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The Expectations and Experiences of Newly Qualified
Diagnostic Radiographers.

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A doctoral project report submitted in partial fulfilment of the requirements of
Sheffield Hallam University
for the degree of Doctor of Professional Studies

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Abstract

This study explores the expectations and experiences of newly qualified diagnostic radiographers during their transition into practice. This is a short, but important period in a professional's career as he or she adjusts from being supervised to becoming an autonomous practitioner. It is during this period that they enhance their competence and confidence.

This was a longitudinal study using interpretative phenomenological analysis methodology. Data was gathered from four students who participated in a focus group. This informed semi structured interviews with a further eight students who were interviewed prior to starting work and three times over the following twelve months. All the participants had undertaken a BSc (Hons) Diagnostic Radiography at the same higher education institution.

Four main themes were generated from the data; experience, fitting in, identity and supporting the transition. A high proportion of clinical education, balanced with theoretical input had developed the participants to be autonomous, reflective practitioners. However, they did find it difficult when required to take responsibility for, and assess students. During the transition process their awareness of departmental culture increased as did their professional identity. The participants wanted tailored support and found that they could ask any colleagues for advice and support and found peer support useful. An excellent practice of organised scaffolding support was identified which can be adapted for use in different areas. This helped the participants build experience and confidence.

This study brings to light the experiences of newly qualified diagnostic radiographers. The findings are open to theoretical generalizability and raise issues that may be used by academic staff in the preparation of students and managers who support newly qualified staff members. These include considering how to train and educate student radiographers in supervisory skills, how to build confidence in areas where it is difficult to gain clinical experience, and facilitating peer support in imaging departments.

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Glossary

This glossary contains an explanation of terms commonly associated with interpretative phenomenological analysis.

Double Hermeneutics

IPA involves double hermeneutics which is the researcher making sense of the participant, who is making sense of their experience. When undertaking IPA research the researcher is attempting to both see what an experience is like for someone and also try to analyse, illuminate and make sense of it.

Emic and Etic Positions

IPA requires a balance of emic and etic positions. An emic approach looks at how people think what has meaning for them from someone who participates in the culture being studied. An etic approach shifts the focus from an insider view to more science-based, analytical observation. IPA requires the researcher to stay focused on the detailed accounts of the participants whilst also stepping outside those accounts to analyse and interpret.

Hermeneutic Circle

The hermeneutic circle is concerned with the dynamic relationship between the part and the whole at different levels. For example how the word fits with the sentence or how a single episode fits within a complete life. It highlights how the meaning of the word becomes clear when it is seen in the context of the whole sentence.

Idiography

Idiography is concerned with the particular. This means that rather than making claims at a population level, research that is idiographic in nature is committed to exploring detail through a thorough and systematic analysis. Idiographic research aims to understand how a particular phenomenon has been understood from the perspective of particular people in a particular context.

Preface

This thesis is the culmination of four years of work exploring the transition into the practice of diagnostic radiography. This is an immensely important time in a professional's career as they move from being a student to an autonomous practitioner. Experiences during this period can be enhanced by well-informed academics, who prepare the students for practice, and managers who facilitate the transition. Significant findings from this research can prompt a fresh approach to both academia and support provided to newly-qualified diagnostic radiographers, ensuring that they can provide a high-quality service.

There are striking differences between the working practices of diagnostic radiography and other health care professionals, thus this research adds to the current body of knowledge gathered with other professional groups. It was initiated following the observation of tremendously different practices between two hospitals which amalgamated to form one National Health Service Trust. This led to questioning whether there is a best practice for supporting newly qualified staff members.

The introductory chapter provides a background to the study. Firstly it explains why the transition into practice is an important period in a persons' career. This is followed by historical and contextual information about diagnostic radiography as an emerging profession and in doing so highlights how diagnostic radiography differs from other professions. Finally the chapter discusses available support mechanisms.

The second chapter introduces research on the experiences of newly qualified practitioners. There is no literature currently available focussing specifically on the experiences of diagnostic radiographers. Therefore, the review draws on knowledge from other professional groups, primarily nursing and occupational therapy. Towards the end of the chapter a discussion incorporates relevant information from diagnostic radiography literature into the findings of the review.

The conceptual framework, which was used to provide a framework for the research process is discussed in Chapter 3. This is situated learning in communities of practice. Communities of practice are a popular concept in health care education, with situated learning being a method by which people become part of a community of practice. Newcomers move from legitimate peripheral participation to become full members of a practice which is a journey that newly qualified practitioners take.

Chapter 4 provides a rationale for the selection of interpretative phenomenological analysis (IPA) as a methodology for the study. This increasingly popular methodology was used to closely examine the lived experience of a small number of participants.

In keeping with IPA, the results are presented in Chapter 5 separately from the discussion in the succeeding chapter. The results are presented in themes with quotes interwoven with analytical comments. The discussion in Chapter 6 then synthesises the results with existing literature to present a vibrant discussion.

The thoughtful self-awareness presented in Chapter 7, as a reflexive account, is an essential component of this thesis. For a diagnostic radiographer with both managerial and academic experience it was imperative that biases and presuppositions were brought to light to ensure that any impact on the research process was acknowledged.

Drawing the thesis to a conclusion, the final chapter brings together the findings of the research and answers the question 'what are the expectations and experiences of newly qualified diagnostic radiographers?' In doing so it raises implications for practice and recommendations for further research.

Acknowledgements

I am grateful to the participants of this study, and feel privileged to have gained an insight into their lives, without whom this research question would not have been answered.

My gratitude goes out to my husband Graham and family who have supported and tolerated this venture. Without this support completing this project would not have been possible. To my children Dan and Chris who kept me grounded in reality with the thrills and tribulations of teenage and early adult life. Thanks to my dogs Assa and Blake for their persistent demands to go out. Walking not only kept me fit but also proved to be an excellent way to synthesise information.

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Chapter 1 Background to the study

1.1 Introduction

This chapter provides the rationale for the study and background information about diagnostic radiography including aspects of education and training. It discusses the unique working environment of a diagnostic radiographer and finally the support mechanisms for newly qualified health care professionals.

1.2 Rationale

Early experiences in a profession can influence the journey a career takes and its longevity (Smith and Pilling 2007). The transition from student to practitioner can be a difficult, stressful, but exciting period. Many authors report the seminal work by Kramer (1974) as first highlighting the concept of reality shock experienced by newly qualified nurses in the United States of America. She identified that nurses found themselves inadequately prepared for their new role, which made the transition difficult, and resulted in a high attrition rate from the nursing profession. Although there have been changes to both the education of health care professionals and health services, reality shock is still reported to be an issue for both nurses and other allied health professionals in several different countries (Morley, Rugg and Drew 2007; Agllias 2010; Higgins, Spencer and Kane 2010; Procter et al 2011). Considerable funding and research has been invested into providing support for the transition into practice of nurses and other health care professionals. However, limited information is available pertaining to diagnostic radiographers. Before being able to understand the experiences of diagnostic radiographers it is important to understand who, or what is a diagnostic radiographer.

1.3 Who or what is a diagnostic radiographer?

Following the discovery of X-radiation the first people to use this technology for producing diagnostic images were photographers, electricians and physicists as well as people from the unskilled sector (Lewis et al 2008). There gradually became a division of labour between the medical professional, who claimed to have expertise in interpreting results with the ability to integrate these results into the clinical process, and those who produced the images. The dominance of the medical radiologists, over the radiographers, who produced the images thus evolved (Lewis et al 2008). Diagnostic radiographers contribute to this by taking a passive role and lacking assertiveness, which allows others to wield power and authority over them (Yielder and Davis 2009). The fight for professional recognition is hampered by feelings of subordination and the 'just the radiographer' syndrome which leads to a low self-esteem, inferiority complex and apathy (Lewis et al 2008; Yielder and Davis 2009). There also appears to be a self-blame culture in diagnostic radiography where, out of concern for their reputation, radiographers take the blame for errors or poor service, such as keeping patients waiting (Strudwick, Mackay and Hicks 2013). The increase in technology used by the profession has decreased the dominating relationship as radiographers' competency in operating technology has increased (Murphy 2006). The more recent introduction of digital radiography has further reduced this imbalanced relationship as images can be viewed remote from where they are produced. This has reduced the interaction between radiographers and radiologists in some areas of radiography and increased the autonomy of radiographers. Therefore, the culture into which the diagnostic radiographers enter, which has a history of their profession being inferior to radiologists and other medical practitioners, is changing (Strudwick, Mackay and Hicks 2013).

Diagnostic radiography is at the heart of modern medicine (Society of Radiographers 2013c), and is a fast moving, continually changing profession (National Health Service careers 2013). Although vital to modern health care, diagnostic radiographers enter a profession which is poorly understood by both the public and other health care professionals (Cowling 2008, 2013). In 1944 radiographers were viewed as 'just

someone who took pictures of people's insides' (Dinsmore 1949 in Bentley 2005 p. 49), and more recently as 'button-pushers' (Coombes et al 2003). Radiography achieved professional recognition in the UK in the early 1960s, but it is still perceived by some as a supervised technical role (Nixon 2001). A paper published in the Radiography journal in 1944 opened by saying *"I think you will agree that the primary function of the radiographer is to be of the utmost possible service to the radiologist"* (Furby 1944 in Bentley 2005 p.47). A more up-to-date definition of the role of a radiographer is *"to care for the needs of the patient whilst producing high quality diagnostic images"* (Williams and Berry 2000 p. 36).

Radiography is an emerging profession which, according to Yelder and Davis (2009), is struggling to meet the criteria for a profession. Indeed in many countries it remains unrecognised as a profession (Cowling 2013). In the International Standard Classification for Occupations radiographers are not recognised, they are listed as operators, medical X-ray equipment (International Labour organisation 2004). Freidson (2001) saw professionalism as an occupation that has control of its own work. This raises the issue of autonomy. There is a lack of functional autonomy when legislation necessitates adherence to routine and protocols which promotes a workplace culture of conformity and discourages creativity and flair (Sim, Zadnik and Radloff 2003; Sim and Radloff 2009). This has impacted on the professional identity of diagnostic radiography. Liaschenko and Peter (2004) suggested that while nursing meets many of the criteria for a profession, it does not have autonomy, and never will have the ability to control its own work. The radiography profession is in a similar situation to nurses in their relationship to the medical profession who generally maintain control over the work environment (Lewis et al 2008; Yelder and Davis 2009). In a discussion about whether social work should be classed as a profession O'Neill (1999) suggested that professional identity stemmed from the acquisition of additional skills, training, and education and required a firm body of knowledge. When defining professionalism within the 'built environment', Hughes and Hughes (2013) also emphasised the need for a body of knowledge, and questioned the extent to which the profession can shape and control their practice. The body of knowledge, for radiographers, in the past, has

been shaped by radiologists and medical physicists, which arguably has reduced the credibility of radiography as a profession (Nixon 2001).

