yrs	3	0	3
	3-4yrs	5	1	6
	Totals	8	1	9
Percentage preferring pre-reg	**89% n=9 p=0.453**			
Male Catheterisation Actual Time Taught by CE responses	0-3mths	6	0	6
	4-6mths	3	1	4
	7-12mths	4	3	7
	1-2yrs	4	6	10
	3-4yrs	0	0	0
	Totals	17	10	27
Percentage preferring pre-reg	**63% n=27 p=0.105**			
Male Catheterisation Actual Time Taught by EI responses	4-6mths	1	0	1
	1-2yrs	4	0	4
	3-4yrs	4	0	4
	Totals	9	0	9
Percentage preferring pre-reg	**100% n=9 Chi Square not computed as actual time is constant**			

On Chi Square Testing there were no significant differences

Venepuncture

Table 6.4 shows that 45 respondents working in CEs and 11 respondents working in EIs were teaching venepuncture. Of these 53% of CEs and 82% of EIs would prefer this skill to be taught pre-registration.

IV Bolus Injection

Table 6.4 shows that 48 respondents working in CEs and 7 respondents working in EIs were teaching IV bolus injection. Of these 44% of CEs and 86% of EIs indicated that the desired time to teach this skill was pre-registration.

Cannulation

Table 6.4 shows that 47 of the respondents working in CEs and 9 in EIs were teaching cannulation. Of these 36% of CEs and 89% of EIs indicated that the desired time for teaching this skill was pre-registration.

Male Catheterisation

Table 6.4 shows that 27 of the respondents working in CEs and 9 in EIs were teaching male catheterisation. Of these 63% of CEs and 100% of EIs indicated the preferred time for teaching this skill was pre-registration.

This analysis of frequency of responses demonstrates higher percentages for pre-registration skill acquisition by EIs compared to CEs.

6.2.5 Content of clinical skills courses

The responses to this question are shown in Figures 6.1 and 6.2 and indicate the content of the courses taught by EI and CE respondents. The results identified differences in modes of delivery. These included: theory only; theory with some practice in a classroom/laboratory setting or theory, practice in a laboratory/classroom setting followed by supervised

practice with patients and clients identified. Other combinations for the content delivery were also identified. Multiple responses were given to the questions on course contents. These were counted and are expressed as percentages of responses. Figures 6.1 and 6.2 show that 62% of CEs are delivering courses which included supervised practice with patients compared to 37% of EIs. This is as expected as CEs would have better access to patient/client groups because they deliver their courses within NHS Trusts.

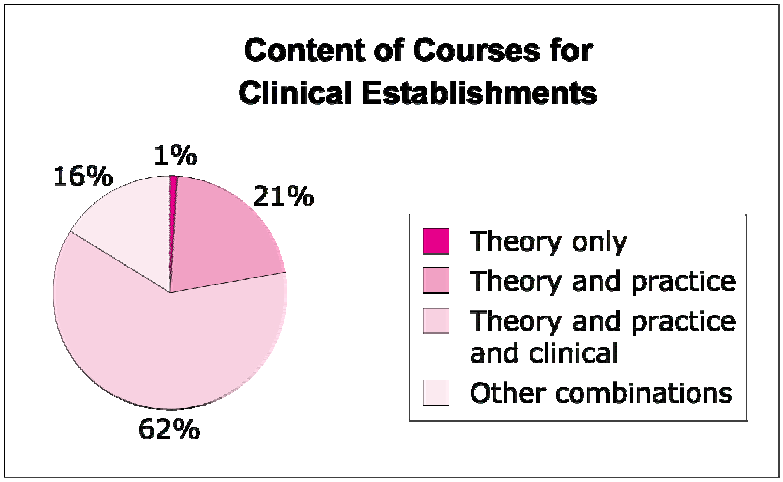


Figure 6.1 Content of Courses for Clinical Establishments

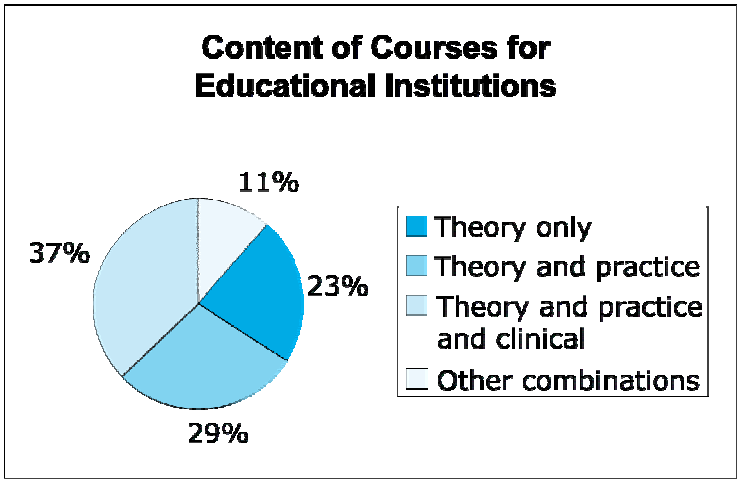


Figure 6.2 Content of Courses for Educational Institutions

Responses denoting "Other combinations" were noted and revealed qualitative data. This was analysed using constant comparative analysis.

Categories which emerged were as follows:

Category	Rationale
Reiteration of previous options	Some responses simply re-stated the options which were given already i.e. theory and practice or theory, practice and supervised practice in clinical settings with patients.
Clinical supervision following hospital protocols	For respondents from educational institutions the opportunity for clinical supervision may or may not occur depending on the area the student attends. For respondents from clinical establishments there were opportunities for the same facilitator who teaches the theory to follow through and provide supervised practice. Others could offer one to one teaching using a learning package.
Assessment of theory and practice	Some responses noted the importance of assessment and the entering of information into a database. A written exam was an essential requirement for one respondent with 100% pass rate required for the numeracy section.

6.2.6 Identification of essential and desirable skills for the first twelve months of qualifying/gaining employment

This question used an amended list of the most generic skills identified from the focus groups and asked CE and EI respondents to identify whether they considered them "essential", "desirable" or "not necessary" within the first twelve months of a nurse qualifying/gaining employment.

The frequency of responses from 156 skills teachers is represented in Figure 6.3.

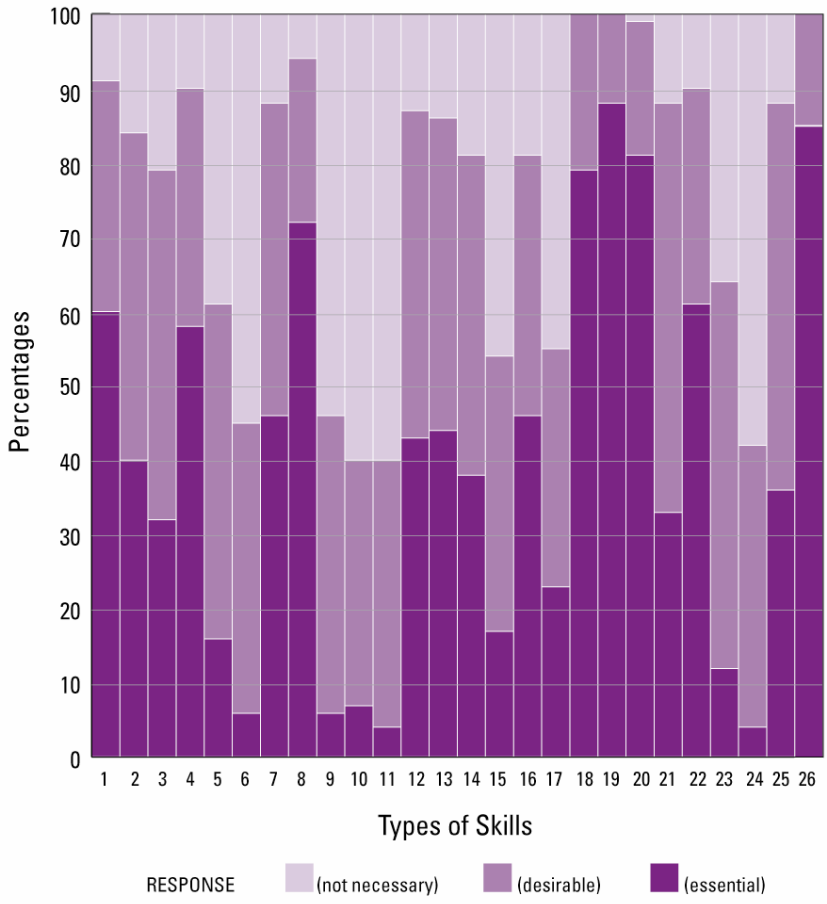


FIGURE 6.3
Survey Responses for Skills which are Essential, Desirable, or Not Necessary for Newly Qualified Nurses in the first 12 months of qualifying/gaining employment

KEY

1	Intravenous Medication	10	Prescribing Medication	19	Customer Care
2	Venepuncture	11	Chemotherapy	20	Quality Issues
3	Cannulation	12	Male Catheterisation	21	Counselling
4	Sub-cutaneous needle insertion	13	Electrocardiograph (ECG)	22	Key Handler (moving & handling/risk management)
5	Gastrostomy tube re-insertion	14	Advanced Life Support	23	Supervisory management
6	Ear Syringing	15	Verification of expected death	24	Budgeting
7	Fine Bore Nasogastric tube insertion	16	Mentorship: to be responsible for a student	25	Research & Audit
8	First Aid	17	Preceptorship: to be responsible for a newly registered nurse	26	Add other skills not included in this list
9	Suturing	18	Violence & Aggression		

Essential skills: highest percentages

These relate to skills 18, 19, and 20. They are Violence and Aggression (78%), Customer Care (85%) and Quality Issues (80%). Skill number 26 in the key also had a high percentage (87%), where respondents could note down any other skill which was not given in the list. These were completed mainly by CEs and pertained to specialist skills related to their own areas of practice. At a later stage in the research Skill 26 was specified as 'continuous infusion

via syringe pump' because the majority of 'other' skills related to this skill or an aspect of this skill. Skill number 8, First Aid also had a high response of 71%. Skill number 22, Key Handler acquired a 60% response.

Intravenous skill results:

Skill number 1, Intravenous bolus injection had a 59% response and the other IV skills of venepuncture and cannulation (skills 2 and 3) acquired 39% and 32% respectively.

Acute skill results:

Skill number 4, sub-cutaneous needle insertion and skill number 5, Gastrostomy tube re-insertion, both scored 56%.

The lowest scores for essential skills were Ear Syringing (skill 6); Suturing (skill 9); Prescribing medication (skill 10); Chemotherapy (skill 11) and budgeting (skill 24). These all scored less than 10% for "essential" skills and had the highest scores for the "not necessary" skills.

Desirable skill results:

The highest percentages for the desirable values were: counselling (skill 21) with 54%; Research and audit (skill 25 - 51%); Supervisory Management (skill 23 - 49%). The next highest percentages for the desirable values were: Cannulation (skill 3- 46%); Venepuncture (skill 2 - 43%); Gastrostomy tube re-insertion (skill 5 - 43%) and Male catheterisation (skill 12 - 43%) and ECG recording 41%.

Not necessary skill results:

The skills with higher percentages indicating that they were 'not necessary' skills were: skill 6 ear syringing; skill 9 suturing; skill 10 prescribing medication; skill 11 chemotherapy; skill 15 verification of expected death and skill 24 budgeting.

Analysis separating CEs and EIs responses

When analysing the first 25 skills represented in Figure 6.3 and separating out the CE and EI responses, using descriptive statistics and Chi Square, the following 8 skills were identified as having statistical significance:

Skill 5 Gastrostomy tube re-insertion; Skill 6 Ear Syringing; Skill 9 Suturing; Skill 13 ECG recording; Skill 15 Verification of Expected Death; Skill 18 Violence and Aggression; Skill 23 Supervisory Management and Skill 24 Budgeting. The analysis is represented in Tables 6.5a.

Table 6.5 Skills with significant differences between CE and EI responses

Skill	Clinical Establishments				Educational Institutions			
	Essential	Desirable	Not Necessary	Total	Essential	Desirable	Not Necessary	Total
Gastrostomy tube re-insertion	15 (17%)	34 (37%)	42 (46%)	n=91	9 (15%)	34 (57%)	17 (28%)	n=60
Chi Square Test p=0.050								
Ear Syringing	3 (4%)	26 (30%)	57 (66%)	n=86	6 (10%)	29 (52%)	21(38%)	n=56
Chi Square Test p=0.003								
Suturing	1 (1%)	35 (38%)	57 (61%)	n=93	8 (13%)	27 (44%)	26 (43%)	n=61
Chi Square Test p=0.003								
ECG recording	35 (39%)	38 (42%)	18 (20%)	n=91	32 (53%)	26 (43%)	2 (3%)	n=60
Chi Square Test p=0.010								
Verification of Expected Death	7 (8%)	29 (34%)	50 (58%)	n=86	18 (30%)	25 (42%)	17(28%)	n=60
Chi Square Test p=0.000								
Violence and Aggression	69 (73%)	25 (26%)	0 (0%)	n=94	52 (81%)	7 (12%)	0 (0%)	n=59
Chi Square Test p=0.029								
Supervisory Management	8 (9%)	41 (46%)	40 (45%)	n=89	10 (18%)	35 (61%)	12 (21%)	n=57
Chi Square Test p=0.010								
Budgeting	5 (5%)	24 (26%)	63 (69%)	n=92	2 (3%)	33 (55%)	25 (42%)	n=60
Chi Square Test p=0.002								

Table 6.5 indicates that there is a significant difference of opinion between the responses from CEs and EIs for 8 of the 25 skills identified in Figure 6.3. For 6 of these skills greater numbers of EI respondents considered them essential. These 6 skills are ear syringing, suturing, ECG recording, verification of expected death, violence and aggression and supervisory management. Gastrostomy tube re-insertion and budgeting are the only skills which had higher percentages for CE respondents considering them 'not necessary' but EI percentages for considering them desirable were higher. On Chi Square testing these proved to be significant differences between the groups. For the skill of violence and aggression there were 0% responses in the 'not necessary' columns indicating strong agreement from both groups for this skill being essential. For the skill of supervisory management and budgeting there were a lower number of responses. In the Chi Square cross tabulation for these skills 2 cells had expected counts of less than 5 and so Fisher's exact test was applied. This revealed the same significance level as the Chi Square test and so confirmed the resultant p values.

Although there were small differences of opinion between the groups noted for the other 17 skills, these did not produce significant results and therefore the percentage differences are not representing anything other than chance variations of opinion.

Qualitative analysis of open questions in the survey

Questions 6, 7, 8 and 9 of survey 1 (see Appendices 6a and 6b) were open questions which elicited qualitative data. These were subjected to constant comparative analysis and categories and sub-themes were derived. The final comparison of this data involved comparisons of all the sub-themes to derive main themes. This is presented in Table 6.6.

Table 6.6 Themes derived from qualitative analysis of Survey 1

Main Theme	Sub-Theme	CE Quotes	EI Quotes
Newly Qualified Nurses' Role	Role of the Nurse	"meets with clinical expectations".	"nurses are more equipped with clinical skills".
	Fit for Practice and Purpose	"develops confidence and competence".	"fit for practice and purpose on registration".
	Role Enhancement	"better for nurses to do these skills than support workers".	"skill acquisition enhances and develops role".
	Student Ability	"appropriate training is required before skills are undertaken".	"standard of skill attainment may be poor".
Up to Date Curriculum	Overloaded Curriculum	"would allow post-registration training to be further developed if venepuncture, cannulation and IV bolus and male catheterisation were added to Pre-registration".	"there are limited resources for adding more skills into the curriculum".
	Curriculum Development	"Skills training needs to be considered as competencies relating to holistic care, integrated into an educational programme. Skills training should be appropriately supervised at all times (pre and post reg.) and directly related to learning outcomes and assessment…".	"Institutions need to embrace change and the need for courses to be equipped with the new skills required for qualification".
	Partnerships and Collaboration	"perhaps if Trusts and HEIs linked closer together to determine where pre-registration (what point) education/ training stops in relation to clinical skills and where CPD (service) starts…this will ensure a smoother transition".	"Clinical areas are the most appropriate sources for finding out which of these skills should be taught and when as it will vary from speciality to speciality".

Table 6.6 (contd)

Main Theme	Sub-Theme	CE Quotes	EI Quotes
Skill Development	Focus on Technical Skills	"We have particular problems around engaging student nurses to observe patients. e.g. Respiratory rate is indicative of oxygen requirement…..there is an overuse of monitors rather than observation".	"There is already a problem with nurses taking on more technical care at the expense of nursing care…"
	Skill Development Focus	"Focus in pre-registration relates to care delivery, assessment, problem solving and communication…This focus may be lost if more skills are introduced".	"I think teaching clinical skills to the pre-registration students has been undervalued for far too long. The use of simulation, role play and case studies are all important ways to help students learn clinically relevant skills and knowledge".
	Acceptable Skills	"skills which optimise care are the acceptable skills".	"those which contribute to holistic patient care and those which aid comfort and diagnosis for the patients".
Clinical Expectations	Dependent Factors	"The skills a new nurse needs depends on the area of practice in which she is going to function….".	"depends on area of work".
	Care Issues	"Agree with patient centred care and seamless service.	"Increased sophistication of practice and a holistic approach to care".

Further analysis of open questions are represented in Figures 6.4 and 6.5 and demonstrate CE and EI opinions on: the professional acceptability of nurses acquiring these skills; CE and EI reasons for their choices regarding the acceptability of skills; the advantages and disadvantages of skill acquisition; and any other comments they had on this topic

6.2.7 Acceptability for nurses undertaking skills

The response from EIs and CEs are represented in Figures 6.4 and 6.5. Multiple responses were elicited.

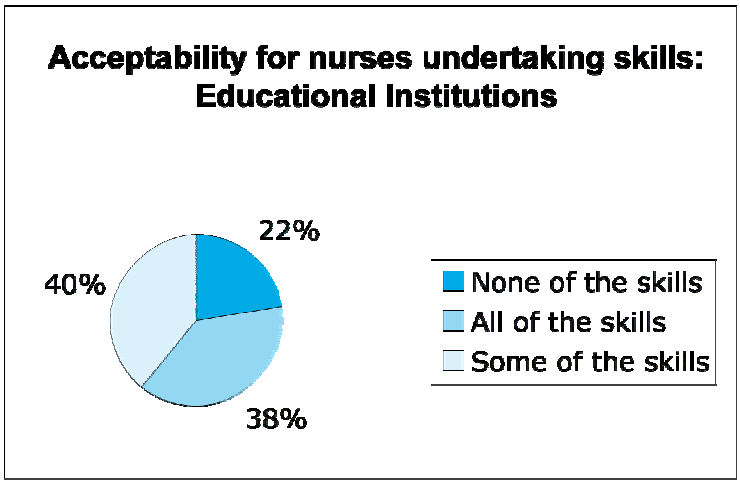


Figure 6.4 Acceptability for nurses undertaking skills: Educational Institutions

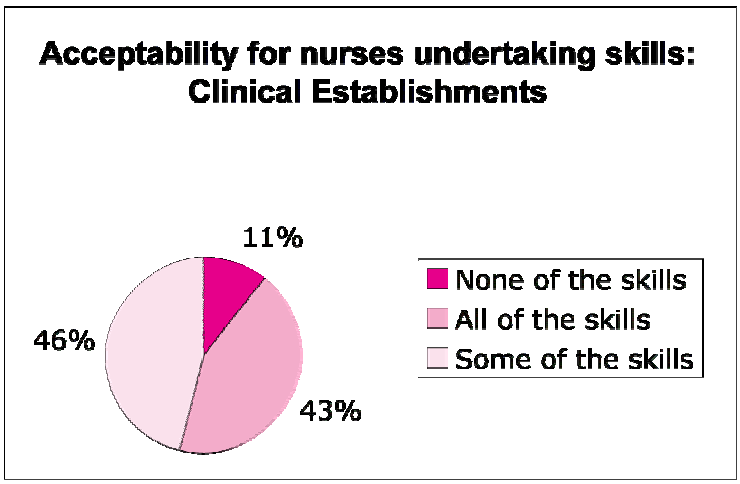


Figure 6.5 Acceptability for nurses undertaking skills: Clinical Establishments

Figures 6.4 and 6.5 show that higher percentages of respondents have indicated that it is acceptable for nurses to undertake these skills.

When the difference between CEs and EIs is analysed 22% of EI respondents considered none of these skills acceptable compared to only 11% of CE respondents. This demonstrates that higher numbers of CE respondents are in favour of these skills being acceptable than EI respondents.

6.2.7a Reasons for choice of responses

The respondents were asked about the reasons for their choice of answer for the acceptability of the skills and their responses are shown in Figure 6.6.

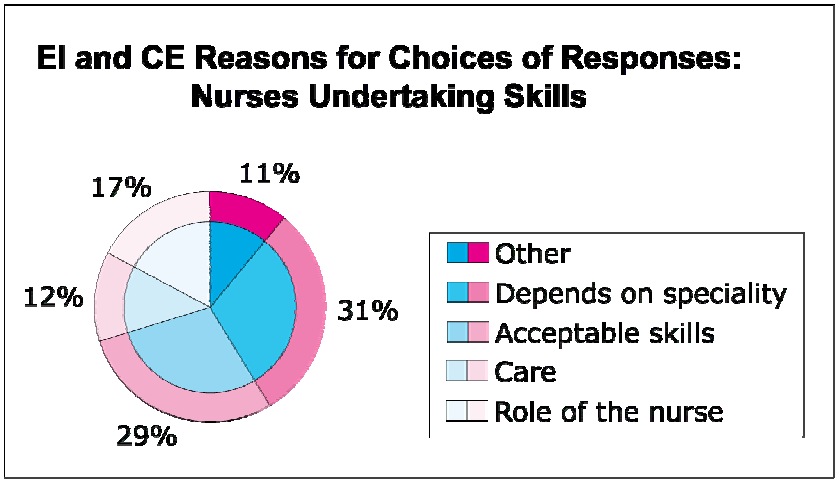


Figure 6.6 EI and CE reasons for choice of responses: Nurses undertaking skills

Figure 6.6 demonstrates that 31% of respondents from both groups agreed that the acceptability for skill acquisition was dependent on the area of work, i.e. if the skill was appropriate for the area of work then it was appropriate for nurses to acquire the skill. The remainder of the respondents qualified their choice by explaining that the skills they had selected in the previous question as essential and/or desirable were the ones that were acceptable for acquisition. Further clarification was made by stating that it also depended on the nurses' experience and that the skills optimised care. The responses relating to "care" and "role of nurse" indicated

that respondents were aware that these skills provided holistic care and a seamless service for the patient as well as providing job satisfaction for the nurse.

6.2.8 Advantages and disadvantages of nurses undertaking skills

Figure 6.7 presents the mean number of advantages and disadvantages as indicated by CE responses. Fifty percent (50%) indicated advantages and 50% disadvantages.

Figure 6.8 presents advantages and disadvantages as indicated by EI responses. Forty-seven percent (47%) indicated advantages and 53% disadvantages.

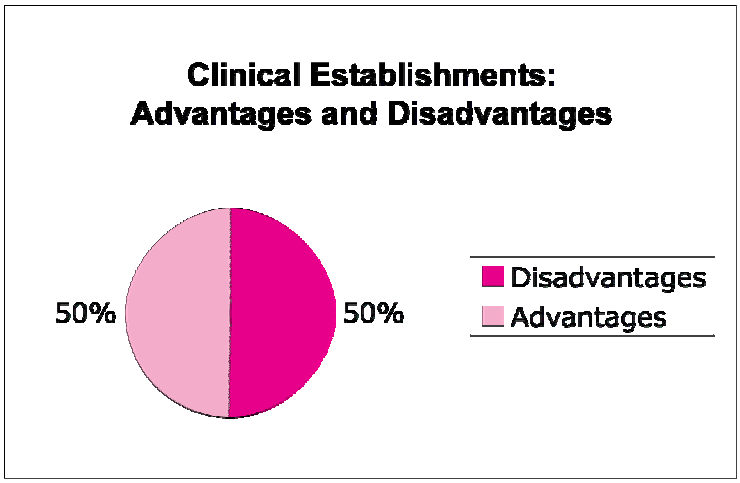


Figure 6.7 Clinical Establishments: Mean number of Advantages and Disadvantages

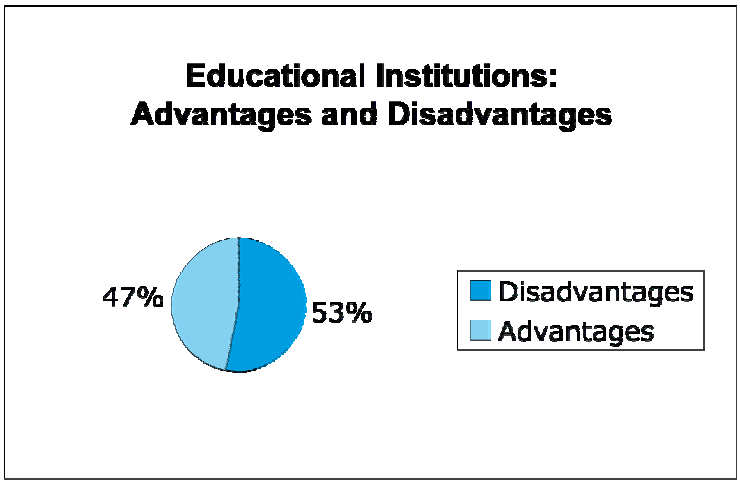


Figure 6.8 Educational Institutions: Mean number of Advantages and Disadvantages

Sections 6.2.8a and 6.2.8b present the qualitative analysis for the questions on advantages and disadvantages of skill acquisition.

6.2.8a Advantages

This was an open question and responses were analysed using constant comparative analysis. The following categories were derived.

No.	Category
1	Better Equipped Nurses
2	Fit for practice and purpose
3	Role Enhancement
4	Principles covered pre-registration
5	Other: This category included responses which did not fit into the previous categories, such as, "this will bring Britain in line with other countries"; "it's a more modern type of training"; "suits employers' expectations"; "satisfies post-registration needs".

These 5 categories were compared again to derive the following sub-themes:

Fit for practice and purpose and Role Enhancement (see Table 6.6)

6.2.8b Disadvantages

This was an open question and responses were analysed using constant comparative analysis. Different themes emerged and the following categories were derived.

No.	Category
1	Time
2	Skills focus
3	Knowledge Base
4	Readiness of students
5	Other: This category included responses which did not fit into the previous categories, such as, "depends on the area of practice"; "need to maintain competence of the skill"; "this skill acquisition marginalises other professions".

These five categories were compared again to derive the following sub-themes:

Overloaded Curriculum; Focus on Technical Skills and Student Ability (see Table 6.6)

6.2.8c Any other comments

This section allowed respondents to add any other comments they had on the subject. Forty-five percent (45%) of respondents made additional comments. Using constant comparative analysis, the responses were categorised into 11 categories.

No.	Category
1	Skills curriculum
2	Skills Teaching
3	Pre-Registration Acquisition
4	Post-registration acquisition
5	Consolidation period
6	Collaboration with partners
7	International Scene
8	Focus of skill development
9	Area Dependent Acquisition
10	Doctor/Patient issues
11	Critique of questionnaire

Three respondents also used this section to comment on the questionnaire itself.

Respondent CEE20

"Regarding question 5 - it was difficult giving generic answers as some skills denoted as 'not necessary' - may be desirable or essential in specific areas…"

Respondent EIE10

"This questionnaire is not sufficiently clear. Question 2 is very ambiguous - the list of skills in question 5 appears unplanned and collected by chance rather than design".

The 11 categories were derived into the following 4 sub-themes: Skill Development Focus; Curriculum Development; Partnership; and Collaboration and Dependent Factors (see Table 6.6)

The evidence from both the focus group and skills teachers' survey (Survey 1) are summarised in Table 6.7 below.

Table 6.7 Summary of evidence from focus groups and skills teachers' survey

Evidence	Feature	Findings
• 35 skills identified by focus groups as necessary post qualification	**Skill Identification**	• IV skills; medication skills; surgical skills; acute care skills; emergency skills; professional/ management skills
• 73% of CEs (n=95) and 18% of EIs (11 out of 61 respondents) were teaching the skills being investigated		• Skills identified as venepuncture; cannulation; IV bolus injection; cannulation; male catheterisation
• The timing of the skill acquisition for CEs was the immediate post-registration period	**Timing of Skill Acquisition**	• Pre-Registration acquisition was preferred by some CEs: 53% venepuncture 44% IV bolus injection 36% cannulation 63% male catheterisation
• The timing of the skill acquisition for EIs was the pre-registration period		• Pre-Registration acquisition was preferred by over 80% of all EIs. (n=61)
• 26 skills categorised as essential, desirable or not necessary within 1st 12 months of qualifying/ employment	**Skill Categorisation**	• 5 skills rated essential by over 70% (n=156) • 2 skills rated desirable by over 50% (n=156) • Chi Square Test showed a significant difference of opinion between the groups for 8 skills.
• Majority stated skills are acceptable for nurses	**Acceptability**	• 22% of EIs (n=61) and 11% of CEs (n=95) stated skills not acceptable
• 5 categories denoting advantages were derived	**Advantages of Skill Acquisition**	• Better equipped nurses • Fit for practice and purpose • Role enhancement • Principles covered in pre-reg • Other

Table 6.7 (contd)

Evidence	Feature	Findings
• 5 categories denoting disadvantages were derived	**Disadvantages of Skill Acquisition**	• Time • Skill focus • Knowledge Base • Readiness of students • Other
• Qualitative analysis of open questions identified 4 main themes and 12 sub-themes (Table 6.6)	**Added Value**	Main Themes: • NQN Role • Up to date Curriculum • Skill Development • Clinical Expectations

CHAPTER 7 EVIDENCE FROM NEWLY QUALIFIED NURSES, PRECEPTORS, MANAGERS AND EIs DELIVERING SKILLS

7.1 Newly qualified nurses (NQNs) responses

This section presents the results from the newly qualified nurse interviews and observations. The total number in this sample is 58. Of these 30 represent the control group and 28 the experimental group.

7.1.1 Demographic details of NQNs

Table 7.1 Demographic details of NQNs

Demographic	Item	Control Group	Experimental Group
When Qualified	April 2003	1	16
	September 2003	11	0
	March 2004	15	0
	April 2004	0	12
	September 2004	3	0
Designation	Staff Nurse	29	28
	Staff Midwife	1	0
Area of Work	Acute Medical	10	12
	Acute Surgical	11	9
	Elderly Acute	5	2
	Theatres	0	3
	Accident and Emergency	1	1
	Continuing Care	0	1
	Child Health	2	0
	Midwifery	1	0

Table 7.1 presents the details of the qualification period for the NQNs, their designations and their areas of work.

7.1.2 Skill acquisition at interview

For 26 of the clinical skills identified from the focus groups and Survey 1, the NQNs were asked if they already possessed the skill, their responses were coded as 'yes' or if they wished to acquire it in the future ('yes in the future') or if they did not want the skill ('no'). This enabled data comparison with Survey 1.

The findings relating to the skills at the NQN interviews are presented as two sections categorised as: Skills with

significant differences between the experimental and control groups (Table 7.2) and skills with no significant difference between the groups (Table 7.3).

As some of the values were small, Fisher's Exact test was computed for each skill. Using SPSS version 15, the Pearson Chi Square Exact test was revealed in the test results. The results between the Fisher's Exact test and the Pearson Chi Square Exact test were comparable and therefore the latter has been referenced throughout.

The skills which were optional for the experimental group to acquire during the pre-registration programme were: venepuncture, cannulation, IV bolus injection, continuous injection via syringe pump, male catheterisation and key handler (see Appendix 4).

Table 7.2 Skill Acquisition at NQN interview with significant differences between the experimental and control groups

Skill	Responses	Control Group	Experimental Group
1. Venepuncture	Yes	2	19
	No	4	1
	Yes In The Future	24 (80%)	8
Chi Square Test P=0.000	**% with skill at interview**	**7%**	**68%**
2. Cannulation	Yes	1	22
	No	4	1
	Yes In The Future	25 (83%)	5
Chi Square Test P=0.000	**% with skill at interview**	**3%**	**79%**
3. Continuous Infusion via Syringe Pump	Yes	19	28
	No	2	0
	Yes In The Future	8	0
Chi Square Test P=0.001	**% with skill at interview**	**66%**	**100%**
4. IV Bolus Injection	Yes	30	23
	No	0	0
	Yes In The Future	0	5 (18%)
Chi Square Test P=0.021	**% with skill at interview**	**100%**	**82%**

Table 7.2 (contd)

Skill	Responses	Control Group	Experimental Group
5. Male Catheterisation	Yes	4	17
	No	3	1
	Yes In The Future	23	10
Chi Square Test P=0.001	**% with skill at interview**	**13%**	**61%**
6. Key Handler	Yes	1	20
	No	18 (60%)	4 (14%)
	Yes In The Future	11 (37%)	4 (14%)
Chi Square Test P=0.000	**% with skill at interview**	**3%**	**71%**
7. NG Tube Insertion	Yes	11	19
	No	2	1
	Yes In The Future	17	8
Chi Square Test P=0.042	**% with skill at interview**	**37%**	**68%**
8. Violence and Aggression	Yes	11	18
	No	1	2
	Yes In The Future	18 (60%)	8
Chi Square Test P=0.037	**% with skill at interview**	**37%**	**64%**
9. Research and Audit	Yes	23	28
	No	6 (20%)	0
	Yes In The Future	1 (3%)	0
Chi Square Test P=0.016	**% with skill at interview**	**77%**	**100%**
10. Prescribing Medication	Yes	1	1
	No	14 (47%)	4 (14%)
	Yes in the future	15 (50%)	23 (82%)
Chi Square Test P=0.012	**% with skill at interview**	**3%**	**4%**

n=30 for the control group and n=28 for experimental group.

1. Venepuncture

   Seven percent (7%) of the control group had acquired this skill at interview compared to 68% of the experimental group. Eighty percent (80%) of the control group wished to acquire this skill in the future. On Chi square testing and referencing the Pearson Chi Square Exact value this proved to be a highly significant difference between the groups (p=0.000).

2. Cannulation

Three percent (3%) of the control group had acquired the skill at interview compared to 79% of the experimental group. Eighty-three percent (83%) of the control group wished to acquire this skill in the future. On Chi Square testing and referencing the Pearson Chi Square Exact value this proved to be a highly significant difference between the groups (p=0.000).

3. Continuous Infusion via a syringe pump

Sixty-six percent (66%) of the control group had acquired this skill at interview compared to 100% of the experimental group. The control group acquired this skill during clinical placement time, whereas the experimental group had been taught during their final year. On Chi Square testing and referencing the Pearson Chi Square Exact value this proved to be a highly significant difference between the groups (p=0.001).

4. IV Bolus Injection

The whole control group (100%) had acquired this skill at interview compared to 82% of the experimental group. This reflected the fact that the control group NQNs were interviewed during their induction courses and had been taught this skill whilst on the induction course. The experimental group had been offered this skill as the optional component of their final year BSc (Hons) Nursing programme and whilst 82% chose to acquire this skill at that time, 18% chose not to acquire this skill but stated that they wished to acquire it in the future. On Chi Square testing and referencing the Pearson Chi Square Exact Test there was a significant difference found (p=0.021).

5. Male Catheterisation

Thirteen percent (13%) of the control group had acquired this skill at interview compared to 61% of the experimental group. This reflected acquisition during clinical placement time for some of the control group and for the experimental group taught sessions during their final year. On Chi Square testing and referencing Pearson Chi Square Exact Test this proved to be a highly significant difference (p=0.001).

6. Key Handler

Three percent (3%) of the control group compared to 71% of the experimental group had acquired this skill at interview. This reflects skill acquisition for the experimental group during their final year. Sixty percent (60%) of the control group responded that they do not wish to acquire this skill compared to only 14% of the experimental group. However, 37% of the control group would like to acquire this skill in the future compared to 14% of the experimental group. The results reflect the optional nature of the skill acquisition in the final year as some students chose not to acquire it at this stage, but would wish to acquire it later in their career. On Chi Square testing and referencing Pearson Chi Square Exact Test this proved to be a highly significant difference (p=0.000).