Developing the professional identity of a diagnostic radiographer is a gradual process. Pre-registration, undergraduate education is a key period for identity formation, because it is during this period that a person starts to be socialised into a profession. However, professional identity, in an individual, is constantly changing and it starts before training commences (Johnson et al 2012). This is because previous life experience impacts on professional identity (Lordly and MacLellan 2012). There is ongoing identity construction and deconstruction throughout educational experience (Johnson et al 2012) and professional identity can be developed as an individual develops their career (Ohlen and Segesten 1998). Continuing education and training shapes the trajectory of professional identity (Johnson et al 2012). Thus professional identity formation progresses throughout working life as competence is built and role extended (Nystrom 2009). Education remains a key factor in raising the status of diagnostic radiography (Furby 1944 in Bentley 2005; Snaith and Hardy 2007; Sim and Radloff 2009).

1.4 The education and training of diagnostic radiographers

The first training for diagnostic radiography was purely practical, apprenticeship style of training undertaken in hospitals (Bentley 2005). Eventually this was controlled by the College of Radiographers but remained hospital-based, with students being attached to an imaging department and attending a school of radiography, which provided the theoretical aspects of the course (Pratt and Adams 2003). Imaging departments took ownership of their students and integrated them into the community of practice as a valued member of staff (Harvey-Lloyd, Stew and Morris 2012). Radiography was the last major health profession to move to an all graduate entry (Nixon 2001). After considerable struggle this was finally achieved in 1993 and it is now well established in higher education (Price 2009).

Higher education establishments integrate interprofessional education (IPE) into diagnostic radiography and other health and social care professions (Milburn and

Colyer 2008). The World Health Organisation (1988) first reported the need for professionals to learn together to improve their competence for the benefit of health care. IPE occurs where two or more professionals learn with and about each other, which can take place pre, or post registration (Centre for the Advancement of Interprofessional Education 2014). The purpose of IPE is to improve interprofessional collaboration and thus patient care (Reeves et al 2013).

One of purported values of interprofessional education is that it supports the identity of professions allowing them to be presented positively (Barr and Low 2011). IPE in undergraduate health courses is widespread, but there are still limited studies on which to base its effectiveness (Reeves et al 2013). One systematic review found that although IPE enabled knowledge and skills necessary for collaborative working to be learnt; it was less able to positively influence attitudes and perceptions towards others in the service delivery team (Hammick et al 2007). There is more indication for the positive impact on health care of post-registration collaborative interventions (Zwarenstein, Reeves and Perrier 2005), which suggests that it could be of benefit during the transition into practice.

The clinical experience of undergraduate students varies depending upon the higher education institution they attend (Harvey-Lloyd, Stew and Morris 2012). Whilst some may remain in one hospital, others rotate around different ones. When a student is allocated to one particular hospital there is a sense that staff members take ownership of that student and integrate them into the community of practice. Spending a sustained amount of time in the same clinical environment supports the professional socialisation of an individual and prepares them for practice. Thus the model of clinical education will impact on the transition into practice. The Society of Radiographers (2011) stressed the need for timely and effective teaching, learning and assessment and suggest approximately 50% of each training programme be clinically based but do not stipulate the mode of delivery. Clinical education is seen as an essential component of undergraduate education for health professionals. Lekkas et al (2007 p. 19) defined clinical education as *'the supervised acquisition of professional skills'*. It is essential for the development of clinical skills and attitudes and for the integration of

theory and practice (Strohschein, Hagler and May 2002; Thomas, Penman and Williamson 2005). The cost of clinical education and the limited availability of clinical placements play a part in different models of clinical education being developed. A literature review examining different models of clinical education with various allied health professionals, involving student to educator ratio, showed that there was no 'gold standard' model of clinical education (Lekkas et al 2007).

The importance of the integration of theory and practice in diagnostic radiography was first raised in 1935 (Bentley 2005). During these times there was a drive to raise the status of radiographers through recognised training and education. Undergraduate curricula place an emphasis on producing self-directed, autonomous, reflective practitioners. Self-directed autonomous learners can identify their own strengths and weaknesses and thus take responsibility for their own learning and practice (Hall and Davis 1999). These critically reflective, self-directing practitioners then encounter a restrictive, target driven workplace culture. Conflict may manifest between the priorities of the department and the priorities of the individual wishing to develop their career (Hall and Davis 1999).

1.5 The working environment of a diagnostic radiographer

The working environment for newly qualified diagnostic radiographers is unpredictable. It is high pressured, target driven work where speed and efficiency is often in conflict with patient care (Whiting 2009). Although Lewis et al (2008) was referring to private practice, a culture, where the radiographer is measured by their productivity in a busy environment, can be seen in the National Health Service (NHS). The continual increase in the demand for imaging results in diagnostic radiography being a profession under pressure (Brown 2004; Harvey-Lloyd, Stew and Morris 2012).

A description of the role of a newly qualified radiographer (1950-1985) included general radiography, on call, assisting radiologists and passing own films (Decker 2009). Today the expectations and requirements for the role are much more expansive (Health and Care Professions Council 2013). Newly qualified radiographers have more to contend with, as practices that were once considered special, have now become a

first post competency (Ferris 2009). They include the ability to perform head computed tomographic (CT) examinations, and the knowledge and ability to assist in other imaging modalities for example magnetic resonance imaging and ultrasound. Qualified diagnostic radiographers also have a professional responsibility for educating, mentoring and training students and supervising assistant practitioners (Society of Radiographers 2013a).

Newly qualified staff members feel the pressure of a busy environment more acutely than experienced staff. Eraut (2000; 2007) has undertaken extensive research into learning in the workplace. He discussed different levels of cognition from routinized behaviour that was semi-conscious, and intuitive behaviour that indicates a greater awareness of what is being done. This typically involves recognition of situations by comparison of situations previously encountered and deliberative behaviour which require explicit thinking and possible consultation with others. He quoted an example of how a newly qualified nurse's survival depends on them being able to reduce their cognitive load by prioritising and routinizing during their first year of employment. He suggested that more thinking time to concentrate on the interaction with clients will be freed up as explicit routines become tacit routines with experience. This is congruent with the work of Benner (1984) who adopted the Dreyfus model of skills acquisition and applied it to nursing resulting in a scale of practice skills from novice to expert practitioner.

The rapidly changing social and health care climate has led to an increase in social awareness and high patient expectations (Buttress and Marangon 2008). Radiographers, as other professionals, need to become more responsive to the needs of the customer, those who purchase or commission the services, in today's market environment. In this competitive market, with stringent government targets, the most cost-effective practitioners are those who are highly adaptable and recognise their transferable skills (Hall and Davis 1999). As in the past, the current economic climate frequently necessitates newly qualified staff to 'hit the ground running' (Payne and Nixon 2001; Decker 2009).

Diagnostic radiographers obtain support from each other through the culture of sharing experiences (Strudwick, Mackay and Hicks 2013). Asking questions and getting information forms part of Eraut's (2007) typology of early career learning. He found that many wards did not encourage a questioning culture and there was a fear of asking a 'bad question' to which they should know the answer. This reflected the findings of others (Thomas, Penman and Williamson 2008 and Mooney 2007a). The culture of the organisation into which the newly qualified enter affects the transition (Lave and Wenger 1991). This sharing of knowledge in an imaging department creates an environment conducive to learning, where new staff members are socialised into the community of practice. However, unlike other professionals, diagnostic radiographers participate in several communities of practice such as different wards and operating theatres which may not be as nurturing.

There are different cultures in education and practice settings (Becker and Geer 1958; Eraut 2000, 2007; Sim, Zadnik and Radloff 2003). Cultural knowledge, that is, knowledge created as a social process, plays a key role in most work place practices. Much of this knowledge is acquired informally and is taken for granted as people are unaware of its influence on their behaviour (Eraut 2007). An understanding of organisational culture helps to explain experiences in social and organisational life and enables a better understanding of oneself (Schein 2010). There is no clear definition for organisational culture but it is generally about beliefs, values and ways of coping with an experience that has developed over an organisation's history (Brown 1998). Culture as a concept is 'below the surface'; it is invisible and unconscious and as such is an abstraction (Schein 2010). It manifests itself through the language, symbols and behaviours of its members (Brown 1998; Scott 2003). These shared basic assumptions, values, and beliefs that characterize a setting are taught to newcomers as the accepted way to think and feel (Schneider, Ehrhart and Macey 2013.) Therefore, as well as learning the technical skills of an occupation, newcomers need to adopt the values and norms that define that occupation in order to fit in (Schein 2010).

Argyris (1974) has written extensively about organisational behaviour. He suggested that there is likely to be conflict between the needs of the individual and the organisation. This conflict was also recognised by Becker and Geer (1958) who plotted the transformation from idealism to cynicism in medical students. The more an organisation approaches the model of formal organisation, of which hospitals are a prime example, the more individuals are forced to behave in a more suppressed, submissive way. Thus the autonomous individual fostered by universities is incongruent with the requirements of the formal organisation. This can lead to frustration and conflict as the individual, who wants control over their immediate working world, encounters restrictive policies, procedures and ritualistic practices (Kramer 1974). It has been suggested that the preparation of individuals for the workplace should include training for the handling of adjustment to authority (Argyris 1998). However it could be argued that this goes against the vision of producing an autonomous, forward thinking professional. Empowerment of the individual in the workplace is an ideal yet to be achieved. However this should still be strived for, not suppressed, as it has an exponential effect on job satisfaction and productivity (Argyris 1998; Potterfield 1999).

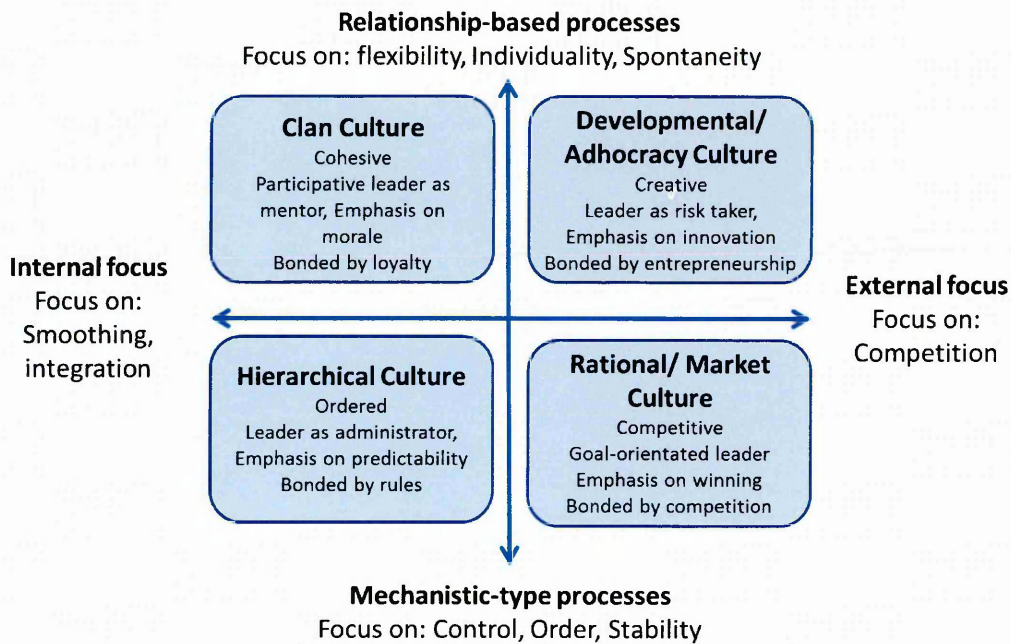
Duchscher and Cowin's (2004) initial work, ignited by a problem of a high rate of attrition in nursing in North America, explored the concept of marginalization, suggesting that attrition was a direct result of a traumatic and stressful transition. They suggested that new recruits were coming into the workplace unaware of the historical, social and political framework that underlies the institutional health care culture. Marginalization has been defined as the peripheralisation of individuals and groups from a dominant, central majority (Hall 1999). Some of the properties of marginalization identified by Hall (1999) can be applicable in this situation. Examples of these are, the risk of loss of established values, the graduate finding a 'voice' in an established environment and the dominating group having knowledge which excludes the new graduate.

Organisational culture is unique to each institution; it is socially constructed, arising from group interactions and is therefore malleable (Bellot 2011). Organisational culture can vary in strength and stability (Schein 2010.) A strong culture is found when staff values and behaviours are aligned with the organisational values and functions productively. Weak cultures have little alignment, and in these situations control is exercised through policies, procedures and bureaucracy. In the study by Jacobs and Roodt (2008) it was found that the more positive the nurses were about the organisational culture, the more inclined they were to remain in the organisation. Organisational culture also has a significant impact on quality of care and patient safety (Montgomery et al 2011). An organisation's culture is not a monolith but will have many different subcultures existing within it (Brown 1998; Tataw 2012). Subcultures can be generated by such things as ethics, religion, class and gender (Scott 2003). Organisations as large as hospitals have subcultures that form specialised areas and departments (Schein 2010). An imaging department itself has further subcultures by virtue of technology such as ultrasound and CT, and different professional groups including medical physicists, nurses and administrators.

Because there is no agreement about what culture is or how it should be studied, many different models of culture have developed (Schneider, Ehrhart and Macey 2013). These models can be used in different settings for seeing the variations that exist between cultures (Brown 1998). The one that helps to explain the situation of transition into practice is that of the 'Competing Values Framework' which can be used to assess culture in a healthcare setting (Jacobs et al 2013). This model first emerged from the work of Quinn and Rohrbaugh (1983). They draw on the nature of transactions associated with information exchange to identify four generic cultures; market, adhocracy, clan and hierarchy (Brown 1998) (Figure 1 overleaf). Their assumption was that transactions are important to an organisation and it is through these that status and power are wielded. This framework has been adapted over time but essentially 'market' is a rational culture focussing on objectives, with the person in charge being decisive, and compliance of the employees encouraged; 'adhocracy' authority is held based on charisma, and employees are compliant to organisational values; clan is a consensual culture based on cohesion and morale, with power an

informal status, and employees comply with agreed decisions; and finally hierarchy which executes regulations and control with employees being kept under control by surveillance (Brown 1998).

Figure 1 Competing Values Framework



Adapted from
Jacobs et al 2013

Other authors use competing values framework in a healthcare setting. A longitudinal study by Jacobs et al (2013) identified clan culture as the most dominant type of senior management team culture in English NHS acute trusts between 2001 and 2007. More recently rational culture has become more dominant, possibly due to changes in NHS policy such as increased patient choice (Jacobs et al 2013). However, when Siourouni et al (2012) reviewed the literature they found no dominant culture in public hospitals but did identify a correlation between employee satisfaction and cultural strength, and recognised that the majority of hospitals had weak organisational culture. Sovie (1993) discussed hospital culture with a focus on creating cultural change in order to meet the ever changing societal needs for healthcare. She suggested that hospitals create strong cultures that were no longer functioning due to changing times and demands on the service. For hospitals to succeed they should create a partnership for care, redesign

the roles of staff and empower staff, along with a commitment to lifelong learning (Sovie 1993). She particularly promoted interprofessional working and valuing the contribution of each staff member.

Hartnell, Ou and Kinicki (2011) undertook a meta-analysis to test the relationship between three of the cultures in the competing values framework, clan, adhocracy and market for organisational effectiveness. They found that clan cultures were most strongly associated with positive employee attitudes, and service quality; and that market culture was associated with innovation and financial effectiveness. Case study research undertaken in Australia indicated that clan type cultures were more likely to share knowledge in a collaborative, friendly, non-competitive environment and that market type cultures, focusing on competition and achievement, were less likely to share knowledge (Wiewiora et al 2013). A clan type culture can be seen in diagnostic radiography where staff members work well together and are willing to share experiences (Strudwick, Mackay and Nicks 2012, 2013). A hierarchical culture is also found within imaging departments where radiographers wait for instruction from radiologists even when they are aware of the appropriate action to take (Murphy 2006). There will have been an adhocracy culture in the early pioneers of the profession which has been stifled in today's climate of litigation (Ferris and Winslow 2009).

1.6 Support for newly qualified health care professionals

The recognition of the difficult period in a professional's career has led to many varied ideas on how to support newly qualified health care professionals. This section discusses the various issues relating to supporting newly qualified staff including different programmes, mentoring, preceptorship, and peer support.

The Department of Health (DoH) (2009) recently published guidance on how to support the early career period for nurses which they quickly updated to include allied health professionals (DoH 2010). This guidance is based on the various support mechanisms currently in place, such as the flying start programme in Scotland (NHS Education for Scotland 2011) and various preceptorship programmes. The Society of

Radiographers' Approval and Accreditation Board annual report 2008-9 announced the approval of their preceptorship CPD programme (Society of Radiographers 2013b). This is to support the first 18 months following qualification. Preceptorship has been explored in radiotherapy, but no evidence has been found regarding the uptake of this program within diagnostic radiography (Allen 2007; Nisbet 2008; Bolderston et al 2010). The considerable variation in delivery of support strategies makes any comparison between the programmes implausible and there appears to be no consensus regarding good practice. The literature reviews by Bain (1996) and Tan et al (2011) found there was a lack of definite concept and no clearly identified strategy for the successful implementation of preceptorship. One prevailing theme from these reviews was that time and lack of managerial support inhibited the success of a preceptorship programme. It has been identified that preceptorship can be time-consuming and adds to an already busy workload (Beecroft et al 2006; Solowiej et al 2010). Many believe that a formal approach is necessary in order to alleviate any inconsistencies in support received (Lennox, Skinner and Foureur 2008; Whitehead et al 2013). However, there is an array of meaning and usage of the terminology pertaining to support such as mentoring, preceptorship and supervision. Mentoring has its historical roots in Homer's *Odyssey* and at least three different types of mentoring; classical, institutional and formal have developed. Preceptorship originated within religious practices in the 15th and 16th centuries in Europe. It can also be traced back to Florence Nightingale who identified the need for novice nurses to be trained by nurses who have been 'trained to train'. The term was commonly used in relation to education in medicine and dentistry and re-emerged in the 1960s to describe teaching of nurses in the clinical environment (Lennox, Skinner and Foureur 2008), with the first publications relating preceptorship to nursing starting to emerge in the 1970s.

The concepts of both mentoring and preceptorship encompass orientation into the work environment (Morton-Cooper and Palmer 1999). This can be either for students or for newly qualified staff. Yonge et al (2007) argued that the two terms, preceptorship and mentorship are used interchangeably by many academics, nurses and others involved in the discussion of the training and support of healthcare professionals and that there is much confusion over the terms. Yonge et al (2007) put

forward the argument that, although it might not directly affect the practitioners, research and literature reviews are compromised by the lack of clarity and confusion and that this will inhibit any development of these supportive roles due to the lack of sound evidence. Contrary to this, Morton-Cooper and Palmer (1999) stated that clarification is required by the practitioners in order to effectively plan and prepare people for the relationship and to be able to determine the success of the outcomes.

All the definitions agree that preceptorship is a short term relationship with a specific end date. The length of a preceptorship relationship is a topic for debate. Farrell and Chakrabarti (2001) reviewed a 4 month period of preceptorship. Harbottle (2006) discussed two programmes; one ran for 3-6 months and the other for 12 to 18 months. Lee et al (2009) evaluated a programme lasting 3 months and Morley (2009b) 12 months. The Scottish 'Flying Start' programme lasts for two years (Solowiej et al 2010). In the survey by Hardyman and Hickey (2001), which focused on what newly qualified nurses expect from preceptorship, most respondents thought that they would require preceptorship for 6 months. Only 7% wanted it for longer. Smith and Pilling (2007) found that attendance at their support programme, consisting of multi-professional group discussion sessions, declined after 6 months. This suggests that there is a reduction in the needs of the new staff after this period. Harbottle (2006) suggested that the preceptorship programmes should run into clinical supervision eliminating the need for defined time scale, and that the time should be dependent upon the needs of the department and the preceptee. Based on work with stakeholders, the DoH (2010) recommends 6 to 12 months preceptorship, containing a blend of theoretical learning and supervision. The Nursing and Midwifery Council (2006) recommend 4 months, but recognise that this may vary according to the needs of the individual.

Bain (1996) concluded that the added pressure and workload placed on preceptors should be acknowledged by managers and adequate consideration, resources and time be given to the development and the implementation of a preceptorship programme. Thus it can be seen that conducting support programmes can be costly. However, not taking time to provide one can be even more costly in administrative and staff time in counselling, on-going performance issues and decreased retention (Hom 2003). The

benefits of a preceptorship programme are highlighted as having someone to turn to (Farrell and Chakrabarti 2001; Beecroft et al 2006; Morley 2009a); helping newly qualified staff to reflect on their practice and increase their confidence levels (Morley 2009b; Solowiej et al 2010); reduce medical errors (Lee et al 2009); and increase job satisfaction (Halfer, Graf and Sullivan 2008).

Designs of preceptorship can include small groups set up to aid reflection on practice which will foster peer support (DoH 2010). Peer support can offer a sense of belonging and provide positive feedback (Solomon 2004). It is well established for use in behaviour change, often in the form of self-help groups for example for alcoholism or gambling. It is also used in the development of new skills such as breast feeding (Jolly et al 2012) and for coping with medical or mental health issues (Solomon 2004; Ieropoli et al 2011). Siegel (2000) suggested that peer relationships could be used as an alternative to mentoring for personal and professional growth. Peers are more likely to identify with contemporary situations than more established staff (Parker, Hall and Kram 2008). Literature on peer support for newly qualified staff is limited. It is advocated in the field of clinical health psychology by Morris and Turnbull (2004) and Kapp and Lam (2007) who reported value in sharing experiences, informal peer supervision and aiding reflection. It also helps them to develop a sense of identity in their new role and reduce feelings of isolation (Morris and Turnbull 2004). Chenot, Benton and Kim (2009) recognised that it has some value for workers early in their career, and report that it may have a significant impact on retention in a profession. It can also support career development (Parker, Hall and Kram 2008). Peer support links to social learning theory in that individuals can learn from a credible role model and from interaction with peers who are coping well in a situation (Solomon 2004).