7. NG Tube Insertion

Thirty-seven percent (37%) of the control group and 68% of the experimental group had acquired this skill at interview. This reflected acquisition during clinical placements for both groups. On Chi Square testing and referencing Pearson Chi Square Exact Test there was a significant difference found (p=0.042).

8. Violence and Aggression

Thirty-seven percent (37%) of the control group and 64% of the experimental group had acquired this skill at interview. This reflected skill acquisition for the experimental group during year three. Sixty percent (60%) of the control group wish to acquire this skill in the future. On Chi Square testing and referencing Pearson Chi Square Exact Test there was a significant difference found (p=0.037).

9. Research and Audit

All participants in the experimental group (100%) responded that they had acquired this skill at interview compared to 77% of the control group. This reflected the research skills gained on the completion of a dissertation during the experimental group's honours year. Twenty percent (20%) of the control group responded that they do not wish to acquire this skill and only 3% wish to acquire it in the future. On Chi Square testing and referencing Pearson Chi Square Exact Test there was a significant difference found (p=0.016).

10. Prescribing Medication

Three percent (3%) of the control group and 4% of the experimental group responded that they had acquired this skill, again through clinical placements, but 50% of the control and 82% of the experimental group would like to acquire this skill in the future.

It was interesting to note that 47% of the control and only 14% of the experimental group did not wish to acquire this skill. On Chi Square testing and referencing Pearson Chi Square Exact Test there was a significant difference found (p=0.012).

Table 7.3 Skill acquisition at NQN interview with no significant differences between the experimental and control groups

Skill	Responses	Control Group	Experimental Group
1. SC Needle Insertion	Yes	13	19
	No	3	1
	Yes in the future	14	8
Chi Square Test P=0.203	**% with skill at interview**	**43%**	**68%**
2. Gastrostomy Tube re-insertion	Yes	4	3
	No	6	11
	Yes in the future	18 (65%)	14 (50%)
Chi Square Test P=0.353	**% with skill at interview**	**14%**	**11%**
3. Ear Syringing	Yes	9	2
	No	10 (33%)	14 (50%)
	Yes in the future	11	12
Chi Square Test P=0.076	**% with skill at interview**	**30%**	**7%**
4. Chemotherapy	Yes	3	1
	No	14 (47%)	16 (57%)
	Yes in the future	13 (43%)	11 (39%)
Chi Square Test P=0.661	**% with skill at interview**	**10%**	**4%**
5. ECG Recording	Yes	16	13
	No	2	0
	Yes in the future	12 (40%)	15 (54%)
Chi Square Test P=0.383	**% with skill at interview**	**53%**	**46%**
6. Verification of Expected Death	Yes	3	2
	No	7(23%)	8 (29%)
	Yes in the future	20(67%)	18 (64%)
Chi Square Test P=0.922	**% with skill at interview**	**10%**	**7%**
7. Suturing	Yes	1	2
	No	11	11
	Yes in the future	18 (60%)	15 (54%)
Chi Square Test P=0.759	**% with skill at interview**	**3%**	**7%**
8. First Aid	Yes	14	17
	No	5	2
	Yes in the future	10	9
Chi Square Test P=0.528	**% with skill at interview**	**47%**	**61%**

Table 7.3 (contd)

Skill	Responses	Control Group	Experimental Group
9. Advanced Life Support	Yes	5	10
	No	5	5
	Yes In The Future	20	13
Chi Square Test P=0.212	**% with skill at interview**	**17%**	**36%**
10. Counselling	Yes	7	10
	No	6 (20%)	1 (4%)
	Yes In The Future	17 (57%)	17 (61%)
Chi Square Test P=0.156	**% with skill at interview**	**23%**	**36%**
11. Mentorship	Yes	30	28
	No	0	0
	Yes in the future	0	0
Chi Square Test No stats computed	**% with skill at interview**	**100%**	**100%**
12. Preceptorship	Yes	0	1
	No	1 (3%)	2 (7%)
	Yes in the future	28 (97%)	25 (89%)
Chi Square Test P=0.417	**% with skill at interview**	**0%**	**4%**
13. Quality Issues	Yes	14	18
	No	7 (23%)	2 (7%)
	Yes In The Future	9 (30%)	8 (29%)
Chi Square Test P=0.227	**% with skill at interview**	**47%**	**64%**
14. Customer Care	Yes	14	12
	No	6 (20%)	7 (25%)
	Yes in the future	10 (33%)	9 (32%)
Chi Square Test P=0.943	**% with skill at interview**	**47%**	**43%**
15. Budgeting	Yes	1	0
	No	9 (30%)	6 (21%)
	Yes in the future	20 (67%)	22 (79%)
Chi Square Test P=0.462	**% with skill at interview**	**3%**	**0%**
16. Supervisory Management	Yes	1	0
	No	6	4
	Yes in the future	23 (77%)	24 (86%)
Chi Square Test P=0.732	**% with skill at interview**	**3%**	**0%**

n=30 for the control group and n= 28 for experimental group.

1. SC Needle Insertion

Forty-three percent (43%) of the control group and 68% of the experimental group had acquired it at interview. This reflected clinical placement acquisition for both groups. On Chi Square testing and referencing Pearson Chi Square Exact Test there was no significant difference found (p=0.203).

2. Gastrostomy Tube Re-insertion

Fourteen percent (14%) of control group and 11% of the experimental group had this skill at interview. This reflected acquisition on clinical placement. Sixty-five percent (65%) of the control group and 50% of the experimental group wished to acquire this skill in the future. On Chi Square testing and referencing Pearson Chi Square Exact Test there was no significant difference found (p=0.353).

3. Ear Syringing

Thirty percent (30%) of the control group and only 7% of the experimental group had acquired this skill at interview. This reflected acquisition during clinical placements for both groups. Thirty-three percent (33%) of the control group and 50% of the experimental group did not wish to acquire this skill. On Chi Square testing and referencing Pearson Chi Square Exact Test there was no significant difference found (p=0.076).

4. Chemotherapy

Ten percent (10%) of the control group and only 4% of the experimental group had acquired this skill, again through clinical placements. Forty-three percent (43%) of the control and 39% of the experimental groups wish to acquire this skill in the future but also 47% and 57% respectively did not wish to acquire this skill. This reflected the areas of work that the NQNs could see themselves in during their career. On Chi Square testing and referencing Pearson Chi Square Exact Test there was no significant difference found (p=0.661).

5. ECG Recording

Fifty-three percent (53%) of the control group and 46% of the experimental group had acquired this skill at interview. This reflected acquisition during clinical placements. Forty percent (40%) of the control and 54% of the experimental groups wished to acquire this skill in the future. On Chi Square testing and referencing Pearson Chi Square Exact Test there was no significant difference found (p=0.383).

6. Verification of Expected Death

Ten percent (10%) of the control group and 7% of the experimental group had acquired this skill at interview. This reflected clinical placement acquisition of this skill for both groups. Sixty-seven percent (67%) of the control and 64% of the experimental group wished to acquire this skill in the future. Also 23% of the control and 29% of the experimental group did not wish to acquire this skill. On Chi Square testing and referencing Pearson Chi Square Exact Test there was no significant difference found (p=0.922).

7. Suturing

Three percent (3%) of the control group and 7% of the experimental group had acquired this skill at interview. This reflected acquisition during clinical placements. Sixty percent (60%) of the control group and 54% of the experimental group wished to acquire this skill in the future. On Chi Square testing and referencing Pearson Chi Square Exact Test there was no significant difference found (p=0.759).

8. First Aid

Forty-seven percent (47%) of the control group and 61% of the experimental group had acquired this skill at interview. For both groups this was partly acquired through taught sessions at university and clinical placements. On Chi Square

testing and referencing Pearson Chi Square Exact Test there was no significant difference found (p=0.528).

9. Advanced Life Support

Seventeen percent (17%) of the control group and 36% of the experimental group had acquired this skill at interview. This reflected extra time spent on this skill during the third year of the programme for the experimental group as well as clinical placement acquisition for both groups. On Chi Square testing and referencing Pearson Chi Square Exact Test there was no significant difference found (p=0.212).

10. Counselling

Twenty-three percent (23%) of the control group and 36% of the experimental group had acquired this skill at interview. There is minimal instruction on this subject within the curriculum and most of this acquisition was gained on clinical placements. Fifty-seven percent (57%) of the control group and 61% of the experimental group wish to acquire this skill in the future. However 20% of the control group compared to only 4% of the experimental group do not wish to acquire this skill. On Chi Square testing and referencing Pearson Chi Square Exact Test there was no significant difference found (p=0.156).

11. Mentorship

All participants (i.e.100%) in both groups had acquired this skill at interview. This reflected the compulsory teaching of this skill at university during year 3 for both groups. No statistics can be computed because both groups gave the same answer.

12. Preceptorship

None of the control group and only 4% of the experimental group had acquired this skill at interview. This reflected clinical placement acquisition for the experimental group.

Ninety-seven percent (97%) of the control and 89% of the experimental group wished to acquire this skill in the future. Only 3% of the control and 7% of the experimental group do not wish to acquire this skill. On Chi Square testing and referencing Pearson Chi Square Exact Test there was no significant difference found (p=0.417).

13. Quality Issues

Forty-seven percent (47%) of the control group and 64% of the experimental group had acquired this skill at interview. The higher figure for the experimental group reflected the acquisition during an inter-professional management module within year three of the BSc (Hons) course. Twenty-three percent (23%) of the control group responded that they did not wish to acquire this skill compared to only 7% of the experimental group. Again this reflected the extra information given to the experimental group on this subject. Thirty percent 30% of the control group and 29% of the experimental group wished to acquire this skill in the future. This reflects the fact that some felt they still did not have sufficient knowledge on this skill and wished to progress with it further. On Chi Square testing and referencing Pearson Chi Square Exact Test Exact Test there was no significant difference found (p=0.227).

14. Customer Care

Forty-seven percent (47%) of the control group and 43% of the experimental group had acquired this skill at interview. This reflected taught sessions at university and clinical placement acquisition. There were some definite "no" responses, 20% for the control group and 25% of the experimental group, but 33% of the control and 32% of the experimental groups did wish to acquire this skill in the future. On Chi Square testing and referencing Pearson Chi Square Exact Test Exact Test there was no significant difference found (p=0.943).

15. Budgeting

Three percent (3%) of the control group and none of the experimental group had acquired this skill at interview. Sixty-seven percent (67%) of the control and 79% of the experimental group wished to acquire this skill in the future. However, 30% of the control group and 21% of the experimental group also responded that they do not wish to acquire this skill. On Chi Square testing and referencing Pearson Chi Square Exact Test Exact Test there was no significant difference found (p=0.462).

16. Supervisory Management

Only 3% of the control group and none of the experimental group had acquired this skill at interview. This was surprising as some skill acquisition was expected from the interdisciplinary management module which the experimental group completed in third year. However 77% of the control and 86% of the experimental group wished to acquire this skill in the future. On Chi Square testing and referencing Pearson Chi Square Exact Test Exact Test there was no significant difference found (p=0.732).

7.1.2a Summary of NQN skills at interview

Significant differences between the groups were found for the skills: venepuncture, cannulation, continuous infusion via syringe pump, IV bolus injection, male catheterisation, key handler, NG tube insertion, violence and aggression, research and audit and prescribing medication.

There were highly significant differences (p=0.000 or p<0.001) between the groups for the skills: venepuncture; cannulation; continuous infusion via syringe pump; male catheterisation and key handler. This is a very interesting finding as these were 5 of the skills included in the constructively aligned curriculum for the experimental group. The missing skill is IV bolus injection. This was acquired by

larger numbers in the control group and was significant at the 0.05 level. (see Tables 4.2 and 4.3)

Sixteen skills had no significant differences between the groups but their percentage frequencies of response and Chi Square results are presented to demonstrate completeness of the data analysis. These skills had some frequency variations between the groups but as they did not prove to be significant the inference is that both the groups had similar or little difference in their responses to these skills.

7.1.3 NQN Responses for stage of development for skill acquisition

NQNs were asked open questions regarding when during their career development these type of skills are best acquired. Responses were analysed using constant comparative analysis (Strauss and Corbin 1990). The verbatim responses from the interview transcripts were recorded onto sheets and the responses from the experimental group and the control group were separated. Frequencies of responses were noted as well as deriving categories and key themes. The findings are presented in Table 7.4. Thirteen categories resulted and these were compared with each other to derive the sub-themes and main themes and these are also represented in Table 7.4.

The main themes are: Pre-Registration Acquisition; Post Registration Acquisition; Dependent factors for acquisition; Added value of acquisition; Practice of skills; Continuity of Care and role overload.

Table 7.4 Themes from content analysis

Main Theme	Sub-Theme	Control Group Quotes	Experimental Group Quotes
Pre-Registration Skill Acquisition	Pre-Registration Skill Acquisition	"Pre-registration is the best time".	"best before you graduate….may not always use them, but good to have some knowledge before starting on the wards"
	Agreement for pre-registration acquisition	"Good to see as a student so you have some idea what's going on and when you are expected to do it…….you get more information and know more about it and then you can do it".	"Good to have theory before qualifying. Some older nurses here don't want these skills, so I get to do them and keep going to study days …. doing it pre-registration has helped me a lot".
	Skills teaching Pre-registration	"Some of them (pre-registration acquisition)….we didn't get to do them….now we're thrown into it….like gastrostomy tube re-insertion, ear syringing, NG tube insertion.	"Some (skills)…IV bolus, SC needle insertion are good early on because the wards are so busy and you need as many people there with these skills".
Post-Registration Skill Acquisition	Post-Registration Skill Acquisition	"Better after qualifying".	"Depends on skill….some are better later".
	Post-Registration Courses	"Yes (agreed pre-registration acquisition but comment on post-registration courses)…because you have to wait quite a few months for induction and it holds you up….so (if pre-registration acquisition) we are fully qualified before we start….this is a benefit"	"…For some skills I will have to go on a refresher course before practising".

Table 7.4 (contd)

Main Theme	Sub-Theme	Control Group Quotes	Experimental Group Quotes
Dependent Factors for acquisition	Acquisition Dependent on Area	"some are picked up during pre-registration, depends on the area you are working in and the area you are aiming to work in.	"Good (to acquire pre-registration)…. but depends on where you are working". "Keen to practice …but not in my area".
	Agreement dependent on specific skills	"some skills before others- IV bolus while you're in learning mode because once you are qualified you have to do that. It's got to come within your first year or first 2 years.	
	Dependent Factors	"(Pre-Registration skill acquisition)….Depends on the individual".	
Added Value of Acquisition	Added value to the role	"Enhances your ability to look after patients. It gives you greater understanding of what's happening and a greater knowledge of what you're doing. It's what you're there for"	"As long as you can multi-task it (skill acquisition) enhances your practice" "It improves the role and moves nursing forward and gives us more responsibility. Nurses are ready for it and are willing to deal with it"
	Job Satisfaction	"It makes you more competent and confident as well. You are able to your job as a professional".	
	Role Enhancement	"Role enhancement….because you've got more knowledge and you can apply this better to the patient"	
	All Rounder	"Makes them (nurses) more rounded….able to do more".	"Continuous professional development occurs and you get better insight into patient care. The nurse can treat the patient on certain things without waiting for the doctor"
	Professional Development	"It makes you more competent and confident as well, able to do your job as professionals"	
	Benefits	"Enhances the job, better patient care, better quality in the job"	

Table 7.4 (contd)

Main Theme	Sub-Theme	Control Group Quotes	Experimental Group Quotes
Practice of skills	Solo Practice	"I want to do this skill as soon as possible"	"I practise most of these skills on a daily basis in the ward"
	Supervised Practice	"I have started supervised practice. I've done 4 so far"	"I am gaining supervised practice and guidance from my mentor".
	Expectations	"The ward staff would want me to do it well and supervise me	"….it's expected of us"
	Choices	"Need to find your feet on the ward but start to acquire them within 1year and definitely 2years"	"Took it slowly as I had been out of uni a while….my mentor always watched over me…till I could do it alone"
	Time Interval	"Have to be top notch with oral medications before attempting IVs- could take months- this is the policy in some areas"	
Continuity of Care	Patient- Doctor Issues	" The job is becoming very technical anyway…nurses are doing more skills than doctors…..doctors feel they have no time to do it (skills)…it's bettering us at the end of the day".	"Patients trust nurses more…they may not have seen a doctor all day and feel scared when they put a needle in their arm…but they trust nurses"
Role Overload	Workload	"Adding to the list of job duties- increases the workload"	"Increases confidence, increases professional development and continuity of care but all skills shouldn't be passed onto nurses"
	Expectations	"Expectation to have skills but depends on placements what you acquire"	"I practice them - it is expected of us".

7.1.4 Analysis of the following 13 categories led to the development of the themes presented in Table 7.4

No.	Category	Comment
1	Pre-registration	These responses indicated that 75% of the experimental group were pleased to have acquired skills during their pre-registration period. Forty percent (40%) of the control group responded that the pre-registration time was the best time for skill acquisition. There was some consensus amongst the control group for this skill acquisition during pre-registration. Their comments were not as clearly defined as the experimental group's, as pre-registration acquisition of additional skills has not formed part of their main experience.
2	Pre-Registration - Specific Time Period	Seven percent (7%) of the experimental group identified specific times for skill acquisition. Some of the control group agreed with this and preferred specific times during pre-registration for skills acquisition
3	Pre-Registration Specific Skills	Eighteen percent (18%) of the experimental group identified specific skills which required pre-registration acquisition. This category was not derived for the control group but a similar category denoting the order of skills was derived.
4	Order of Skills	This category was not derived for the experimental group, although some of their previous responses have indicated a chronological order for skill acquisition. Twenty-three percent (23%) of the control group identified an order for skill acquisition and their responses indicated that the order could apply pre or post registration.
5	Post Registration	Twenty-five percent (25%) of the experimental group identified post-registration as the time period for acquiring some of the skills. These responses reflect NQNs who did not have a chance to practice the skill acquisition on qualifying. This was due to either the NQN opting to take time out after the course and not working straight away or the area they commenced work in did not recognise their skill acquisition at university and they were not allowed to practice. Fifty percent (50%) of the control group identified post-registration as the time period for acquiring these skills. These responses indicated a more definite opinion on post-registration skill acquisition. This reflects the control group's experience as not always having the opportunity to gain skills pre-registration. Post-registration acquisition is the norm and reflects their familiarity with this stage, however there were comments made by this group regarding experience in relation to skill acquisition.

7.1.4 (contd)

No.	Category	Comment
6	Post-Registration Courses	Eighteen percent (18%) of the experimental group commented regarding post-registration courses. The responses reflected the fact that some students did not acquire certain skills during the pre-registration period or that they did not practice for a while and therefore needed to attend specific post-registration courses. This category was not derived for the control group
7	Pre-Registration Theory and Knowledge	Twenty-nine percent (29%) of the experimental group responded relating to "theory and knowledge"
8	Area Dependent	Four percent (4%) of the experimental group and 7% of the control group responded that the area in which the nurse is working would determine the skills acquired. Some NQNs therefore felt that skill acquisition is area dependent.
9	Individual Choice	Eleven percent (11%) of the experimental group and 10% of the control group indicated that personal choice should be a facet of skill acquisition.
10	Expectations of the Area	Seven percent (7%) of the control group commented on the area's expectations of these skills. This category was not derived for the experimental group
11	Patient Benefits	Four percent (4%) of the experimental group commented on "patients" in the response. This category was not derived for the control group.
12	Nurse Benefits	Eleven percent (11%) of the experimental group commented on "nurse benefits" in the response. This category was not derived for the control group.
13	Confidence	Seven percent (7%) of the experimental group commented on "confidence" in the response. These are opposing viewpoints regarding employer confidence in the NQN. The latter comment reflects the inability to practice the skills in the first post.

Table 7.5 shows that 89% of the experimental group agreed that pre-registration acquisition was the best time compared to 52% of the control group. These are high figures for both groups. Forty-five percent (45%) of the control group agreed that for some skills pre-registration acquisition was the best compared to 8% of the experimental group. Therefore a more definite "yes" response resulted for the experimental group for pre-registration, whereas the control group seem to be reacting more guardedly by stating "yes for some skills" only. The "no" responses for both groups were low.

Table 7.5 Specifically pre-registration acquisition : role enhancement or technical focus and nurses undertaking skills

Question	Item	Control Group	Experimental Group
Agree Pre-Registration Acquisition **Chi Square Test P=0.004**	Yes	52%	89%
	Yes for some skills	45%	8%
	No	3%	4%
Role Enhancement or Technical Focus **Chi Square Test P=0.065**	Role Enhancement	63%	89%
	Both Role Enhancement and Technical Focus	30%	8%
	Not Sure	7%	4%
Should nurses undertake skills **Chi Square Test P= 0.494**	Yes	90%	100%
	Some skills only	3%	0%
	No	7%	0%

n=30 for the control group and n= 28 for experimental group (3 missing values).

Further analysis of the responses in Table 7.5 was performed using Fisher's Exact test but the Pearson Chi Square exact value was referenced. This revealed that there was a significant difference in the two groups' response to the skills being acquired during the pre-registration period (p=0.004). There were no significant differences between the groups for 'role enhancement or technical focus' and 'should nurses undertake skills'.

Qualitative comments for the question relating specifically to pre-registration acquisition were also analysed. Eight categories were derived from constant comparative analysis for this question.

The categories were as follows:

No.	Category
1	Comments on Specific Skills
2	Yes: Even if not Practising
3	Area Dependent
4	"Depends on…"
5	Comments on Skills Teaching Pre-Registration
6	Comments on Post-Registration Courses
7	Individual Benefits
8	Feelings about the Skills

From these eight categories, further comparisons enabled the development of 5 sub-themes:

General agreement for pre-registration acquisition; Agreement dependent on specific skills; Skills teaching pre-registration; Benefits and Acquisition depends on area.

These were incorporated into main themes which are reported in Table 7.4.

The sections 7.1.5 – 7.1.8 represent further analysis of qualitative data.

7.1.5 – Role Enhancement or Technical Focus

7.1.6 – Nurses Undertaking Skills

7.1.7 – Progression with Skills

7.1.8 – Nurse Benefits and Professional Benefits

7.1.5 Role enhancement or technical focus

Table 7.5 shows responses to the question which asked respondents to comment on whether such skill acquisition led to role enhancement for the NQN or a more technically focussed nurse. Eighty-nine percent (89%) of the experimental group and 63% of the control group agreed

that it led to role enhancement for the nurse. These are high positive responses for both groups, but a more positive response from the experimental group. Thirty percent (30%) of the control group compared to only 8% of the experimental group stated it led to both. More of the control group could see this skill acquisition as creating both role enhancement and technical focus. Using Fisher's Exact Test there was no significant difference between the groups for role enhancement or technical focus (p=0.065).

Further qualitative responses to this question were analysed using constant comparative analysis and themes which emerged were categorised and reported as 10 categories:

No.	Category
1	Patient Related Comments
2	Doctor Related Comments
3	Continuity of Care
4	Professional Development
5	Autonomy/Accountability
6	Added Value to the Role
7	Builds Confidence
8	Job Satisfaction
9	Workload
10	"Depends on"

These 10 categories were further compared to derive 7 sub-themes.

Role enhancement; All Rounder; Dependent factors; Patient - doctor issues; Added value to role; Job Satisfaction and Professional Development.

These were incorporated into the main themes and are included in Table 7.4.

7.1.6 Nurses undertaking these skills

The responses to this question are shown in Table 7.5 and related to whether or not nurses should undertake these skills. Table 7.5 demonstrates that 90% of the control group and 100% of the experimental group answered "yes"

to this question, indicating a positive response for skill acquisition. Using Fisher's Exact test there was no significant difference between the groups for 'should nurses undertake skills' (p=0.494).

A further 8 categories were derived from the qualitative comments for this question by constant comparative analysis.

No.	Category
1	Patient and Doctor Related Comments
2	Nurse Benefits
3	Area Dependent
4	Pay Related Comment
5	Workload
6	Depends on the Individual
7	Expectations of Others
8	Repeating Courses

These 8 categories were further compared and 6 sub-themes were derived.

Agreement; Agreement for some skills; dependent factors; Patient-doctor issues; Workload issues and Expectations.

These were incorporated into main themes and are included in Table 7.4.

7.1.7 The NQN's progression with these skills

This question related to the 'next phase' and related to the expectation of the NQN in the clinical area following skill acquisition. Sixteen categories were derived from the responses to this question. These 16 categories were further compared and 6 sub-themes were derived. They were: Solo Practice; Supervised Practice; Post-Registration Courses; Time Intervals; Acquisition Area Dependent and Expectations. The first 3 categories received the highest number of responses. These were incorporated into main themes and are represented in Table 7.4.

7.1.7 The NQN's progression with these skills (contd.)

No.	Category	Comment
1	I practice them	Sixty-eight percent (68%) of the experimental group stated that they practised these skills in their first post. None of the control group had done
2	I acquired supervision	Forty-three percent (43%) of the experimental group stated that they were acquiring supervision for the practice of the skills learnt at university compared to only 3% of the control group.
3	Expect to start supervised practice	Eighty-three percent (83%) of the control group stated that they expected to commence supervised practice. None of the experimental group stated this.
4	I want to practice	Eleven percent (11%) of the experimental group stated this.
5	Ward Expectations	This category applied only to 11% of the experimental group.
6	Comments related to Specific Skills	This category related to 7% of the experimental group.
7	Area Dependent	There have been comments referred to previously regarding the skills not being practised because of the area the NQN was working in, but 11% of the experimental group made specific comments. This category was not derived for the control group.
8	Exemption from Trust Courses	Seven percent (7%) of the experimental group stated that they had been exempt from their employers' courses on the skills. This category was not derived for the control group.
9	Waste not to practice	Seven percent (7%) of the experimental group stated that it would be a waste not to practice these skills. This category was not derived for the control group.
10	Difficulties with practice	Four percent (4%) of the experimental group commented regarding the difficulty involved in gaining supervision prior to practice. This category was not derived for the control group.
11	Anticipation of a longer time before gaining supervision	A similar category to the one above was derived for the control group, but in relation to anticipating difficulties. This category was not derived for the experimental group.
12	Gap between course at University and Practice/ Refresher Courses	This category was derived for the experimental group only and relates to the gap between the university course and practice and then the need for refresher courses

7.1.7 The NQN's progression with these skills (contd.)

No.	Category	Comment
13	Ward Guidance and support	Ten percent (10%) of the control group made comments derived under this category.
14	Urgency to start	Ten percent (10%) of the control group made comments derived under this category.
15	Accountability	Seven percent (7%) of the control group made comments related to accountability.
16	Not sure what happens next	Three percent (3%) of the control group stated that they had not been informed regarding the next phase and were not sure what would happen next.

7.1.8 What does this do for the nurse and the nursing profession?

This question asked whether the role of the nurse was affected in any way and whether any professional issues arose out of this skill acquisition. Ten categories were derived for the responses to this question. These 10 categories were further compared and 5 sub-themes were derived.

These sub-themes were: Professional Role Development; Job Satisfaction; Added Value; Patient/Doctor/Team Issues; and Workload. These were incorporated into main themes and are represented in Table 7.4.

7.1.8 What does this do for the nurse and the nursing profession? (contd.)

No.	Category	Comment
1	Positive comments on the Role	Thirty-nine percent (39%) of the experimental group and 57% of the control group made positive comments.
2	Improves Knowledge and Insight	Thirty-two percent (32%) of the experimental group and 30% of the control group commented on the improvement in knowledge and insight.
3	Added value to the Role and Profession	Fifty-seven percent (57%) of the experimental group and 53% of the control group commented on the added value and job satisfaction on skill acquisition.
4	Recognition for Nurses	This category was derived only for the experimental group. Twenty five percent (25%) commented on the right for nurses to be recognised with this skill acquisition.
5	Improves Confidence	Eighteen percent (18%) of the experimental group and 17% of the control group commented on improvements in confidence for the nurse.
6	Adds Responsibility	Eleven percent (11%) of the experimental group and 10% of the control group commented on the increase in responsibility with skill acquisition.
7	Continuity of Care	This category was derived for the experimental group only. Thirty-two (32%) commented on the continuity of care for patients.
8	Patient Related Comments	Thirty-two percent (32%) of comments for the experimental group and 20% for the control group were patient related
9	Doctors and other Staff Related Comments	Thirty-two percent (32%) of the experimental group and 23% of the control group made comments about other staff members but especially doctors. Many of these have been included under other categories
10	Pay and Workload Issues	Fourteen percent (14%) of the experimental group and 13% of the control group commented on pay and workload.

7.2 Analysis of observational visits to NQNs and confidence levels with skills practice

Two observational visits were made in the clinical setting for each NQN within the sample group, approximately one month and three months into post. Field Notes were taken and data were entered into SPSS and qualitative data were

analysed using constant comparative analysis. Skills being practised were analysed and the results are presented.

Table 7.7 shows the skills which were practised with higher frequency by the experimental group. Table 7.8 shows the skills which were practised with little differences in frequency between the groups. It was noted that there were no skills practised with a higher frequency for the control group. This is in spite of higher values for some skills at interview for the control group.

Concurrently a survey of the NQNs' preceptors (Survey 2) took place and the demographic results and their views on the timing of skill acquisition are presented in Table 7.6.

7.2.1 Preceptors' Survey

Table 7.6 Demographic details for preceptors and their views on pre-registration skill acquisition

Demographic	Item	Control Group	Experimental Group
Number who responded		**13**	**12**
Number of years as a preceptor	0-1yrs	3	2
	1-3yrs	3	2
	3-5yrs	2	3
	Over 5yrs	3	5
	Not Sure	2	0
Number of Nurses precepted	1	2	5
	1-3	4	0
	3-5	3	3
	Over 5	3	3
	Not Sure	1	1
Area of Work	Acute Medical	2	5
	Acute Surgical	8	5
	Elderly Acute	2	1
	Accident and Emergency	1	0
	Theatres	0	1
Agree with Pre-Registration Acqusition	Yes	7 (53%)	8 (67%)
	No	4 (31%)	4 (33%)
	Not Sure	1 (8%)	0 (0%)

Table 7.6 shows the responses given by preceptors who were precepting the NQNs. Forty-three percent (43%) of preceptors for each of the control and experimental groups responded to the survey. The range of experience for the preceptors of each group spanned 0-5 years and 5 preceptors for the experimental group and 3 for the control group had over 5 years experience. Table 7.6 shows the number of nurses precepted. This spans from 1-5 nurses for both groups, with 2 preceptors unsure of the exact number precepted. Three preceptors from each group had precepted over 5 nurses. This also reflects the number of years they have been precepting. The table also shows in which specialities the preceptors were located. Acute medical and surgical areas have the highest numbers and this is consistent with the NQNs responses for their area of work.

Table 7.6 shows the preceptors' views on skill acquisition during the pre-registration period. Fifty-three percent (53%) of the control group preceptors and 67% of the experimental group preceptors responded positively in agreement with pre-registration acquisition of the skills investigated. However, 31% for the control and 33% for the experimental group responded in the negative. 8% of the control group but none of the experimental group preceptors responded as "not sure".

Table 7.7 NQN observations: skills practised with a higher frequency for the experimental group

Skill	Observation	Frequency of Practice	Control Group	Experimental Group
1. Venepuncture	1st	Not Practising	29	14
		1-2x month	0	2
		1-2x week	0	2
		1-3x shift	0	1
		3-5x shift	0	0
		> 6x shift	0	0
		Total Practising	**0%** N=29	**26%** N=19
	2nd	Not Practising	29	13
		1-2x month	0	2
		1-2x week	0	3
		1-3x shift	0	1
		3-5x shift	0	0
		> 6x shift	0	0
		Total Practising	**0%** N=29	**32%** N=19
2. Cannulation	1st	Not Practising	29	14
		1-2x month	0	4
		1-2x week	0	1
		1-3x shift	0	2
		3-5x shift	0	1
		> 6x shift	0	0
		Total Practising	**0%** N=29	**36%** N=22
	2nd	Not Practising	29	15
		1-2x month	0	3
		1-2x week	0	0
		1-3x shift	0	2
		3-5x shift	0	2
		> 6x shift	0	0
		Total Practising	**0%** N=29	**32%** N=22

Note: Experimental Group
Venepuncture - 19 had the skill at interview
Cannulation - 22 had the skill at interview

Control Group
N=29 because 1 respondent was missing and was not observed

Table 7.7 (contd.)

Skill	Observation	Frequency of Practice	Control Group	Experimental Group
3. IV Bolus Injection	1st	Not Practising	8	3
		1-2x month	2	0
		1-2x week	7	0
		1-3x shift	5	3
		3-5x shift	3	8
		> 6x shift	4	10
		Total Practising	**72%** N=29	**88%** N=24
	2nd	Not Practising	4	3
		1-2x month	3	0
		1-2x week	5	0
		1-3x shift	5	3
		3-5x shift	6	8
		> 6x shift	6	9
		Total Practising	**86%** N=29	**87%** N=23
4. Continuous Infusion via Syringe Pump	1st	Not Practising	14	6
		1-2x month	2	0
		1-2x week	1	0
		1-3x shift	0	0
		3-5x shift	3	13
		> 6x shift	4	9
		Total Practising	**71%** N=24	**79%** N=28
	2nd	Not Practising	7	5
		1-2x month	2	1
		1-2x week	5	0
		1-3x shift	0	0
		3-5x shift	5	12
		> 6x shift	5	10
		Total Practising	**71%** N=24	**82%** N=28

Note: The numbers reported are the respondents who were observed with this skill acquisition. Some missing values are noted and others gained the skill in the time span between NQN interview and NQN observation.

Table 7.7 (contd.)

Skill	Observation	Frequency of Practice	Control Group	Experimental Group
5. SC Needle Insertion	1st	Not Practising	14	17
		1-2x month	1	3
		1-2x week	3	2
		1-3x shift	0	1
		3-5x shift	0	1
		> 6x shift	1	2
		Total Practising	**26%** N=19	**35%** N=26
	2nd	Not Practising	8	16
		1-2x month	1	4
		1-2x week	4	3
		1-3x shift	0	1
		3-5x shift	0	0
		> 6x shift	1	2
		Total Practising	**43%** N=14	**38%** N=26
6. Mentorship	1st	Not Practising	29	19
		Had a student	0	7
		Total Practising	**0%** N=29	**27%** N=26
	2nd	Not Practising	24	14
		Had a student	5	10
		Total Practising	**17%** N=29	**42%** N=24

Note: The numbers reported are the respondents who were observed with this skill acquisition. Some missing values are noted and others gained the skill in the time span between NQN interview and NQN observation.

Table 7.7 (contd.)

Skill	Observation	Frequency	Control Group	Experimental Group
7. Violence and Aggression	1st	Did not comment	9	11
		Practising	2	5
		Total Practising	**18%** N=11	**31%** N=16
	2nd	No Change		
8. Customer Care	1st	Did not comment	9	1
		Practising	4	10
		Total Practising	**31%** N=13	**91%** N=11
	2nd	No Change		
9. Quality Issues	1st	Did not comment	11	9
		Practising	3	8
		Total Practising	**21%** N=14	**47%** N=17
	2nd	No Change		
10. Counselling	1st	Did not comment	7	5
		Practising	1	4
		Total Practising	**13%** N=8	**44%** N=9
	2nd	No Change		
11. Key Handler	1st	Not Practising	1	15
		More than 6 x per shift	0	5
		Total Practising	**0%** N=1	**25%** N=20
	2nd	No Change		
12. Research and Audit	1st	Not Practising	15	13
		Practising	6	12
		Total Practising	**29%** N=21	**48%** N=25
	2nd	No Change		

Note: The numbers reported are the respondents who were observed with this skill acquisition. Some missing values are noted and others gained the skill in the time span between NQN interview and NQN observation.

Table 7.7 (contd.)