Self-confidence, and moral support from colleagues, help individuals to proactively seek out learning opportunities in the workplace. Eraut (2000) suggested a triangular relationship between challenge, support and confidence as factors which affect learning in the workplace. For novice professionals to progress their work they need to be challenged without being so daunted that it reduces their confidence (Eraut 2007). Thus a step-by-step approach to learning and development should smooth the

transition of newly qualified practitioners. Vygotsky was a Russian psychologist (well known to early years educators) whose teachings can be adapted to the learning and development of adults. His emphasis was on social interaction in learning and he is known for his concept of the zone of proximal development, which explores the relationship between learning and development (Vygotsky and Cole 1978).

The zone of proximal development is the gap between what someone can do unaided and what they might be able to do with support (Daniels 2005; Smidt 2009). This support may come in the form of an expert who helps the novice to take the steps to move from dependence to independence (Daniels 2005; Smidt 2009). Learners were more likely to reach their potential when they were supported by those with whom they shared cultural tools, for example a common language (Bruner 1996; Smidt 2009). Scaffolding, as a form of structured support, was introduced by psychologist Jerome Bruner (Fleer 1990). With scaffolding, support is gradually removed, as mastery of the task is achieved (Bruner et al 1956; Smidt 2009). Vygotsky suggested that a person can only imitate that which is within their development level (Vygotsky and Cole 1978). Thus, learning and removal of support should be matched with the individual's development level (Vygotsky and Cole 1978).

1.7 Summary

It has been recognised that the transition into practice can be a difficult period which may influence the journey a career takes. A state called transition shock has been found in some professions, where the newly qualified staff thought that they were prepared for practice but found that they were not (Kramer 1974). There are many support mechanisms in place to support new staff during this period of learning and adjustment. Some are designed for all health care professionals, whilst others are targeted specifically at radiographers (Society of Radiographers 2013b). Despite the various programmes of support there remains a lack of clarity about best practice, and what support can realistically be provided during this period of learning and development.

Learning and development starts during undergraduate education, thus experience as an undergraduate impacts on the transition into practice. The exposure to clinical experience varies between courses with the recommended level being 50% of a training programme (Society of Radiographers 2011). The exposure to professional practice influences professional identity.

The development of professional identity starts as a student and further develops during the transition into practice. Diagnostic radiography is a relatively new profession which is still struggling for recognition (Yielder and Davis 2009). Newly qualified practitioners, who have been trained in the skills of reflective practice, self-direction and autonomy, may encounter a restrictive, target driven workplace culture.

Different cultures are found within the practice setting. These cultures impact on the experience of newly qualified staff. They may find a conflict between their needs and values, and those of the organisation (Argyris 1974). The culture of the organisation also influences the support provided and the opportunity for learning and development.

Gaining an understanding of expectations and experiences of diagnostic radiographers during their transition from student to qualified practitioner will help to identify the needs of this group of professionals during a period of change. This period is very small

but important as it has the potential to influence future career decisions. There is no recognised problem with attrition from the profession of diagnostic radiography, and none for the foreseeable future, therefore the outcome of this project was not to affect attrition. The study will highlight best practices of transition support in the high pressure, unpredictable clinical environment of diagnostic radiography. As this is a qualitative study, using a small number of participants, it is not intended to provide a broad picture of current practices regarding support mechanisms.

All patients expect to be treated by competent members of staff. There is a spectrum of proficiency and this study highlights the feelings of the new qualified diagnostic radiographers about their confidence on entering the profession. This provides information for the planning of higher education courses. The participants were working in a variety of hospitals and this study gives an insight into how the newly qualified diagnostic radiographers received their integration into the work environment. As such this thesis may be of interest to staff and managers in individual imaging departments who support newly qualified staff, and inform future guidance from the Society of Radiographers.

The aim of this thesis is to explore the expectations and experiences of newly qualified diagnostic radiographers during their transition from student to practitioner.

Chapter 2 Literature review

2.1 Introduction

This chapter begins by discussing the research question ‘What are the expectations and experiences of newly qualified diagnostic radiographers during their transition from student to practitioner?’ Through a structured literature review it will explore what is currently known about the experiences of newly qualified practitioners during the transition into practice from their perspective. Careful selection and examination of this relevant body of literature, through critical appraisal and meta-ethnography, will test the research question to determine its relevance and significance. Due to the lack of literature specifically relating to the transition from student to diagnostic radiographer information is drawn from other professional groups. Connections to diagnostic radiography will be integrated into a discussion towards the end of the chapter. Themes generated from the literature are learning and development, organisational culture, professional identity and support which are discussed under separate headings.

2.2 The research question

The research question is important in determining the direction of the literature review. The main interest in this literature review is the transition from student to practitioner from the view point of the individual involved. This is because they are best placed to describe and interpret their experiences and identify what has assisted their transition and what factors have hindered their integration into the workforce. Thus the research question is ‘what are the experiences and perceptions of newly qualified practitioners during their transition from student to practitioner’. How people perceive their experience is influenced by their expectations, therefore it is important to review the expectations that students, about to qualify, have, regarding their impending new role.

The initial period of employment for many health care professionals is referred to as preceptorship. This is the period of support that a newly qualified practitioner receives

on entering the workforce. Several preceptorship programmes have been established and evaluated and many professions and governing bodies have their own guidelines for preceptorship. A plethora of papers are available that review the success or failure of preceptorship programmes. These papers mainly focus on the aspect of supporting the individual in various forms. No papers have been found to date that have come to the conclusion that the formal preceptorship programmes reviewed were not necessary. This is not surprising when considerable time and funding will have been invested into these programmes. Most of the research into preceptorship has included the views of the preceptors, or other senior staff, rather than focussing purely on the views of the preceptee. This literature review focuses on the broader experiences of the newly qualified staff rather than narrowing the search down to support mechanisms. In keeping with seeking out the in-depth views of the individual the focus of the literature review is on qualitative findings that view this transition period from the perspective of the newly qualified professional. However some have adopted a survey approach in order to obtain a wider participation which was used to supplement the themes generated by the qualitative research. A meta-ethnographic approach was utilised in this review which is congruent with the interpretative paradigm. This approach, first defined by Noblit and Hare (1988) to synthesise ethnographic studies, has now been adopted for use across all qualitative studies (Aveyard 2010). The approach, described by Atkins et al (2008), provides a structure to enable a high level of analysis across the range of qualitative studies and then integrate the findings of the mixed methods studies and surveys.

2.3 Literature search strategy

Three main databases were used to search for relevant literature, CINAHL, Medline and Scopus. The Boolean/phrase search terms newly qualified AND (experience* or reality shock or adaptation, psychological or attitude of health personnel) were used. Being mindful of the descriptive titles frequently used by qualitative researchers, 'free-text' searching was used rather than searching the titles. In addition, citation searching was undertaken of the retrieved papers. A further 2 papers were recommended by

professionals with an interest in the field. The search strategy can be seen in Table 1 below.

Table 1 Search Strategy

Database name	Key words/phrases used	Search limits	No. results
CINAHL Bibliographic database for nursing and allied health	newly qualified AND (experience* or reality shock or adaptation, psychological or attitude of health personnel)	English Language Year 2000 onwards	176
MEDLINE Medical information on medicine, nursing, dentistry, veterinary medicine, the health care system and pre-clinical sciences.	newly qualified AND (experience* or reality shock or adaptation, psychological or attitude of health personnel)	English language Year 2000 onwards	183
Scopus A multidisciplinary database with comprehensive coverage of all Science including health and psychology	newly qualified AND (experience* or reality shock or adaptation, psychological or attitude of health personnel)	English language Year 2000 onwards	89

The articles were sorted in order of relevance and then reviewed manually for their suitability for inclusion in the review.

2.4 Inclusion and exclusion criteria

As found by Atkins et al (2008), the poor quality of some of the abstracts, or in some cases a lack of abstract, meant that most of the text was reviewed in making the decision whether it should be included in the review. Being mindful of the focus of the literature review on the perceptions of the individual, only those research papers that

sought out these perceptions were included. Any papers where the opinions of other members of staff were integrated with the perceptions of the newly qualified were excluded. The search was limited to professionals working in the western world in the field of health and social care where the education and working conditions bear some resemblance to each other. What is unclear, and not reported in most papers, is the clinical element incorporated into the higher education of the professionals. Only papers published from the year 2000 onwards were included as there are continual changes in both the educational system and the health and social care environment. Only papers published in English were reviewed for practical reasons. A table summarising the papers included in the review can be found in Appendix 1. As none of the papers found were specifically focussed on diagnostic radiography, relevant literature pertaining to this profession is included in order to ensure that this chapter remains relevant to the thesis.

2.5 Method of critical appraisal

There is no absolute consensus regarding the criteria for critical appraisal of qualitative papers, and some debate about the exclusion of those that are methodologically flawed (Jones 2004). Atkins et al (2008) suggested that the critical appraisal of study quality is not essential in meta-ethnography because short comings in the methodology emerge during synthesis. However, a thorough critical appraisal of each of the included studies was undertaken with the assistance of the Critical Appraisal Skills Programme (2013) quality assessment tool to facilitate an initial systematic review of each paper. An example of this can be seen in Appendix 2. Each article was also appraised using a critical framework which expanded the appraisal with more probing questions and facilitated further structured review of each paper (Appendix 3) (Moule et al 2003). In meta-ethnography, the interpretative approach to the synthesis of qualitative papers, aims to preserve the interpretative properties of the primary data (Atkins et al 2008), and extract and synthesis key concepts from primary papers (Campbell et al 2003). The method involves examining quotes and interpretation found in the results sections followed by examining the researcher's interpretation of their results which is found in the discussion within the qualitative studies (Campbell et al

2003; Atkins et al 2008). Methodological shortcomings emerged during this synthesis process and are discussed below. Papers were not excluded solely on their quality.

All the included papers gave clear information about their participants and selection criteria. Most authors identified their data collection method, two used a combination of focus groups and interviews, ten used interviews alone, three studies used interviews in combination with audio diaries, questionnaires and journal entries; and four studies used questionnaires. The quality of the reporting of the data analysis was inconsistent. Some gave a clear description of their analysis. Four of the phenomenological studies specified using an approach to analysis suggested by Colaizzi (1978), others stipulated that they used a particular method without going into detail such as 'constant comparative method' (Agllias 2010). Others merely acknowledged the tools that they used such as NVivo to create themes (Kelly and Ahern 2009).

Each paper was read several times to enable familiarity with the contents. The main themes have been extracted and the information tabulated along with other information such as the profession, country of origin, number of participants and methodology. Triple hermeneutics became apparent during the process of making sense of the researcher making sense of the participants making sense of their experience. The analysis was limited by only having the extracts selected by the authors to work with, rather than the full view of the participants' experience. It was at times difficult to decipher the participants' experience from the interpretation by the author, and to what extent bias played a part in the reporting of the research. Meta-ethnography is primarily for qualitative studies. Five of the publications included in this review contained data from quantitative questionnaires. The approach with these was to review the qualitative findings first and then integrate the data from the questionnaires into the developed themes.

2.6 Analysis of the literature

The literature search produced a total of 24 papers to review. However two of the papers are reports of the same study. Therefore they are being treated as one paper.

Bearing in mind that the order in which the transcripts are compared can influence the resulting synthesis (Atkins et al 2008), the findings were translated into themes by firstly comparing by profession, followed by comparing country of origin and finally chronologically. Four main themes emerged; these were learning and development, organisational culture, professional identity and support. As is common when reporting qualitative research, the themes in the literature were mainly given descriptive terms, thus the emerging themes are interpretations of the contents of the themes presented by the various authors.

Most of the literature has poor reporting of contextual factors and this made it difficult to take these into consideration. Some of these are very important such as the amount of time that was spent gaining clinical experience as a student and the amount of rotation between work placements as a newly qualified member of staff. Only one of the papers reported on the number of clinical hours required as a student occupational therapist (Toal-Sullivan 2006). One of the aims of meta-ethnography is to retain the rich context of the data and this was made difficult by the limited reporting of contextual factors (Atkins et al 2008).

Not surprisingly the majority of the studies found were from the nursing professions (17), two papers are from occupational therapists, the remaining are from junior doctors, midwives and social workers. Geographically the studies originated from Australia, looking at nurses, midwives, occupational therapists and social workers, one study on occupational therapists from Canada, midwives and nurses from the Republic of Ireland; doctors, nurses and occupational therapists from the United Kingdom (UK) and nurses from the United States of America (USA), Denmark and Norway. The studies spanned quite evenly between the years 2000 and 2013. Of those that specified a methodology, seven undertook phenomenological studies and three grounded theory. Six of the studies were longitudinal either pre and post qualification or over a period of time following employment. This range of studies gave a comprehensive, comparative overview of the experiences of newly qualified practitioners. The review is presented under the themes generated from the literature.

These are learning and development, organisational culture, professional identity and support.

2.7 Learning and Development

Many participants were delighted with their new post and had a positive experience (Jackson 2005; Toal-Sullivan 2006; O'Shea and Kelly 2007; Bjerknes and Bjørk 2012; Thrysoe et al 2012). This is reflected in an online survey of recent graduate radiographers in the UK undertaken by the Society of Radiographers (2012). Although only achieving a response rate of 13%, this gauged the opinions of 468 individuals and 86% felt prepared for their first job. However, transition remains a stressful time for some newly qualified practitioners (Ross and Clifford 2002). In Wangenstein, Johansson and Nordstrom (2008) and Toal-Sullivan's (2006) studies, the participants experienced initial feelings of uncertainty and strangeness. Even if they were familiar with the work place, due to previous part time work or student placement, they found their new role challenging. Specific to occupational therapists and junior doctors was anxiety caused by the uncertainty or lack of clarity about their role (Toal-Sullivan 2006; Brennan et al 2010). The study in Ireland by O'Shea and Kelly (2007) found that being new caused physical stress for some of their participants who were 'scared, nervous or daunted'. The junior doctors expressed their feelings in the stronger term of 'terrifying' (Brennan et al 2010). These feeling lasted only a week or so for most, slightly longer for some.

The clinical experience gained as an undergraduate affects the confidence and competence of newly qualified professionals, although the amount of experience was not specified in most reports, the impression was that some had little or no hands-on clinical experience as they described being assessed in skills laboratories in university and how this was different from real life (Pellico, Brewer and Kovner 2009). In the online survey of new graduate diagnostic radiographers clinical placement experience was cited as having a positive impact on their preparation for practice (Society of Radiographers 2012). The social workers who had undertaken experienced-based learning felt well prepared clinically, and felt confident, particularly in their team

working skills (Agllias 2010). At the other end of the spectrum one nurse from the United States felt unprepared to the extent that they had to 'ask about every single thing' (Olson 2009). In some situations nurses knew the theory but lacked the confidence to act (Gerrish 2000). Interestingly the mental health nurses also felt that they had theoretical knowledge but could not find a place to use it (Rungapadiachy, Madill and Gough 2006). Eraut (2007), who highlighted the different cultures of education and practice, identified this phenomenon, and that transferring knowledge from higher education to practice settings is complex. Eraut (2004) identified the complexity involved in the transfer of knowledge, suggesting that there were five interrelated stages:

1. extracting potentially relevant knowledge
2. understanding the new situation
3. recognising what knowledge and skills were relevant
4. transforming them to fit the new situation
5. integrating the existing knowledge with the new requirements of the new situation

The mental health nurses probably were prepared for stages 1 and 3 during their training but lacked the ability to understand the new situation which inhibited the last two stages of this knowledge transfer process. The occupational therapists and junior doctors found that practice placement education facilitated the transition (Toal-Sullivan 2006; Brennan et al 2010). These professionals had the opportunity to integrate experiential learning and social learning, making them better prepared for practice. The functionality of this integration of experiential and social learning was that the events they experienced as students whilst in a practice setting which were stored initially in their episodic memory, which relates to specific experiences, were then transferred to semantic memory, relating to understanding, as they were performed (Eraut 2000). Once they were then in the workplace they were better equipped for knowledge transfer because of this understanding.

Experiential or situated learning was evident in all of the reviewed papers. 'It is only when you are in the job that you can learn the job' is the message that came across

from more than one paper (Gerrish 2000; Rungapadiachy, Madill and Gough 2006; Brennan et al 2010). Some of this was supported by learning outcomes which provided a feeling of confidence as they were 'ticked off' (Gerrish 2000; Hollywood 2011) and preceptorship or mentorship. The participants also demonstrated self-reliance and the ability to cover their knowledge deficit by reading journals and policies (Gerrish 2000). They also commented on drawing on their theoretical knowledge. The graduate participants in the study by Gerrish (2000) had the confidence to recognise their limitations and seek advice. They also had the skills to learn from reflecting on their practice. Asking questions is important for positive learning (Eraut 2007). Thrysoe et al (2012), when looking at newly qualified nurses' experiences of interacting with members of a community of practice, stressed the importance of continuous professional dialogue, as did Fenwick et al (2012). They found that a lack of dialogue lead to newly qualified nurses repeatedly asking for specific answers to their questions rather than having the confidence to seek clarification for their decisions, and midwives being chastised or ignored (Fenwick 2012). Some nurses, who entered an unsupportive environment, commented that the first thing that they needed to learn was who to ask and who not to ask (Kelly and Ahern 2009). Knowing when and how to ask questions requires special social skills (Eraut 2007). These are preferably developed as a student.

Universally nurses were unprepared for newly acquired accountability and responsibility (Gerrish 2000; Rungapadiachy, Madill and Gough 2006; Mooney 2007a, 2007b; Wangenstein, Johansson and Nordstrom 2008; Kelly and Ahern 2009; Bjerknes and Bjørk 2012; O'Kane 2012). Although the more experienced children's nurses in the study by Hollywood (2011) felt anxious about the newly acquired accountability and responsibility, they reported that this gave them a sense of ownership of their practice. For the less experienced junior doctors the additional responsibility made them question their competence and knowledge (Brennan et al 2010). The Canadian occupational therapists were also unprepared for the additional responsibility, management, decision making and supervising support workers, as they were protected from these as students, although these became easier with time (Toal-Sullivan 2006). One cause of stress brought on by individual accountability was due to

the fear of litigation and loss of registration (Gerrish 2000). The fear of increased responsibility and accountability was reduced when entering a supportive, friendly environment as identified by the deviant case in Mooney's study (2007b). There are also areas where diagnostic radiographers struggle with responsibility and accountability such as justifying request cards and working in an operating theatre (Feusi, Reeves and Decker 2006). Other areas where nurses felt unprepared were in time management and delegation (Gerrish 2000; Newton and McKenna 2007, Wangenstein, Johansson and Nordstrom 2008; Bjerknes and Bjørk 2012, O'Kane 2012). In Deasy, Doody and Tuohy's survey (2011) only 30% of 98 respondents felt that they had managerial skills pre-registration and although only based on 21 responses 33% had not developed these skills after six months. The occupational therapists in the study by Toal-Sullivan (2006) who were initially overwhelmed by their workload, developed coping strategies and time management skills and became more efficient over time. Eraut's research (2007) differentiated between instant routinized behaviour, intuitive and analytical behaviour. He suggested that when tasks become routinized it frees up time for newly qualified staff.

Eraut (2007) identified tackling challenging tasks as one of the work processes that has learning as a by-product. The nurses in Newton and McKenna's study (2007) who were on a graduate programme, found that they learnt through challenging situations, by putting theory into practice, and being able to apply knowledge and skills. Others in a supportive situation also found that they learnt and gained confidence from challenging situations, viewing them as learning opportunities (Wangenstein, Johansson and Nordstrom 2008). These people had a 'step-by-step' induction rather than a 'jump and swim' experience found elsewhere. In Mooney's study (2007a) the participants felt that they were expected to know everything and were made to feel inadequate if they asked questions. Rather than learning from difficult situations, the blame culture meant that mistakes made them lose confidence and feel shame.

2.8 Organisational Culture

The culture and environment into which the newly qualified practitioner is launched affects their transition. There was no pattern to the cultural environments which the newly qualified practitioners experienced relating to the country of origin or profession. Diagnostic Radiographers tend to form a clan culture which has a friendly environment where knowledge is shared (Strudwick, Mackay and Nicks 2013). Aquatic metaphors are apparent in many of the papers to describe the transition into practice. These are emphasised in the paper by Fenwick et al (2012) who described the workplace as a 'pond', sometimes calm and peaceful and at other times murky and infested. Some nurses talked about being marginalised where they experienced 'silence' as they entered the ward (Kelly and Ahern 2009; Thrysoe et al 2012). Some social work graduates both expected and experienced resistance to the fresh perspective they took to the work environment (Agllias 2010). Other professionals entered a welcoming, supportive friendly environment where their newness was acknowledged and embraced (Wangensteen, Johansson and Nordstrom 2008). Being able to contribute knowledge and experience helped nurses integrate into the community of practice (Thrysoe et al 2012), and fostered feelings of equality in midwives, which increased their confidence and competence (Fenwick 2012)

The manager influences some of the culture in the workplace. They appear to have the power to facilitate or inhibit a smooth transition into practice (Kelly and Ahern 2009). Nurses in the study by O'Kane (2012) thought the nurse in charge played a pivotal role in whether they had a good or bad day. Deliberate planning by the head nurse arranging, for example, a more experienced nurse to work with the newly qualified on their first night shift was very supportive (Wangensteen, Johansson and Nordstrom 2008). Others felt unsupported by their nurse managers and experienced a 'blame culture' (Rungapadiachy, Madill and Gough 2006). In Mooney's (2007a) study, many of her participants experienced ritualistic practice, which they found frustrating. They commented that the rigidity of these practices eased when the nurse manager was not present which resulted in them feeling less pressurised. Eraut (2007) suggested that it

is an important part of a manager's role to develop a culture of mutual support and learning.

Olson (2009) found that after six months their participants were feeling more confident and 'feeling more at home'. However they felt like 'fish out of water' again when moved to another unit. The graduate nurses in the study by Newton and McKenna (2007) had undertaken a 3 year degree and were on a sponsored programme which allowed rotation through several clinical areas in order to gain a broad range of experience. They also identified the problem of moving wards and the need to 'fit in' all over again. Kelly and Ahern (2009) call this 'double reality shock'. None of their participants had a positive experience when changing wards. Changing places of work required newly qualified staff to re-establish their professional identity in the new environment.