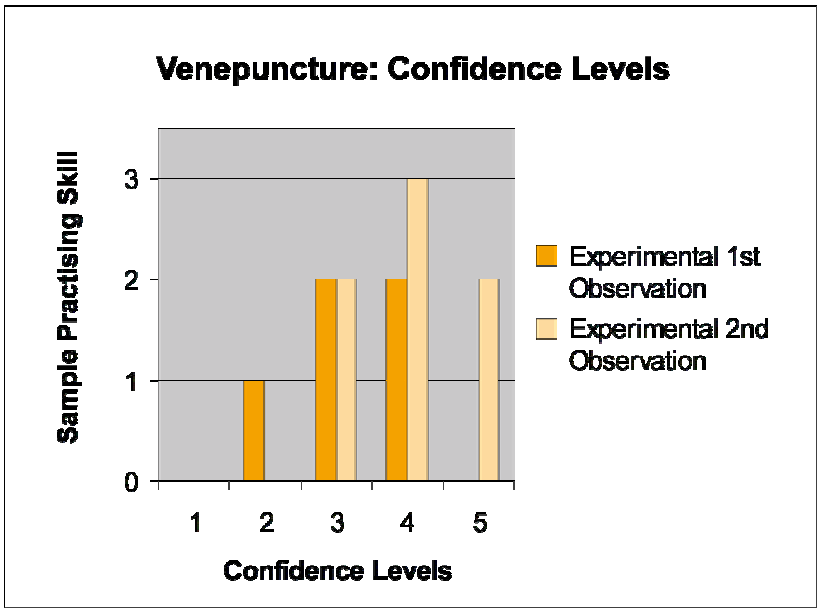
Skill	Observation	Frequency	Control Group	Experimental Group
13. ECG Recording	1st	Not Practising	13	7
		1-2x month	0	1
		1-2x week	1	0
		1-3x shift	0	0
		3-5x shift	1	1
		> 6x shift	0	3
		Total Practising	**13%** N=15	**42%** N=12
	2nd	Not Practising	12	8
		1-2x month	0	1
		1-2x week	1	0
		1-3x shift	0	0
		3-5x shift	1	1
		> 6x shift	0	2
		Total Practising	**14%** N=14	**33%** N=12

Note: The numbers reported are the respondents who were observed with this skill acquisition. Some missing values are noted and others gained the skill in the time span between NQN interview and NQN observation.

Skill 1 Venepuncture

Frequency of Practice

Table 7.7 shows that at 1st observation none of the control group were practising this skill compared to 26% of the experimental group. The control group had not gained this skill acquisition at this stage. The figures are low for the experimental group and reflect opportunities for practice. At 2nd observation the control group have still not practised and the experimental group have increased to 32% practising.



Legend for Confidence Levels

Level	Confidence Level
1	Not Confident
2	A Little Confident
3	Developing Confidence
4	Some Confidence
5	Confident

Figure 7.1 Venepuncture confidence levels

Figure 7.1 demonstrates that for the experimental group, 2 were at the 'developing confidence' (Level 3) and 2 at 'some confidence' (Level 4) stages at the first observation but by 2nd observation this had increased to 3 at level 4 and 2 at 'confident' (level 5).

Table 7.7a Preceptors' opinion: Venepuncture

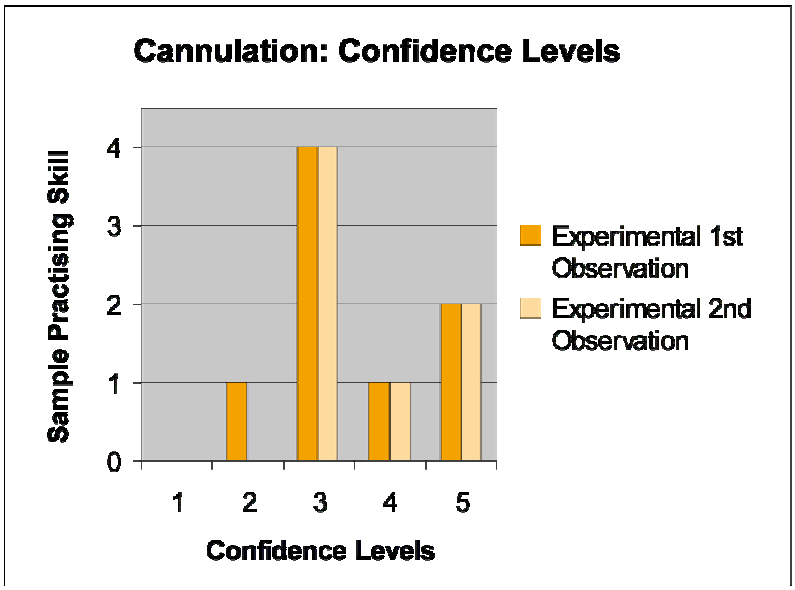
	Control Group	Experimental Group
Missing	30	
Confidence level 1		1 (17%)
2		0
3		1 (17%)
4		1 (16%)
5		3 (50%)

Table 7.7a represents data from the Preceptors' survey of NQNs. They agreed with some of the levels of confidence for the experimental group and deemed 50% of members 'confident' (level 5), but also deemed 17% 'not confident' (level 1).

Skill 2 Cannulation

Frequency of Practice

Table 7.7 shows that the control group were not practising this skill at 1st observation because of lack of skill acquisition. Thirty-six percent (36%) of the experimental group were practising this skill at 1st observation. On 2nd observation only 32% of experimental group members were practising cannulation and none reported for the control group. This decrease in the experimental group's result reflects lack of practice opportunities compounded by a change of clinical area by 2nd observation.



Legend for Confidence Levels

Level	Confidence Level
1	Not Confident
2	A Little Confident
3	Developing Confidence
4	Some Confidence
5	Confident

Figure 7.2 Cannulation confidence levels

Figure 7.2 shows that confidence levels were improving for the experimental group. This is in spite of the fact that frequency of practice declined slightly.

Table 7.7b Preceptors' opinion: Cannulation

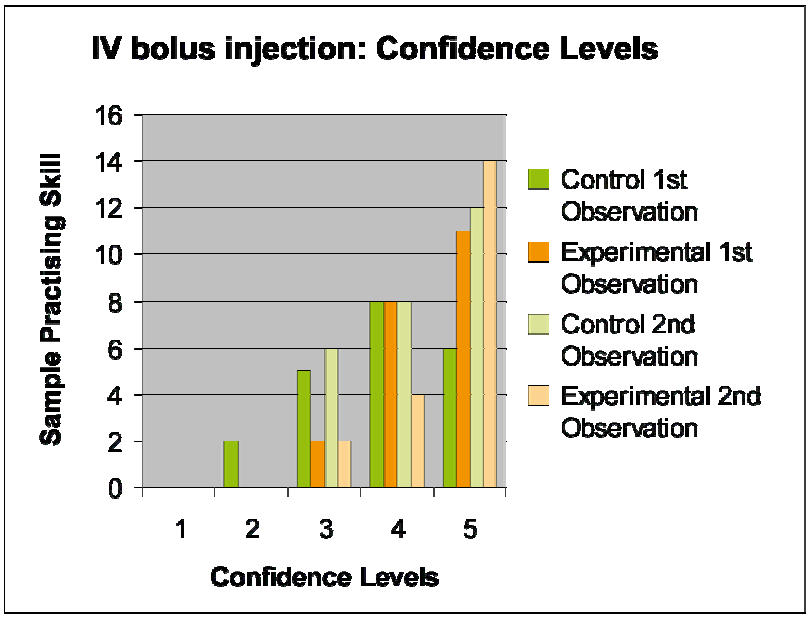
	Control Group	Experimental Group
Missing	30	
Confidence level 1		2 (40%)
2		0
3		1 (20%)
4		1 (20%)
5		1 (20%)

Table 7.7b shows that Preceptors' views on confidence levels differed slightly from the NQN's view. Forty percent (40%) of the experimental group was deemed 'not confident' (level 1).

Skill 3 IV Bolus Injection

Frequency of Practice

Table 7.7 represents the frequency of practice of IV Bolus injection. On 1st observation 72% of the control group and 88% of the experimental group were practising this skill. On 2nd observation this had risen to 86% and 87% respectively.



Legend for Confidence Levels

Level	Confidence Level
1	Not Confident
2	A Little Confident
3	Developing Confidence
4	Some Confidence
5	Confident

Figure 7.3 IV Bolus injection confidence levels

Figure 7.3 demonstrates that at 1st observation 6 of the control group and 11 of the experimental group deemed themselves "confident" (level 5). At 2nd observation confidence levels had risen with 12 of the control group and 14 of the experimental group stating they were 'confident' (level 5).

Table 7.7c Preceptors' opinion: IV bolus injection

Confidence Level	Control Group	Experimental Group
1	0	0
2	2 (17%)	1 (10%)
3	3 (25%)	0
4	6 (50%)	2 (20%)
5	1 (8%)	7 (70%)

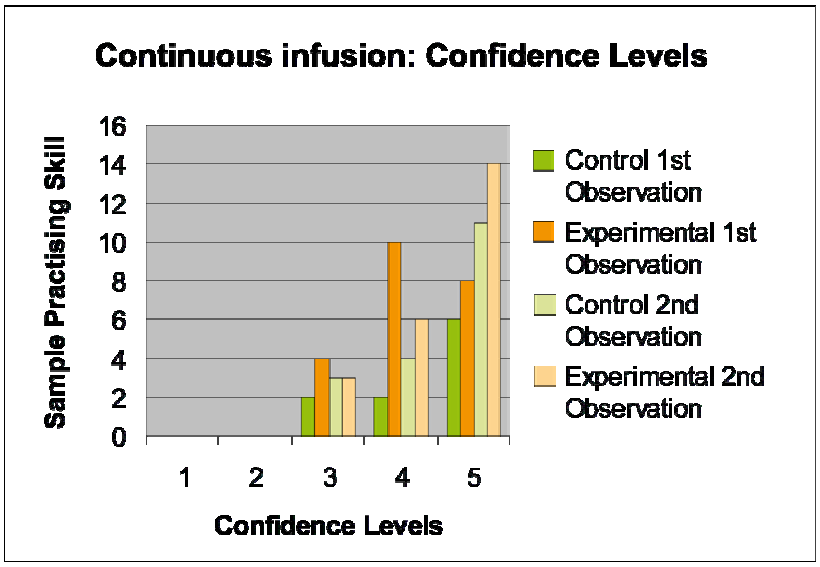
Table 7.7c shows that Preceptors agreed more with the experimental group's perceptions deeming 70% 'confident' (level 5) compared to 8% for the control group. This is in spite of the fact that the control group had a higher value for this skill acquisition at interview (Table 7.2). This result adds value to the credibility of the constructively aligned curriculum which is where the experimental group acquired this skill.

Skill 4 Continuous Infusion via Syringe Pump

Frequency of Practice

Table 7.7 represents the frequency of practice of dealing with intravenous electronic pumps and lines and in particular syringe pumps. Seventy-one percent (71%) of the control group were practising this skill at 1st observation compared to 79% of the experimental group. Nine of the experimental group were practising this skill '6 or more times per shift' compared to 4 of the control group.

By 2nd observation both groups had increased their practice. Five for the control group and 10 for the experimental group were practising '6 or more times per shift'. Seventy-one percent (71%) of the control group practising compared to 82% of the experimental group.



Legend for Confidence Levels

Level	Confidence Level
1	Not Confident
2	A Little Confident
3	Developing Confidence
4	Some Confidence
5	Confident

Figure 7.4 Continuous infusion confidence levels

Figure 7.4 demonstrates that at first observation 6 of the control group and 8 of the experimental group considered themselves 'confident' (level 5). By 2nd observation 11 control and 14 experimental group members were 'confident' (level 5).

Table 7.7d Preceptors' opinion: Continuous infusion via syringe pump

Confidence Level	Control Group	Experimental Group
1	1 (9%)	0
2	2 (18%)	0
3	5 (46%)	2 (20%)
4	3 (27%)	2 (20%)
5	0	6 (60%)

Table 7.7d shows that the preceptors disagreed with the control group's views. They considered 46% of the control group to be 'developing confidence' i.e. level 3 and 27% had 'some confidence'

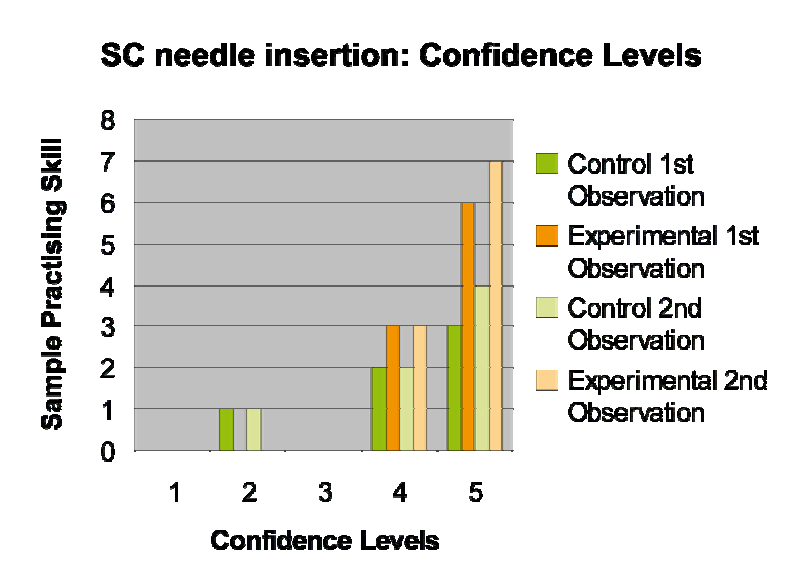
i.e. level 4. The preceptors' views were more favourable with the experimental group's views, as 60% were deemed 'confident' (level 5).

Skill 5 SC Needle Insertion

Frequency of Practice

Table 7.7 represents the frequency of practice for sub-cutaneous needle insertion. This was not a skill which had practice opportunities in all areas and therefore the figures for 'not practising' were high at 14 for the control group and 17 for the experimental group. Twenty-six percent (26%) of the control group and 35% of the experimental group were practising this skill at 1st observation.

By 2nd observation frequency of practice had increased to 43% for the control group and 38% for the experimental group.



Legend for Confidence Levels

Level	Confidence Level
1	Not Confident
2	A Little Confident
3	Developing Confidence
4	Some Confidence
5	Confident

Figure 7.5 SC needle insertion confidence levels

Figure 7.5 demonstrates that in spite of the infrequent practice, confidence levels are high for both groups. At 1st observation 3 of the control group and 6 of the experimental group deemed themselves 'confident' (level 5). By 2nd observation 4 of the control group are 'confident' (level 5) and 7 of the experimental group are 'confident' (level 5).

Table 7.7e Preceptors' opinion: SC needle insertion

Confidence Level	Control Group	Experimental Group
1	1 (17%)	0
2	0	1 (14%)
3	2 (33%)	0
4	2 (33%)	1 (14%)
5	1 (17%)	5 (72%)

Table 7.7e shows that Preceptor's opinion disagreed with the control group's views on confidence levels as preceptors deemed only 17% of the control group 'confident' (level 5). However, they deemed 72% of the experimental group 'confident' (level 5).

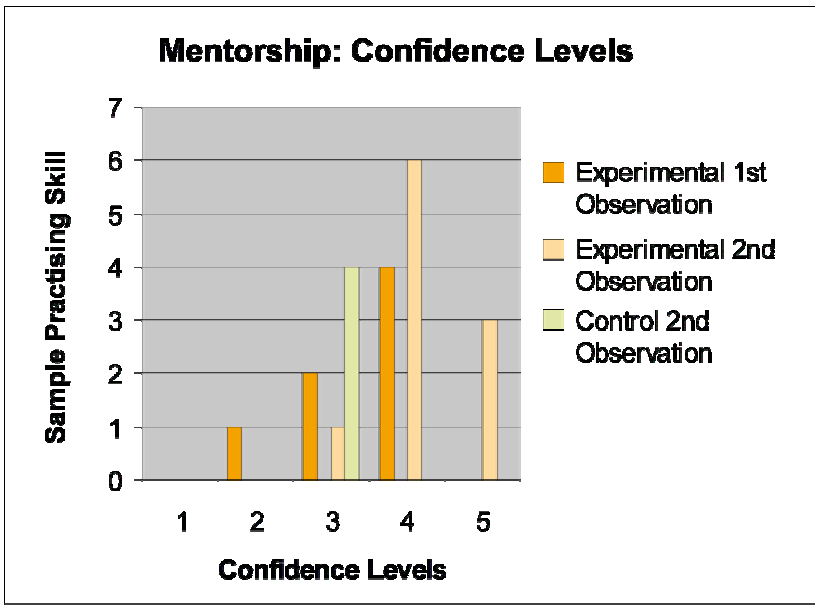
Skill 6 Mentorship

Frequency of Practice

Table 7.7 represents the frequency of practice for mentorship.

Twenty-seven percent (27%) of the experimental group had already had a student at 1st observation of this skill compared to none of the control group. The majority of both groups had not practised this skill. By the 2nd observation 17% of the control group and 42% of the experimental group had mentored a student.

Figure 7.6 shows only the experimental groups confidence levels at 1st observation. Four of the experimental group felt they had 'some confidence' (level 4) with the skill. Confidence levels at 2nd observation had risen, with 4 of the control group deeming themselves as 'developing confidence' (level 3), whereas the experimental group had 3 at 'confident' (level 5) and 6 had 'some confidence' (level 4).



Legend for Confidence Levels

Level	Confidence Level
1	Not Confident
2	A Little Confident
3	Developing Confidence
4	Some Confidence
5	Confident

Figure 7.6 Mentorship confidence levels

Table 7.7f Preceptors' opinion: Mentorship

Confidence Level	Control Group	Experimental Group
1	1 (50%)	0
2	0	1 (25%)
3	1 (50%)	1 (25%)
4	0	1 (25%)
5	0	1 (25%)

Table 7.7f shows that Preceptor's opinions have demonstrated some higher levels of confidence for the experimental group than the control group for the skill of mentorship. However, numbers of respondents are low (2 for the control group and 4 for the experimental group) for this skill.

Skill 7 Violence and Aggression

Frequency of Practice

Table 7.7 represents the observation responses for the skill of Violence and Aggression. Only 18% of the control group and 31% of the experimental group commented on practicing this skill at 1st observation. By 2nd observation there was no change. This could have been due to changes in clinical areas between the observational visits.

Confidence Levels:

Confidence levels were not commented on for the control group at either 1st or 2nd observation. At 1st observation 3 of the experimental group deemed themselves as 'developing confidence' (level 3). 'Developing confidence' (level 3) was highlighted by the experimental group as their confidence level on 2nd observation.

Table 7.7g Preceptors' opinion: Violence and aggression

Confidence Level	Control Group	Experimental Group
1	0	0
2	3 (33%)	3 (43%)
3	5 (56%)	0
4	1 (11%)	3 (43%)
5	0	1 (14%)

Table 7.7g shows that Preceptors did comment on this skill and found 56% of the control group to be 'developing confidence' (level 3) and the experimental group were at 43% for 'a little confidence' (level 2) and 'some confidence' (level 4) through to 14% at 'confident' (level 5).

Skill 8 Customer Care

Frequency of Practice

Table 7.7 represents the responses at 1st observation for the skill of 'customer care'. Thirty-one percent (31%) of the control group commented on practising this skill compared to 91% of the experimental group. The response 'no comments' refers to NQNs who stated that they had not had an opportunity to practice this skill

and therefore had no comments to make. By 2nd observation there was no change.

Confidence Levels

Confidence levels were not commented on by either group at 1st or 2nd observations.

Table 7.7h Preceptors' opinion: Customer care

Confidence Level	Control Group	Experimental Group
1	0	0
2	2(10%)	0
3	3 (30%)	1 (16%)
4	5 (50%)	1 (17%)
5	1 (10%)	4 (67%)

Preceptors however had comments on confidence levels for this skill. Table 7.7h shows that they deemed 67% of the experimental group 'confident' (level 5) compared to 10% of the control group.

Skill 9 Quality Issues

Frequency of Practice

Table 7.7 shows the responses at observations to 'quality issues'. Twenty-one percent (21%) of the control group commented that they were practising this skill compared to 47% of the experimental group. Frequency of practice did not change at 2nd observation.

Confidence Levels

'Developing confidence' (level 3) was the level both groups chose for their confidence levels at both observations.

Table 7.7i Preceptors' opinion: Quality issues

Confidence Level	Control Group	Experimental Group
1	0	0
2	0	0
3	5 (63%)	3 (43%)
4	3 (38%)	0
5	0	4 (57%)

Table 7.7i shows that 57% of the experimental group was deemed 'confident' (level 5) for this skill by preceptors but none of the control group reached this level.

Skill 10 Counselling

Frequency of Practice

Table 7.7 represents the responses at observation for 'counselling'. Forty-four (44%) of the experimental group compared to only 13% of the control group stated they were practising. The figures did not change for the 2nd observation.

Confidence Levels

Confidence levels were indicated at 'developing confidence' (level 3) for both groups.

Table 7.7j Preceptors' opinion: Counselling

Confidence Level	Control Group	Experimental Group
1	1 (17%)	0
2	1 (17%)	0
3	3 (50%)	2 (40%)
4	1 (17%)	2 (40%)
5	0	1 (20%)

Table 7.7j shows that Preceptors deemed 20% of the experimental group 'confident' (level 5) and 40% had 'some confidence' (level 4). Most preceptors agreed that both groups were 'developing confidence' (level 3) at this skill.

Skill 11 Key Handler

Frequency of Practice

Table 7.7 shows the responses at observation for 'Key Handler'. This skill was practised by 25% of the experimental group although 75% stated they were not practising this skill. This was due to lack of practice opportunities. The entire control group (100%) was 'not practising'. This was not a skill acquired by the control group at this time.

Confidence levels

Three of the experimental group deemed themselves 'confident' (level 5) at this skill and 2 with 'some confidence' (level 4). The figures did not change at 2nd observation but 5 of the experimental group deemed themselves 'confident' (level 5).

Table 7.7k Preceptors' opinion: Key handler

Confidence Level	Control Group	Experimental Group
1	1 (34%)	0
2	0	0
3	1 (33%)	1 (20%)
4	1 (33%)	2 (40%)
5	0	2 (40%)

Table 7.7k shows that the highest confidence level for the control group was 'some confidence' (level 4). This is in spite of this group's lack of skill acquisition for the key handler skill and could reflect opinion on general moving and handling practices. Forty percent (40%) of the experimental group was deemed 'confident' (level 5) and 40% at 'some confidence' (level 4) and 20% at 'developing confidence' (level 3).

Skill 12 Research and Audit

Frequency of Practice

Table 7.7 shows the responses at observation for the practice of 'research and audit' skills. Forty-eight percent (48%) of the experimental group stated they were practising this skill at 1st observation compared to only 29% of the control group. The comments 'not practising' sometimes referred to responses where NQNs felt they could have practised but for various reasons did not. There were no significant changes to these figures at 2nd observation.

Confidence Levels

The experimental group deemed themselves 'confident' (level 5) and 'some confidence' (level 4) but the control group made no comments regarding their confidence.

Table 7.7l Preceptors' opinion: Research and audit

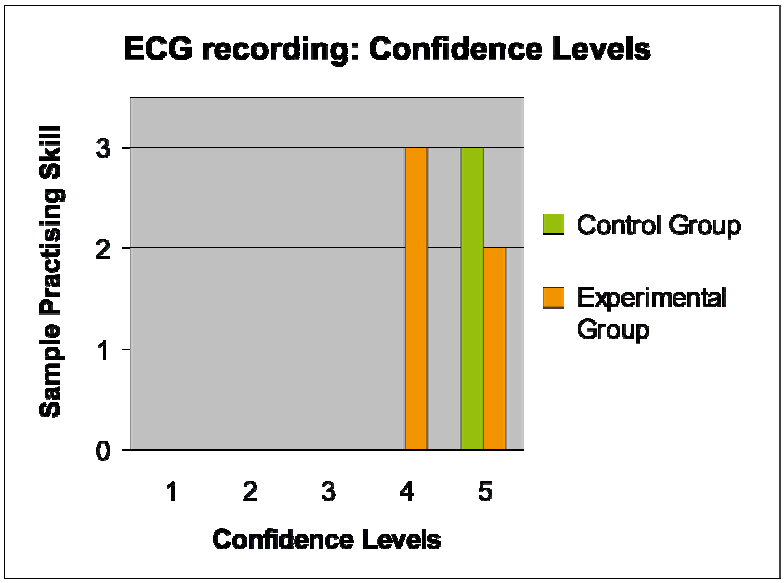
Confidence Level	Control Group	Experimental Group
1	1 (100%)	0
2	0	0
3	0	2 (50%)
4	0	1 (25%)
5	0	1 (25%)

The preceptors deemed one control group member 'not confident' (level 1) with this skill. The preceptors did not record any other scores for the control group. For the experimental group the scores ranged from 'developing confidence' i.e. level 3 (50%) to 'some confidence' i.e. level 4 (25%) and 'confident' i.e. level 5 (25%).

Skill 13 ECG Recording

Frequency of Practice

Table 7.7 represents the frequency of practice for ECG recording. Both groups had high numbers not practising this skill, 13 of the control group and 7 of the experimental group. Forty-two percent (42%) of the experimental group compared to 13% of the control group was practising this skill at 1st observation. Practice dropped to 33% for the experimental group at 2nd observation and increased to 14% for the control group.



Legend for Confidence Levels

Level	Confidence Level
1	Not Confident
2	A Little Confident
3	Developing Confidence
4	Some Confidence
5	Confident

Figure 7.7 ECG recording confidence levels

Figure 7.7 demonstrates that in spite of the low frequency of practice, 3 of the control group members and 2 experimental group members who were practising this skill deemed themselves 'confident' (level 5) with this skill at 1st observation. Confidence levels were much the same for both groups at 2nd observation.

Table 7.7m Preceptors' opinion: ECG recording

Confidence Level	Control Group	Experimental Group
1	1 (34%)	1 (25%)
2	0	0
3	0	0
4	1 (33%)	1 (25%)
5	1 (33%)	2 (50%)

Table 7.7m shows that Preceptors disagreed slightly with both groups by deeming one from each group 'not confident' (level 1) but otherwise there was some agreement.

Preceptorship

This skill was only practised by one member from each group at 1st and 2nd observations, and confidence levels were low. This was the only skill on which preceptors did not comment.

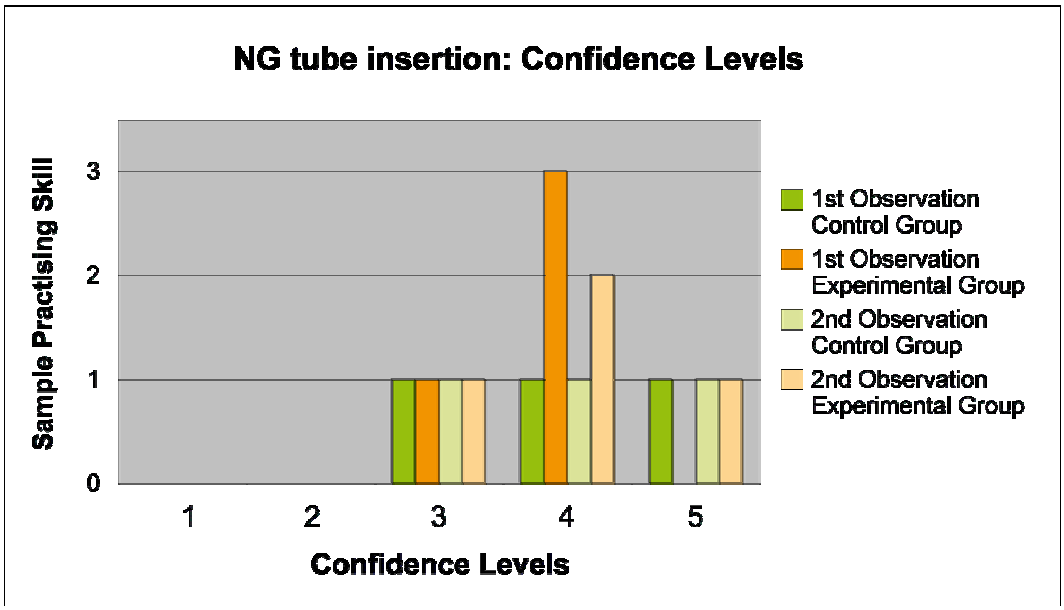
Table 7.8 NQN observations: skills practised with little difference in frequency between the groups

Skill	Observation	Frequency	Control Group	Experimental Group
1. NG Tube Insertion	1st	Not Practising	6	15
		1-2x month	1	3
		1-2x week	0	1
		1-3x shift	0	0
		3-5x shift	1	0
		> 6x shift	1	0
		Total Practising	**33%**	**21%**
	2nd	No Change		
2. Male Catheterisation	1st	Not Practising	2	11
		1-2x month	1	2
		1-2x week	0	1
		1-3x shift	0	1
		3-5x shift	0	0
		> 6x shift	0	0
		Total Practising	**33%**	**27%**
	2nd	Not Practising	2	10
		1-2x month	1	3
		1-2x week	0	1
		1-3x shift	0	1
		3-5x shift	0	0
		> 6x shift	0	0
		Total Practising	**33%**	**33%**

Skill 1 NG Tube Insertion

Frequency of Practice

Table 7.8 shows that on 1st observation 6 of the control group and 15 of the experimental group were not practising this skill. Only 33% of the control group and 21% of the experimental group had practised. This was related to practice opportunities. On 2nd observation there was no change in the frequency of practice for either group.



Legend for Confidence Levels

Level	Confidence Level
1	Not Confident
2	A Little Confident
3	Developing Confidence
4	Some Confidence
5	Confident

Figure 7.8 NG tube insertion confidence levels

Figure 7.8 demonstrates that at 1st observation one member of the control group stated they were 'confident' (level 5) and 3 of the experimental group stated they had 'some confidence' (level 4). By 2nd observation the experimental group's confidence had increased slightly, with one deeming themselves 'confident' (level 5). The control group's confidence levels remained the same.

Table 7.8a Preceptors' opinion: NG tube insertion

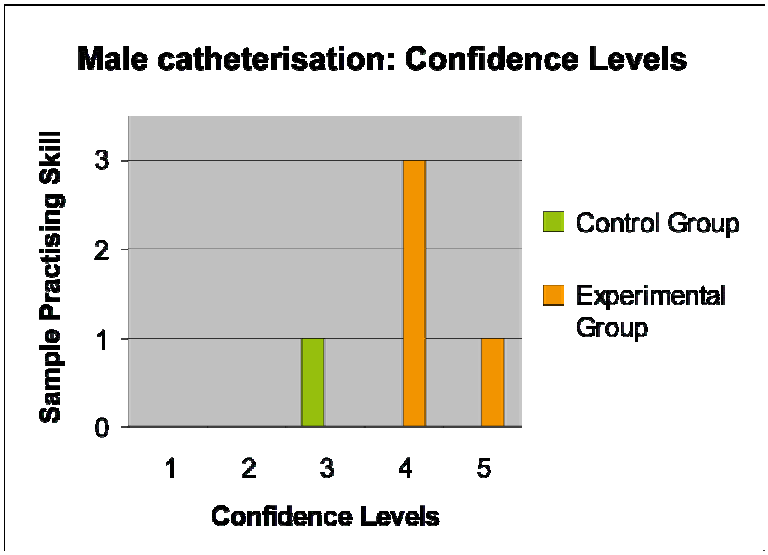
Confidence Level	Control Group	Experimental Group
1	2 (100%)	0
2	0	0
3	0	1 (50%)
4	0	0
5	0	1 (50%)

Table 7.8a shows that Preceptors' opinion disagreed with the control group's views on confidence and deemed 2 'not confident' (level 1). There was greater agreement between preceptors' and experimental group's views.

Skill 2 Male Catheterisation

Frequency of Practice

Table 7.8 represents the frequency of practice for male catheterisation. Only 27% of the experimental group and 33% of the control group were practising this skill at 1st observation. On 2nd observation there was some increase in practice in the experimental group to 33%. No change was observed in the control group.



Legend for Confidence Levels

Level	Confidence Level
1	Not Confident
2	A Little Confident
3	Developing Confidence
4	Some Confidence
5	Confident

Figure 7.9 Male catheterisation confidence levels

Figure 7.9 demonstrates that one of the experimental group deemed themselves 'confident' (level 5) at this skill at 1st observation. One of the control group deemed themselves as 'developing confidence' (level 3). There was little change in confidence levels at 2nd observation.

Table 7.8b Preceptors' opinion: Male catheterisation

Confidence Level	Control Group	Experimental Group
1	0	0
2	0	0
3	3 (100%)	0
4	0	1 (25%)
5	0	3 (75%)

Table 7.8b shows that Preceptors' opinion on confidence levels agreed with the control group's views but exceeded the experimental group's views deeming 75% of them as 'confident'.

Supervisory Management

Neither group commented on practising this skill at 1st or 2nd observation.

Table 7.8c Preceptorship opinion: Supervisory management

Confidence Level	Control Group	Experimental Group
1	1 (50%)	0
2	0	1 (25%)
3	1 (50%)	1 (25%)
4	0	1 (25%)
5	0	1 (25%)

Table 7.8c shows that Preceptors however had comments to make. The experimental group scored 25% for 'a little confident' through to 'confident' compared to the control group who had one score within 'not confident' (level 1) and one score for 'developing confidence' (level 3).

Budgeting

Neither group commented on practising this skill at 1st or 2nd observation.

Table 7.8d Preceptorship opinion: Budgeting

Confidence Level	Control Group	Experimental Group
1	1 (33%)	0
2	0	0
3	2(67%)	3 (100%)
4	0	0
5	0	0

Table 7.8d shows that Preceptors however had comments to make. They deemed 100% of the experimental group as 'developing confidence' (level 3), compared to the control group who had one score within 'not confident' (level 1) and 67% at 'developing confidence' (level3).

7.3 Time Interval : between skill acquisition and practice

Table 7.9 Cross tabulation of time interval between skill acquisition and practice: IV bolus injection

Time Intervals			Group		Total
			Control Group	Experimental Group	
Time interval between acquisition of IV bolus and practice	0 months	Count Expected Count % Within Group	17 9.6 65.4%	0 7.4 0%	17 17.0 37.0%
	1 month	Count Expected Count % Within Group	5 4.5 19.2%	3 3.5 15.0%	8 8.0 17.4%
	2 – 3 months	Count Expected Count % Within Group	0 6 0%	1 4 5.0%	1 1.0 2.2%
	5 – 6 months	Count Expected Count % Within Group	4 4.0 15.4%	3 3.0 15.0%	7 7.0 15.2%
	7 – 9 months	Count Expected Count % Within Group	0 6 .0%	1 4 5.0%	1 1.0 2.2%
	10 – 12 months	Count Expected Count % Within Group	0 6 .0%	1 4 5.0%	1 1.0 2.2%
	Repeated Course with Trust	Count Expected Count % Within Group	0 6.2 0%	11 4.8 55.0%	11 11.0 23.9%
Total		Count Expected Count % Within Group	26 26.0 100.0%	20 20.0 100.0%	46 46.0 100.0%

Table 7.9 shows the time interval between the acquisition of IV bolus injection and the practice of the skill. Of those members of the control group (n=26) who had this skill acquisition 65% of them could practice immediately (i.e. 0 months). This was not the case for the experimental group. The control group was acquiring this skill during their induction course on employment. The experimental group was still in university whilst acquiring this skill and 45% (n=20) experienced a time interval of 1 - 12 months. 55% stated that they repeated the Trust course on IV bolus injection and then practised.

On Chi Square testing there is a highly significant difference between the groups for IV Bolus Injection skill acquisition and practice (P<0.001), based principally on the different incidence levels at '0 months'. This is represented in Table 7.9a.