2.9 Professional Identity

The ability to establish a strong professional identity when newly qualified was influenced by the degree of hierarchy within the workplace. The nurses in the USA, who completed the survey by Pellico, Brewer and Kovner (2009) experienced conflict between their personal view of the profession and the lived experience. One poignant quote by one of their participants summed this up when they spoke about nursing being a profession but not being treated as professional (Pellico, Brewer and Kovner 2009). They experienced a lack of autonomy, bureaucratic administration, and a 'lack of voice', in a medically bureaucratic world. These nurses found that doctors were critical, arrogant and rude towards them (Pellico, Brewer and Kovner 2009). This has also been experienced by diagnostic radiographers in the UK and USA (Sechrist and Frazer 1992; Brown 2004). Social workers also commented on their powerlessness and the lack of professional credibility awarded to them by other professionals (Agllias 2010). This was not expressed so forcefully in Olson's (2009) study undertaken in the USA but they comment on their discomfort when speaking to the doctors. Similarly, in Ireland nurses found that the doctors placed unreasonable expectations on them and they found themselves taken away from direct patient care to run errands for the

doctors (Mooney 2007b). Nurses in Norway also found interaction with the doctors frustrating and felt that they spent unnecessary time 'running after them' (Bjerknes and Bjørk 2012). Although not in relation to the doctors, social workers also found themselves performing practical tasks that they did not expect, such as finding accommodation and getting cigarettes, rather than their perceived role of working with families (Agllias 2010).

The feeling of being integrated into a community of practice was increased when the new staff member was addressed by name (Thyrsoe et al 2012). They found it difficult if labelled a 'learner' or 'grad', as happened with one participant in the study by Newton and McKenna (2007). This led to not being accepted as a fully functioning member of the team and caused discomfort in the workplace as the newcomer was set apart from the group (Boud and Solomon 2003). One concern of the nurses interviewed by O'Kane (2012) was that they might not be treated as qualified, and still be viewed as a student, if they had been previously known as a student on the ward. However, they were also concerned that familiarity might lead to a lack of support. Similarly the label 'grad' was viewed by some as providing some protection from the full reality of practice (Newton and McKenna 2007).

Social participation within the community is required for informal learning at work (Wenger 1998). Boud stressed the importance of talk, or more precisely chat, in the process of informal learning at work (Boud, Rooney and Solomon 2009). The work he has done in this identified spaces where learning took place mainly through talking, such as in the staff room (Boud, Rooney and Solomon 2009; Solomon, Boud and Rooney 2006). Social interaction promoted newly qualified nurses' integration into their community of practice (Thyrsoe et al 2012). An inhibitor to this is the busyness of a work area, which resulted in conversations only taking place in passing (Bjerknes and Bjørk 2012). If the newcomer is not accepted and welcomed into the environment and experiences marginalisation and isolation they will not receive the support required. The junior doctors in the study by Brennan et al (2010) felt their support varied according to the area of work. One participant working in accident and emergency commented that although sometimes they felt that they were 'in at the deep end' they

were never really put anywhere where they should have been 'out of their depth' or could not ask for help (Brennan et al 2010).

2.10 Support

A study comparing four professional groups identified that radiographers lacked the formal process found in other professions, thus will draw on alternative methods of support (Thomas et al 2008). In the literature it was identified that support from staff was key to alleviating feelings of being 'thrown in at the deep end' and left to flounder (Hollywood 2011; Fenwick 2012). In several papers the term 'swimming' in reference to gaining confidence and competence, and 'sinking' referring to losing confidence and struggling were used (Fenwick 2012). For some newly qualified staff, an initial period of supernumerary status helped them feel well supported (Gerrish 2000, O'Kane 2012). The newly qualified practitioners who had supernumerary status were able to work alongside, learn and receive feedback from, more experienced staff, during which time they gained confidence (Gerrish 2000; Van der Putten 2008). Working alongside qualified staff members was described as a 'life-raft' (Fenwick 2012). One participant in Hollywood's (2011) study reported 'never being left to do things she felt uncomfortable with'. For others, poor staffing levels meant that they felt alone, isolated and unsupported, which made them disillusioned with their new role (Hollywood 2011; Fenwick 2012).

Lack of direct support was not always seen in a negative light. Some described how they had to find their own way, and viewed this as a positive aid to knowledge retention (Hollywood 2011). The participants in the study by Hollywood (2011) were children's nurses who were all dually qualified, and had thus gone through a transition period as registered nurses, and had previous experience on which to draw, which would help them to 'find their own way'. However, others commented on how 'just getting on and doing it' made them more confident (Jackson 2005). For some newly qualified staff being 'thrown in at the deep end' and left to 'sink or swim' was very stressful because this was unsupported by experienced staff (Kelly and Ahern 2009). The only support these participants received was from fellow new staff which they

described as the 'blind leading the blind' (Kelly and Ahern 2009). Peer support was also seen as negative by the nurses interviewed by O'Kane (2012) who expressed concern about being compared with other new staff members.

There are several positive reports, from different countries, of supportive, approachable and welcoming staff (Ross and Clifford 2002; Rungapadiachy, Madill and Gough 2006; O'Shea and Kelly 2007; Wangensteen, Johansson and Nordstrom 2008; Olson 2009; Fenwick 2012). However, for participants in some studies the experience was more detrimental than just lack of support, with reports of seasoned nurses being mean and back-stabbing towards their new staff leading to the phrase of nurses 'eating their young' (Pellico, Brewer and Kovner 2009). This phenomenon was experienced in USA and Australia with reports of power games, hierarchy and bitchiness.

Support in the form of feedback was viewed as highly important (Jackson 2005). A cause of anxiety for newly qualified practitioners was meeting their employer's expectations. This anxiety was eased by receiving feedback on their performance (Eraut 2007). This was received by some via informal chat at the end of a shift (Bjerknes and Bjørk 2012). Even negative feedback on performance was desired rather than no feedback at all (Olson 2009). Feedback is also necessary to highlight areas where improvement might be made. According to Eraut (2000) making tacit knowledge more explicit via feedback was important in improving an individual's performance.

Formal feedback was sporadic and unreliable. Brown and Edelman (2000) found that only 7% had support from a preceptor or mentor, and Deasy, Doody and Tuohy (2011) found that only 33% of their respondents received feedback from their peers and 38% from the ward manager. Hollywood (2011) found that some were supposed to have been assigned a preceptor but that this did not materialise. This was described by Fenwick (2012) as the support being 'only on paper'. Ross and Clifford (2002) suggested staff shortages led to a lack of time for preceptorship in some cases. One newly qualified practitioner, who did have a positive experience, labelled their preceptor as a 'life saver' (Olson 2009). Although others found that their preceptors

did not reduce their level of support appropriately as they gained confidence (O’Kane 2012). Most of the participants in Agllias’s (2010) study were pleasantly surprised at their level of supervision as they had not expected much support.

2.11 Application of the literature to diagnostic radiography

The literature reviewed suggested that most new graduates are delighted with their new post. This is reflected in radiography, demonstrated by a survey of recent graduates from both therapeutic and diagnostic radiography (n=64) where 75% experienced job satisfaction (Society of Radiographers 2012). However, the transition into practice, for some, remains a stressful time with feelings of uncertainty. When Decker (2009), using oral history, looked at the lived experience of diagnostic radiographers from 1950 to 1985 she identified that being newly qualified at that time was an emotional and anxious phase, which was associated with the additional responsibility of accepting or rejecting their own films, and working single-handedly on-call.

Some of the new graduates in this review felt unprepared for increased accountability, responsibility and decision making. A mixed methods study exploring the preparedness for clinical practice of diagnostic radiographers, undertaken after six months of clinical experience suggested that graduate diagnostic radiographers were well prepared (Mackay, Anderson and Hogg 2008). The analysis of recent graduates undertaken by the Society of Radiographers (2012) found that 86% felt prepared for their first job and cited clinical placement as being an important contributory factor in how they felt. However, there are areas where diagnostic radiographers struggle. These included the justification of X-ray requests (where diagnostic radiographers are required to make a decision whether there is a good reason for the examination to be performed), the readiness for undertaking imaging procedures in theatre (Feusi, Reeves and Decker 2006), and undertaking on-call duties when there are no colleagues to consult with (Brown 2004).

A panel of experts, as part of a Delphi study, were asked to consider the timescale after which they would expect a diagnostic radiographer to be competent following

qualification (Williams and Berry 1999). Over 60% of the panel gave a response of between 1 and 3 months. However, expectations ranged from immediate to 12 months. There were also suggestions that the timescale would be different for those working in a hospital where they had experience as students to those who were completely new. This is because familiarity with 'in-house' routines and procedures would be much greater (Williams and Berry 2000).

There was some concern amongst newly qualified staff about not being treated as qualified or labelled a learner. With higher education student radiographers do not always 'belong' to an imaging department (Harvey-Lloyd, Stew and Morris 2012). They are more likely to be viewed as a visiting 'student' during their training period. Thus on qualification they still need to find their place in their community of practice (Brown 2004). It was identified that newly qualified practitioners feel more 'at home' after six months but like 'fish out of water' when moved as they need to integrate into a new community of practice. This will have implications for diagnostic radiographers who are required to work in a variety of communities of practice.

The environment into which newly qualified staff members enter affects the transition. In a study examining the work related stressors which affect diagnostic radiographers, using a cross sectional survey with 32 participants, it was found that the volume of patients, heavy workload and staff shortages were the most cited sources of pressure at work (Verrier and Harvey 2010). Staff shortages have been found to inhibit the amount of support that experienced staff members have been able to give to new starters (Brown 2004). This literature review demonstrated that graduate health care professionals have some self-reliance and the ability to draw on theoretical knowledge. Due to pressures of work diagnostic radiographers are sometimes required to organise support for their own learning and, as with other professions, learn from dealing with challenging situations (Brown 2004). Challenging roles can increase job satisfaction for diagnostic radiographers (Ferris 2009).

Managers influence the culture of the workplace. In diagnostic radiography there is a correlation between poor levels of support from managers and stress in radiographers (Verrier and Harvey 2010). It has been suggested that this could be improved if

managers changed their approach from authoritative to participative, and value radiographers' contribution to the functioning of the imaging department (Makanjee, Hartzler and Ilse 2006). When discussing leadership and power in medical imaging, Yelder (2006) suggested that excessive management produces compliance, passivity and order for order's sake which will impact on the autonomous practitioners exiting higher education.

The ability to establish a strong professional identity when newly qualified was influenced by the degree of hierarchy within the workplace. Imaging Departments generally have a strong hierarchical culture (Murphy 2006). However, radiographers themselves form a clan culture, where they are more likely to share knowledge in a collaborative, friendly, non-competitive environment (Strudwick, Mackay and Nicks 2013). This means that newly qualified diagnostic radiographers are assisted in the development of their professional identity by the sharing of experiences with their peers (Morris and Turnbull 2004). There were several positive reports, from different countries, of supportive, approachable and welcoming staff, but a culture of marginalisation was seen in nursing. This does not appear to be an issue in diagnostic radiography.