Table 7.9a Chi-Square tests for time interval: IV bolus injection

	Value	df	Asymp. Sig (2-sided)
Pearson Chi-Square	31.94(a)	6	.000
Likelihood Ratio	42.839	1	.000
Linear-by-Linear Association	27.380		.000
N of Valid Cases	46		

a 11 cells (78.6%) have expected count less than 5.
The minimum count is .43

Table 7.10 Time interval for other skills: No statistical significance noted

Skill	Time Interval	Control Group	Experimental Group
1. Venepuncture	0 months	-	2
	1 month	-	1
	6 months	-	1
	12 months	-	2
	Repeated Trust course	-	1
			(n=7)
Chi Square: no stats computed because group is constant			
2. Cannulation	0 months	-	2
	3 months	-	4
	6 months	-	2
	9 months	-	1
	12 months	-	1
			(n=10)
Chi Square: no stats computed because group is constant			
3. SC Needle Insertion	0 months	4	6
	3 months	1	1
	6 months	1	1
	9 months	1	1
	12 months	0	2
Chi Square p=<0.8		(n=7)	(n=11)
4. NG Tube insertion	0 months	2	3
	3 months	1	1
Chi Square p=<0.8		(n=3)	(n=4)
5. Male Catheterisation	0 months	1	0
	1 month	0	1
	3 months	0	1
	6 months	0	1
	12 months	0	1
	Repeated Trust course	0	1
Chi Square p=<0.3		(n=1)	(n=5)
6. ECG	0 months	2	1
	1 month	1	1
	3 months	0	1
	12 months	0	2
Chi Square p=<0.3		(n=3)	(n=5)
7. Mentorship	9 months	-	1
	12 months	-	5
Chi Square: no stats computed because group is constant			(n=6)
8. Key Handler	1 month	-	2
	6 months	-	3
Chi Square: no stats computed because group is constant			(n=5)

1. Time Interval: Venepuncture

   The skill of venepuncture was not acquired for the control group at this stage. Only the experimental group's results are presented.

   Table 7.10 shows that 3 experimental group members practised this skill within a month of acquisition. Three practised 6-12 months post acquisition and 1 repeated the Trust course.

2. Time Interval: Cannulation

   Table 7.10 shows only the experimental group's results as the control group had not acquired this skill. Six of the experimental group were practising this skill within 3 months of acquisition. Four were practising between 6 – 12 months post-acquisition.

3. Time Interval Sub- Cutaneous Needle Insertion

   Table 7.10 demonstrates that the majority from both groups were able to practise this skill straight after acquisition. This reflects 'on-the-job' teaching of the skill prior to practise.

4. Time Interval NG Tube Insertion

   Table 7.10 shows that the practice of NG tube insertion is within 3 months of skill acquisition for both groups.

5. Time Interval Male Catheterisation

   Table 7.10 shows that only one member of the control group was able to practise male catheterisation and this was immediately after skill acquisition. Four of the experimental group practised between 1 and 12 months of skill acquisition and 1 repeated the Trust's course. This reflects the university acquisition of this skill for the experimental group and the availability of the opportunity to practise.

6. Time Interval ECG Recording

Three from each group were practising this skill within 3 months of acquisition. The rest of the experimental group was practising between 1 and 12 months post-acquisition.

7. Time Interval Mentorship

This skill was only being practised by the experimental group and therefore only their results are reported.

Six of the experimental group were practising this skill within 12 months of acquisition. Both groups left the university having acquired this skill.

8. Time Interval Key Handler

This skill was only being practised by the experimental group and therefore only their results are reported. Table 7.10 demonstrates that within 6 months of skill acquisition 5 of the experimental group were practising this skill.

9. Time Interval Advanced Life Support

Only one member of the experimental group was practising this skill and this was straight after acquisition.

10. Time Interval Verification of Expected Death

Only one member of the experimental group was practising this skill and this was straight after acquisition.

7.4 NQN Observational data: work schedule

NQNs were asked to describe a typical shift pattern during each observational visit and to focus on how they incorporated skills practice for the skills being investigated. Their results are summarised in Table 7.11 and reflect acute medical and surgical wards.

Table 7.11 NQN observations: workload analysis

Time	Activity	Variations
7 am	Report from night staff	Reports were verbal; taped or written in a folder to read
7.30am	Care Delivery System: The area could be divided geographically; team nursing; patient allocation 4-6 patients for one nurse or 10-12 patients for 2-3 nurses.	There could be a set rota for staff; colour coding of teams; white board information; Named nurse responsibility.
8 am	Patients' breakfasts, beds and personal care. Medicine Round	Variations: Medicines administered for own patients including IVs; One nurse did medicines for one side including IVs; One nurse did medicines for both sides including IVs; Two medicine trolleys…. just did one side's medicines; any trained nurse did medicines; Red group then green group did medicines; 5 IVs maximum only per nurse.
9 – 10 am	Doctors' rounds	Nurse-in-charge or co-coordinator performed Doctors' round
10 – 12 pm	Personal care of patients including vital observations; continuous infusions via syringe pumps; PCAs; wound care; SC needle insertion; TPN; male catheterisation; catheter care; handovers to physiotherapists, occupational therapists, social workers. Theatre visits; ambulance patients discharged	
12 – 1 pm	Mealtimes Medicine Round	Medicine rounds implemented as before or any nurse who is free or one nurse does all including IVs
2 – 4 pm	Medicine Round Observations; continuous infusions via syringe pumps; admissions; discharges; theatre visits; Care plan documentation; relatives; ward teaching	As 12pm, or some areas merge these 2 rounds together. Care Pathway for orthopaedics
5 pm	Mealtimes	
6 pm	Medicine Round Doctors' Rounds	As before
7 pm	Handover to night staff	

Experimental group variations to Table 7.11

The experimental group reported other skills which they were practising. Some cannulated new admissions and re-cannulated patients as required. Some practised venepuncture at weekends when the technicians were off. Some also practised 12 lead ECGs as the technicians only did routine ECGs. Some had a student working alongside them when they were practising mentorship.

7.5 Other professionals involved in skills practice

During the observational visits NQNs were asked to name the other professionals involved with the practice of the skills under investigation. The results are presented in Table 7.12.

Table 7.12 Other professionals involved in skills practice

Doctors	Cannulation; some IV bolus injections; venepuncture; male catheterisation; NG tube if difficult; insertion of central lines; ECG; Advanced Life Support
Phlebotomists and Ward Assistants; Medical Support Nurse	Venepuncture
Technicians	ECGs
Night Nurse Practitioners; Medical Support Nurse	IV bolus injection; cannulation; venepuncture; male catheterisation; Advanced Life Support
Experienced Nurses	Key Handler; Preceptorship
Less experienced Nurses	Mentorship
Acute Pain Team	PCA pumps
Palliative Care Nurses	Syringe pumps

7.6 Variations between skills' teaching and practice

NQNs were asked to indicate whether there were any variations between what they had been taught regarding the skill and practice. In the majority of cases both groups indicated that there was no difference between what had been taught and what was practised. Some minor variations are represented in Table 7.13.

Table 7.13 Variations between skills' teaching and practice

Skill	Control Group	Experimental Group
IV Bolus Injection	The duration for the administration of the drug differed; only half an hour spent on instruction with a very short practice time; had to self study;	Differences between plastic model and real life; flushing was different…dilute with water and flush with water; flushing with different size syringes on ward; intermittent IV bolus administration with 100ml bags.
Continuous Infusion via syringe pump	PCA usage in general surgery different to own area; learned with theatre recovery nurse…much better to get 'hands on'….more confident	Date line and batch numbers practice on wards; 'Finger on the button' course to come
Cannulation		Requires date labels
Venepuncture		Butterfly needles for difficult veins; blood taken through shunt
Male Catheterisation		slightly different cleansing procedure shown
Key Handler		New update
Mentorship		Had a difficult student but good support; documentation had changed

Table 7.14 Summary table for NQN skills analysis

	Control Group	Experimental Group
Skill acquisition at interview with higher values for experimental group		
Skill 1 Venepuncture		
% with skill at interview	7%	68%
% practising 1st Obs	0%	26%
% practising 2nd Obs	0%	32%
Confidence level 5 1st Obs	No	No
Confidence level 5 2nd Obs	No	Yes
Skill 2 Cannulation		
% with skill at interview	3%	79%
% practising 1st Obs	0%	36%
% practising 2nd Obs	0%	32%
Confidence level 5 1st Obs	No	No
Confidence level 5 2nd Obs	No	Yes
Skill 3 Continuous infusion syringe pump		
% with skill at interview	63%	100%
% practising 1st Obs	71%	79%
% practising 2nd Obs	71%	82%
Confidence level 5 1st Obs	Yes	Yes
Confidence level 5 2nd Obs	Yes	Yes
Skill 4 Male Catheterisation		
% with skill at interview	13%	61%
% practising 1st Obs	33%	27%
% practising 2nd Obs	33%	33%
Confidence level 5 1st Obs	No	Yes
Confidence level 5 2nd Obs	No	Yes
Skill 5 SC Needle Insertion		
% with skill at interview	43%	68%
% practising 1st Obs	26%	35%
% practising 2nd Obs	43%	38%
Confidence level 5 1st Obs	Yes	Yes
Confidence level 5 2nd Obs	Yes	Yes
Skill 6 Key Handler		
% with skill at interview	3%	71%
% practising 1st Obs	0%	25%
% practising 2nd Obs	0%	25%
Confidence level 5 1st Obs	No	Yes
Confidence level 5 2nd Obs	No	Yes
Skill 7 NG Tube insertion		
% with skill at interview	37%	68%
% practising 1st Obs	33%	21%
% practising 2nd Obs	33%	21%
Confidence level 5 1st Obs	Yes	No
Confidence level 5 2nd Obs	Yes	No
Skill 8 First Aid		
% with skill at interview	47%	61%
% practising 1st Obs	10%	29%
% practising 2nd Obs	10%	25%
Confidence level 5 1st Obs	Yes	Yes
Confidence level 5 2nd Obs	Yes	Yes

Table 7.14 (contd)

	Control Group	Experimental Group
Skill 9 Advanced Life Support		
% with skill at interview	17%	36%
% practising 1st Obs	7%	11%
% practising 2nd Obs	10%	11%
Confidence level 5 1st Obs	No	No
Confidence level 5 2nd Obs	No	Yes
Skill 10 Violence and Aggression		
% with skill at interview	37%	54%
% practising 1st Obs	18%	31%
% practising 2nd Obs	18%	31%
Confidence level 5 1st Obs	No	No
Confidence level 5 2nd Obs	No	No
Skill 11 Counselling		
% with skill at interview	23%	36%
% practising 1st Obs	13%	44%
% practising 2nd Obs	13%	44%
Confidence level 5 1st Obs	No	No
Confidence level 5 2nd Obs	No	No
Skill 12 Quality Issues		
% with skill at interview	47%	64%
% practising 1st Obs	21%	47%
% practising 2nd Obs	21%	47%
Confidence level 5 1st Obs	No	Yes
Confidence level 5 2nd Obs		
Skill 13 Research and audit		
% with skill at interview	77%	100%
% practising 1st Obs	29%	48%
% practising 2nd Obs	29%	48%
Confidence level 5 1st Obs	No	Yes
Confidence level 5 2nd Obs	No	Yes
Skill Acquisition at interview with higher values for control group		
Skill 1 IV Bolus Injection		
% with skill at interview	100%	82%
% practising 1st Obs	72%	87%
% practising 2nd Obs	86%	87%
Confidence level 5 1st Obs	Yes	Yes
Confidence level 5 2nd Obs	Yes	Yes
Skill 2 Gastrostomy tube re-insertion		
% with skill at interview	30%	7%
% practising 1st Obs	Not Practising	
% practising 2nd Obs		
Skill 3 Ear Syringing		
% with skill at interview	30%	7%
% practising 1st Obs	Not Practising	
% practising 2nd Obs		
Skill 4 Chemotherapy		
% with skill at interview	10%	4%
% practising 1st Obs	Not Practising	
% practising 2nd Obs		

Table 7.14 (contd)

	Control Group	Experimental Group
Skill 5 ECG recording		
% with skill at interview	53%	46%
% practising 1st Obs	13%	41%
% practising 2nd Obs	14%	33%
Confidence level 5 1st Obs	Yes	Yes
Confidence level 5 2nd Obs	Yes	Yes
Skill 6 Verification of Expected Death		
% with skill at interview	10%	7%
% practising 1st Obs	Not Practising	
% practising 2nd Obs		
Skill 7 Budgeting		
% with skill at interview	3%	0%
% practising 1st Obs	Not Practising	
% practising 2nd Obs		
Skills with little or no difference between the groups at interview		
Skill 1 Suturing		
% with skill at interview	3%	7%
% practising 1st Obs	Not Practising	
% practising 2nd Obs		
Skill 2 Prescribing Medication		
% with skill at interview	3%	4%
% practising 1st Obs	Not Practising	
% practising 2nd Obs		
Skill 3 Mentorship		
% with skill at interview	100%	100%
% practising 1st Obs	0%	27%
% practising 2nd Obs	17%	42%
Confidence level 5 1st Obs	No	No
Confidence level 5 2nd Obs	No	Yes
Skill4 Preceptorship		
% with skill at interview	0%	4%
% practising 1st Obs	Not Practising	
% practising 2nd Obs		
Skill 5 Customer Care		
% with skill at interview	47%	43%
% practising 1st Obs	31%	91%
% practising 2nd Obs	31%	91%
Confidence level 5 1st Obs	No	No
Confidence level 5 2nd Obs	No	No
Skill 6 Supervisory Management		
% with skill at interview	3%	0%
% practising 1st Obs	Not Practising	
% practising 2nd Obs		

Table 7.14 demonstrates that the experimental group acquired more skills and was practising with greater frequency and at higher confidence levels for the majority of the skills investigated.

7.7 Analysis of Clinical Nurse Manager (CNM) Interviews

Twelve clinical nurse managers' views were obtained. Eleven were obtained by face to face interviews and one by postal questionnaire. Five open ended questions were asked and their responses were transcribed verbatim and analysed using constant comparative analysis. The questions asked are reported and Table 7.15 summarises the themes which emerged and examples of responses are given.

CNM's opinion of nurses undertaking these skills depending on where they are working.

Some CNMs chose to answer this question referring to each skill listed. Others made general comments. Seventy-five percent (75%) CNMs were in favour of and 25% did not favour nurses undertaking these skills.

CNMs opinion on pre-registration skill acquisition

Some CNMs answered this question relating it to each skill listed, agreeing with some skills but disagreeing with others. Generally, IV bolus injection was seen as necessary for all areas. Some agreed that all the IV skills could be delivered pre-registration. For others the following skills were important: Violence and Aggression (and one respondent specified to level 1); Customer Care; Quality Issues; Research and Audit; Mentorship and Preceptorship.

Skill acquisition leads to NQNs being fit for practice and purpose

CNMs were asked if pre-registration skill acquisition equipped NQNs for the first 12 months would this lead to NQNs being fit for practice and purpose. Fifty-eight percent (58%) of CNMs answered "yes" to this; 33% were "not sure" and 8% answered "no".

The developing role of the NQN within the next five years

The CNMs were asked how they would foresee the role of the NQN developing in the next five years. The responses to this were very varied. It was an opportunity for some CNMs to discuss their own departments and the future developments. Some of them veered away from answering this question.

Emerging themes from CNM Interviews

The responses from the CNMs were very varied and themes emerged which are summarised in the Table 7.15.

Table 7.15 Analysis of clinical nurse manager (CNM) interviews

Positive Themes	Themes Expressing Concern
1. Valuable and Worthwhile Skill Acquisition: *"I think overall it can be a really good idea because there are distinct advantages for patients who have got someone who can perform the task immediately rather than waiting for a doctor to come out of theatre…."* *"…..Extremely valuable and worthwhile…this is the right way to go to ensure we retain staff and professionally develop them to ensure we give staff job satisfaction…"*	1. Basic care should be consolidated first: *I think perhaps they are a breed of people who are a bit more responsive but very basic nursing care is still highly important and the ability to look after patients is…possibly even more critical now…"*
2. Increases confidence for NQNs: *"….We need to move away from the mindset that a NQN is somebody who comes in and just does basic nursing care and it is only over a period of time in post that they gain these additional skills and they become for want of a better word a fully fledged member of the team. I think if we can produce NQNs with these skills, who have all the other things I've mentioned (practice opportunities and competency)….we need to recognise that we can use these individuals in a different way…this would be to the benefit of the patient…..and benefit the service".*	2. Junior Doctors are losing skills *"I think venepuncture and cannulation are skills nurses are taking on to the detriment of patient care because they are doing junior doctors tasks and not adding to basic nursing care. I think it is necessary in some areas but it's not something they should be taught in pre-reg….it's something they should gain with experience. IV bolus is valuable yes and I think it is important yes as it is part of a normal drug round now…."*

Table 7.15 (contd)

Positive Themes	Themes Expressing Concern
3. Practice Educators Roles support students and transition to NQNs *"I am aware of it as a manager…I have a practice educator…so that probably gives me more knowledge than perhaps some might have…."* *"It would help their preparation but they would still have to be assessed and demonstrate proficiency. If they come to an area and say I've done this and I can do it. We wouldn't say that's fine go ahead we would still be monitoring how they do it".*	3. Economic and political drivers promote skill acquisition rather than enhancement of profession: *"what concerns me is that they (skill acquisition) are currently being driven within the health service by a political agenda…linked to money saving such as reduction of junior doctors hours…it concerns me as a nursing profession we are looking at these things with the wrong reasons…we are not looking at it purely from enhancing the profession…and saying these are things that nurses should be given the opportunity to develop if they wish".*
4. Agenda for change will affect roles *"…Things will change because of Agenda for Change, there will be opportunities for nurses to develop in totally different ways…auxiliaries will take on some of the roles that NQNs are doing right now…"*	Some skills are area dependent: *"It's a lot for NQNs to take on any of these things and yes it would really depend very much on where they were working and what competencies were required for the areas."*

7.8 Survey 3: Educational institutions delivering pre-registration additional skills

In Survey 1, 31% of EIs (n=61) responded 'Yes' to the inclusion of the skills investigated by this PhD study. However on closer analysis only 18% of these respondents related their answer to pre-registration skill acquisition.

Ten percent (10%) responded to survey 3 inviting further analysis of the skill acquisition. Their job titles were: Nurse Lecturer; Nurse Lecturer/clinical skills; Lecturer/Practitioner; Head of Department; Principal Lecturer and Course Leader. The geographical areas represented were: 83% from England and 17% from Scotland. Skills taught pre-registration by these respondents were:
IV medicine administration; Venepuncture; Cannulation; Male Catheterisation; Fine Bore Nasogastric Tube Insertion; ECG monitoring; First Aid; Sub-cutaneous needle insertion; Violence and Aggression and Key Handler. Not all the respondents were teaching all of these skills but a combination of them.

7.8a Underpinning philosophy for the inclusion of additional skills

The skills identified by the respondents from survey 1 were re-stated on the questionnaire and respondents from survey 3 were invited to explain the rationale for the inclusion of the skills and the length of time this had been occurring. The responses are summarised in Table 7.16.

Table 7.16 Analysis of data from EIs delivering skills investigated

Underpinning philosophy	Decision making process for skill inclusion	Length of time skills have been included within curriculum
"The skills ease the patient journey. Even if students choose not to practice them - the theory allows them to be better advocates for patients".	*With Trust representatives and pre-registration director of nurse education".*	5 years
"Response to local, national, and international trends, practices and research"	*"In house discussion and collaboration with local Trusts and Workforce Development Confederation"*	"Variable"
"No particular philosophy - included at the request of several Trusts".	*"Through discussion with local NHS Trusts and a small working group which examined clinical skills development".*	6 years
No response	*"The decision was made based on the request of the Trusts at the time of developing the 'Making the Difference Curriculum'."*	3 years
"Recognised as skills required in order for student nurses to qualify fit for practice"	*"Through partnership and networking with local service providers".*	4 years
"Additional skills offered to Honours students to give them a higher level of skills. Preparation for practice UK wide"	*"Module Team and Course Programme Management Team. Involvement of colleagues"*	5 years approx.

7.8b Development of the additional skills curriculum

Respondents were asked how the curricula was being developed and assessed. The responses are summarised in the Table 7.17.

Table 7.17 Curriculum development by EIs with skills investigated

Review of skills teaching	More skills added	Integrated or Integrative Teaching and Assessment
"Informal review- responding to curriculum changes and student evaluations"	*"Yes…care of patient receiving blood and care of patient with tracheostomy"*	*"OSCE in Semester 1"*
"Yes"	*"Yes"*	*"Formative in school and summative in practice"*
"Currently working through a review for revalidation".	*"Constantly changing in response to changes in practice"*	*"Yes for foundation skills and basic life support. Plans to develop this further for new curriculum 2005".*
"The 'complex needs' 3rd year module was developed to include theory and practice for these skills. Appropriate equipment was purchased".	*"No"*	*"The assessment of skills occurs during practice, if the area is able to provide appropriate experience"*
"NMC and QAA visit. Current review due with revalidation of pre-registration programme"	*"Glucometer; syringe driver; moving towards Intermediate Life Support"*	*"Skills currently assessed via practice portfolio. Will be using OSCEs in revalidated programme".*
"Ongoing review in light of module evaluations and continued collaborations with clinical colleagues"	*"Male Catheterisation"*	*"Demonstration, practice, OSCE and theory report are all integrated".*

7.8c Expectation to practice immediately and exemption from trust courses for these skills

The respondents identified with which Trusts they collaborated and were asked if there was an expectation from the Trusts for the NQNs with skill acquisition to practice immediately. Sixty-seven percent (67%) responded "yes"; 17% answered "no" and 16% were 'not sure'.

Respondents were asked if NQNs were exempt from Trust-run courses on this skill acquisition. Eighty-three percent (83%) responded "No" and 17% responded "Yes". Comments are summarised in Table 7.18. These responses indicated that although there was no exemption in most cases, educators felt that this was not appropriate and exemptions should be made available.

Table 7.18 Expectation to practice immediately and exemption from Trust course for skills investigated

Expectation to Practice Immediately	Exemption from Trust Course
"Following preceptorship and supervised practice in line with policy and procedure individual to each Trust".	"Students need regular updates but should not need to attend Trust sessions initially on employment as this is repetition, removing them from the workplace unnecessarily".
"The current system allows students to develop skills to the level of supervised practice, therefore it is a short step as part of preceptorship to move to independent practice".	"There needs to be more joined up thinking! Remove fear/threat of practitioner with these skills, valuing the contribution and workload of all team members".
"Basic skills are part of the Trust's induction…..it is possible that they (NQNs) could use the skills immediately".	"Some exemption, I think it has to be on an individual basis".

Further comments on this topic

Respondents were invited to comment further on this topic. Two respondents commented:

"There was quite a change of opinion from many of the Trusts between the writing of the curriculum and the execution of it. Partly caused by a change of personnel in significant places".

This comment indicated that barriers to this development can arise because of the opinion of key stakeholders.

"Constraints in practice making time available to release staff to attend advanced skills, causing disharmony when pre-registration student attend placement wishing to experience these skills

(previously taught in college prior to practice placement) in an opportunistic way".

A confusing sentence but it seems to reflect the fact that qualified staff have difficulty gaining places on courses to acquire these skills and yet student nurses are expecting to practice them when on placement and this can cause 'disharmony' amongst the nursing staff.

Table 7.19 Summary of key features of evidence from NQNs, preceptors managers and EIs delivering skills

NQN	Control Group	Experimental Group	Other Comments
1. Skill Acquisition Refer to Tables 7.2 and 7.3 10 out of 26 skills (38%) being investigated had significant differences between the groups.	IV bolus had a statistically significant difference between the groups ($p<0.05$). 100% of the control group had acquired this skill when interviewed	5 of these skills which had highly significant differences between the groups ($p<0.001$) were part of the constructively aligned curriculum	
2. Opinion on stage of Skill Acquisition Refer to Table 7.5	52% agreed with pre-registration skill acquisition	89% agreed with pre-registration skill acquisition	Majority of Preceptors agreed with pre-registration skill acquisition
3. What does this do for nurses?	63% said Role Enhancement	89% said Role Enhancement	
4. Should nurses acquire these skills?	90% said Yes	100% said Yes	
5. Skills Practice Refer to Tables 7.7 and 7.8	None of the skills were practised with a higher frequency for the control group	13 of the 26 skills were practised with higher frequency for the Experimental Group	2 of the skills were practised with little difference in frequency for the two groups

Table 7.19 (contd)

NQN	Control Group	Experimental Group	Other Comments
5. Skills Practice (contd)		These skills were: Venepuncture Cannulation IV bolus Injection Continuous Infusion SC Needle Insertion Mentorship Violence and Aggression Customer Care Quality Issues Counselling Key Handler Research and Audit ECG recording	These skills were: NG Tube insertion Male Catheterisation
	15 of the 26 (58%) skills were being practised Skills not practised: First Aid; Advanced Life Support; Gastrostomy Tube Re-insertion; Supervisory Management; Budgeting; Preceptorship; Ear Syringing; Chemotherapy; Prescribing Medication; Verification of Expected Death and Suturing		
6. Confidence Levels	Slightly higher frequency of Level 5 values noted for ECG Recording; NG tube insertion;	Higher frequency of Level 5 values are noted for the experimental group for almost all skills with agreement from preceptors for 14 skills	
7. Time Interval between skill acquisition and practice	There is a significant association between the time interval for IV bolus injection acquisition and its practice ($P<0.001$). 65% of the control group could potentially have practised this skill immediately	None of the experimental group was able to practice IV bolus immediately but their frequency of practice is still higher than the control group and their confidence levels higher.	Venepuncture; Cannulation; SC needle insertion; male catheterisation; ECG recording; Mentorship and Key Handler were also analysed. No further significant values were noted for these skills.

Table 7.19 (contd)

NQN	Other Comments
8. Work Schedule	The skills investigated were being accommodated into the daily shift patterns of the NQNs. No major difficulties were reported.
9. Other Professionals	In areas where other professionals are involved in these skills NQN involvement is less frequent
10. Differences between skills teaching and practice	Only minor differences reported
11. CNM Interviews	A variety of positive themes with some practical concerns
12. EIs delivering skills investigated	• 6 EIs responded • Good collaboration between HEI's and CE's led to skill development within curriculum • Exemptions from Trust courses is favoured by EIs but is not common practice • OSCEs favoured for skills' assessment

7.9 Summary of evidence from newly qualified nurses, preceptors and managers

The results of the survey 1 provided a sound foundation for the development of the interview and observational content for NQNs. There were significant differences between the two groups studied especially for 5 of the skills contained within the constructively aligned curriculum. The experimental group achieved favourable results for most of the questions posed. There were correlations between the NQN responses and the Preceptor survey responses (Survey 2). There was greater consistency between the preceptor and experimental group correlations with higher confidence ratings for 14 skills when compared to the control group. Clinical Nurse Managers posed some interesting views and interjected their opinions as stakeholders into the debate. Survey 3 accentuated the focus on innovative curriculum development as the way forward for skills' curricula maintaining currency in the clinical environment. This survey demonstrated the importance of collaboration between Educational Institutions with local Trusts, but also highlighted the difficulties for NQNs when skill acquisition is not recognised by the new employer. Table 7.19 summarises this chapter's findings and further interpretation of the findings is found in Chapter 9.

The next chapter attempts to bring together the results from the four groups investigated i.e. CEs, EIs, Control and Experimental groups and triangulates the findings.

CHAPTER 8 EVIDENCE FROM TRIANGULATION OF FINDINGS

8.0 Triangulation of findings from Survey 1 and NQN interviews and observations

This section presents triangulated data analysis from three sources of data namely, survey 1; the NQN interviews and observations. This was achieved by recoding and merging two SPSS data sets and performing a combined analysis. The merging of data sets was achieved through the recoding of certain similar questions with ordinal values and these are reported in section 8.1.

8.1 Question 5 in Survey 1: Essential, desirable skills for first 12 months of registration combined with NQN interview responses (Skill Acquisition – Appendix 9a)

Question 5 allowed CEs and EIs to respond as to whether each of the 26 skills was essential, desirable or not necessary. Skill 26 was originally 'other skills' but was recoded to 'continuous infusion via syringe pump'. Data from the skill acquisition section of the NQN interviews, indicated as to whether or not each skill had been acquired at the time of interview or whether there was an intention to acquire the skill at a later stage or not at all. Responses to this were coded into SPSS as 'Yes' (1), 'Yes in the future' (2) or 'No' (3). The correlation made was: essential=yes; desirable= yes in the future and not necessary=no

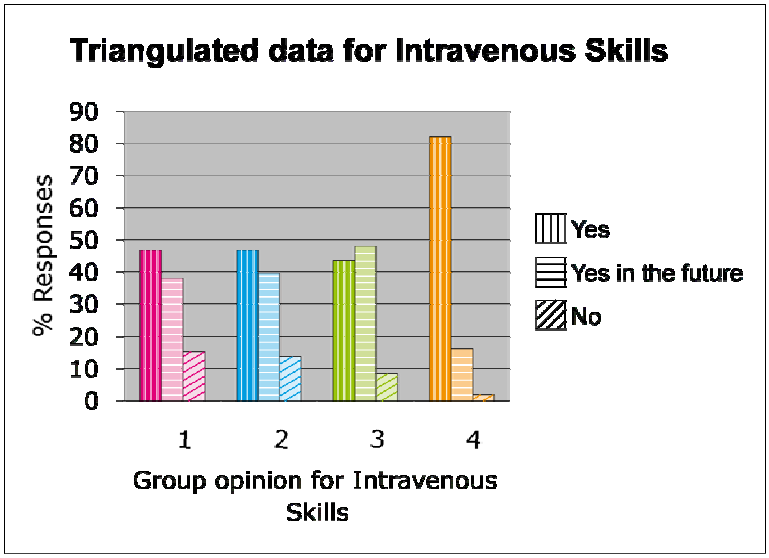
The following recoding was performed:
'Essential' responses from Question 5 survey 1 were recoded to 'Yes' (1); 'Desirable' responses recoded to 'Yes in the future' (2) and 'Not necessary' responses recoded to 'No' (3). This recoding allowed the data sets for this question to be merged and comparisons made. Using SPSS and Minitab the responses for 4 groups (CE n=95, EI n=61, Control n=30 and Experimental group n=28) were merged and stacked on top of one another. This process is known as 'concatenating' files. This provided 5323 responses for the 26 skills.

Representing this on one graph was too cumbersome and therefore the skills data which were triangulated are clustered into three

similar skill groups i.e. IV Skills; Acute Skills and Professional Skills.

8.2 Triangulated responses for Intravenous Skills

Figure 8.1 demonstrates the differences in opinion of the four groups with regard to IV skills (i.e. IV bolus injection, venepuncture, cannulation, and continuous infusion via syringe pump). The experimental group (Group 4) had an 82% 'Yes' response compared to 47% for CEs, (Group 1); 47% for EIs (Group 2) and 44% for the control group (Group 3). This demonstrates that the experimental group considered IV skills essential when commencing employment with a greater majority then the other groups.



Legend for Group Responses

Group No.	Group Name
1	Clinical Establishment
2	Educational Institutions
3	Control Group
4	Experimental Group

Figure 8.1 Triangulated data for Intravenous skills

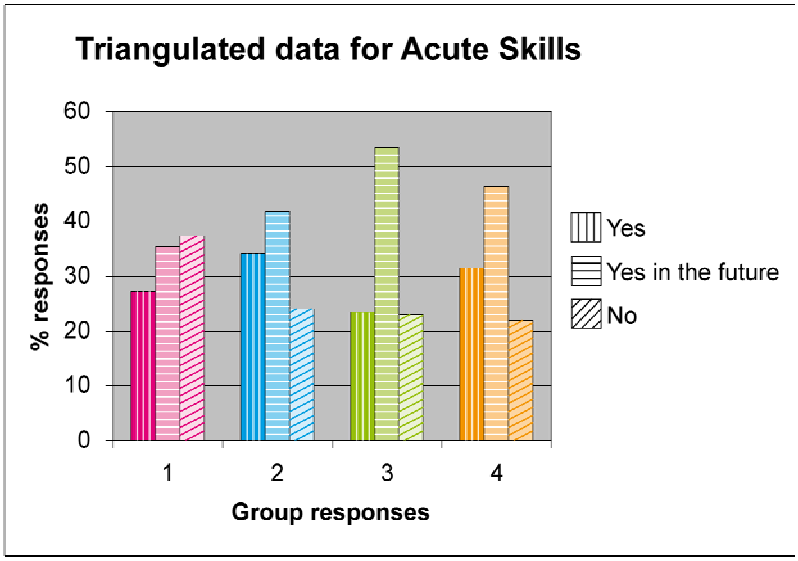
Figure 8.1 also demonstrates how opinion between the two groups changes when considering acquiring IV skills sometime in the future.

Here the control group (Group 3) have the highest percentage (48%). The scores for the CEs and EIs were also high. The experimental group (Group 4) had the lowest score of 16%. This

reflects the fact that the experimental group had acquired IV skills and recognised their importance. Although the control group had a 100% skill acquisition for IV bolus injection (Table 7.2) when comparing IV skills collectively they see themselves as acquiring these skills at a future point in their career. The CE and EI responses indicate that whilst they do not consider these skills essential initially for the NQN they do consider them to be desirable later in their career.

8.3 Triangulated responses for 'Acute Skills'

Figure 8.2 shows the group responses to the acquisition of the following skills: Sub-cutaneous needle insertion; Gastrostomy tube insertion; Ear syringing; Fine bore NG tube insertion; First Aid; Suturing; Prescribing medication; Chemotherapy; Male catheterisation; ECG recording; Advanced Life Support and Verification of Expected Death. These have been grouped together as 'Acute Skills'.



Legend for Group Responses

Group No.	Group Name
1	Clinical Establishment
2	Educational Institutions
3	Control Group
4	Experimental Group

Figure 8.2 Triangulated data for Acute skills

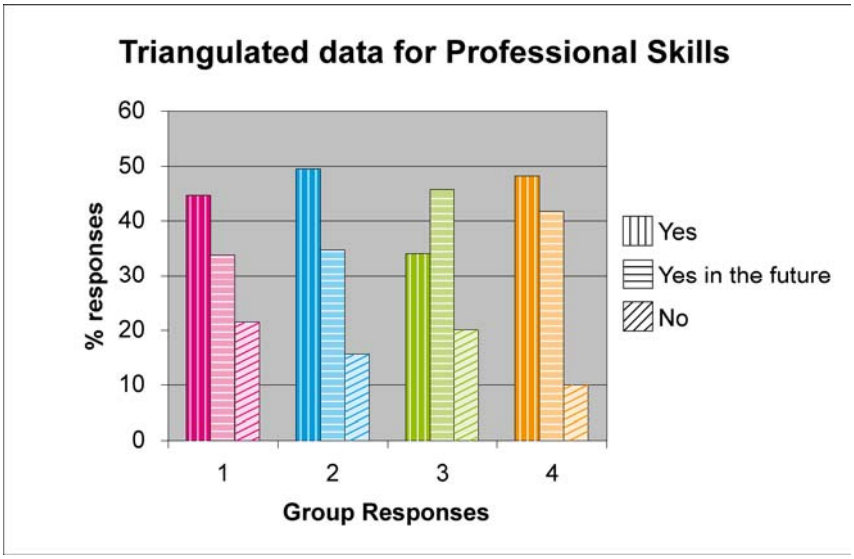
For this set of skills, the EIs (Group 2) had the highest percentage

of 'yes' responses (34%), considering them essential for NQNs. The experimental group (Group 4) was the next highest (32%).

Figure 8.2 also represents the responses for the acquisition of acute skills in the future. It is noted that the control group (Group 3) had the highest percentage of responses (54%) for acquiring acute skills at a future time in their career. The experimental group (Group 4) had the next highest percentage (46%), indicating that if they had not acquired this skill by the interview stage they intended to at some point in their career.

8.4 Triangulated responses for 'Professional Skills'

Figure 8.3 shows the percentage responses for the skills of Mentorship, Preceptorship, Violence and Aggression, Customer Care, Quality Issues, Counselling, Key Handler, Supervisory Management, Budgeting and Research and Audit. These have been grouped together as 'Professional Skills'.



Legend for Group Responses

Group No.	Group Name
1	Clinical Establishment
2	Educational Institutions
3	Control Group
4	Experimental Group

Figure 8.3 Triangulated data for Professional skills

The results shown in Figure 8.3 distinguished the EIs (Group 2) as having the highest 'Yes' responses (50%) for this set of skills. However the experimental group (Group 4) are closely behind with 48%. Previous results for the experimental group indicated higher responses in terms of frequency of practice for these skills. (Table 7.7 Chapter 7).

Figure 8.3 also represents the responses for professional skill acquisition in the future. This shows the control group (Group 3) with the highest response indicating that they wish to acquire these skills at some stage in their career. The experimental group has the next highest response. Similar responses were noted from both CEs and EIs indicating very little difference of opinion between them for skill acquisition at some time in a nurse's career.

8.5 Comparison of the four groups for Intravenous, Acute and Professional Skills

In order to make comparisons between the groups the mean response was calculated for each individual respondent for the set of skills in the categories. If an individual had not responded the mean score was treated as missing but this applied to only a few respondents. The responses for each category of skills were 'Yes' (rank 1), 'yes in the future' (rank 2) and 'no' (rank 3). Using SPSS the Kruskal-Wallis test to compare the four groups was performed on these mean responses. The results are presented in Table 8.1.

Table 8.1 Kruskal Wallis test for triangulated skills data

Skill Category	Group	Number	Mean Rank
Intravenous	CE	94	114.12
	EI	60	112.68
	Control	30	116.58
	Experimental	28	56.88
	Total	212	
Acute	CE	79	110.00
	EI	51	74.65
	Control	27	93.39
	Experimental	28	78.09
	Total	185	
Professional	CE	86	106.37
	EI	55	87.28
	Control	29	123.14
	Experimental	28	77.91
	Total	198	

Table 8.1a Test statistics for Kruskal Wallis test

	IV Skills	Acute Skills	Professional Skills
Chi- Square	21.863	16.219	12.759
df	3	3	3
Asymp. Sig.	0.000	0.001	0.005

The mean ranks for the triangulated skills categories show that for intravenous skills the control group has the highest mean rank (116.58) and the experimental group has the lowest mean rank (56.88). The EI and CE groups have similar mean ranks. The significance level shown in Table 8.1a is 0.000 indicating a highly significant difference between the groups.

Table 8.1 shows that for the acute skills the highest mean rank is with the CEs (110.00). The EIs have the lowest mean rank (74.65) and there are similarities between the EIs and the experimental groups and possibly between the CEs and the control groups. The significance level shown in Table 8.1a is 0.001 indicating a significant difference between the groups.

Table 8.1 shows that for the professional skills the Control group has the highest mean rank (123.14) and the experimental group has the lowest mean rank (77.91). There are also possible similarities between the ranks of the EIs and experimental groups

and between those of the CEs and the control groups. The significance level shown in Table 8.1a is 0.005 indicating a significant difference between the groups.

Therefore when comparing the Kruskal Wallis test results with Figures 8.1, 8.2 and 8.3, the following can be noted. For IV skills (Figure 8.1) based on percentages of response the experimental group had the highest response rate for considering these skills essential. When comparing mean responses using mean ranks, the experimental group has proved significantly different from the other groups. For acute skills (Figure 8.2) the EIs and the experimental group had the higher percentages of responses for considering these skills essential and when comparing mean responses using mean ranks a significant difference is noted with similarities between the EI and experimental group responses. For professional skills (Figure 8.3) again the EIs and the experimental group had the higher percentages of responses for considering these skills essential. A significant difference between these groups is proven.

In order to further analyse which groups were comparable and which groups were very different, pair-wise comparisons between the groups are required. To do this the Mann-Whitney test was used to compare two groups.

8.5.1 Comparisons between groups for Intravenous Skills

Table 8.2 Comparison of means for intravenous skills

Group	N	Mean	Median	Standard Deviation
CE	94	1.6888	1.6667	0.55977
EI	60	1.6778	1.6667	0.59610
Control	30	1.6472	1.5000	0.26685
Experimental	28	1.1964	1.0000	0.30700
Total	212	1.6148	1.5833	0.53504

Table 8.2 presents the mean scores for all four groups as below 2.0 indicating that on average the response for IV skills is 'Yes' (1) meaning that they are essential skills for NQNs to have on qualifying. For the CE, EI and control

groups the mean and median scores are above 1.5 indicating that their views are between the responses of 'yes' (1) and 'yes in the future' (2). However the experimental group's mean score is 1.1 and the median score is 1.0 indicating a stronger 'Yes' response. When Mann Whitney tests were performed to compare the CEs and the experimental group a highly significant difference between these groups were noted (p=0.000). This was also proved for the EI and the experimental group. However the EI and control group were not proved to have significantly different responses (p=0.976). Therefore this confirms the finding that the experimental group are considerably different in their responses for IV skills being essential for NQNs.

8.5.2 Comparisons between groups for Acute Skills

Table 8.3 Comparison of means for acute skills

Group	N	Mean	Median	Standard Deviation
CE	79	2.1245	2.0833	0.36492
EI	51	1.8873	1.8333	0.34953
Control	27	1.9877	2.0000	0.21768
Experimental	28	1.9048	1.9167	0.22420
Total	185	2.0059	2.0000	0.33951

Table 8.3 presents the mean score for CEs as 2.1 indicating that on average the CE response was for acute skills to be acquired 'in the future' (2) i.e. they were not necessary for immediate practice and could also be classed as 'desirable' rather than 'essential'.

The results for the other 3 groups are below 2.0 indicating that on average their responses for acute skills was 'yes' (1) and are required for immediate practice.

When considering the median scores however, the CEs and the control group are more similar and would agree 'yes in the future' (2) and the EIs and experimental group are similar. The latter median scores are below 2.

For pair wise comparisons the Mann-Whitney test was computed. These results confirmed that there was a significant difference between the CE and EI responses for these skills to be considered essential for NQNs (p=0.000) but there were no significant differences in the responses between CE and control (p=0.102), CE and experimental (p=0.007) and EI and control (p=0.115).

8.5.3 Comparisons between groups for Professional Skills

Table 8.4 Comparison of means for professional skills

Group	N	Mean	Median	Standard Deviation
CE	86	1.7640	1.8000	0.35244
EI	55	1.6636	1.6000	0.33464
Control	29	1.8621	1.8000	0.24988
Experimental	28	1.6179	1.6000	0.23421
Total	198	1.7298	1.8000	0.32676

Table 8.4 presents the mean scores for all four groups as below 2.0 indicating that on average the response was 'yes' (1) for professional skills to be acquired immediately on qualifying.

When considering the median scores again the scores are still below 2.0, however both the mean and the median responses are over 1.5 indicating a range of agreement for 'yes' (1) and 'yes in the future' (2).

For pair wise comparisons the Mann-Whitney test was computed. These results confirmed that the control and experimental groups' responses were very different (p=0.000); also the CE and experimental groups' response (P=0.028) and the EI and control groups' responses were also different (p=0.004). There were no significant differences between CE and control (p=0.287) and the CE and EI responses (p=0.073).

8.6 Nurses undertaking skills

The question 'should nurses undertake this skill acquisition' was asked of all four groups. The 'yes', 'no' responses to the question have been triangulated by merging and stacking data as described in section 8.1 but specifically for this question for all four groups. These responses required only a 'yes' or 'no' answer and the question was asked in the same way for all four groups. The findings are presented in Figure 8.4.

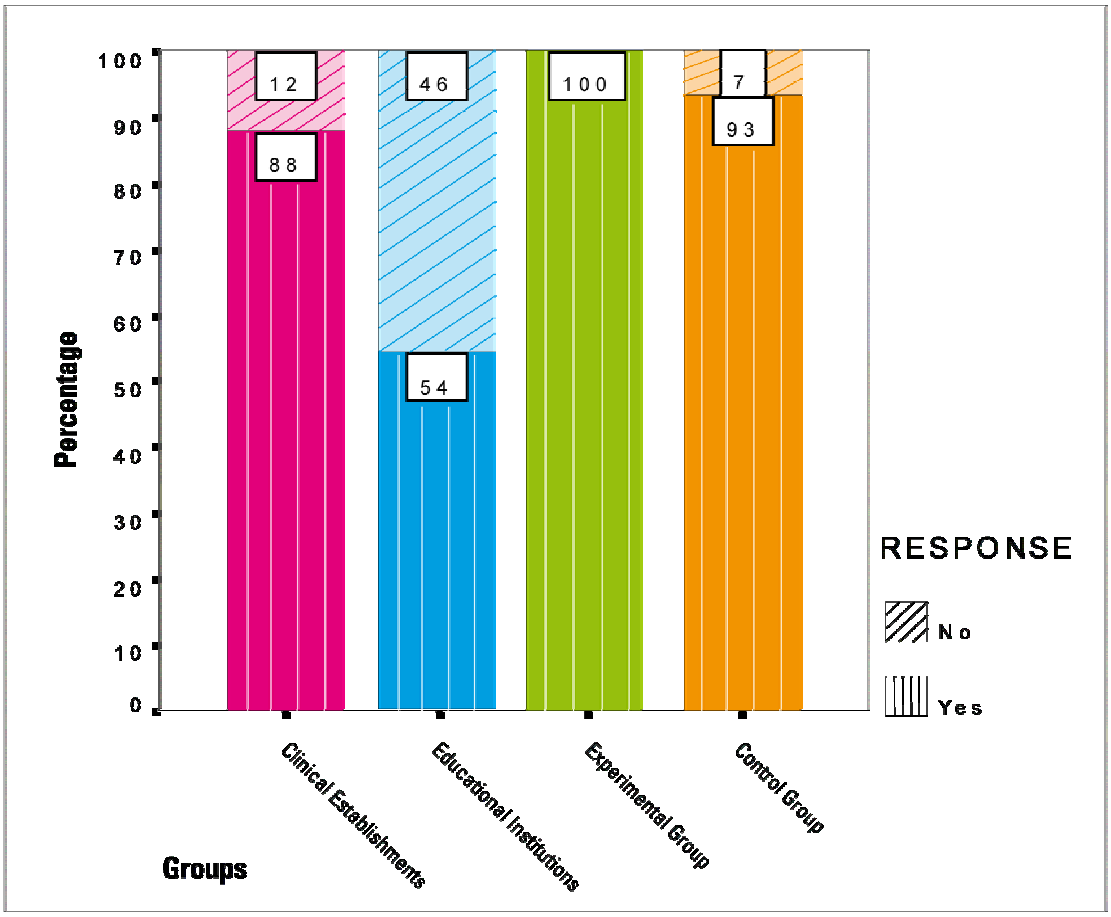


Figure 8.4 Nurses undertaking skills

Both Figure 8.4 and Table 8.5 for the cross tabulation of findings showed that 100% of the experimental group agreed with nurses undertaking these skills. The figures for the control group and the CEs were also high, 93% and 88% respectively. Only the EIs showed a lower figure with 54% agreeing with nurses undertaking these skills. This has demonstrated that the groups closest to the patients and the delivery of the service have indicated the need for

nurses to acquire these skills. These results are substantiated on Chi Square testing (Table 8.5a).

Table 8.5 Triangulation of responses to "should nurses undertake skill acquisition" crosstabulation

			RESPONSE		
			Yes	No	Total
GROUP	Clinical Establishment	Count	93	13	106
		Expected Count	80.7	25.3	106.0
		% within GROUP	87.7%	12.3%	100.0%
	Educational Institutions	Count	58	49	107
		Expected Count	81.4	25.6	107.0
		% within GROUP	54.2%	45.8%	100.0%
	Control Group	Count	27	2	29
		Expected Count	22.1	6.9	29.0
		% within GROUP	93.1%	6.9%	100%
	Experimental Group	Count	26	0	26
		Expected Count	19.8	6.2	26.0
		% within GROUP	100.0%	0%	100%
TOTAL		Count	204	64	268
		Expected Count	204.0	64.0	268.0
		% within GROUP	76.1%	23.9%	100.0%

One hundred percent (100%) of 'Yes' responses were noted for the experimental group and 93% for the control group and 88% for CEs but a much lower percentage of 'Yes' responses is noted for the EIs. Chi Square testing (Table 8.5a) demonstrated that the experimental group, Control group and CEs were significantly more in favour of nurses undertaking these skills compared to EIs (p=0.000).

Table 8.5a Chi-Square Test for triangulated responses : "should nurses undertake skill acquisition"

	Value	df	Asymp. Sig (2-sided)
Pearson Chi-Square	48.895(a)	3	.000
Likelihood Ratio	53.611	3	.000
N of Valid Cases	268		

a 0 cells (.0%) have expected count less than 5.
The minimum expected count is 6.21.

8.7 Findings from other sources of data for "Should nurses undertake skill acquisition?"

Focus groups were also asked the same question whether nurses should undertake skills acquisition. The opinion was divided between the need to consolidate learning and the recognition that these skills are vital to patient care. The preceptors' survey indicated a similar opinion. The CNMs' opinion was also divided and they introduced other issues relating to junior doctors skills and the ability of the nurse to juggle technical skills alongside basic care.

Quotes from the sample groups relating to this question included:

"..better for nurses to do these skills than support workers…" (CE respondent from survey 1 Table 6.6)

"..nurses are more equipped with clinical skills…" (EI respondent from survey 1 Table 6.6)

"..enhances your ability to look after patients. It (skill acquisition) gives you greater understanding of what's happening and a greater knowledge of what you're doing. It's what you're there for." (Control group respondent from NQN interview Table 7.4)

"..it (skill acquisition) improves the role and moves nursing forward and gives us more responsibility. Nurses are ready for it and are willing to deal with it." (Experimental group respondent from NQN interview Table 7.4)

"..extremely valuable and worthwhile…this is the right way to go to ensure we retain staff and professionally develop them to ensure we give staff job satisfaction". (CNM respondent Table 7.15)

"…the skills ease the patients journey…" (EI respondent from survey 3 Table 7.16)

8.8 Stage of skill acquisition

The responses from CE and EI survey Question 6 were recoded to indicate if opinion reflected 'Yes' or 'No' for pre-registration acquisition. This was merged and stacked with the 'Yes/No' responses to this same question for the Experimental and Control group data. The findings for the triangulated responses for the four groups are presented in Figure 8.5.

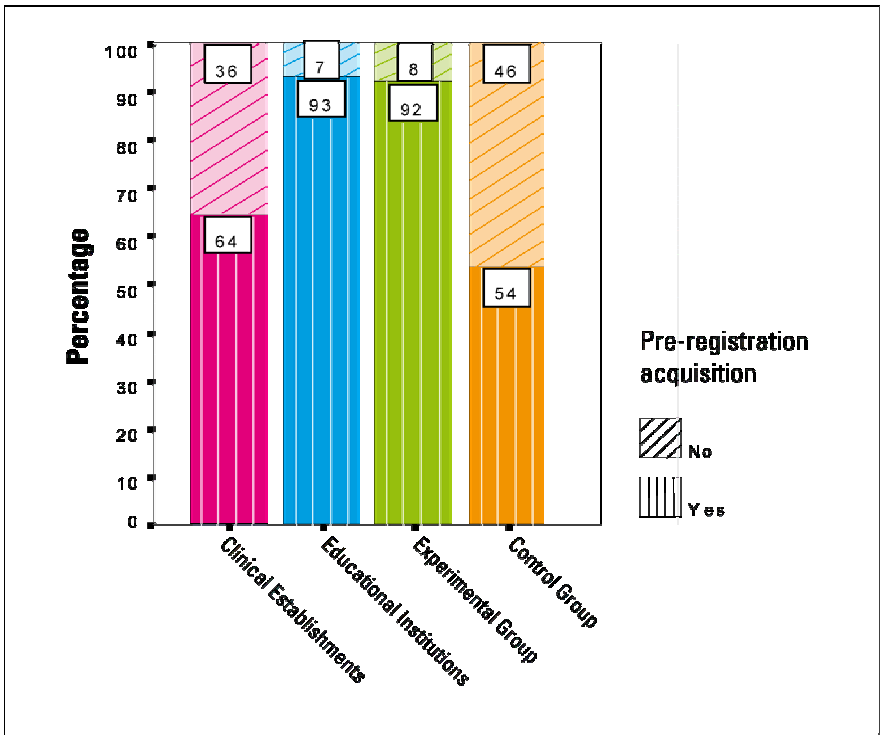


Figure 8.5 Stage of skill acquisition

Figure 8.5 shows that 93% of the EIs and 92% of the experimental group agreed with pre-registration skill acquisition. This result is consistent with the previous question for the experimental group, but it shows a difference of opinion by the EIs. The EIs appear to be saying that whilst only 54% of them agreed that nurses should undertake these skills, 93% of them feel that skill acquisition should be within pre-registration. This appears to reflect a contradiction. Only 64% of the CEs agreed with pre-registration acquisition. This is a difference of opinion for this group as well. Whilst 88% previously answered 'yes' to nurses undertaking these skills, only 64% agreed that this should be during pre-registration. The greatest change in opinion was reflected by the control group. Only 54% of them agreed with pre-registration acquisition compared to the previous question when 93% of them felt it was appropriate for nurses to undertake these skills. These findings are particularly interesting and will be interpreted further in the discussion chapter.

Table 8.6 Triangulation of pre-registration acquisition crosstabulation

			Pre-Registration Acquisition		
			Yes	No	Total
Different Groups	Clinical Establishment	Count Expected Count % within different Group	38 41.7 64.4%	21 17.3 35.6%	59 59.0 100.0%
	Educational Institutions	Count Expected Count % within different Group	13 9.9 92.9%	1 4.1 7.1%	14 14.0 100.0%
	Control Group	Count Expected Count % within different Group	15 19.8 53.6%	13 8.2 46.4%	28 28.0 100.0%
	Experimental Group	Count Expected Count % within different Group	23 17.7 92.0%	2 7.3 8.0%	25 25.0 100.0%
TOTAL		Count Expected Count % within different Group	89 89.0 70.6%	37 37.0 29.4%	126 126.0 100.0%

The cross tabulation of the data sets showed a high percentage of 'Yes' responses for EIs (93%) and for the experimental group (92%) compared to the other groups. Chi Square testing of the data revealed that a significant association existed between the EIs and the experimental group and that these groups were more in favour of pre-registration acquisition of these skills (p=0.003).

Table 8.6a Chi-Square test for pre-registration acquisition

	Value	df	Asymp. Sig (2-sided)
Pearson Chi-Square	13.869(a)	3	.003
Likelihood Ratio	15.918	3	.001
N of Valid Cases	126		

a 1 cells (12.5%) have expected count less than 5.
The minimum expected count is 4.11.

8.9 Findings from other data sources for pre-registration acquisition

Focus groups responses indicated that lecturers were generally not in favour of pre-registration acquisition, but clinical staff were in favour. The preceptors' survey revealed a mixed response with some favouring the idea and others not. Time saving issues for skill development were seen as the main positives and lack of time for consolidation the main negatives. The CNMs were also divided

regarding this issue, some regarding skill acquisition as valuable and economically viable and others responded with the need for consolidation of learning.

Quotes from the sample groups relating to this question included:
"..would allow post-registration training to be further developed if venepuncture, cannulation, IV bolus and male catheterization were added to pre-registration" (CE respondent from survey 1 Table 6.6)
"institutions need to embrace change and the need for courses to be equipped with the new skills required for qualification". (EI respondent from survey 1 Table 6.6)
"Yes (for pre-registration acquisition).. because you have to wait quite a few months for induction so it holds you up…so (if pre-registration acquisition) we are fully qualified before we start.." (Control group respondent at NQN interview Table 7.4)
"some skills…are good early on because the wards are so busy you need as many people there with these skills" (Experimental group respondent at NQN interview Table 7.4)
"…(if pre-registration acquisition) we can use these individuals in a different way…this would be to the benefit of the patient…and benefit the service". (CNM respondent Table 7.15)
"the complex needs 3rd year module was developed to include theory and practice for these skills." (EI respondent from survey 3 Table 7.17)

8.10 Effects on nursing profession

Qualitative data from the sources represented in Table 8.7 were triangulated to analyse the effects of skill acquisition on the profession and the implications for practice.

Table 8.7 Effects on nursing profession

Data Source	Question
Focus Groups	What effects will this have on the role of the nurse on qualifying and what effects will it have on the profession?
Survey 1	Advantages and Disadvantages of pre-registration skill acquisition and any other comments
NQN interviews	What happens now with the skills? What would it do the nurses' role?
NQN observations	Exemption from Trust courses
Survey 3	Exemption from Trust courses
CNM Interviews	Are they fit for practice and purpose? What is the future for NQN role development?

Data from the focus groups indicated that the boundaries between the professional groups were changing and that nurses took on new roles without recognition. There were concerns regarding the shift in skill focus to technological skills and this could mean nurses were leaving 'basic care' to unqualified staff. It was noted that other countries were already enabling nurses to practice these skills and there was recognition that stakeholder requirements for the future will change the current status quo in the UK. There was historical evidence of this happening in the past (Gerrish and Griffith 2004). There was agreement from the CNMs and the EI and CEs on these issues. Survey 1 respondents expressed advantages in that nurses would be fit for practice and purpose and it would provide role enhancement. The majority of CNMs stated that it enabled NQNs to be fit for practice and purpose, adding that it was a worthwhile and valuable skill acquisition and increased confidence for the NQNs. Of the NQNs 68% of the experimental group were practising skills learned at university; 43% were acquiring supervision and 83% of the control group were expecting to start practice. They gained job satisfaction and felt they "added value" to the profession and maintained continuity of care for the patient. Their concerns were work overload and that practice of the skill was area dependent. Survey 3 indicated that students were prepared to the level of supervised practice and that there was an expectation to practice immediately. However, exemption from Trust courses was not commonplace despite partnership agreements and collaboration. Whilst this was true for the majority of NQNs observed, 2 individuals

from the Experimental group NQNs were observed as being exempt from Trust courses. Barriers to practice were indicated by all data sources and revealed that economic and political factors as well as opinions of individual stakeholders can prevent practice.

8.11 Curriculum development innovations

The responses to the content of courses in Surveys 1 and 3 indicated that innovative developments were occurring with skills curricula. CEs were found to practice a combined learning package of theory, practice and supervised practice in clinical settings and some EIs had managed to achieve this by closer working relationships with their local Trusts. One EI had a particular stage 3 module into which these skills were incorporated. Assessment strategies included Objective Structured Clinical Examinations (OSCEs) as well as portfolio development. The curricula was kept up to date by regular reviews from both the QAA and NMC; collaboration with clinical colleagues and from student evaluations.

Observational data from NQNs reported that repetitions with skills learning were helpful in refreshing memory but could also be a waste of time as well. They felt that in general skills teaching at HEI and skills practice in Trusts were similar but further developments which encouraged more 'hands on' practice and a longer duration for IV bolus teaching for the control group would be helpful.

8.12 Educational institutions and local Trust collaborations

Table 8.7 lists the collaborations between EIs and Trusts. It was possible to identify these collaborations through the tracking of data from the two surveys and by matching Trusts named by EIs in survey 3 to those identified by the CEs survey 1.

Table 8.8 Educational institutions and local Trust collaborations

EIE 4	Rationale from EI "Nurses will gain much needed practical experience and abilities…learn to practice in a non-threatening environment…. Increased confidence and patient care"	Linked with CEE1, CEE16 and CEE59	CE Views: Links concept of CPD … consolidation of learning… depends on area… confidence building in new role	No exemption from Trust courses Practice following preceptorship period
EIE 29, 30, 32		Trusts identified but no CE responses		
EIS 6	Rationale from EI "Preparation for practice UK wide"	Linked with CES11	CE Views: Agreed that students would be better prepared… concerns regarding maintenance of competency… agreed with counselling skills	No Exemption from Trust courses. Practice following preceptorship period

Legend	
EIE	Educational Institution England
EIS	Educational Institution Scotland
CEE	Clinical Establishment England
CES	Clinical Establishment Scotland

8.13 Summary of evidence from triangulation of findings

Triangulation of the data from Survey 1 along with the NQN interview and observation data proved to be very valuable with many highly significant associations demonstrated statistically (see Table 8.9).

Table 8.9 Summary of triangulated findings

Question	Control Group	Experimental Group	Educational Institutions	Clinical Establishments
Are the IV skills investigated essential in the first twelve months for NQNs? (Figure 8.1)	44% Yes	82% Yes	47% Yes	47% Yes
Statistical tests proved these differences	CEs and Experimental groups' responses were very different (p=0.000) from each other and EIs and Experimental groups' responses were very different from each other (p=0.000)			
Are the Acute skills investigated essential in first twelve months for NQNs? (Figure 8.2)	24% Yes	32% Yes	34% Yes	27% Yes
Statistical tests proved these differences	CE and EI responses were different from each other (p=0.000) but the other groups' responses were similar			
Are the Professional skills investigated essential in first twelve months for NQNs? (Figure 8.3)	34% Yes	48% Yes	50% Yes	45% Yes
Statistical tests proved these differences	Control and experimental groups' responses were different (p=0.000) from each other and CE and experimental groups' responses were significantly different (p=0.028)			
Should nurses undertake this skill acquisition? (Figure 8.4)	93% Yes	100% Yes	54% Yes	88% Yes
Chi Square Test: p=0.000				
Should skill acquisition be within pre-registration nursing programme?	54% Yes	92% Yes	93% Yes	64% Yes
Chi Square Test: p=0.003				

These findings were strengthened by the qualitative data analysis from the Preceptor survey, CNM interviews and EI survey (3).

The discussion chapter follows and will interpret these findings further.

CHAPTER 9 DISCUSSION

9.0 Introduction

This chapter presents the interpretations of the key findings and discussion on how the study is situated amongst the other works in this field. The original contribution to this area of study will be highlighted. The limitations of the study will also be discussed in light of the challenges and issues which arose during the course of undertaking the study. The achievement of the study's objectives (see Appendix 1) will also be discussed as will the dissemination of the study's outcomes and recommendations for future research.

9.1 Interpretation of Key Findings

There are sixteen key findings which will be discussed and analysed separately under the sub-headings 9.1.1- 9.1.16

9.1.1 Confirmation of deficit model in pre-registration nurse education

This confirmation came early in the study and was echoed throughout the findings. The focus groups first confirmed the existence of a deficit model by suggesting that 35 skills could potentially be 'added on' during the NQN's first twelve months (Table 6.1) and that this list could be extended depending on where NQNs were working. The results from survey 1 confirmed that EIs and CEs recognised that there were skills which are important for the NQN which are not always addressed in the curriculum and identified these clearly (Figure 6.3). The NQN data revealed that at interview NQNs from different pre-registration programmes possessed different skills even though the programme was leading to the same award, that of nurse registration. Whilst it is recognised that the experimental group deliberately had a constructively aligned skills curricula implemented into their programme, there were skills identified for both groups which were not taught within the HEI element of the course (Tables 7.2 and 7.3). The acquisition of these skills was adhoc in some cases as it depended on placement locations

and the opportunity for skills to be taught by their mentors. The CNMs agreed that the skill of IV bolus injection was necessary for all areas and could be delivered in the pre-registration curriculum (Table 7.15). This was therefore a deficit in skill acquisition and this was picked up by the NQN during the Trust's induction course. However in some cases induction did not happen immediately on commencement of the post and therefore this deficit was allowed to continue with other staff undertaking the skill until the NQN had acquired it (Table 7.4).

9.1.2 Tracking differences of opinion amongst stakeholders

The study confirmed a finding which has been alluded to in previous chapters which was the division of views which existed between clinicians and educators. The earliest discovery of this viewpoint was from focus group data and further confirmation of this was evident from survey 1's findings (Figures 6.4 and 6.5). Greater numbers of clinicians were of the view that nurses should undertake the skills being investigated but some educators felt there were real concerns if this occurred. Primarily their concerns were curriculum overload and students' capabilities when undertaking too many skills. Focus group respondents considered the identified skills to be essential for NQNs within 12 months of completing a pre-registration nursing programme but views were divided between clinicians and educators. An important difference between this study and other similar studies (Runciman *et al.* 2000, Alavi *et al.* 1991, Holloway 1999) is that the skills list generated was a list of skills not included within known pre-registration nursing programmes in the UK.

The differences of opinion within the educator groups were interesting but sometimes contradictory. The educators who favoured pre-registration skill acquisition (Table 6.4) were those who were teaching these skills within a pre-

registration curriculum, but when asked the specific question "should nurses undertake the skills investigated?" EI responses were less favourable in comparison to CEs. When data are triangulated the same differences are apparent. However, the EIs have some of the highest percentage responses for Acute Skills (Figure 8.2) and Professional Skills (Figure 8.3) as essential for NQNs. Also when asked the question regarding pre-registration acquisition the EIs responded with the highest percentage (Figure 8.5) and all these differences proved statistically significant. They still respond with the lowest percentage as to whether these skills are acceptable for nurses (Figure 8.4) and this was substantiated by the Chi Square test. The reasons for this are not clear from the data analysis. Data from other sources i.e. focus groups and CNMs provided mixed responses and did not clarify this any further, but it does fuel the debate that the profession is not able to agree on certain fundamental issues related to skill acquisition. This concurs with Runciman *et al.* (2000) who also found difficulties in achieving consistent agreement from nurses for skill attainment.

9.1.3 Skill Identification and the Top Ten Skills

Skills' teachers within the UK who responded provided valuable information on skills' teaching within pre-registration curricula. Survey 1 provided valuable data on what respondents' considered essential, desirable and not necessary skills for a NQN.

The top ten essential skills were identified as Violence and Aggression; Customer Care; Quality; First Aid; Key Handler; IV Bolus Injection; SC Needle Insertion; Fine Bore NG tube insertion; Mentorship and ECG Recording (Figure 6.3). When comparing this list to Holloway's (1999) top ten skills the common ones are IV management and key handler, although the key handler skill in this PhD study has a

different emphasis to the 'lifting and transferring' skill referred to in Holloway's (1999) study. The list from this PhD study does not really have any comparisons with the NMC's essential skills clusters, except possibly that IV bolus injection could be identified within the NMC's 'fluid maintenance and medicines management' ESCs. The question which requires debate in relation to this finding is the inclusion of teaching and assessment related to these top ten skills within pre-registration nurse education. This PhD study has progressed Holloway (1999) and the NMC's (2007) skill identification further and identified other skills which are relevant for the NQN and reflects a snapshot of the UK scene.

A key finding from survey 1 was the identification of HEIs who were implementing the same strategies within their skills' curricula and others who were planning to do so in the near future as a result of newly validated "Fitness for practice" programmes. This was encouraging but the scale of development was still small (11 HEIs).

9.1.4 Skills not required in pre-registration curricula

A notable finding was the number of skills considered "not necessary" for a NQN (Figure 6.3). This is the first indication that the pre-registration skills curricula could have these skills withdrawn if they were already included. By asking this question in this way this study has provided for the first time a list of skills not required within the curriculum because they are not required by a NQN. This has not been reported in the literature reviewed. Most of the literature asked the question pertaining to what is required for a NQN (Alavi *et al.* 1991, Holloway 1999, Runciman *et al.* 1998 and 2000). It seemed easier for some respondents to clarify what is not required as well. These skills were identified as ear syringing, suturing, prescribing medication, chemotherapy, and budgeting (Figure 6.3). Ear syringing and suturing had

statistically significant differences between EIs and CEs with greater numbers of EIs suggesting these skills were required and greater numbers of CEs suggesting they were not necessary (Table 6.5).

This correlates with the focus group findings and some of the qualitative responses in the survey which indicated that there was curriculum overload and some content would have to be removed to encompass new or additional content. Here, we have a definitive list of skills which if already included in curricula could be removed to create room for skills which are necessary and essential to the work of the NQN. Thus, this PhD study was shaping the beginnings of a constructively aligned skills' curriculum for nurse education. However in a changing clinical environment there may be a time when these skills are considered necessary and the evidence basis for them to be introduced would need to be substantiated.

9.1.5 Stage of skill acquisition and professional acceptability of skills

The skills teachers' responded that it was acceptable for nurses to undertake the identified skills with more CEs in favour than EIs. The experimental group agreed with this unanimously, and a high percentage (93%) was noted for the control group. These results were highly significant and are found in Figure 8.4 and Table 8.5. Focus group respondents confirmed their agreement for skill acquisition being acceptable with some reservations relating to the need for a consolidation period during the immediate post-registration period and some respondents stipulated this should be up to 18 months (Section 6.1.4). There were also concerns expressed regarding such skill acquisition changing the definition of nursing and creating a new breed of nurse (Section 6.1.6). It could be argued that this 'new breed of nurse' already exists but with the skill deficits is floundering

his/her way through the complex maze of clinical practice (Miller *et al.* 2005). Preceptors and CNMs agreed that this skill acquisition is acceptable but also had reservations. They expressed some concerns regarding junior doctor skills diminishing and the ability of nurses to 'juggle technical skills alongside basic care' (Table 7.15). The same concerns were expressed by some survey 1 respondents and Fox (1995) but these were not borne out by the NQN observations (Table 7.11).

Because these reservations had been highlighted in the focus group data and survey 1 it was possible to emphasise this with the NQNs. The questions regarding what these skills achieved or had not achieved for them professionally were asked. In the case of the control group this related to potentially what these skills could achieve for them. The results proved that there were positive benefits relating to added value, continuity of patient care as well as role enhancement and job satisfaction (Table 7.4). The need to acquire the skills during pre-registration and the fact that role enhancement followed skill acquisition produced statistically significant differences between the experimental and control groups (Table 7.5). This result strengthened the value of the constructively aligned curriculum input for the experimental group.

However, this has to be considered along side the limitations of the study explained in section 9.7 as there may have been other unknown variables influencing this result. The fact that both the experimental and control groups gained this skill acquisition in their fourth year of studying nursing, albeit the experimental group were still student nurses and the control group were qualified nurses, has been explained in Chapter 5 Section 5.7.2. There were also reservations expressed by NQNs in relation to role overload, lack of choice to undertake skill acquisition because of the area's expectations, and the

lack of recognition for the skills (Table 7.4). The ideas of sharing these skills between medical and nursing professions had not materialised in the collaborating Trust area. During the observational visits it was noted that NQNs managed to achieve technical skills alongside their normal patient routines and ideas of sharing the role with medical staff was not perceived as an option. These are issues which have to be addressed by the profession for the future and perhaps initiatives such as Skills for Health (2007) and the Scottish Clinical Skills Network (SCSN 2007) can assist professionals to move forward with a team approach to competent skills practice.

Regarding the stage of skill acquisition the triangulated data revealed that the EIs and the experimental group were more highly in favour of pre-registration acquisition and this was statistically significant (Figure 8.5 and Table 8.6). As mentioned previously, this contradicts previous results for EIs where they did not feel that this skill acquisition was acceptable for nurses and also reservations from EIs regarding space within the curriculum. The inference here is that EIs are saying that if this skill acquisition is to occur then situating it within a sound learning environment is better for learners. Preceptors and CNMs had mixed views on pre-registration acquisition. Time saving skill acquisition was the main reason for agreeing but lack of time for consolidation of learning was a concern.

Skills' teachers identified the staging of skills teaching within their programmes (Table 6.4). For CEs it was interesting to note that for venepuncture; IV bolus injection; cannulation and male catheterisation skill acquisition occurred within the 12 month period following qualification. The minimum time period being 0-3 months following qualification. This is very soon after a NQN commences their new employment and concurs with the researcher's own experience mentioned in

Chapter 1. Whilst there was some variation in the responses for actual times the skills were taught and the desired times, these did not prove to be statistically significant differences. However, the results show that there is recognition by the skills' teachers within the CEs that there is a deficit in skill acquisition and an attempt to rectify this is made by enabling skill acquisition as early as possible (Table 6.4). For the EIs, it was interesting to note that the majority who were implementing this skill acquisition do so in the latter stages of the pre-registration programme i.e. years 3 and 4. This would enable skill acquisition closer to the time of qualified practice but does not allow much time and opportunity for skill proficiency during the programme. There are arguments for and against this. Ramritu and Barnard (2001) would argue that soon after skills are acquired they should be practised and the EIs were concurring with this viewpoint. However, as mentioned in Chapter 3, in EU countries offering exchanges it is noted that student nurses are enabled to commence skill acquisition for some of the skills investigated from year one onwards in order that proficiency is reached on qualifying (ENNE 2007). This correlates with Bjork (1999) and Gomez and Gomez (1984)'s teaching strategies that repetition in different learning environments have positive benefits for skill acquisition. So perhaps there is value in skill acquisition earlier in a pre-registration programme but with practice enabled during clinical placements. The experimental group were in favour of early skill acquisition and were frustrated if practice was not enabled in clinical areas (Table 7.4).