Some of the newly qualified staff experienced conflict between their personal view of the profession and the lived experience. Professional identity is influenced by everyday radiographic practices (Nieme and Passivaara 2007). Generally diagnostic radiography students experience a high proportion of clinical experience and are thus exposed to the everyday practices of diagnostic radiography (The Society of Radiographers 2011). This means that they will have already formed a realistic view of their profession, despite the different cultures between university and the clinical workplace (Sim, Zadnik and Radloff 2003).

A recurring theme was the lack of autonomy, bureaucratic administration, and a 'lack of voice', in a medically bureaucratic world. Medical dominance over other health care professionals has been well documented (Yelder 2006; Lewis et al 2008). Through power and control, backed by scientific justification radiographers went through a period of deskilling and marginalisation which resulted in the medical profession

having authority over diagnostic radiographers (Yielder 2006). Out of the top ten most significant stressors for radiologic technologists (the name for radiographers in the USA), four were related to medical staff being disrespectful, uncooperative, un-supportive and demanding (Sechrist and Frazer 1992). Radiographers have felt that their contribution is ignored or undervalued by the doctors (Brown 2004). These studies were undertaken over a decade ago but may reflect relationships today as radiographers tend to still feel inferior to radiologists and other medical practitioners (Whitaker 2013), despite the fact that technology and the ability to view images remotely is assisted in decreasing this dominating relationship (Murphy 2006).

The literature suggests that support from staff is a key factor for alleviating feelings of being 'thrown in at the deep end'. Diagnostic radiographers work in a team environment (Strudwick, Mackay and Hicks 2012) and recognise the importance of learning from their peers (Brown 2004). Verrier and Harvey (2009) demonstrated that peer support played a significant part in reducing work related stress in radiographers, who appear to prefer to go to colleagues for advice rather than written policies (Strudwick, Mackay and Hicks 2013).

The newly qualified practitioners who had supernumerary status were able to work alongside, learn and receive feedback from, more experienced staff, during which time they gained confidence. A study into induction and transition comparing four professional groups, including radiographers, found that radiographers lacked the formal process found in other professions (Thomas et al 2008). It had been suggested that preceptorship might be the solution to supporting new staff members working in imaging departments (Tan et al 2011; Harvey-Lloyd, Stew and Morris 2012). This is also the view of the DoH (2010) and the Society of Radiographers (2013b). They recognised that the transition into practice is a period of learning and development which varies in length for different individuals. There is limited literature relating to preceptorship in diagnostic radiography. The potential for preceptorship has been more thoroughly explored in radiotherapy (Allen 2007; Nisbet 2008; Bolderston et al 2010).

2.12 Summary

This literature review has shown that the period of transition from student to practitioner can be a positive experience but for some it is a stressful, even daunting time. Factors that appear to influence the experience are the amount of previous clinical experience, the culture of the work place and the support provided for the new staff.

The clinical experience gained as a student affected the confidence and competence of newly qualified practitioners. This experience varied and was poorly reported in most papers and therefore difficult to analyse. Most of the newly qualified practitioners, having undertaken higher education, had transferable skills like teamwork and were prepared to be autonomous learners. They had skills in reflection and research and were able to fill any knowledge and skills deficit. One area of practice that needed refining was time management, but this improved with experience as they became more efficient. There were indications that it was difficult to prepare for additional responsibility and accountability, because no matter what they encountered as students they were always protected by the 'student' status under which they had the reassurance of some supervision.

The newly qualified practitioners needed to establish their professional identity. For some there was conflict between expectations about the profession and their experiences. This was influenced by the culture of the workplace into which they entered. In some places a hierarchical system, where throwing newly qualified staff in at the deep end to sink or swim, was practiced. In this situation the boundaries into the profession were difficult to negotiate. Some newly qualified staff members were fortunate to enter a welcoming, friendly environment where they felt supported in taking on their new role and additional responsibility.

To use an aquatic metaphor, which was referred to in the papers, it would appear acceptable to be 'thrown in at the deep end' if they have a life-raft for support, and are equipped with the theoretical knowledge about how to swim.

Learning and development through situated, experiential learning was evident in all the papers. Situated learning is a social learning theory which views learning as a social process where newcomers learn, develop and become integrated into a community of practice through participation in that practice. This learning and development is thus influenced by the community of practice into which the newly qualified practitioner enters.

Although there were some common themes and experiences there were also anomalies between professions and places of work. It is therefore valid to undertake a study particularly targeting the profession of diagnostic radiography to ascertain the experience of transition into practice using situated learning in communities of practice as a theoretical framework.

Chapter 3

Conceptual Framework

Situated learning in communities of practice

3.1 Introduction

A conceptual framework is used to provide a focus during the research process. The literature review highlights issues which can be encompassed in the theory of situated learning in communities of practice. It is through learning and development that newcomers are integrated into a community of practice. The culture within the community of practice will either inhibit, or facilitate the transition. Professional identity is formed via interaction within and between communities of practice.

A community of practice is a popular concept in health care education, with situated learning being a method by which people become part of a community of practice. The concept sees newcomers move from legitimate peripheral participation to become full members of a practice which is a journey that newly qualified practitioners take once employed. This chapter will discuss this theory in relation to diagnostic radiography and the transition into practice.

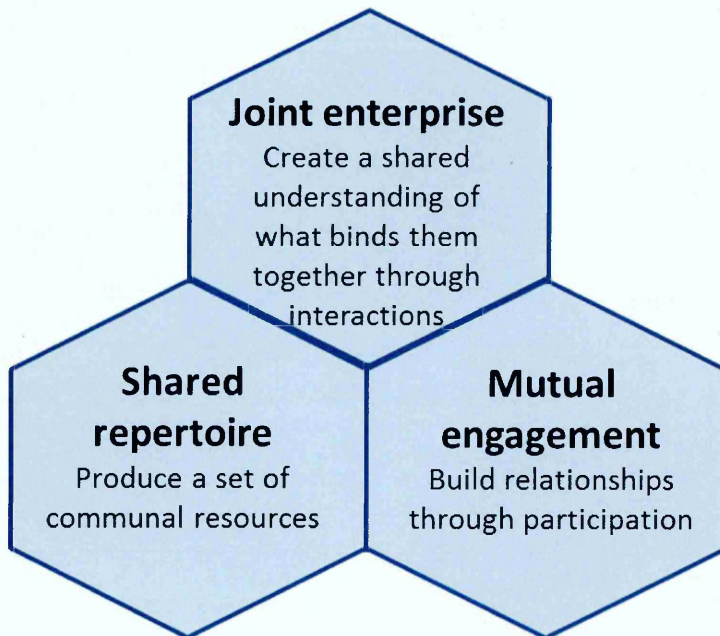
3.2 Communities of Practice

According to anthropologists Lave and Wenger (1991), communities of practice are groups of people who share a craft or profession. They can occur anywhere, often so familiar that they are overlooked. However, when given a name and brought into focus this concept becomes a perspective that can help better understanding of the world beyond formal structured organisation, such as individual professions within a hospital. The initial concept, built on work with apprenticeships, was that of legitimate peripheral participation. This suggested that as newcomers join an established group, they start on the periphery watching and learning how the group works and how they can participate. This is a social learning theory, putting forward the notion that

learning is through social participation, a process in which people are not only active participants in the practice of the community but also through which they develop their own identities in relation to that community.

Lave and Wenger (1991) used three interrelated terms to associate community with practice; joint enterprise, mutual engagement and shared repertoire. Figure 2 taken from Wenger (1998) illustrates the relationship and meaning of these three aspects of communities of practice. In her discussion paper Edwards (2005) suggested that the concept needed greater clarification because these aspects of joint enterprise, mutual engagement and shared repertoire could apply across other activities and gave the example of being in a traffic jam. She put forward the idea that people, who are mutually engaged, share an understanding of what binds them together and has a set of communal resources when being held up in traffic.

Figure 2 Three dimensions of communities of practice



Adapted from Wenger (1998)

A community of practice exists because a practice resides in a community of people who are engaged in actions whose meanings are negotiated with each other. In diagnostic radiography this will occur when staff work together to complete a day's work. Facilitating this engagement is an essential component of any practice i.e. being able to talk and interact while at work. For newcomers to belong to a community of practice they need to be inducted into what matters within the practice. Mutual engagement involves the competence of each individual, it draws on what people know and do, and their ability to connect meaningfully with what they do and do not know. Participants may have different roles within a community of practice and mutual engagement involves complimentary contributions to the practice. This can be seen in an operating theatre environment where professionals with different skills, including diagnostic radiographers, work together to undertake an operation (Feusi, Reeves and Decker 2006).

It is the negotiation of a joint enterprise that keeps people in communities of practice together (Wenger 1998). This does not mean that everybody believes in the same thing, but that practice is commonly negotiated for example when diagnostic radiographers work together as a team to produce images on one patient. The concept of communities of practice insinuates peace and harmony, but conflict, tension and disagreements still exist in a community of practice as with most situations where there are sustained interpersonal relationships. However, challenges, competition and conflicting opinion can all be forms of participation. Relationships in communities of practice reflect the complexity of real life.

Communities of practice are shaped by external influences and conditions outside the control of its members, such as policies and guidelines, but the day to day reality is produced by participation within the constraints of the situation. Diagnostic radiographers, as all health care professionals, work under many national and local guidelines, but the practice between different hospitals varies. These include different ways of organising a workload and undertaking a procedure, how the patients are treated, and common words and phrases. These are clear indications that participation in a community shapes its practice.

Over time a community of practice will create a set of communal resources. The shared repertoire of a community of practice includes routines, words, tools and ways of doing things. These resources reflect a history of mutual engagement yet, at the same time should be dynamic and interactive. For this to happen there must be some learning involved otherwise the community of practice will stagnate rather than grow and develop. This is particularly pertinent in the field of diagnostic radiography where technology is continually driving forward change with the introduction of new equipment and imaging techniques.