The advantages and disadvantages of skill acquisition provoked some differences of opinion between the EIs and the CEs (Figures 6.7 and 6.8 and also within qualitative comments 6.2.8a, 6.2.8b and 6.2.8c). However, the number of advantages and disadvantages stipulated by both groups were balanced. Concerns were expressed as to who would

teach the skills. The clinicians were suggesting that the educators would not have the recent clinical experience to enable up-to-date skills teaching. Some of the EIs' reluctance to embrace this type of skill acquisition could relate to their lack of current clinical expertise as suggested by the clinicians. The modes of delivery for teaching the skills could have a bearing on this in that the CEs have direct access to patient care and included theory, practice and clinical supervision of skills to provide a holistic learning package for the NQN (Figure 6.1), whereas the EIs had less of the clinical component to their course contents (Figure 6.2). The EIs who had embraced this skill development in survey 3 managed to achieve clinical links by negotiation with NHS Trusts although they reported difficulties with this. Concurring with the NMC skills clusters (NMC 2007b) one EI reported their standard of 100% pass rate for the numeracy section of skill attainment (Text below Figure 6.2).

9.1.6 Evaluation of the constructively aligned curriculum using Stake's Countenance model of evaluation

The programme evaluated positively using Stake's (1967) countenance model of evaluation as detailed for this PhD study in Figure 4.2. Within the judgement matrix, the 'antecedent' that most students chose one skill to acquire during their pre-registration period has been upheld and satisfied by this study (Table 7.2). There were statistically significant differences between the experimental and control groups for five out of the six skills taught within the constructively aligned curriculum (Table 7.2). This confirms the rejection of the null hypothesis and confirmation of the alternative hypothesis (Chapter 5 Section 5.7.1). The 'transaction' relating to the programme being evaluated well by teachers and students has been upheld from the learners' perspectives (Table 7.4) and confirmed by the fact that few differences were found between the teaching and practice of the skills (Table 7.13). The 'outcome' in the judgement matrix to produce a NQN who is fit for practice and purpose

has also been upheld by this study (Experimental group data Chapter 7). The "intent" in the description matrix to equip students with the necessary skills for immediate nursing practice has been fulfilled (Experimental group data Chapter 7). Therefore, the programme has been evaluated positively and was delivered using the constructively aligned curriculum described in Chapter 4 Figure 4.3 (Biggs 1999). However, there are one or two "intents" and "outcomes" according to Stake's model which have not been achieved (Figure 4.2). These are:

"Students will be equipped with clinical skills necessary for immediate nursing practice with exemption from Trust courses. Students will experience enhancement of employability and career prospects". This intent has been proven for some students but the majority working within the collaborative establishment did not achieve this.

An outcome revealed was:

"Encouragement to practice skill acquisition was not consistent in all employment areas".

This outcome reflects the students' ability to consolidate prior learning acquired within the EI in the patient setting as an NQN. If opportunities were not given to practice and there was a time lapse between skill acquisition and practice, the students' confidence and ability could be questioned.

Therefore the 'intent' and 'outcome' detailed above were not completely satisfied. Successful achievement of these will require strengthening of the collaborative relationships and a refining of the partnerships between EIs and their placement providers. To comply with Stake's (1967) contingency issues, the programme must achieve what it intended and with the exception of the above this was confirmed positively with the majority of the experimental group. This inability to

practice skills learned within EIs was confirmed by others in Survey 3 (Table 7.18).

9.1.7 Outcomes of skills' performance between the Experimental Group and Control Group

The experimental group were practising 13 of the 26 skills investigated with a higher frequency compared to the control group (Table 7.7). Apart from NG tube insertion there were no other skills practised with a higher frequency on both observational visits by the control group (Table 7.8). This confirms the success of a constructively aligned approach to curriculum design and proves it has a definite place in the design of skills' curricula within nurse education as it is able to match learning needs to practice requirements.

Confidence levels were also higher for the experimental group and this was confirmed by preceptors for 15 of the skills (Figures 7.1 - 7.9 and Tables 7.7a - 7.7m and Tables 7.8a - 7.8d). The results demonstrated greater consistencies between the preceptors' and experimental group's views of confidence levels. Preceptors often disagreed with the confidence levels of the control group and gave lower ratings. Preceptors gave higher confidence ratings to the experimental group even compared to the experimental group's own assessment of their confidence levels. This was an unexpected finding and gave validity to the self-judgements of confidence made by the experimental group. There is no logical reason why this should be the case. The inference that preceptors of the experimental group must be satisfied with the NQNs' confidence levels is the only conclusion to be reached. An inference that NQNs in the experimental group were more self-aware than the control group can be intimated but not substantiated. However, the limitation that one group were honours graduates and the other group were either diplomats or ordinary degree graduates has to be considered as other variables could

have influenced the result. (This is explained in section 9.7 and section 5.7.2).

The alternative hypothesis for this quasi-experiment has been proven and the null hypothesis is rejected (Chapter 5 Section 5.7.1) as there are favourable and statistically significant differences demonstrated by the experimental group.

9.1.8 IV skills

At NQN interview all of the IV skills proved to have statistically significant differences between the experimental and control groups (Table 7.2). For venepuncture, cannulation and continuous infusion via syringe pump, the experimental group had acquired these in significantly greater numbers than the control group. For IV bolus injection, the control group had acquired this in significantly greater numbers than the experimental group. This has been explained as a skill acquired during the induction course for the control group and this correlated with the timing of the NQN interviews.

In terms of practice, venepuncture, cannulation and continuous infusion via syringe pump were practised more frequently by the experimental group (Table 7.7). The practice of IV bolus injection had a higher frequency of practice for the experimental group at 1st observation but by 2nd observation there is little difference in practice between the two groups (Table 7.7). This was a surprising finding as the expectation would have been that the control group would have a higher frequency for practice because there was 100% skill acquisition at interview. Confidence levels for IV bolus injection were higher for the experimental group (Figure 7.3) and this was confirmed by preceptors (Table 7.7c). These findings question the different teaching methods employed to gain the skill of IV bolus injection

between the groups and confirm the view that skill acquisition occurring within a constructively aligned curriculum has positive benefits for practice. The other IV skills in this category were also practised with a higher frequency by the experimental group with higher confidence ratings (Table 7.7 and Figures 7.1, 7.2 and 7.4). Preceptors however had a slightly different view on the confidence levels of the experimental group for cannulation (Table 7.7b). This was a rare occurrence of inconsistency between preceptors and the experimental group's opinion of confidence.

There was a highly significant difference between the experimental and control groups for the time interval between skill acquisition and practice for IV bolus injection (Tables 7.9 and 7.9a). This was based principally on the fact that the control group was able to acquire the skill during a post-registration induction course and immediately commence practice. This was not the case for the experimental group who had acquired the skill during pre-registration and experienced a time interval of 1-12months before practising. However in spite of this ability to practice straightaway the control group's frequency of practice was less than the experimental group's for IV bolus injection (Table 7.7). Given that preceptors were rating confidence levels higher for the experimental group, the inference here could be that the experimental group were given more opportunities for practice because they were more confident.

Responses from skills teachers rated IV bolus injection at 59% as an essential skill for an NQN and venepuncture at 39% and cannulation at 32% respectively. These are not very high values compared with the other skill ratings, however, observations of NQNs indicated that the skills were practised daily by qualified nurses. The values are also low compared with the results reported by Alavi *et al.* (1991)

and Holloway (1999) who found a 90% frequency rating for intravenous management skills. This confirms the difference of opinion of some UK nurses to IV skills compared to international opinion. It could be attributed to the historical skill acquisition experience in the UK in that these skills were within the medical domain for a long time and are not considered the domain of the NQN but rather that of the experienced nurse.

However, on further analysis of the triangulated data, comparing CE, EI and NQN data, revealed that the experimental group had the highest percentage for considering IV skills as essential compared to the other groups (Figure 8.1). This was proved statistically significant and tests confirmed that the experimental group were significantly different in their views compared to the other groups (Tables 8.1 and 8.2). This is perhaps an expected result as the experimental group had more exposure to IV skills and as a result of the constructively aligned curriculum could understand the need for these skills to ensure continuity of care. This was confirmed by their qualitative comments related to the roles of doctors and nurses in relation to IV skills and is consistent with the findings within the literature (Tolley 1994, Wright 1995, Fox 1995, DoH 1991).

The control group had the highest response for wanting to develop IV skills in the future (Figure 8.1). So, even though they did not have these skills at the commencement of their career they considered them important for their career development.

The EIs and the CEs considered IV skills important but some concerns were expressed in their qualitative comments. The CNMs agreed that IV skills were generic to all areas of nursing and some agreed that pre-registration acquisition

was important (Table 7.15), but their choice of essential skills focussed on other skills as mentioned previously. Their perspective on junior doctors losing their skills is echoed by reports in some of the literature but some CNMs could see that a shared role between doctors and nurses as advocated in Department of Health documents would prevent this (NHSME 1991). However, there was no evidence of this being implemented. There was definite confirmation from CNMs that IV bolus injection is part of the routine medication round and this was observed. Therefore there is a strong argument for the IV route for medicine administration to become a 'routine' skill acquired in pre-registration programmes. This has not been clearly confirmed within the NMC's essential skills clusters but within one NMC circular (NMC 2007b) there is a section under medicines management relating to routes of administration. Here there is reference to administration 'by infusion, injection, syringe driver and pumps'. Further clarification is required to ascertain if this ESC is advocating IV bolus injection administration by student nurses.

9.1.9 Acute skills

The skills grouped together as acute skills were: sub-cutaneous needle insertion; gastrostomy tube re-insertion; ear syringing; fine bore nasogastric tube insertion; first aid; suturing; prescribing medication; chemotherapy; male catheterisation; ECG recording; advanced life support; and verification of expected death.

From survey 1 there were significant differences in EI and CE responses for the following skills: Gastrostomy tube re-insertion, ear syringing, suturing, ECG recording and verification of expected death (Table 6.5). These results showed that EIs were significantly more in favour of these skills than CEs.

At NQN interviews there were statistically significant differences between the experimental and control groups'

acquisition of the following skills: male catheterisation, key handler, NG tube insertion and prescribing medication. These all had higher acquisition rates for the experimental group (Table 7.2). Male catheterisation and key handler were part of the constructively aligned curriculum for this group.

In terms of skills practice, SC needle insertion and ECG recording were practised with a higher frequency by the experimental group with little differences in the practice of NG tube insertion and male catheterisation (Tables 7.7 and 7.8). This could relate to the lack of patient opportunities for practice.

When analysing the triangulated responses, the EIs had the highest percentage response for agreeing that these skills were essential for a NQN with the experimental group having the second highest percentage (Figure 8.2). On statistical testing there was a significant difference between the CE and EI responses but not between the other groups (Tables 8.1 and 8.3). This is unexpected for the EIs as they have questioned the value of introducing additional skills into an "overloaded curriculum". The results for the experimental and control groups are as expected. Apart from the skills which were included in the constructively aligned curriculum for the experimental group, the NQNs had acquired these during their pre-registration programme in an adhoc way as placement opportunities presented. The lower values for CEs are unexpected as within the survey they were advocating the necessity of these skills. Some of these acute skills were found to be valuable by other researchers (Runciman *et al.* 2000; Alavi *et al.* 1991; Holloway 1999) and listed as important skills by other authors e.g. Greenhalgh (1994) and Fox (1995). In spite of these authors concluding that these skills are valuable for nurses the UK pre-registration curriculum does not regularly include these skills and they have not been listed specifically within the NMC ESCs (NMC 2007b).

9.1.10 Professional skills

These skills were: Mentorship; Preceptorship; Violence and Aggression; Customer Care; Quality Issues; Counselling; Key Handler; Supervisory Management; Budgeting and Research and Audit.

From Survey 1, violence and aggression, supervisory management and budgeting demonstrated statistically significant differences of opinion between CE and EI responses (Table 6.5) with significantly higher percentages for EIs considering these skills essential and significantly higher percentages for CEs considering supervisory management and budgeting as not necessary. This is disconcerting when considering recent research by Miller *et al.* (2005) who report that the skills of delegation and prioritisation are vital to the survival of NQNs in new posts. Both CEs and EIs agreed with violence and aggression being either a desirable or essential skill with 0% recorded for 'not necessary'. This was the only skill with this result indicating strong agreement (Table 6.5).

From NQN interview data there were statistically significant differences between the experimental and control groups' acquisition of the following skills: key handler, violence and aggression and research and audit. The experimental group had these skills included within their pre-registration curriculum (Table 7.2). There were higher frequencies of practice by the experimental group for the skills of mentorship, violence and aggression, customer care, quality issues, key handler and research and audit. There were higher confidence levels for the experimental group for these skills (e.g. Figure 7.6) and this was confirmed by preceptors (Tables 7.7f - 7.7l). This supports the positive benefits of a constructively aligned curriculum and adds weight to the rejection of the null hypothesis.

The "mentorship" skill was acquired by both experimental and control groups during their pre-registration programme. It was interesting to note that in spite of this the frequency of practice was greater for the experimental group than the control group (Table 7.7). One would have expected these to be the same as both groups were exiting the pre-registration course with this skill. This result is validated by the higher confidence levels of the experimental group (Figure 7.6) and verified by preceptor's opinions of confidence levels (Table 7.7f). This skill has recently been confirmed as a post-registration skill in the recently published NMC document 'Standards for supporting learning in practice' (NMC 2006b). This is perhaps appropriate as a degree of experience and further learning is necessary prior to mentoring students. However preceptors in this study considered the experimental group as having sufficient confidence and ability to mentor students.

The "preceptorship" skill is one which is required by a qualified nurse who is "precepting" an NQN. It is not a taught skill within the pre-registration programme but has probably been acquired through role modelling as each NQN observed had a preceptor. Frequency of practice was low for both groups as were confidence levels. This is to be expected as post-registration learning would be required for this skill.

Violence and aggression was the most highly rated skill within the survey 1 and by the CNMs. The experimental group rated this skill highly but it was a difficult skill to quantify in terms of frequency of practice. Confidence levels for the experimental group were at the "developing confidence" stage however preceptors gave them a higher rating (Table 7.7g). This result could be due to the fact that the experimental group had experienced violence and aggression training provided by the collaborating

establishment during the third year of their honours programme. Therefore pre-registration skill acquisition was evident even before commencing their constructively aligned curriculum in honours year.

Customer care and quality issues were also difficult skills to quantify for frequency of practice but were rated highly in survey 1 as 85% and 80% respectively. These were also rated highly by the CNMs. The experimental group rated this skill highly compared to the control group but both groups were not able to make many comments regarding frequency of practice. Preceptors however rated higher confidence levels for the experimental group (Tables 7.7h and 7.7i).

Counselling was a skill which was rated highly by the experimental group but only seen as a desirable skill within the survey 1. This skill is not specifically taught within the pre-registration programme as the emphasis is on therapeutic communication, however NQNs may have seen evidence of counselling skills from clinical placements and felt they had some grasp of this skill. Again the preceptors' opinion of confidence levels verified that the experimental group were slightly more confident in performing this skill (Table 7.7j).

Key Handler was a skill within the constructively aligned curriculum for the experimental group. It was acquired during pre-registration and practised at a higher frequency by the experimental group. Confidence levels were rated highly by the experimental group and this was confirmed by their preceptors. It also had a high rating from the skills' teachers (60%) as an essential skill for an NQN. However, in spite of the high rating the experimental group found that opportunities for practising the skill were lacking. This probably reflects the Trust's policies relating to responsibilities within this role. Many of the NQNs were

finding they required to be updated by the Trust before undertaking this skill. This is an example of an 'intent' and 'outcome' not completely achieved (Stake 1967). Alavi *et al.* (1991) had a similar experience in relation to IV bolus injection and the lack of encouragement for student practice. However the nurses in this PhD study had completed a pre-registration course and were qualified and yet were not having skill acquisition from pre-registration recognised. This finding was confirmed by survey 3 where other EIs responded that there were difficulties in skill recognition and acceptance by Trusts.

Supervisory management is a term given to the first level management responsibilities for a qualified nurse. This skill along with an awareness of budgeting was acquired by the experimental group during the third year of their honours programme, but the opportunities to practice were lacking. However, preceptors verified that the experimental group were "confident" in this area compared to the control group who had "some confidence" (Table 7.8c). This skill is considered important for NQNs to cope with their new posts (Miller *et al.* 2005 and Grossman and Valiga 2000).

Research and audit skills were acquired by the experimental group during their honours year. They undertook a dissertation in a topic of their choice. The practice of research and audit had a slightly higher rating for frequency of practice for the experimental group than the control group, but it was a skill which was difficult to quantify. Lack of opportunities to use the skill in practice was also identified by the experimental group. Preceptors reported higher confidence levels for the experimental group than for the control group (Table 7.7l). The skills' teachers considered research and audit as desirable (51%) rather than essential. This conflicts with Bleinkinsop (2003) who advocated that undergraduate nursing programmes should pay just as much

importance to research skills as they do to clinical skills (see Chapter 2).

The positive results for the experimental group have to be considered alongside the limitations to the study as explained in Section 9.7.

9.1.11 Mixed views from managers

The managers of the NQNs had mixed viewpoints regarding skill acquisition. Most of them favoured nurses undertaking the identified skills but whether or not pre-registration acquisition was the best way forward received mixed reviews (Table 7.15). They agreed that IV skills; violence and aggression; customer care; quality; research and audit; mentorship and preceptorship were important. Perhaps as managers their opinion has focussed on incidents involving skills which are alerted to management. It is interesting to note that violence and aggression; customer care and quality issues were also highly rated as essential skills by skills teachers (Figure 6.3). Therefore there is consistency of opinion between the managers and the skills teachers. As with the advantages and disadvantages from survey 1, there were mixed responses from managers. Some expressed positive comments and others expressed concern. However, managers' views enriched the data by including economical and political issues which had not been brought into the debate before. These included the de-skilling of junior doctors and management issues related to pre-registration skill acquisition. There was no evidence from managers or NQNs of the shared role of doctors and nurses working together for continuity of patient care as mentioned in the literature (NHSME 1991; Fox 1995, Casey 1997). Managers gave positive feedback on the practice educator roles within some specialities. They felt these roles strengthened relationships between the HEI and Trusts. This concurs with the findings reported by Scholes *et al.* (2004).

9.1.12 Skills curriculum design and teaching within pre-registration nurse education

This PhD study has identified the skills which are not currently taught within the pre-registration nursing curriculum but are essential and desirable for practice for NQNs. The studies undertaken by Alavi *et al.* (1991), Holloway (1999), Runciman *et al.* (2000) and Boxer and Kluge (2000) sought to provide evidence of skills which were essential for practice. By amalgamating the evidence from the literature and the findings of this PhD study, a clearer picture of an evidence based skills curriculum is emerging.

This curriculum if constructively aligned has the potential to maintain its currency in an ever changing clinical environment (Biggs 1999). Therefore, by taking the end product of a generic nurse working in twenty first century Britain, in a hospital or community setting and mapping the skills practised within the first twelve months of qualifying with what is taught in pre-registration programmes, deficits can be identified and rectified. Rectification of the deficits involve negotiations with all stakeholders namely: skills teachers both within HEIs, further education colleges and within clinical settings (NHS and Private); Programme managers for the pre-registration courses; Clinical Managers, Practice Education, Training and Professional Development staff; Professional Bodies such as NMC; NHS Education Departments; RCN; UNISON; and Service user groups. Satisfactory negotiations will ensure that the "end product", i.e. the NQN is acceptable to all concerned and quality patient care is maximised. In other words, ensuring that the NQN is "fit for practice and purpose". There is a real desire amongst those researching nurse education to create an evidence basis for designing curricula (Scholes *et al.* 2004 and Miller *et al.* 2005) and this PhD study contributes to this knowledge base.

Consensus reaching strategies would need to be adopted if stakeholders cannot agree. However, the experience of Cuthbert (2002) and Webster (2002) mentioned in Chapter 2, indicated that trying to constructively align curricula in the midst of a complex sometimes chaotic environment, can be optimised if each organisation i.e. HEI considered its local subjective knowledge. Therefore, understanding the local environment and the stakeholders involved would be the key to ensuring a successfully aligned curriculum with an agreed "end product". This concept was verified by survey 3 with evidence from some HEIs and NHS Trusts who had collaborated successfully to enable students to practise the skills taught. Scholes *et al.* (2004) confirmed the view that partnerships between HEIs and NHS Trusts had improved since the fitness for practice programmes were implemented and that there were improved systems of communication. This report confirmed the need for practice educators/ placement facilitators and identified them as the key to cascading information between the organisations. However major differences were also noted in terms of the speed at which HEIs responded to issues and the fact that Trusts sometimes requested skills which expanded skills' practice. This is an interesting point and relates back to the focus groups in this PhD study identifying 35 additional skills as important for NQNs within their first twelve months with a view to possibly expanding this list. Whilst this might be appropriate in addressing deficits there needs to be realism for any curriculum development as too many additions to the skills curricula would detract from the aim which is to produce a NQN fit for practice and purpose. True partnerships will need to involve a meeting of minds to ensure that developments are appropriate and necessary. Substantiating new skill developments with an evidence basis for its introduction within the pre-registration curriculum is the way forward. As the NLN (2007) have stated nurse education needs to re-look at what is contained

within the curriculum and "design evidence-based curricula that are flexible, responsive to students needs, collaborative and integrate current technology" (NLN 2007)

In terms of skills teaching and how skills should be taught, firstly the curriculum should give importance to skills and shake off the notion that skills devalue the curriculum (Bjork 1999). Secondly, nursing is a practice based profession and like other similar professions emphasis on clinical teaching should be promoted (GMC 1993, Lam *et al.* 2002, Johnston and Boohan 2000). As Koh (1996) stated clinical skills teaching should not be left solely to clinical staff, but rather be embraced by HEIs delivering pre-registration programmes. Critique of skills teaching was apparent from the qualitative comments of the control group who felt that skills' teaching was minimal during their programme of study at HEIs and they had relied on clinical placements to gain skill acquisition teaching (Table 7.4 and text which follows Table 7.4). They did not feel this was right and felt that greater emphasis on skills teaching in the classroom would have been appreciated.

The classroom environment has evolved into 'state of the art' skills laboratories in many HEIs delivering pre-registration programmes. These laboratories enable the development of simulated learning combining theory and practice in a relatively safe environment for the student (Wellard *et al.* 2007). The use of 'human patient simulators' and 'volunteer patients' to simulate skill acquisition makes the whole experience so much more realistic for the student (Radhakrishnan *et al.* 2007). Video recordings of simulations enable constructive feedback of performance so that the transfer of skills from an educational environment to a clinical setting is no longer fraught with the difficulties highlighted by Bjork (1999). The use of the objective structured clinical examination (OSCE) positively reinforces a

constructively aligned curriculum in that the assessment focuses specifically on the 'end product' i.e. how the nurse is expected to perform the skill. This is in accord with Love *et al.* (1989)'s and Scholes *et al's* (2004) findings, who reported positive effects of OSCEs. Three (50%) of the EIs who responded in survey 3 confirmed this view by stating that they used OSCEs to assess students (Table 7.17). Evidence from NQN Observations confirmed that teaching acquired within the EI was consistent with clinical practice. Only minor differences were noted (Table 7.13). This adds to the view that a constructively aligned curriculum is effective.

This PhD study used assessment of confidence levels for NQNs as a measure of skill proficiency and whilst this was a self-assessed confidence level, preceptors for the NQNs could confirm or contradict the NQNs assessment without having any prior knowledge of how the NQNs had rated themselves. This study confirmed that NQNs who had undertaken a constructively aligned curriculum demonstrated higher levels of confidence for the skills investigated. Earlier studies alluded to the problem that assessment measures within educational programmes favour competence but not performance (Fitzpatrick *et al.* 1997, While 1994). This PhD study has shown that skills' teaching enables the enhancement of performance and proficiency. The real test of skill acquisition is what happens in the clinical setting with 'real' patients and by observing NQNs in their work environments it was possible in this PhD study to evaluate the translation of theoretical learning to clinical practice.

9.1.13 The first twelve months for NQNs: Consolidation versus New Learning

Many stakeholders spoke of the need for NQNs to consolidate learning when newly qualified and starting as a new employee. However, the reality was that NQNs were not able to spend their first twelve months consolidating

previous learning; indeed they were undertaking new learning at a rapid pace. This new learning consisted of study days provided by the Trust to equip them with the skills required to carry out their new jobs.

NQNs spoke of the compulsion they felt to undertake new learning in order to become a fully fledged member of the team (Table 7.4 and text following Table 7.4). Many of them wanted this in order to feel they were fully contributing to their new role. However, they posed the same question which the researcher had posed at the start of this study, which is "if the skills are so necessary to their first post why are they not covered during their pre-registration programme?" (see Chapter 1 Section 1.0). Many of the control group responded that they wished to acquire the skills investigated at some time in the future. The question this raised is whether they were recognising skill deficits within themselves or was this investigation merely sharpening their focus on skill acquisition which they had not previously considered?

Due to the nature of provision of short courses within a clinical setting when time pressures and patient care issues dominate the learning environment, the learning becomes packaged into a convenient deliverable format. Thus, skills teaching can become manual and technical procedures based, and learning becomes task and local policy focussed, reverting back to the very notions of skills teaching which Bjork (1999) critiqued. Indeed, comments from some of the respondents in the control group stated that the study day relating to IV bolus injection had been reduced to a half day of their induction programme and there was little time to practice on the 'training arms'. By contrast, the experimental group experienced learning within a HEI skills laboratory setting where they could practice with repetitions and gain constructive feedback on the skills they were

learning. Also the HEI set aside appropriate time for learning and treated the skill acquisition as complex learning, requiring knowledge of theory and research based evidence; cognitive and psychomotor domains of learning as well as the interpersonal and communication skills required. Students on the constructively aligned curriculum were required to research the skill and its practice within the clinical context, locally, nationally and internationally. This enabled the students to think more widely and indeed to question skills' practice in the clinical setting. This questioning approach on the students' part promotes the development of a 'critical thinker', concurring with the differences between training and education (Burnard and Chapman 1990). The inference is that training based learning occurs within the clinical setting and educative learning occurs within HEIs. The aim of a localised Trust training course in relation to the skills investigated would be to equip the learner with relevant skills in order that they may return to their workplace ready to practice. The aim of an HEI educational programme in skill acquisition would be to develop the learner with knowledge and practical ability in order that they can be flexible and adaptive in their practice of the skill. Thus giving the learner the ability to question the practice of the skill which they might have observed on clinical placements and have insight and forethought into how research evidence may improve the practice of the skill for the patient's benefit. Possibly this is one reason why there is some resistance to the acceptance of HEI skill acquisition by new employers of NQNs. Could this also be the difference preceptors were noticing with the experimental group or is it a reflection of the extra year in HEI experienced by the experimental group which develops their confidence? These questions are not answered by this study and further research would be required.

In this PhD study, the fact that there was very little difference noted by NQNs between skills' teaching and their subsequent practice (Table 7.13) was partly because many of the teachers of the constructively aligned curriculum were NHS Trust employees who were responsible for the same skill acquisition within the Trust. This demonstrates the collaboration which was achieved to implement the constructively aligned curriculum experienced by the experimental group.

As with the experimental group, the majority of EIs in survey 3 responded stating that students did not gain exemption from the Trust course in spite of negotiations with key stakeholders. The importance of prior learning and acquisition of these skills was a key factor that led to the development of an innovative curriculum in the first place for these organisations. It was obvious to these lecturers that this was not appropriate and that exemptions should be available to avoid repetition of learning. The reasons given for the lack of exemptions were clearly related to barriers between EIs and Trusts. As one EI respondent stated:

"There needs to be more joined up thinking! Remove fear/threat of practitioner with these skills, valuing the contribution and workload of all team members". (Table 7.18).

Another EI respondent indicated that only when changes of personnel in 'significant places' in Trusts had occurred, would exemptions for NQNs be made.

The insights given by these EIs enriched the data base. They also represented different geographical areas to the main study area and as such enabled a different perspective to be analysed. This has enabled generalisations to be made between the sample groups and their target populations.

Within this PhD study 2 respondents from the experimental group stated that they had been exempt from their employers' courses. However, both these respondents were not practising within the collaborating trust's employment (Section 7.1.7 Category 8).

There are changes arising which will affect this scenario as standardisation of courses delivering skills are designed as a result of efforts by the Scottish Clinical Skills Network (SCSN 2007) and NES (NES 2003) as well as Skills for Health (2007) initiatives. There is recognition that a number of health professionals are implementing some of the skills investigated. For example, venepuncture is a skill performed by doctors, phlebotomists, qualified nurses and nursing auxiliaries working within hospital and community settings. Therefore, each health worker practising this skill should perform within certain standards and to achieve this they should have undertaken competency based learning allowing them to operate within their professional domain for the skill. Skills for Health (2007) are developing competencies for skill development by health professionals. Courses are being validated by HLSP and will enable nurses to move from area to area and practice freely by providing evidence of attendance at a validated course and achievement of competency. They will not need to repeat prior learning. This will also overcome some of the barriers for EIs as all their courses have to be validated by their appointed agency and therefore recognition by Trusts should result.

9.1.14 The UK's position in relation to the international scene

The international literature on skill acquisition proved difficult to assimilate as most of the articles presented commentaries on how nurse education was progressing within individual countries, rather than focus specifically on skills curricula. Lawson's (1998) world view found that

advanced technology and nurse education are the most important issues facing nurses worldwide. In 1995 the poll by the International Council of Nurses Foundation ranked nurse education as the most important issue facing nurses worldwide. Therefore, there is support for curricula which remains current and fit for purpose. Indeed the WHO is developing global standards for initial nursing and midwifery education (Fleming 2007).

The evidence from nurses entering the UK having qualified in other countries indicated that some skills, for example, IV skills, have become routine in their countries. These nurses are surprised and frustrated that they are unable to practice such skills in the UK (Gerrish and Griffith 2004). This indicates that other countries have moved on and included these skills as part of a NQNs' remit, recognising advances in technology and nurse education which necessitate this skill acquisition.

As mentioned in Chapter 2, anecdotal evidence from student nurses on exchange visits and contacts between the researcher and lecturer members of the ENNE (2007) indicate that student nurses in most of the EU countries are encouraged to commence IV skill development at an early stage of their pre-registration programme. Indeed, there is surprise on both sides that this is not the case in the UK.

The implications for the UK are that nurses here are falling behind the international skills competence levels in terms of what they can and cannot do on qualifying. If there are other skills which UK nurses are more competent in on qualifying which compensate for what they are deficit in, then this is not obvious. There is an expectation of a UK nurse to skill up on essential IV skills in order to practice in another country. Could it be that the rest of the world is wrong and the UK has got it right? Or is it the other way

round and the UK is alone in this view? Some skills teachers already felt this way with comments that if skill acquisition occurred within pre-registration curriculum, the UK would be more in line with other countries (Chapter 6 Section 6.2.8c). This indicated that there was awareness that other countries were teaching these skills within pre-registration.

9.1.15 Curriculum innovations by HEIs

An encouraging finding following survey 1 was that 10% of HEI respondents had implemented curriculum innovations similar to the one being reported in this PhD study. Their rationale for doing so included "responding to local, national and international trends, practices and research" (Table 7.16). It was encouraging to discover like minded teachers. They also indicated that there was a need to review the skills taught within their programmes and in many cases skills had been added to reflect the changing needs in practice. This is clear evidence that a skills curriculum can be kept up-to-date and current. These EIs recognised that they are preparing nurses to work anywhere in the UK and also internationally. Therefore, the dilemmas they faced with local Trusts regarding implementation of the skills whilst disappointing, did not deter them from maintaining and developing the skills curricula. As one respondent stated:
"Even if the students choose not to practice them - the theory allows them to be better advocates for patients"
(Table 7.16).

Whilst there was also agreement from the NQNs in this PhD study that their learning had not been wasted even when they were not practising, more work needs to occur to enable Trusts to embrace this skill development. Issues relating to vicarious liability for skills which are normally practised by qualified nurses are usually raised by stakeholders within Trusts. This was found to be true by Alavi *et al.* (1991) for IV skills. In order to engage with

students for such skill acquisition Trusts will have to review their policies. Perhaps the new developments scheduled for 2008 within the NMC essential skills clusters will progress the discussion on pre-registration skill acquisition and remove some of these barriers.

Inter-professional learning was not mentioned by any of the EI respondents but would be an added innovation in skill acquisition. Early literature advocated inter-professional learning (Fox 1995, Casey 1997). This type of skill acquisition will blend well with the efforts to standardise skills practice by different professionals (NES 2003 and Skills for Health 2007).

9.1.16 Wastage of skills acquired and not practised

The fact that many of the NQNs stated that they were unable to practice the skills they had acquired during the pre-registration programme was alarming (Tables 7.7 and 7.8). Given that skills not practised will result in loss of proficiency and confidence (Ramitru and Barnard 2001), this is a concerning occurrence. The consequences for patient care of NQNs not delivering treatments and care that they were capable of is immeasurable.

The reasons given by NQNs for this were that the area did not allow practice, either because the skill was not relevant to the area or because practice within one year of qualifying was not "allowed". The respondents from the experimental group recognised what a waste this was to the clinical area and to themselves professionally (Chapter 7 Section 7.1.7 categories 9 and 10). Preceptors within this PhD study demonstrated that confidence levels when practising were high, so the exact rationale for allowing such skill wastage is not clear.

Because skills were not practised soon after they were acquired an increased time span between skill acquisition and skill practice was created (Tables 7.9 and 7.10). This necessitated the need for a refresher course for NQNs to enable them to gain proficiency. Perhaps this was a subtle method for Trusts to ensure that NQNs then access the Trust's courses but there were also issues regarding access to these courses when NQNs felt ready. This was attributed to Trust courses being over subscribed or not being able to be released from the clinical area to attend. When CNMs were asked if they were aware of the skill acquisition of the NQNs in their area some CNMs affirmed that they did have this information but were also aware of the constraints for practice. It would seem that from a cost-effective viewpoint supporting practice of these skills by NQNs would have economic benefits which the CNMs were not addressing (Table 7.15).

More crucially, the possibility that continuity of care for patients may be compromised where skills are not practised by NQNs could be considered an accountability issue for managers.

9.2 Implementing the developmental model of skill acquisition

The developmental model presented in Chapter 1 Figure 1.3 shows that the student nurse entering higher education should engage with a curriculum which matches needs. In order to achieve this, the HEI should have negotiated with stakeholders concerned and with providers of the pre-registration programme as to the nature of these needs. The generic skills requirements for NQNs would be verified and the end product would be a competently qualified nurse who is fit for practice and purpose. This would balance the triangle of needs between the student, educator and employer as presented in Chapter 1 Figure 1.1.

Within the HEI, this would involve devising curricula which give importance to skills' teaching and recognise the academic content of skills' teaching. Concurring with Bjork (1999), skills are not simple manual and technical procedures which can be taught quickly but rather are complex processes, involving the ability to apply theory, research and communication skills alongside cognitive and psychomotor ability. Indeed, the model which Bjork (1999) implemented is an ideal model for skills' teaching as it recognises that skill performance is fluid and not statics (see Chapter 3 and Appendix 3).

This model of skills' teaching can be used within the context of a skills laboratory within an HEI where individual data on student performance can be collated using video and DVD technology to give constructive feedback. In today's technology this can include digital transference of skill performance to the student's mobile phone or iPOD allowing them to view their performance over and over again. This technology would allow the student to view their performance in slow motion and break the skill into parts which can be learned separately. This is in line with Gomez and Gomez (1984)'s findings who argued that practising repetitions of skill breakdown greatly enhances retention. Skill performance is therefore individualised to the student's style of learning and concurs with Love *et al.* (1989)'s findings who report the merits of self directed learning.

The addition of an OSCE to assess skill performance would greatly enhance the process of learning. Again, this could be facilitated in a skills laboratory with assessors from HEI and Trust environments. Such a move would enhance the collaboration process and foster the 'joined up thinking' as expressed earlier in this chapter. Students would also feel that their learning acquired within the HEI or the Trust is underpinned by the same principles as both their teachers and assessors are demonstrating congruence and consistency in spite of working in different environments.

Constructively aligning the curricula allows the student to construct meaning from their learning (Biggs 1999). Therefore, by 'educating' rather than 'training' students in skill attainment and maintaining a student centred approach, a conceptual change in the student is achieved. This will enable the students to achieve 'deep' rather than 'superficial' learning (Biggs 1999). In addition the educators would be implementing the constructivist theory of learning (Figure 4.3).

Finally, any curriculum innovation must be evaluated by all the stakeholders. Stake's Countenance of Evaluation Model (1967) provides an adequate framework with which to do this (Figure 4.2).

Stake's model (1967) and Biggs (1999) constructively aligned curriculum blend well together in terms of programme evaluation. Stake's (1967) antecedents, transactions and outcomes compare well with Bigg's (1999) teaching and learning activities, curriculum objectives and assessment tasks. These three items within each theoretical framework can be linked together to enable programme evaluation to be implemented with relative ease.

9.3 Constructively aligning skills curricula maintains its currency

Academics tend to devise curricula by using the rational curriculum model as defined by Jackson and Shaw (2002) and explained in Chapter 1. This is evident in nurse education as lecturers shape the curricula based on their knowledge of the subject. Worse still according to Jackson and Shaw (2002) is the fact that knowledge and skills become compartmentalised into modules with specific units of learning. This can be detrimental to the achievement of the desired outcome. The NLN in USA have also remarked that nurse educators are not truly innovative in curricular design (NLN 2007) However, when the teacher 'aligns' teaching, learning and assessment they set up a learning environment which achieves the desired outcomes and 'end product' (Biggs 2002b). The teacher brings knowledge and skills out of their compartments and an integrated system of learning is created. This integrated system would span the HEI and clinical placement environments for nurse

education. Therefore working 'backwards' from the 'end product' of learning the nurse educator would have to design curricula and assessment activities which match the intended outcomes.

The outcomes of this PhD study have led to the design of two process models depicting the responsibilities of stakeholders in devising skills curricula which is innovative and maintains its currency in a changing clinical environment. Creating a team of skills teachers from EIs and their local clinical environments would enable a specialised team of teachers to design, implement and evaluate the students' experience of skill acquisition. Ownership is on the learners to identify any prior learning of skills, have these acknowledged by the skills teachers and match their learning needs with the HEI programme. These models are represented in Figures 9.1 and 9.2.

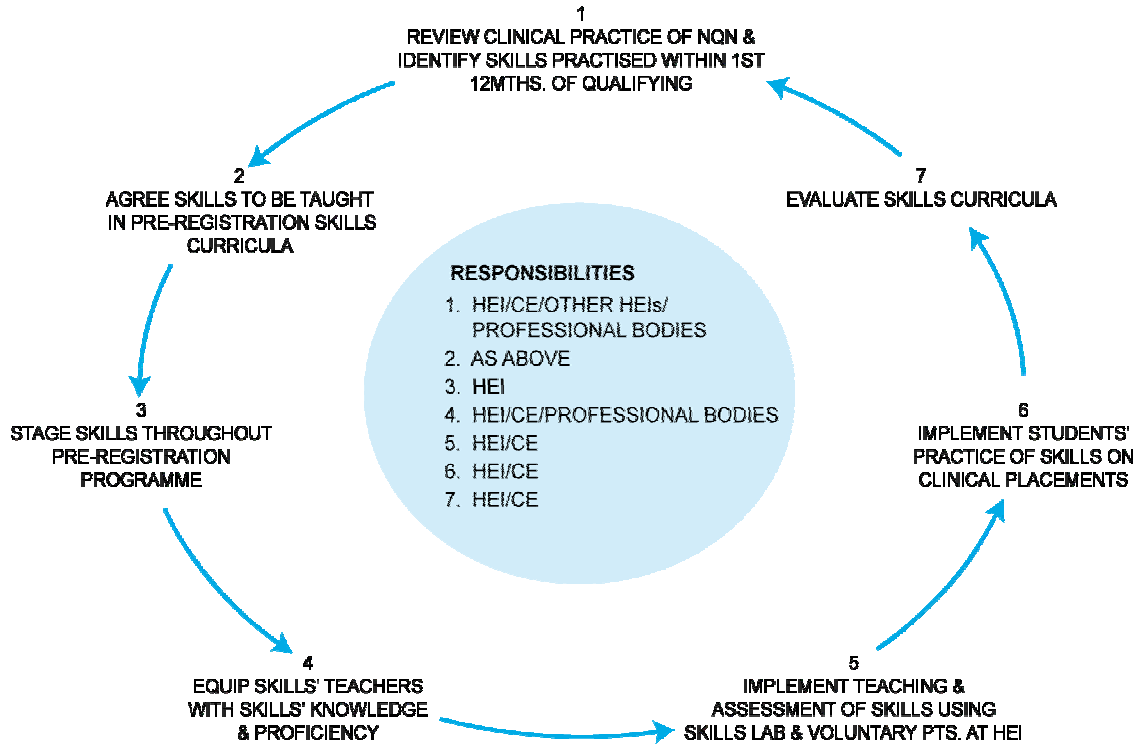


Figure 9.1

IMPLEMENTING A MODEL FOR SKILLS' CURRICULA DEVELOPMENT IN PRE-REGISTRATION NURSING

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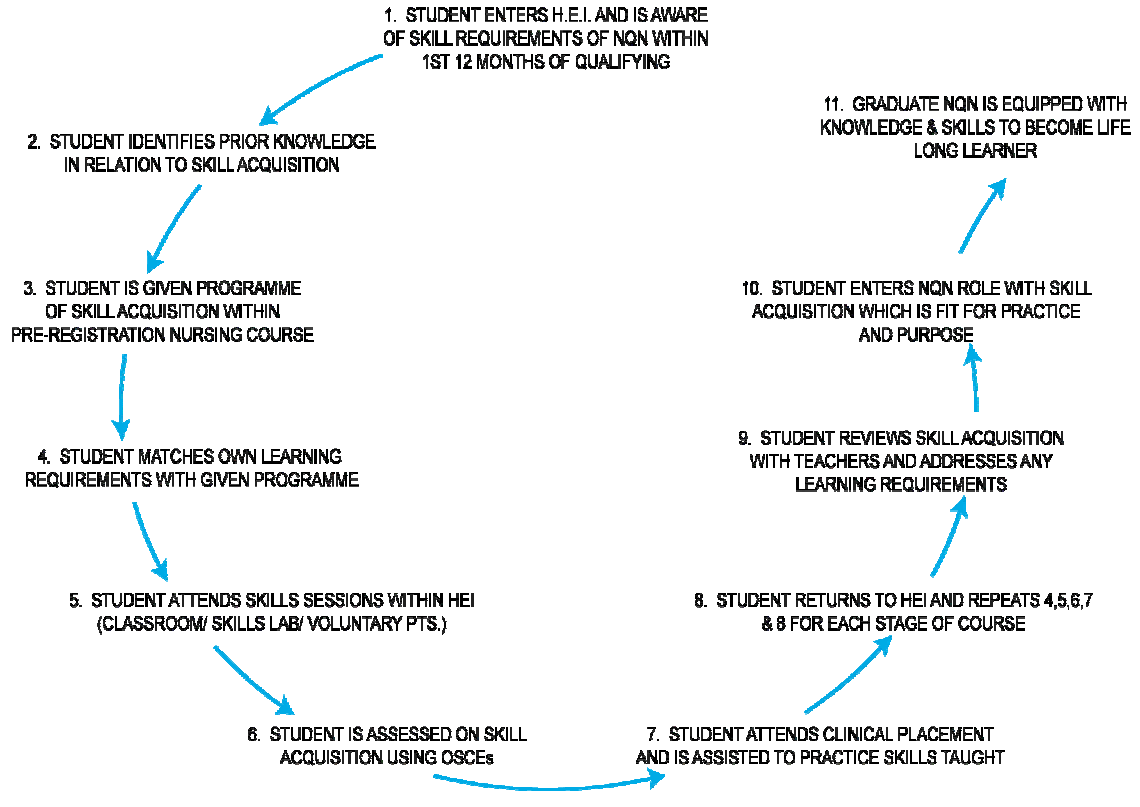

Figure 9.2

STUDENT'S JOURNEY TO CLINICAL SKILL ACQUISITION WITHIN A PRE-REGISTRATION NURSING PROGRAMME

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This seems an easy process but set in the context of the complexities in a learner's world (Figure 1.2) it is complicated. These complexities can be matched with Tosey's (2002a) complexity theory and then the educator can begin to find a way through the maze. Tosey (2002b) advocated that this would be similar to the way in which we understand the universe, in that there are patterns and principles which are identifiable. These are the restrainers and drivers for curriculum development. He also purported the notion that educators can remain safe in this chaotic world by continuing with the status quo. The consequences as evident from this study would be that a spiralling deficit of skill acquisition would ensue. Alternatively, nurse educators can sit on the edge of chaos (Tosey 2002a) and embrace the skills which are not included in pre-registration programmes but are considered essential and desirable for NQNs. Nurse education in the UK cannot afford to maintain this status quo and must change to meet the demands of practice. As Grossman and Valiga (2000) have emphasised, achieving positive benefits from chaos and change requires strong leadership. Nurse leaders and educators need to address this issue and not be complacent. It would appear that one establishment (either HEIs or Trusts) sometimes seems to wait for a lead from the other. For anything pertaining to curriculum development the lead is usually expected to come from the HEI so perhaps the impetus here is for nurse educators to make the first move.

One limitation of using a constructivist approach is the jargon involved which creates barriers for stakeholders (see Chapter 4). Cultural diversity does exist between HEIs and NHS Trusts (Scholes *et al.* 2004) and this could lead to a weakening of the partnerships and lack of understanding between organisations. Educators must recognise this and enable constructive dialogue. The strength of the collaborative partnerships between HEIs and Trusts will be severely tested. Areas with strong partnerships will forge ahead and ensure skills curricula match the required need, whilst areas with weaker partnerships will hover within a status quo of skills deficit to the detriment of NQNs.

9.4 Changing the face of nurse education to match nursing practice

Nurse education has many masters to satisfy in order to deliver validated programmes. Each of these must be satisfied that their needs have been met. The quality enhancement measures for any programme must protect students from experiencing anything other than quality learning. More commonly, service users are being co-opted onto programme management teams. This results in engaging the very people whom nursing students will nurse. Therefore, a tremendous amount of activity to satisfy expectations is undertaken by all the stakeholders and in particular the HEI delivering the programme.

However, none of this is of any value unless the curriculum developers have adequately considered the content and delivery of a programme. Curriculum developers need to have a detailed knowledge of the environment in which their students are engaging. This includes the HEI environment but more importantly the clinical environment. Curriculum developers need to take cognisance of Grossman and Valiga's (2000) and Tosey's (2002a and 2002b) views that whilst there is a chaotic environment within which to situate learning that by equipping nurses with extensive knowledge and sophisticated technical skills there will be recognisable positive benefits to be gained. Grossman and Valiga (2000) named some additional skills as "creativity; patient centeredness; coordination; multiple priority management; problem solving; critical thinking and system navigation". These skills they argued would enable the NQN to 'survive' and 'navigate' the difficulties of clinical environments. Miller *et al.* (2005) researching in the UK have added the skills of 'prioritisation and delegation' as skills which have not been taught effectively in the pre-registration programmes but important for the NQN to survive their complex environment. In this PhD study these skills are to be found within the supervisory management skill which was evaluated with slightly higher results for the experimental group and did have a significantly higher value for EIs than CEs. Earlier authors, such as Burnard and Chapman (1990) have already

mentioned the need for a 'critical thinker' and data from the Preceptors' survey in this PhD study confirmed some of the NQNs as confident critical thinkers. The common denominator in practice is that of 'continuity of patient care'. By acquiring the skills identified within this PhD study the NQN will be able to deliver continuity of care for the patient's journey and navigate through the chaotic clinical environment. Most importantly without the ability to perform highly technical skills, the NQN will not be able to survive in the clinical environment and would become frustrated and 'burnt out' and even leave the profession (Miller *et al.* 2005 and Gardner 1992). Nurses leaving the service prematurely for reasons described above create wastage of expenditure and a depletion of nursing resources for the health services, as well as huge personal discontent for the NQN.

Nurse educators must act quickly to rectify this and produce valuable resources for the health services and satisfied graduates who feel equipped to handle their first posts. This will give added reassurances for sustaining UK nursing populations beyond 2030 as indicated by the work of Buchan and Seccombe (2002); Finlayson *et al.* (2002) and Miller *et al.* (2005).

To do this, nurse educators must rely on and use effective educational theories which are valid and current. The constructive alignment theory has been proven to equip students with the knowledge and skills they require to practice successfully in their chosen occupations (Biggs 1999, 2002a and 2002b). The limitations of current models of curriculum design must be recognised (Jackson Shaw 2002, NLN 2007). This PhD study has proven that a constructively aligned skills curriculum using Bigg's theory (1999) is a successful way forward for nurse education.

9.5 Original contribution of this study to knowledge and practice

As outlined in the introduction (Chapter 1, Section 1.3), the original contribution of this study was to provide research evidence of the need for change. This has been achieved by proving the existence of

a deficit model within current UK nurse education and has provided evidence that a developmental model has positive benefits for NQNs.

Curriculum development within nurse education has to date not obviously embraced the theories of educational research. This study proved that by adopting one such theory, i.e. constructive alignment, the benefit to nurse education is that the student nurse emerges from higher education more confident and fit for practice and purpose. In doing this the original recommendations of the Fitness for practice report (UKCC 1999a) are fulfilled. Whilst this report recommended that fitness for practice was the responsibility of the HEI and fitness for purpose was the responsibility of the employer, this PhD study has demonstrated that the HEI is able to provide both fitness for practice and fitness for purpose in relation to the skills curricula. Such integrated and holistic provision enables the learner to consolidate learning during their first year of qualifying rather than leaving the work environment to acquire new skills. This PhD study has shown that this is the added value for the profession and that there is no longer the requirement for NQNs to 'come up to speed' in terms of skill development on qualifying. Thus, NQNs can be fully fledged members of the nursing team, gaining confidence as they become more experienced.

For the learner, this study has shown that when the skill acquisition has occurred within a sound educational framework, there are better outcomes for the NQN and consequently the continuity of patient care. If this occurs then the world of employment opens up avenues for consolidation of learning at post graduate and post registration levels. Learning can occur when the NQN is ready to develop and specialise. CPD can therefore focus on developing the 'experienced nurse' (Macleod 1996). The consideration that the NQNs in this PhD study graduated from a four year programme and therefore were able to perform better has been noted. However, this study found that the EI responses in survey 3 were mainly from England where three year programmes in nursing are common. These respondents

had seen the need to provide this learning within initial pre-registration preparation (see Section 7.8) regardless of the duration of the programme.

This relieves the pressure to undertake additional learning because it is imperative for the first NQN's post but rather equips the qualified nurse for successive posts.

By adopting a constructively aligned curriculum nurse educators can stay at the forefront of the complexities within the continually changing clinical environments. The skills curriculum will maintain its currency and fitness for purpose in spite of technological and organisational changes in the clinical setting.

9.6 Challenges and issues when undertaking this study

There were many challenges and issues in implementing this study. Some of these have already been addressed earlier in this chapter and also in Chapters 3 and 5, for example, the difficulties in acquiring comparative curricula content from others countries. Others were mainly methodological in nature and have been discussed in Chapter 5, for example, the difficulties in accessing the teachers of clinical skills for the survey have been highlighted. The observational visits proved fraught with difficulty in terms of accessing NQNs who were on various shift patterns as well as moving ward areas and hospitals.

There were difficulties surrounding the terminology to address this type of skill acquisition. Defining this too clearly would negate the intentions of the study which were to encourage stakeholder definitions to emerge. For this reason the ambiguity of definition was allowed to permeate through the study. In order to summarise the 26 skills investigated they were finally grouped into: Intravenous skills; Acute skills and Professional skills. There may be disagreements within the profession as to which skills were grouped in each category but the groupings were convenient in the researcher's opinion.

Another challenge was to minimise 'measurement error'. By taking longer to issue the questionnaires for survey 1 to CEs in England and Wales the test-re-test reliability may have been compromised. This has to be considered a limitation of the study.

Obtaining an accurate sample size for the NQN part of the study proved correct in that the power analysis performed (Chapter 5 Section 5.1.3) enabled significant rejection of the null hypothesis based on a significance level of $p<0.05$.

There were considerable challenges in keeping track of a mixed methods study especially during the concurrent phase. This required a high level of planning and organisation on the part of the researcher.

The data analysis of a mixed methods study also proved challenging and careful attention to the triangulation process was necessary in order to assimilate where data could be recoded and where this was not an option.

Further challenges also led to limitations of the study.

9.7 Limitations of the study

The global literature review proved limiting in that the published material focussed more on the nurse education strategies for the countries identified rather than the skills curriculum. Attempts to identify the skills undertaken during pre-registration nursing curricula were not resolved for all countries and therefore inferences have been made only from the literature that was available.

Higher response rates for the focus groups, surveys and the CNM interviews would have enhanced the study's findings. This has to be considered a limitation of the study even though statistically significant results have been found.

The initial difficulties pertaining to generating mailing lists were overcome with perseverance and diligence to ensure accuracy of targeting the correct sample group. This difficulty prolonged this phase of the study and resulted in data being accumulated in batches rather than the planned approach of a set date for the entire survey to be returned. However disruption and corruption of the data was minimised by ensuring the mailings of the questionnaire to each nation i.e. England, Scotland and Wales was effected at the same time. Northern Ireland was used as the pilot area and whilst response rates were disappointing, the returns enabled appropriate amendments of the survey tool to be achieved.

The low response rate for the surveys 2 and 3 proved difficult to resolve therefore inferences from these findings are limited. The data have been presented as numbers rather than percentages so that exact values are represented.

By allowing respondents the option to disclose their identity or geographical area there were limitations in the comparisons which could be made across the UK. This meant that matching up the CE and EI responses for survey 3 was limited.

Other limitations of this study are that the focus group, NQN and nurse manager data mainly refer to one geographical area and to hospital based nurses and managers.

The fact the control group had undertaken a three year programme leading to a diploma or ordinary degree in nurse education and the experimental group had undertaken an honours degree, could also be seen as a limitation of this study. There are other variables relating to graduate studies which may have come into play and favourably affected the results for the experimental group. However, as explained in Chapter 5 Section 5.7.2, both groups of nurses were acquiring skills in their fourth year of studying nursing. i.e. the experimental group were in their fourth year of an honours programme and the control group had completed three years

learning within their pre-registration programme and were now embarking on their fourth year of learning on-the-job. If the notion of life long learning is applied then the two groups were undertaking this skill acquisition at the same phase of their nurse education, albeit the experimental group had not graduated and the control group were already qualified. Therefore there is the possibility of this being a limitation of the study.

9.8 Achievement of study objectives

The objectives in the original proposal (see Appendix 1) have all been achieved with the exception of "critically reviewing the international perspective on the acquisition of skills". As explained earlier, there was a lack of specific literature on the skills curricula of different countries, but some studies have been reviewed.

Each objective will be reflected on to assess the level of achievement obtained within the study.

Objective 1 related to investigating the education and training provision for the acquisition of "additional" nursing skills and this investigation was implemented by means of the focus groups and surveys. This objective was achieved successfully (Chapter 6, Sections 6.1 and 6.2).

Objective 2 related to sampling the views of educational and training providers in educational and clinical settings on the acquisition of "additional" nursing skills. This was implemented by means of the surveys and was successfully achieved (Chapter 6 Section 6.2).

Objective 3 related to the international literature and has already been commented on as being partly achieved. However, the studies reviewed on specific skills and explained in Chapter 3 were international. A further literature review could examine each country's requirements for nurse registration and investigate whether or not specific skill requirements for NQNs are noted. If they are noted then an assumption that the pre-registration

curricula for that country must meet that requirement could be made. However, if like the UK there are no specific skill requirements mentioned then difficulties in meeting this objective will continue. The WHO study identifying global standards for initial nursing and midwifery education may assist this process (Fleming 2007).

Objective 4 related to clarifying the variations in the identification of "additional" nursing skills within the UK. This was implemented through the surveys and was successfully achieved (Chapter 6 Section 6.2).

Objective 5 related to evaluating the educational and professional implications of incorporating "additional" nursing skills within pre-registration nurse education. This was implemented by interviewing and observing NQNs from two different groups, namely the control group without any pre-registration skill acquisition for the skills being investigated and the experimental group who had received pre-registration skill acquisition. This was successfully achieved (see Chapter 7). This objective was also achieved by the preceptors' survey and the CNM interviews.

Objective 6 related to developing a knowledge base with respect to the relationship between the responsibilities of NQNs and the content of pre and post-registration nursing curricula and training. This study has investigated the possibility of utilising an educational theory such as constructive alignment (Biggs 1999) to underpin nursing curricula. This was implemented with the experimental group and the objective was successfully achieved. In addition this study also investigated the use of Stake's countenance model for evaluating an innovative nurse education constructively aligned curricula. The findings from this study support the use of a model such as Bjork's (1999) for implementing skills teaching. This will raise the value of skills teaching within nursing curricula, but more importantly, enable the learner to learn skills in a meaningful way, whilst enhancing skill retention and instilling confident practice. By

identifying skills which can be contained within the pre-registration curricula this study has enabled future studies to effectively identify skills which fit into the post-registration curricula.

With the effective implementation of the constructive alignment theory, Stake's evaluation model and Bjork's model, this study has successfully achieved objective 6.

The next chapter will summarise the key points from this study and provide conclusions and recommendations.

CHAPTER 10 CONCLUSION

10.0 Study Focus

This study has investigated the preparation of newly qualified nurses (NQNs) in relation to skill acquisition. It has argued that pre-registration nurse education is failing to equip NQNs with some of the essential skills required for patient care. These skills are developing at an alarming rate as technology advances and the pre-registration skills curricula has not kept itself up to date to assist NQNs cope in the complexities of the clinical setting.

The transition period between student nurse and qualified nurse is a confusing and challenging time for NQNs and has been widely reported. The effects of the existence of a deficit model on student nurses and the further effects on qualifying have been highlighted by this PhD study. Lack of sufficient preparation for the role could be a contributory factor for nurses leaving the profession and has been alluded to by this PhD study.
So what can be done and how can this be changed?

10.1 Recognition of skill deficits in NQNs

First of all there needs to be recognition that there are skills' deficits for NQNs. Whilst this was proven by studies such as Alavi *et al.* (1991), Holloway (1999), Runciman *et al.* (2000) and Boxer and Kluge (2000), this PhD study has added to these literary views that skills deficits do exist in nursing and are perhaps more alarming than first thought in that there are a number of skills which are acquired by NQNs predominantly within their first 12 months of qualifying and commencing a new post. This skill acquisition was not considered by previous studies. The present climate in the profession is acceptance for this skill acquisition to predominate in the immediate post-registration period, when NQNs commence their first posts.

10.2 Identification of skills required on qualifying

This study has identified some of the essential and desirable skills which nurses require during their first 12 months of qualifying. It also identified skills which are not required on qualifying. The skills were broadly categorised into intravenous skills; acute skills and professional skills.

By taking this skills list and combining it with the previous studies a comprehensive and up to date skills curriculum can be designed. There were advantages and disadvantages of this skill acquisition discussed by the stakeholders consulted by this PhD study, namely clinical skills teachers within EIs and CEs; NQNs; preceptors and managers. However there was consensus on the acceptability of nurses acquiring these skills, but the timing of skill acquisition within the pre-registration programme caused some differences of opinion.

10.3 The NQNs' first twelve months

There was no doubt from the participants of this study that the first twelve months for NQNs should be consolidation of prior learning with new learning focussing on adapting to the new role rather than skill acquisition. However if there continues to be the entrenched view that post-registration is the time when most of this skill acquisition should be implemented then NQNs will have to continually face the challenges of new learning to match the requirements of their first nursing post. This begs the question: what is pre-registration preparation all about?

The notion that pre-registration programmes ensure fitness for practice but fitness for purpose is the responsibility of the employer (UKCC 1999a) perpetuates the skills deficit for NQNs and contributes to the theory-practice gap. By virtue of skill acquisition occurring so soon after qualifying employers are saying that NQNs are not fit for practice or purpose until they have gained particularly the intravenous skills investigated by this study. There is also wastage of skills which have been acquired during pre-registration

which are not practised in the immediate qualifying period. Some of the mangers were not aware that NQNs possessed the skills and therefore practice was not encouraged but in some areas there were definite barriers to practice.

10.4 Making the change for improvement

This study has demonstrated that improvements to curriculum design can be made with positive consequences for NQNs. Curriculum innovations made by EIs have already been identified and indeed by the time of publication there may be many more universities actively reviewing skills curricula to reflect changes in clinical practice. In order to manage these changes effectively stakeholders need to agree on the pre-registration skills curricula and respect each others' contribution to these changes so that skills practice by NQNs can occur without any barriers or constraints. This will be aided by the NMC's proposals to identify essential skills clusters when previously specific skills have not been identified in pre-registration requirements (NMC 2004a and NMC 2007a).

The implementation of an educational theory such as constructive alignment will greatly enhance these innovations as it begins with the question:

"What do we want the learner to be able to do as a result of learning?" (Biggs 2002a, p.1).

The act of aligning the teaching and assessment components of pre-registration nursing curriculum will address this question in a way which will enhance the student experience to promote deeper meaning to their learning (Biggs 1999). It will also minimise the theory-practise gap by recognising their movement between two learning environments i.e. higher education institutions and clinical settings and by actively situating teaching and assessment tasks. Bridging these environments to create a seamless journey for learners will be greatly enhanced by adopting strategies of clinical simulations in skills laboratories using volunteer patients; adopting a

model of skills teaching such as Bjork's (1995) and implementing assessment strategies such as OSCEs.

Further innovations to skill acquisition would be to implement inter-professional learning strategies. This would enable nursing schools to forge stronger links with other schools within higher education and develop competence for transferable skills between disciplines. Best practice curriculum innovations could be shared and joint assessment such as team OSCEs would ably simulate the inter-disciplinary health care team. Such curriculum innovations would reap benefits for newly qualified health professionals and clinical environments would become less daunting. Impacts on statistics related to nurses leaving the profession as well as progression through the NQN period could be reviewed to evaluate the benefits.

10.5 Moving on with the rest of the world

The UK's position on pre and post-registration skill acquisition requires serious review when considering the international scene. The reputation of Britain as a leading light on nursing issues on the global stage dates back to Florence Nightingale. However, recent influxes of foreign nurses and student/lecturer exchanges within Europe indicate that other countries have moved on with this debate on skill acquisition and the UK has not. The exact reasons for this remain a mystery but in this study, traditional values and role boundaries in the UK have been alluded to as possibly affecting this view.

In these times of rapid globalisation, the nursing skills curriculum has remained very much the domain of the country within which the nurse is educated. Whilst European countries have tried to have common themes and agreed duration of courses to aid mobility of nurses across the European Union, skills recognition within these agreements has been missing.

` A further study which investigates the pre-registration skills curricula of different countries and which then proposes an

international skills curriculum would be an advantage to all when considering current nurse migration. Such a curriculum could be the world standard against which each country matches its own requirements essential pre-registration nursing skills. Attempts to create a database and develop standards for pre-registration curricula internationally are being undertaken by the WHO (Fleming and Homes 2005, Fleming 2007).

Before this can happen however, there needs to be a national awareness of skills curricula within each country. Certainly in the UK each higher education institution whilst working within NMC guidelines has its own individual ideas on which skills to include within the curricula. If these ideas were continually submitted to a national organisation, a database could be created which promotes a UK wide awareness of what is current and up to date. Such a database would be valuable to all providers of pre-registration nurse education.

Local, national and international co-operation would be required to implement these ideas and existing organisations such as the WHO and NMC may already be interested in encouraging this recommendation.

10.6 Study design and implementation

The study design was complex using evaluation research, constructivist paradigm and mixed methods. All of these design features have been used before for programme evaluation and health related studies, however bringing them together in the specific way for this study has helped to address the research question. Some significant results were achieved and sound data were obtained which satisfied the objectives of the study and proved its original contribution. The use of triangulation enabled data analysis to be complete.

The challenges and limitations of the study have been discussed as mainly methodological and geographical. These are summarised as:

sampling and access difficulties; survey response rates; the lack of international literature on skill acquisition and the limited geographical location for the main part of the study. Other challenges to manage were the sheer volume of data from a mixed methods design, particularly when implementing the concurrent phases of the study. However, these challenges and limitations did not compromise the ethical values and research rigour which underpinned the researcher's motivation to complete the study. In hindsight there were phases of the study which could have been managed differently and these have been explained in Sections 9.6 and 9.7 but the study's objectives were successfully completed.

10.7 The original contribution

The original contribution of this study was explained in Chapter 1 and involved six features, all have which have the potential to make a significant difference to curriculum planning for pre-registration nurse education. These features are summarised below.

No other known studies have developed a knowledge base for nursing curriculum development which could be informed or underpinned by educational research using constructive alignment theory. This has been achieved by this study and has the potential to be implemented widely.

Previous studies relating to core skill development in the pre-registration period, omitted identification of the skills obtained by nurses in the immediate post-registration period. This study had identified those skills and provided a strategy for skills curricula to maintain its currency in the complexities of a changing clinical environment.

This study has identified UK nurse educators who have embraced skills curriculum innovations and adopted them within their programmes but as yet underpinning them with an educational theory has not been verified. This study can enable nurse educators

to do this and create applications which are suitable for the academic and practical uniqueness of nursing.

This study has enabled the learner to be the centre of the investigation by recognising learners as stakeholders and partners in the education process. It has demonstrated the added value of nurses entering the profession with the essential learning requirements for their first year of practice provided within a sound educational framework.

Future developments will impact on the findings of this study and are arising as this thesis is published. The NMC consultation on pre-registration nurse education (NMC 2007a) and its subsequent report as well as the evaluations of the Fitness for Practice programmes will have major contributions for nurse education in the near future.

RECOMMENDATIONS

The findings of this study have evoked the following recommendations for the future of nurse education and research. They are presented with three areas of focus: Nurse education; clinical managers and future research. They are presented in a random order and priorities are not indicated by the numbering.

Nurse Education

1. Educational theories such as constructive alignment should be used to underpin pre-registration curriculum development due to the positive benefits for NQNs.

2. Nursing skills curricula should maintain its currency within a changing clinical environment by nurse educators revising and reviewing what is currently taught and what is currently practised.

3. Inter-professional skills teaching should be explored particularly with the development of clinical skills standards across professional groups.

4. Skills teaching should follow an evidence based model such as Bjork (1999).

5. Nurse educators should review skills curricula regularly and identify skills which need to be removed in order to accommodate skills which need to be included.

6. Nurse educators and collaborating stakeholders should discuss the skills curricula regularly ensuring the development of trust and mutual respect for each other's expertise.

7. Teachers of skills should also be practitioners of skills in order to maintain credibility and expertise.

8. The use of skills laboratories and simulation models should be an ongoing feature of skill development within pre-registration nursing. This should include the use of digital technology for constructive feedback.

9. Programme evaluation for any curriculum development should continue to be an ongoing feature.

Clinical Managers

1. Managers employing NQNs should be aware of the nurse's pre-registration skill acquisition and facilitate skill competency.

2. Skill acquisition during the first twelve months of a nurse qualifying and entering his/her first post should be kept to a minimum to ensure consolidation of pre-registration learning.

3. Any pre-registration skill acquisition should be recognised by employers and exemption from courses should be allowed provided that the skill has been acquired within an appropriate time frame for practice.

4. Post registration skill acquisition should be reviewed by clinical educators collaborating with HEIs. An awareness of skill acquisition pre and post-registration should exist with skills teachers. A focus for CPD should be to develop experienced nurses for successive posts.

5. Nurses should enter their first post fit for practice and purpose. This phrase should be seen holistically as the responsibility of the provider of pre-registration education rather than split between the HEI and the new employer.

6. Newly qualified nurses should be enabled to practice skills by their preceptors. If the skill acquired is not required in the area then provisions should be made for the NQN to maintain skill competency, thus preventing skill wastage.

7. Career progression for skills should take the form of core skills during pre-registration and advanced skills during post registration.

8. Leadership programmes in nursing should encompass chaos and complexity theories in order that future nurse professionals adopt mechanisms to cope with ever changing clinical and educational environments.

Future Research

1. A future research recommendation would be to investigate the nurse registration requirements for nurses in other countries and to identify skill requirements which may or may not be specified. This would enable the design of an international skills curriculum and add to the WHO database developments.

2. Following on from the above recommendation developing a global consensus on skills content of pre-registration nursing curricula will enable easier nurse mobility and transference of skill expertise.

3. A key UK nursing organisation should hold a database which has regular input from HEIs regarding their curriculum developments- especially skill development. This database should be shared across HEIs in the UK and up dated regularly.

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APPENDIX 1

PhD Study Objectives

Objective 1
Investigate the current education and training provision for the acquisition of "additional" nursing skills.

Objective 2
Sample the views of education and training providers in educational institutions and clinical settings, on the acquisition of "additional" nursing skills.

Objective 3
Critically review the international nursing perspective on the acquisition of "additional" nursing skills.

Objective 4
Clarify variations in the identification of "additional" nursing skills within the United Kingdom.

Objective 5
Evaluate educational and professional implications of incorporating "additional" nursing skills within pre-registration nurse education.

Objective 6
Develop the knowledge base with respect to the relationship between the responsibilities of newly registered nurses and the content of pre and post-registration nursing curricula and training.

APPENDIX 2

Letter from Grampian Health Board

GHB
Grampian Health Board

GRAMPIAN HEALTH BOARD
AND
UNIVERSITY OF ABERDEEN

GRAMPIAN RESEARCH ETHICS COMMITTEE

Chairman

Dr John Dean
Consultant
Department of Medical Genetics
Medical School
Foresterhill
Aberdeen
AB25 2ZD

Tel: (01224) 552120
Fax: (01224) 559390

Clerk to the Committee

Mrs Diane Murray
Dept of Public Health
Grampian Health Board
Summerfield House
2 Eday Road
ABERDEEN, AB15 6RE
Email: diane.murray@ghb.grampian.scot.nhs.uk

Tel: (01224) 558503
Fax: (01224) 558609

14th June 2001

Mrs Sundari Joseph
Lecturer in Nursing
School of Nursing & Midwifery
Block C
Northern College of Education
Hilton Place
Aberdeen AB24 4FP

Dear Mrs Joseph

Thank you for your letter of 4th June 2001, which we received at the Board on 6th June 2001. I am pleased to confirm that the project you describe does not require ethical approval from the Grampian Research Ethics Committee on this occasion.

Thank you for bringing this study to the Committee's attention.

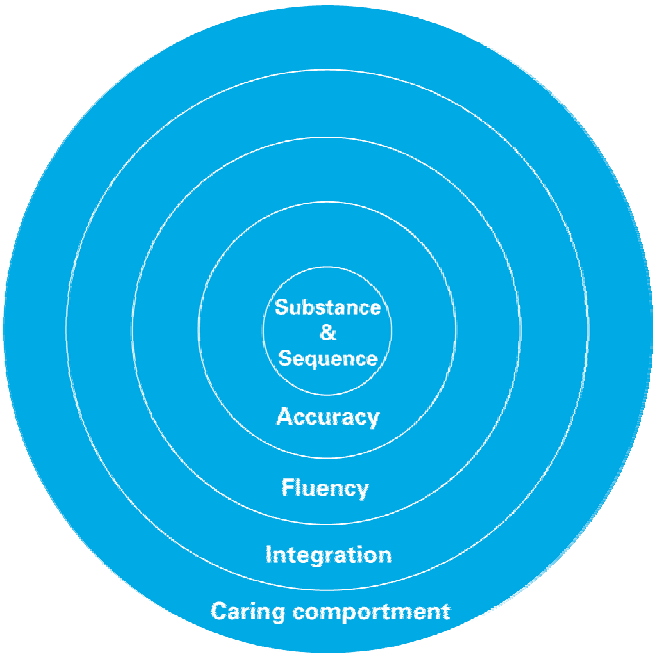
Yours sincerely

Mrs Murray

Mrs Diane Murray
Clerk to the Grampian Research Ethics Committee

APPENDIX 3

Bjork's Model of Practical Skill Performance



Error!

Substance: refers to the inclusion of relevant content in the form of movement steps, instruction, and information.

Sequence: reflects whether movement steps, instruction and information come in a logical order.

Accuracy: refers to exactness of each movement step and the correctness and precision of instruction and information included.

Fluency: is when each element of performance gives an impression of ease and smoothness, when they seem "finished" and without hesitation.

Integration: reflects the nurse's ability to harmonize and time the parallel aspects of an action such as movement steps, physical support and verbal interaction. Integration also includes being attentive to what the patient in total needs while taking care of the specifics of the ongoing action.

Caring comportment: relates to how the nurse creates an atmosphere that is respectful, accepting and encouraging. It includes concern for the whole person by relating to the patient's feelings and reactions to the instrumental steps of the action and to the total experience of being a patient.

Bjork (1999) Page 74

APPENDIX 4

Eligibilty Criteria for Methods

2.1 Focus Groups

Candidates were eligible if they were practising and/or teaching clinical nursing skills and were currently employed as: a lecturer within the School of Nursing; a teacher within the collaborating NHS Trust and/ or practising as nurse in a clinical setting. Newly qualified nurses were defined as those who had completed their pre-registration nurse education within twelve months prior to the focus group date and had commenced nurse employment.

2.2 Survey 1 Clinical Skills Teachers' Survey

Candidates were eligible if they were responsible for the delivery of clinical skills teaching within the pre-registration programme and /or teaching clinical skills within their departments. Candidates were based either in Higher Education Institutions (EI) or NHS Clinical Establishments (CE).

2.3 Interview 1:NQN Interviews

Experimental Group:

Candidates were eligible if they had completed Year 4 BSc (Hons) Nursing. During this final honours year candidates must have attended the optional "additional skills" sessions and acquired at least one skill from the following list: venepuncture; cannulation; intravenous bolus injection; continuous infusion via syringe pump; male catheterisation; key handler.

Control Group:

Candidates were eligible if they had qualified as nurses within twelve months prior to the NQN interview and were employed as nurses within the collaborating NHS Trust.

2.4 NQN Observational Visits

The eligibility criteria for the NQN observational visits were as for the NQN interviews.

2.5 Survey 2 Preceptorship

A preceptor as defined by the UKCC (1992), is an experienced qualified nurse who nurtures and supports a newly qualified nurse into their role as qualified nurse. For this study the preceptors who were responsible for the experimental and control group candidates were eligible to respond to the survey.

2.6 Interview 2: Nurse Managers

Candidates were eligible if they fulfilled the role of clinical nurse manager for the clinical setting within which the experimental and control group candidates were working.

2.7 Survey 3: Specific Teachers of Clinical Skills

Candidates were eligible if they had responded to survey 1: Clinical Skills Teaching as responsible for and /or delivering the teaching of the skills investigated by this study. Candidates also had to have given their contact details which were optional.

APPENDIX 5

Topic for Discussion and Debate at Focus Group

Nurses are expected to add-on various skills immediately after qualifying (usually within the first 12mths)

Questions to consider:

- What are these skills that nurse are expected to add-on?
- Is it acceptable that nurses take on these skills?
- Could this list of skills be extended?
- When during a nurse's career is it most appropriate for these skills to be added on?
- Would it be appropriate to include these skills during the pre-registration education programme?
- What effects will this have on the role of the nurse on qualifying?
- What effects will this have on the nursing profession?

Please consider your answers to the questions above before attending the focus group and come along prepared to comment on your views and opinions on the subject.

APPENDIX 6

Example of Introductory Letter for Survey 1: Clinical Skills Teachers' Survey

November 2001

Dear Colleague

I am undertaking an investigation on the subject of skill acquisition by student nurses and newly qualified nurses in the United Kingdom. The particular focus of the study relates to practical and technical skills, which are sometimes considered "additional" to those required for Nurse Registration in the UK.

As you are aware this is a particularly topical area for discussion as pre-registration nursing programmes review their curricula in light of the report "Fitness for Practice" (UKCC 1999). It also becomes an important issue as nurses re-define their roles in clinical settings with respect to employer's requirements and the document "Scope of Professional Practice" (UKCC 1992).

Your contribution to this research will have a notable effect in assisting me to evaluate the current education and training provision within the United Kingdom for the acquisition of these skills. This project is registered as an MPhil/PhD research degree with the Robert Gordon University, Aberdeen. It is intended that the project will inform nurse education on the content and development of pre-registration nursing courses and also inform the collaborative relationship between education and service. I would be grateful if you would complete the questionnaire enclosed and return it to me by **Monday, 17th December 2001.**

All information given will be held and processed confidentially. The geographical area of the UK to which the questionnaire was sent will be coded and will be reported, but individual institutions/ establishments will not be named unless permission has been obtained from that institution/establishment.

If there is anyone else in your department/area to whom you think this letter and questionnaire has relevance please feel free to photocopy it to them for completion and return of the questionnaire.

Should you require further self-addressed FREEPOST envelopes please email me at **s.joseph@rgu.ac.uk** or telephone me at **01224 262975**.

In anticipation of your response to this request I will forward a copy of the executive summary by May 2003. Please complete and return the reply slip to the freepost address with your completed questionnaire if you would like a copy.

If you have any queries or further information which could assist me with this investigation, please do not hesitate to contact me.

Thanking you for your participation.

Yours sincerely

Mrs Sundari Joseph
Lecturer in Nursing

PLEASE SEND ME A COPY OF THE EXECUTIVE SUMMARY:

NAME: .....

DESIGNATION: .....

EMAIL ADDRESS: .....

POSTAL ADDRESS: .....

.....

APPENDIX 6a

Example of Questionnaire to Clinical Establishments

SKILLS TEACHING
SURVEY

1. Please list the title(s) of course(s) for which you are responsible. *Attach additional sheets as required.*

Title	Duration	Full-time	Part-time

2. Do these courses include technical/practical skills normally considered **within** the UKCC's "Scope of Professional Practice" and **outside** the requirements for nurse registration in the UK?

Delete as required YES/NO

If NO, *please proceed to* ***Question 5***.

APPENDIX 6a
Example of Questionnaire to Clinical Establishments (contd)

3. If YES was answered to Q.2:
   - Please list the skills which are currently taught which are **within** the UKCC's "Scope for Professional Practice" and **outside** the requirements for nurse registration.
   - State how soon following registration and commencement of the first post these skills are introduced.
   - State, in your opinion, when these skills should be introduced.

Skills currently taught which are not required for nurse registration.	Please tick when the skill is first introduced (full-time equivalence)					Please tick when you feel this skill should be introduced				
	0 - 3 months	4 - 6 months	7 - 12 months	1 - 2 years	3 - 4 years	During pre-registration period	During first 6 months following registration/ gaining employment	During second 6 months following registration/gaining employment	1 - 2 years following registration/gaining employment	3 - 5 years following registration/gaining employment

Please photocopy additional pages as required.

APPENDIX 6a
Example of Questionnaire to Clinical Establishments (contd)

4. Considering these skills, does the content primarily cover: *Delete as required*

4.1 Theory related to skill only? YES/NO

4.2 Theory and practice within a classroom/laboratory setting? YES/NO

4.3 Theory and practice within a classroom/laboratory setting followed by supervised
practice in clinical settings with patients/clients? YES/NO

4.4 Please describe other combinations:
.....
.....
.....

5. Please consider the following table of skills. Although some of these skills are not required for nurse registration in the United Kingdom, in your opinion are they **essential, desirable or not necessary, within the first 12 months of a nurse qualifying/gaining employment?**

	Skill	Essential	Desirable	Not necessary
5.1	Intravenous medication			
5.2	Venepuncture			
5.3	Cannulation			
5.4	Sub-cutaneous needle insertion			
5.5	Gastrostomy tube re-insertion			
5.6	Ear syringing			
5.7	Fine bore nasogastric tube insertion			
5.8	First aid			
5.9	Suturing			
5.10	Prescribing medication			
5.11	Chemotherapy			
5.12	Male catheterisation			
5.13	Electrocardiograph recording (ECG)			
5.14	Advanced life support			
5.15	Verification of expected death			
5.16	Mentorship: to be responsible for a student			
5.17	Preceptorship: to be responsible for a newly registered nurse			
5.18	Violence and aggression			
5.19	Customer care			
5.20	Quality issues			
5.21	Counselling			
5.22	Key handler (moving and handling/risk management)			
5.23	Supervisory management			
5.24	Budgeting			
5.25	Research and audit			
5.26	Please add other skills not included in this list:			

Please continue overleaf if necessary.

APPENDIX 6a
Example of Questionnaire to Clinical Establishments (contd)

6. In your opinion, is it acceptable for nurses to take on these skills?

Delete as required

6.1 ALL OF THEM YES/NO

6.2 SOME OF THEM YES/NO

6.3 NONE OF THEM YES/NO

Please give your reasons for your choice of answer and, if 6.2 is your answer, identify which skills are acceptable for nurses to undertake:

.....
.....
.....

7. What advantages can you foresee of introducing any of these skills during a pre-registration programme?

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8. What disadvantages can you foresee of introducing any of these skills during a pre-registration programme?

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.....

9. Have you any other comments regarding this subject?

.....
.....
.....
.....

10. Name of institution:
    .....

    Town/city: .....

11. Job title of respondent: .....

12. If you wish to give your name, please enter it here: .....

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE. PLEASE RETURN IT IN THE FREEPOST ENVELOPE PROVIDED **AS SOON AS POSSIBLE.**

Mrs Sundari Joseph
Lecturer in Nursing
School of Nursing & Midwifery
The Robert Gordon University
FREEPOST AB313
ABERDEEN
AB10 1ZQ

APPENDIX 6b

Example of Questionnaire to EIs

SKILLS TEACHING
SURVEY

1. Please list the title(s) of course(s) for which you are responsible.
Attach additional sheets as required.

Title	Duration	Full-time	Part-time

2. Do these courses include technical/practical skills normally considered **within** the UKCC's "Scope of Professional Practice" and **outside** the requirements for nurse registration in the UK?

Delete as required YES/NO

If NO, *please proceed to* ***Question 5***.

APPENDIX 6b

Example of Questionnaire to EIs (contd)

3. If YES was answered to Q.2:
   - Please list the skills which are currently taught which are **within** the UKCC's "Scope for Professional Practice" and **outside** the requirements for nurse registration.
   - State how soon after commencement of the course these skills are introduced.
   - State, in your opinion, when these skills should be introduced.

Skills currently taught which are not required for nurse registration.	Please tick when the skill is first introduced (full-time equivalence)					Please tick when you feel this skill should be introduced				
	0 - 3 months	4 - 6 months	7 - 12 months	1 - 2 years	3 - 4 years	During pre-registration period	During first 6 months following registration/ gaining employment	During second 6 months following registration/gaining employment	1 - 2 years following registration/gaining employment	3 - 5 years following registration/gaining employment

Please photocopy additional pages as required.

APPENDIX 6b

Example of Questionnaire to EIs (contd)

4. Considering these skills, does the content primarily cover: *Delete as required*

4.1 theory related to skill only? YES/NO

4.2 theory and practice within a classroom/laboratory setting? YES/NO

4.3 theory and practice within a classroom/laboratory setting followed by supervised practice in clinical settings with patients/clients? YES/NO

4.4 Please describe other combinations:

.....

.....

.....

5. Please consider the following table of skills. Although some of these skills are not required for nurse registration in the United Kingdom, in your opinion are they **essential, desirable or not necessary, within the first 12 months of a nurse qualifying/gaining employment?**

	Skill	Essential	Desirable	Not necessary
5.1	Intravenous medication			
5.2	Venepuncture			
5.3	Cannulation			
5.4	Sub-cutaneous needle insertion			
5.5	Gastrostomy tube re-insertion			
5.6	Ear syringing			
5.7	Fine bore nasogastric tube insertion			
5.8	First aid			
5.9	Suturing			
5.10	Prescribing medication			
5.11	Chemotherapy			
5.12	Male catheterisation			
5.13	Electrocardiograph recording (ECG)			
5.14	Advanced life support			
5.15	Verification of expected death			
5.16	Mentorship: to be responsible for a student			
5.17	Preceptorship: to be responsible for a newly registered nurse			
5.18	Violence and aggression			
5.19	Customer care			
5.20	Quality issues			
5.21	Counselling			
5.22	Key handler (moving and handling/risk management)			
5.23	Supervisory management			
5.24	Budgeting			
5.25	Research and audit			
5.26	Please add other skills not included in this list:			

Please continue overleaf if necessary.

APPENDIX 6b

Example of Questionnaire to EIs (contd)

6. In your opinion, is it acceptable for nurses to take on these skills? *Delete as required*

6.1 ALL OF THEM YES/NO

6.2 SOME OF THEM YES/NO

6.3 NONE OF THEM YES/NO

Please give your reasons for your choice of answer and, if 6.2 is your answer, identify which skills are acceptable for nurses to undertake:

.....

.....

.....

7. What advantages can you foresee of introducing any of these skills during a pre-registration programme?

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8. What disadvantages can you foresee of introducing any of these skills during a pre-registration programme?

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9. Have you any other comments regarding this subject?

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APPENDIX 6b

Example of Questionnaire to EIs (contd)

10. Name of institution: .....

    Town/city: .....

11. Job title of respondent: .....
.

12. If you wish to give your name, please enter it here: .....

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE. PLEASE RETURN IT IN THE FREEPOST ENVELOPE PROVIDED BY **MONDAY, 16TH JULY 2001.**

Mrs Sundari Joseph
Lecturer in Nursing
School of Nursing & Midwifery
The Robert Gordon University
FREEPOST AB313
ABERDEEN
AB10 1ZQ

APPENDIX 7

Letter of Invitation to Recruit NQN Experimental Group

Direct Line 01224 - 262975

Our ref. sj/ep

5th November 2004

Dear

I am undertaking a project investigating "additional skill acquisition". This project is registered for a PhD at The Robert Gordon University and ethical permission has been granted by Grampian Research Ethics Committee.

I am writing to request a 15 minute interview with you and a short follow-up observation in your work environment one month and three months afterwards. It is intended that the information gained through this research project will inform nurse educators to maintain an up-to-date skills curriculum.

All information will be treated confidentially and anonymity within the study will be guaranteed.

Further information will be given to you on your agreement to participate.

Your co-operation is important to us and your experience and skills will be valuable to nurse education in the future.

Yours sincerely,

Sundari Joseph
Lecturer in Nursing
School of Nursing & Midwifery

Please complete the following reply slip and use the Freepost envelope enclosed for your reply to Sundari Joseph.

Name: .....

Contact Address: .....

.....

.....

Contact Telephone No: .....

E-mail Contact: .....

I agree to participate in this research project on "additional skill acquisition".
I understand that all data will be held confidentially and anonymity for me and my work environment is guaranteed.

I also understand that I can withdraw from the study at any stage.

Signed:.....

Date: .....

APPENDIX 8

Letter of Invitation to Recruit NQN Control Group

1st November 2004

Dear

I am undertaking a project investigating "additional skill acquisition". This project is registered for a PhD at The Robert Gordon University, Aberdeen and ethical permission has been granted by Grampian Research Ethics Committee.

I am writing to request a 15min interview with you during your induction programme and a short follow-up observation in your work environment one month and three months afterwards.

It is intended that the information gained through this research project will inform nurse educators to maintain an up to date skills curriculum.
All information will be treated confidentially and anonymity within the study will be guaranteed.

Further information will be given to you on your agreement to participate.
Your cooperation is important to us and your experience and skills will be valuable to nurse education in the future.
Yours Sincerely,

Sundari Joseph
Lecturer in Nursing
School of Nursing & Midwifery Tel: 01224 262975

Please complete the following reply slip and I will collect it from you during your induction programme.
Name.....

Contact Address.....

Contact Telephone.....

E mail contact.....

I agree to participate in this research project on "additional skill acquisition".
I understand that all data will be held confidentially and anonymity for me and my work environment is guaranteed.
I also understand that I can withdraw from the study at any stage.

Signed.....

Date.....

APPENDIX 9a

Interview 1- NQN Interview Schedule

Interview Schedule for Newly Qualified Nurses

Date:_____ **Code_____**

- Introduction

Name and designation
Purpose of interview

- Demographic Details
  Where qualified?
  How long qualified?
  Speciality?

- Skill Acquisition

Skill	Where acquired	How acquired	When acquired	Comment
IV Bolus				
Venepuncture				
Cannulation				
SC needle insertion				
Gastrostomy Tube reinsertion				
Ear Syringing				
Fine Bore NG tube insertion				
First Aid				
Suturing				
Prescribing medication				
Chemotherapy				
Male Catheterisation				
ECG recording				
Advanced Life support				
Verification of Expected Death				
Mentorship				
Preceptorship				
Violence & Aggression				
Customer Care				
Quality Issues				
Counselling				
Key Handler				
Supervisory Management				
Budgeting				
Research & Audit				
Other Skills				

APPENDIX 9a

Interview 1- NQN Interview Schedule (contd)

- Opinions
  At what stage in your development as a nurse do you think these skills are best acquired?
  Rationale for answer

  What would your view be on the acquisition of these skills during the pre-registration period?
  Rationale for answer

  Do you think that the acquisition of "additional skills" would:
  a) lead to role enhancement

  OR

  b) lead to nurse who focuses more on technical aspects of care?

- Verdict
  What happens now with these skills?
  Expand on answer

  Should nurses undertake these skills?
  Expand on answer

  What would this do to the nurse's role?
  Expand on answer

- Verify Observation time
  Explain principles of observation of skills practice
  Arrange dates and times

APPENDIX 9b

Template for Transcription of NQN Interviews

Template for transcripts of interviews with Newly Qualified Nurses

Enter Code for each candidate.

Either begins with SDP or BSC and then 103 or 203 etc. (03 refers to year, will change to 04 for next year)

Interviewer in bold text

Interviewee in normal text

NQN: Abbreviation for Newly Qualified Nurse can be used
------ Indicates a pause
..... Indicates an interruption
_____ For Individual's name

Margin to right of page for researcher's comments

1. Introduction

   Designation? **Staff Nurse**

   Where qualified? **RGU/other university**

   How long qualified? **Approx. date eg. Sept 2003**

   Speciality?

Where they are working eg. Name of ward or speciality of ward

2. Skill Acquisition

   See table page 2

APPENDIX 9b

Template for Transciption of NQN Interviews (contd.)

Skill **Explanation given for clarification not necessary to transcribe explanation from Interviewer**	Acquired **Yes/No**	How acquired **RGU/induction course/staff development programme**	When acquired **Pre-registration or Post-Registration**	To be acquired at some time in their nursing career **Yes/No**	Comment **Add any additional comments made for each skill**
IV Bolus					
Venepuncture					
Cannulation					
SC needle insertion					
Gastrostomy Tube reinsertion					
Ear Syringing					
Fine Bore NG tube insertion					
First Aid					
Suturing					
Prescribing medication					
Chemotherapy					
Male Catheterisation					
ECG recording					
Advanced Life support					
Verification of Expected Death					
Mentorship					
Preceptorship					
Violence & Aggression					
Customer Care					
Quality Issues					
Counselling					
Key Handler					
Supervisory Management					
Budgeting					
Research & Audit					
Other Skills					

APPENDIX 9b

Template for Transciption of NQN Interviews (contd.)

3. At what stage in your development as a nurse do you think these skills are best acquired?
   Transcribe entire answer

4. What would your view be on the acquisition of these skills during the pre-registration period?
   Transcribe entire answer

5. Do you think that the acquisition of "additional skills" would:
   a) lead to role enhancement
   OR
   b) lead to nurse who focuses more on technical aspects of care?
   Transcribe entire answer

6. What happens now with these skills?
   Transcribe entire answer

7. Should nurses undertake these skills?
   Transcribe entire answer

8. What would this do to the nurse's role?
   Transcribe entire answer

APPENDIX 10
Prompt for Interviews

Skills being investigated by the project: "Innovative Curriculum Design for Pre-Registration Nurse Education: Meeting Additional Skill Requirements"
IV Bolus
Venepuncture
Cannulation
SC needle insertion
Gastrostomy Tube reinsertion
Ear Syringing
Fine Bore NG tube insertion
First Aid
Suturing
Prescribing medication
Chemotherapy
Male Catheterisation
ECG recording
Advanced Life support
Verification of Expected Death
Mentorship
Preceptorship
Violence & Aggression
Customer Care
Quality Issues
Counselling
Key Handler
Supervisory Management
Budgeting
Research & Audit
Other Skills

APPENDIX 11

NQN Observation Schedule

NEWLY QUALIFIED NURSES

OBSERVATION SHEET CODE: _____

1ST OBSERVATION DATE: _____ TIME: _____ WARD & SPECIALITY _____

2ND OBSERVATION DATE: _____ TIME: _____ WARD & SPECIALITY _____

TYPES OF SKILLS	FREQUENCY PER SHIFT	CONFIDENCE LEVEL IN PERFORMING SKILL 1-5

APPENDIX 11

NQN Observation Schedule (contd.)

LENGTH OF TIME BETWEEN SKILLS COURSE & PRACTICE

DIFFERENCES BETWEEN SKILLS TEACHING & PRACTICE:

OTHER PROFESSIONALS PERFORMING SAME SKILLS?

WORK SCHEDULE FOR TYPICAL SHIFT

APPENDIX 12a

Preceptors' Questionnaire
NQN Experimental Group

The Robert Gordon University
School of Nursing & Midwifery

PRECEPTORS' SURVEY

Please complete the following:

1.1 Where you work: Ward/ Speciality_____

1.2 How long have you been a preceptor? _____

1.3 How many newly qualified nurses have you precepted? _____

The newly qualified nurse giving you this questionnaire acquired some "additional" skills during his/her pre-registration programme. These skills were optional and included some of the skills on the list below

2. Please rate the confidence level of the newly qualified nurse in relation to each skill. If the skill is not being practised please write N/A. Add any comments in the column on the right.

Skill	Confidence level 1- Not confide 5- Very confident	Comment
5.1 IV Bolus		
5.2 Venepuncture		
5.3 Cannulation		
5.4 SC needle insertion		
5.5 Gastrostomy Tube reinsertion		
5.6 Ear Syringing		
5.7 Fine Bore NG tube insertion		
5.8 First Aid		
5.9 Suturing		
5.10 Prescribing medication		
5.11 Chemotherapy		
5.12 Male Catheterisation		

APPENDIX 12a

Preceptors' Questionnaire
NQN Experimental Group (contd)

Skill		Confidence level 2- Not confide 5- Very confident	Comment
5.13	ECG recording		
5.14	Advanced Life support		
5.15	Verification of Expected Death		
5.16	Mentorship		
5.17	Preceptorship		
5.18	Violence & Aggression		
5.19	Customer Care		
5.20	Quality Issues		
5.21	Counselling		
5.22	Key Handler		
5.23	Supervisory Management		
5.24	Budgeting		
5.25	Research & Audit		
5.26	Pumps & Lines		

3. Has acquisition of some of these skills affected the performance of the newly qualified nurse?

Yes/ No

Please explain your answer

_____
_____
_____

4. What are your comments on nurses acquiring such skills during the pre-registration curriculum?

_____
_____
_____

Thank you for completing this questionnaire.

Please return in the Freepost envelope provided to:

Mrs. Sundari Joseph,
Lecturer in Nursing
School of Nursing & Midwifery
The Robert Gordon University
Freepost AB313
Aberdeen AB10 1GG

APPENDIX 12b

Preceptors' Questionnaire
NQN Control Group

The Robert Gordon University
School of Nursing & Midwifery

PRECEPTORS' SURVEY

Please complete the following:

1.1 Where you work: Ward/ Speciality _____

1.2 How long have you been a preceptor? _____

1.3 How many newly qualified nurses have you precepted? _____

The newly qualified nurse giving you this questionnaire acquired some "additional" skills during his/her staff development programme. These skills included some of the skills on the list below.

2. Please rate the confidence level of the newly qualified nurse in relation to each skill. If the skill is not being practised please write N/A. Add any comments in the column on the right.

Skill		Confidence level 3- Not confident 5- Very confident	Comment
5.1	IV Bolus		
5.2	Venepuncture		
5.3	Cannulation		
5.4	SC needle insertion		
5.5	Gastrostomy Tube reinsertion		
5.6	Ear Syringing		
5.7	Fine Bore NG tube insertion		
5.8	First Aid		
5.9	Suturing		
5.10	Prescribing medication		
5.11	Chemotherapy		
5.12	Male Catheterisation		
5.13	ECG recording		
5.14	Advanced Life support		
5.15	Verification of Expected Death		
5.16	Mentorship		
5.17	Preceptorship		
5.18	Violence & Aggression		
5.19	Customer Care		

APPENDIX 12b

Preceptors' Questionnaire
NQN Control Group (contd)

Skill		Confidence level 4- Not confident 5- Very confident	Comment
5.20	Quality Issues		
5.21	Counselling		
5.22	Key Handler		
5.23	Supervisory Management		
5.24	Budgeting		
5.25	Research & Audit		
5.26	Pumps & Lines		

3. Has acquisition of some of these skills affected the performance of the newly qualified nurse?

Yes/ No

Please explain your answer

_____

_____

_____

_____

4. What are your comments on nurses acquiring such skills during the pre-registration curriculum?

_____

_____

_____

Thank you for completing this questionnaire.

Please return in the Freepost envelope provided to:

Mrs. Sundari Joseph,
Lecturer in Nursing
School of Nursing & Midwifery
The Robert Gordon University
Freepost AB313
Aberdeen AB10 1GG

APPENDIX 12c

Example of Introductory Letter to Preceptors

10th January 2005

Dear

I am undertaking a project investigating "additional skill acquisition". This project is registered for a PhD at The Robert Gordon University, Aberdeen and ethical permission has been granted by Grampian Research Ethics Committee.

The newly qualified nurse, who has given you this letter, has agreed to participate in this project and as part of his/her participation I am writing to invite you to complete a short questionnaire. The questionnaire is attached to this letter and I would appreciate you completing it and posting it back to me in the Freepost envelope provided, by **Friday 24th February 2005.**

It is intended that the information gained through this research project will inform nurse educators to maintain an up to date skills curriculum.

All information will be treated confidentially and anonymity within the study will be guaranteed.

Your cooperation is important to us and your experience and skills will be valuable to nurse education in the future.

Yours sincerely,

Sundari Joseph
Lecturer in Nursing
School of Nursing & Midwifery
Tel: 01224 262975

APPENDIX 13a

Letter of Invitation to Nurse Managers

22nd November 2004

Dear

I am undertaking a project investigating

"Innovative Curriculum Design for Pre- Registration Nurse Education: Meeting Additional Skill Requirements".

This project is registered for a PhD at The Robert Gordon University, Aberdeen and ethical permission has been granted by Grampian Research Ethics Committee. NHS Grampian is nominated as the collaborating establishment and I have obtained your name and address through '*name of person granting access to collaborating establishment'* and the Professional development Department.

I have interviewed Newly Qualified Nurses working in NHS Grampian during their induction course and visited them briefly in their work environment, one month and three months later.

It is intended that the information gained through this research project will inform nurse educators to maintain an up to date skills curriculum.

As some of these newly qualified nurses are working in your area, I would like to offer you the opportunity to contribute to this study by participating in a ten minute interview with myself.

All information will be treated confidentially and anonymity within the study is guaranteed.

Please contact me through e mail or by telephone to indicate that you would be willing to participate and a mutually convenient date and time can be arranged. It is anticipated that interviews would take place between December and January 2005 at a venue convenient to yourself.

Your cooperation is important to us and your experience and skills will be valuable to nurse education in the future.

Yours sincerely,

S.Joseph

Sundari Joseph
Lecturer in Nursing
School of Nursing & Midwifery
Tel: 01224 262975 e mail: s.joseph@rgu.ac.uk

APPENDIX 13b

Interview 2: Interview Schedule Nurse Managers

Interview Schedule for Nurse Managers

Date:_____ **Code_____**

Show prompt for interviews (Appendix 10)

1. What is your opinion about nurses undertaking some of these skills depending on the area they are working in?

- Skills

Skill	Comment
IV Bolus	
Venepuncture	
Cannulation	
SC needle insertion	
Gastrostomy Tube reinsertion	
Ear Syringing	
Fine Bore NG tube insertion	
First Aid	
Suturing	
Prescribing medication	
Chemotherapy	
Male Catheterisation	
ECG recording	
Advanced Life support	
Verification of Expected Death	
Mentorship	
Preceptorship	
Violence & Aggression	
Customer Care	
Quality Issues	
Counselling	
Key Handler	
Supervisory Management	
Budgeting	
Research & Audit	
Other Skills	

APPENDIX 13b

Interview Schedule Nurse Managers (contd)

2. What would be your view on the acquisition of some of these skills during the pre-registration period?

Yes/No	Comment

3. Were you aware that some newly qualified nurses working within the department had acquired some of these skills during the pre-registration period?

Yes/No	Comment

4. If student nurses acquire all the essential practical & technical skills required for the first 12 months of clinical practice, during a pre-registration programme, are they better equipped & fit for practice & purpose?

Yes/No	Comment

5. How do you foresee the role of the newly qualified nurse developing in the next 5yrs?

Comment

APPENDIX 13c

Letter to invite Nurse Manager Participation following NQN Telephone Interview

22nd November 2004

Dear

I am undertaking a project investigating

"Innovative Curriculum Design for Pre- Registration Nurse Education: Meeting Additional Skill Requirements".

This project is registered for a PhD at The Robert Gordon University, Aberdeen and ethical permission has been granted by Grampian Research Ethics Committee.

I have telephone interviewed Newly Qualified Nurses from The Robert Gordon University, who are working in your area will follow them up by phone one month later.

It is intended that the information gained through this research project will inform nurse educators to maintain an up to date skills curriculum.

I would like to offer you the opportunity to contribute to this study by participating in a self administered questionnaire. On completion please return it in the FREEPOST envelope provided.

All information will be treated confidentially and anonymity within the study is guaranteed.

Your cooperation is important to us and your experience and skills will be valuable to nurse education in the future.

Yours sincerely,

Sundari Joseph
Lecturer in Nursing
School of Nursing & Midwifery Tel: 01224 262975 e mail: s.joseph@rgu.ac.uk

APPENDIX 14a

Letter of Invitation to Specific EI Respondents from Survey 1

20th April 2004

Dear colleague,

This is the 2nd posting of this letter

You kindly responded to a survey in 2001-2002 regarding the teaching of clinical skills in pre-registration nursing courses. In particular the survey enquired about the teaching of "additional" skills.

Your response indicated that the following "additional" skills were taught:

- Venepuncture
- Male Catheterisation
- IV bolus injection
- Cannulation

As you were one of only 11 UK universities who identified this skill acquisition in the pre-registration period during the data collection period, I am writing to request a few more details.

Any responses you give will be treated confidentially and anonymity for individuals and organisations within the study is guaranteed.

Please take a few minutes to complete the attached open-ended questions to assist the study further.

Also please let me know whether or not you have received the executive summary of the preliminary findings from me. This was sent out to respondents who gave personal contact details but not to everyone. If you wish to receive a copy please include a contact address or e mail. You may return the questionnaire by e mail or in the Freepost envelope provided by **Monday June 28th 2004**.

Thank you in anticipation for your interest to participate further with this study.

Yours sincerely,

Sundari Joseph
Lecturer in Nursing
School of Nursing & Midwifery

APPENDIX 14b

Survey 3- Example of EI Questionnaire to Specific Respondents in Survey 1

"Additional Skills" within the Pre-registration Nursing Curriculum

Question 1
The following "additional" skills were identified as being taught in your pre-registration curriculum during 2001-2002. Please answer the questions within each box.

List skills identified from survey in 2001-2002.	Any underpinning philosophy or ideas for the inclusion of these skills?	How was the decision to include these skills made?	How long have these skills been a part of the pre-reg curriculum?
Male Catheterisation Venepuncture Cannulation IV Bolus Injection			

Question 2
How is the "additional" nursing skills curriculum being developed?

Additional" nursing skills curriculum	Has there been a review of skills teaching?	Have more additional skills been added?	Is there integrated or integrative teaching & assessment?

Question 3
Clinicians teaching skills within NHS Trusts were also surveyed during 2001-2002

Which local NHS Trusts link with your pre-registration courses?

Please list as appropriate

.....
.....
.....

APPENDIX 14b

Survey 3- Example of EI Questionnaire to Specific Respondents in Survey 1

3A Is there an expectation that nurses qualifying from your courses and gaining employment within these Trusts practise these skills immediately?

Yes/No

If not, please specify why?

.....
.....
.....

3B Do nurses gain exemption from Trust based training on these skills?

Please circle which applies:

Yes - If Yes, do you agree with this practice?

.....
.....
.....

No - If No, what are your views about not granting exemptions from Trust based skills training related to "additional" skills?

.....
.....
.....

Don't Know

Question 4 Any further comments on this subject?

.....
.....
.....

Please return the completed questionnaire by e mail or in the Freepost Envelope provided by

Monday May 10th 2004:

Mrs. Sundari Joseph
Lecturer in Nursing
The Robert Gordon University
Faculty of Health & Social care
Garthdee Campus
Garthdee Road
Aberdeen AB10 7QG
E mail s.joseph@rgu.ac.uk Tel: 01224 262975

APPENDIX 14c

Example of Letter for 2ND Posting of EI Survey 3

20th April 2004

Dear colleague,

This is the 2nd posting of this letter

You kindly responded to a survey in 2001-2002 regarding the teaching of clinical skills in pre-registration nursing courses. In particular the survey enquired about the teaching of "additional" skills.

Your response indicated that the following "additional" skills were taught:

- Assessing
- Leadership
- Teaching

As you were one of only 11 UK universities who identified this skill acquisition in the pre-registration period during the data collection period, I am writing to request a few more details.

Any responses you give will be treated confidentially and anonymity for individuals and organisations within the study is guaranteed.

Please take a few minutes to complete the attached open-ended questions to assist the study further.

Also please let me know whether or not you have received the executive summary of the preliminary findings from me. This was sent out to respondents who gave personal contact details but not to everyone. If you wish to receive a copy please include a contact address or e mail. You may return the questionnaire by e mail or in the Freepost envelope provided by **Monday June 28th 2004**.

Thank you in anticipation for your interest to participate further with this study.

Yours sincerely,

Sundari Joseph
Lecturer in Nursing
School of Nursing & Midwifery

APPENDIX 15

Conference Presentations

Presentation 1

Nurse Education Tomorrow Conference, 3rd -5th September 2002 Durham
Submission under the theme of "Researching Education"
Title of paper: "Pre-registration skills for tomorrow's nurses"

Presentation 2

Submission to RCN International Nursing Research Conference, 7th - 10th March 2005, Belfast
Title of Poster: "Innovative Curriculum Design for Pre-Registration Nurse Education: Meeting Additional Skill Requirements"

Presentation 3

Submission to Enhancing the student experience in Scottish Higher Education, QAA Conference, 23rd March 2005, Dundee University
Title of Poster: "Enhancing Students' Employability: Strengthening and Developing partnerships"

Please see attached CD ROM for presentations and posters.