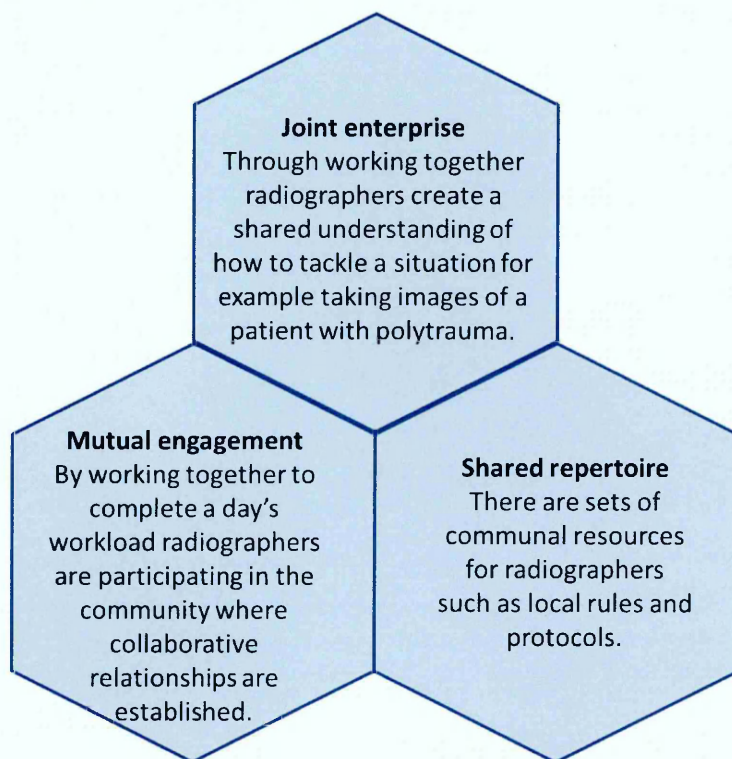
Boundaries are discussed in relation to communities of practice. These boundaries are not physical, but notional, and should be permeable and changeable (Wenger 1998). Closed boundaries can result in perpetuating poor performance and will see newcomers gradually performing to the standard they encounter. This can be seen when students, or newly qualified diagnostic radiographers enter a workplace with a desire to give high standards of patient care but over time modify their behaviour to fit into a hospital which may be more target driven than patient focussed. Macpherson and Clark (2009) used a case study based on a utility company in the United Kingdom to understand why variations in performance exist between teams. They used observation and interviews over a two year period with teams of pipe layers and showed how practices create boundaries and discrete 'islands of practice' that perpetuate variations in performance. They found that each team in their study operated as a discrete unit, and whilst situated learning occurred within teams it was unlikely to occur across teams because of the boundaries.

This has implications for inter-professional learning. Since, traditionally, professions trained and mainly practiced uni-professionally; communities of practice have developed closed boundaries around a professional group. This has resulted in a reduction in the ability to learn from other professionals and inhibits communication between professional groups. A goal of inter-professional education is the collaboration of professionals, learning and working together (Sargeant 2009), thus encouraging the formation of inter-professional communities of practice with permeable boundaries. A community of practice with permeable boundaries will

welcome newcomer's ideas, no matter what their profession, and there will be shared learning and development between the newcomer and established members.

Figure 3 summarises how the terms associated with communities of practice can manifest in diagnostic radiography. Radiographers work within teams to complete a workload often helping each other, for example by processing the images for each other (Strudwick, Mackay and Hicks 2013). During their daily practice radiographers share information and experiences and thus engage in social learning (Strudwick, Mackay and Hicks 2012). Radiography, as other professions, is bound by local and national guidelines, policies and protocols.

Figure 3 Dimensions of communities of practice in relation to diagnostic radiographers



Adapted from Wenger (1998)

3.3 Situated Learning

Situated learning is integral to communities of practice. It is more than learning by doing or experiential learning. It involves people building their identity by negotiating

the meaning of their experience to become full participants in their social community. It makes the assumption that through engagement in social practice professionals learn and create an identity (Wenger 1998). Effective communities of practice are thought to reduce the learning curve of new employees. However, if the community of practice is weak, or there are strong established power relationships, this can inhibit entry into the community of practice (Wenger 1998). For example there may be cliques within an imaging department, a resistance to new ideas, or a strong hierarchy which would keep a newly qualified diagnostic radiographer on the periphery of the social group.

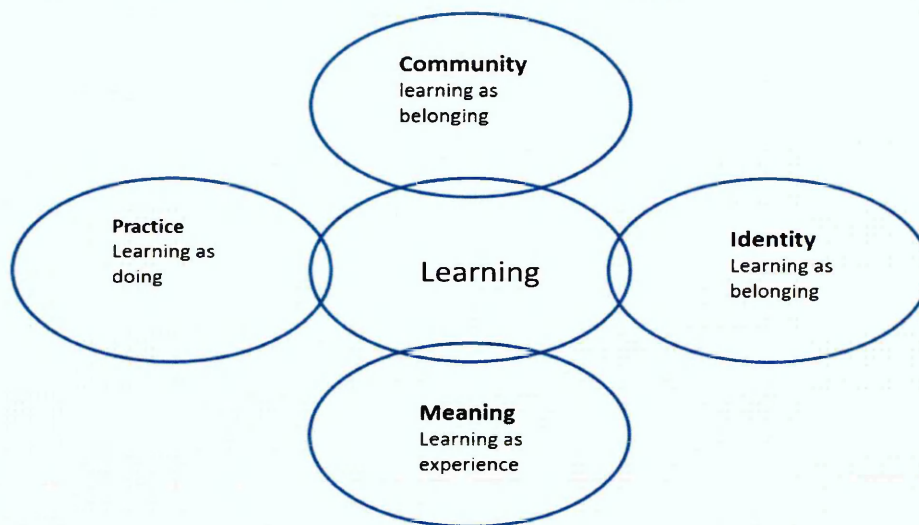
This theory of learning through social participation makes the following assumptions.

- Learning changes the learner and shapes identity.
- Learning is a realignment of experience and competence. Thus learning is impaired when the two are either too distant or too close. There needs to be a slight tension between the two for learning to occur.
- Learning is a matter of engagement; it depends on opportunities to contribute actively to the practices of the community.

(Wenger 1998)

There are five integrated, interchangeable components to situated learning; community, identity, meaning, practice and learning. These are shown in figure 4 overleaf.

Figure 4 Components of Situated Learning



Adapted from Wenger (1998)

Although Lave and Wenger (1991) are credited with the popularisation of the concept of situated learning in communities of practice, Brown, Collins and Duguid (1989) have also explored this topic. They started by looking at the breach between learning and use. This is often captured by the phrases 'know what' and 'know how'. Many methods of didactic education assume a separation between knowing and doing (Brown, Collins and Duguid 1989). They suggested that the activity in which knowledge is developed should be an integral part of what is learnt. This means that learning and cognition are fundamentally situated and that knowledge is acquired through activity. They promoted the concept of a 'cognitive apprenticeship' that embeds learning in activity and makes deliberate use of social and physical contexts (Collins, Brown and Holum 1991). For example a diagnostic radiographer will know how to take an image of a chest, but it is only when they are taking an image in an on call situation, when they are working alone out of the hours of a normal working day, that they learn the nuances of working in that lone situation. Cognitive apprenticeship has been adopted as a model for clinical education in nursing, in order to combat the problem of knowledge transfer (Taylor and Care 1999; Woolley and Jarvis 2007).

Brown, Collins and Duguid (1989 p. 32) warned that *"by ignoring the situated nature of cognition, education defeats its own goal of providing usable, robust knowledge."* They drew on the example of learning a language from dictionaries. They believed that all

knowledge was like a language in that a concept, like the meaning of the word, is always under construction, and that part of the meaning is always inherited from the context of use. Another analogy they gave was that of conceptual knowledge being similar to a set of tools, and that tools can only be fully understood through using them. Tools can be acquired without the person being able to use them; similarly knowledge can be acquired without a person knowing how to apply it and therefore lies inert. In contrast to this, people who use tools, or knowledge, actively build a rich understanding of the world in which the tools are used and of the tools themselves. Brown, Collins and Duguid (1989) went on to suggest that it is not possible to use the tool appropriately without understanding the community or culture in which it is used, thus introducing the concept of communities of practice. This concept is not explored in greater depth but they introduce the following idea:

“The culture and the use of the tool acts together to determine the way practitioners see the world; and the way the world appears to them determines the cultures understanding of the world and of tools.” (Brown, Collins and Duguid 1989 p. 33).

They viewed learning as a process of enculturation, that meaning and purpose are socially constructed through negotiations among present and past members. This suggests that the culture may change as the tools change, which is continually happening in diagnostic radiography.

Situated learning should not be confused with the frequently observed method of learning commonly termed ‘sitting with Nellie’ (Cope, Cuthbertson and Stoddart 2000). This is often poor quality on-the-job training, where the trainee is expected to learn the job by observing a more experienced worker. In this haphazard situation bad habits as well as valuable skills may be absorbed. Cognitive apprenticeship is more akin to coaching in which experts make their situational knowledge explicit (Cope, Cuthbertson and Stoddart 2000). It is a way of maintaining academic rigour whilst facilitating quality clinical education, and can be used as a strategy for transferring training from the class room setting to practice (Brown, Collins and Duguid 1989).

Situated learning varies from cognitive and behavioural theories of learning. Cognitive theorists view learning as knowledge that is acquired and behavioural theories are

concerned with a change in mental state (Fuller in Hughes, Jewson and Unwin 2007). Lave and Wenger's (1991) theory of situated learning moved away from viewing learning as a process or something that could be acquired, or assessed on an individual basis via examination to learning as participation in a community of practice.

Learning through participation is mainly focused on learning that takes place inside the community. However, important learning takes place in other social spaces, and by crossing boundaries. Fuller and Unwin (2003) found that apprentices who had the opportunity to work in multiple settings had a more expansive experience. This situation can be seen with diagnostic radiographers who work, not only in their community within an imaging department, but also in operating theatres and on hospital wards.

Situated learning is a social learning theory and as such involves the formation of identity (Wenger 1999). People belong to many communities of practice and membership of one community will form only part of our identity (Wenger 1998). A finding of the study by Macpherson and Clark (2009) was that dispersed places of work influence the depth of identification and participation. Newly qualified diagnostic radiographers may find themselves working in different hospitals as part of their contract, where NHS trusts have amalgamated. Within these different hospitals they may encounter different practices, because of closed boundaries. The boundaries may be closed for various reasons, such as the remoteness of the geographical area, or different organisational culture. Whilst this will increase their learning and development they will also need to re-establish their identity within different communities of practice.

Wenger (1998) suggested that identity is formed through experience and participation in specific communities. He viewed identity not as an object but as a "*constant becoming*" (p. 154) arguing that it is something that we constantly renegotiate throughout our lives. The idealistic view sees newcomers forming an identity to become full members and knowledgeable practitioners in a community of practice. However this is not inevitable because communities of practice can create conditions which inhibit learning. Lave and Wenger (1991) acknowledged that this can sometimes

be the case. They identified issues such as poor relations with managers, involuntary servitude rather than participation, and exhausting workloads as being adverse conditions for learning through participation (Lave and Wenger 1991).

The use of the word 'community' comes with a connotation of harmony and togetherness and implies a sharing of common interests, but this might not always be the reality in the workplace. For example, the priorities of the members of the community might be different (Hodkinson and Hodkinson 2004). From the analysis of their research, Hodkinson and Hodkinson (2004) suggested that workplace learning varied according to the precise context of relations, for example, whether workers were in a tightknit community of practice or not.

Towards the end of their book, Lave and Wenger (1991 p. 116) came to the following conclusion:

"Shared participation is the stage on which the old and the new, the known and the unknown, the established and the hopeful act out their differences and discover their commonalities, manifest their fear of one another, and come to terms with their need for one another.....conflict is experienced and worked out through a shared everyday practice in which differing viewpoints and common stakes are in interplay."

Whilst they acknowledge that the views of newcomers may be muted by the difference in power between the new and established members of staff, they do not fully account for situations where there is oppression by the masters or marginalisation (Engestrom 2001; Engestrom in Hughes, Jewson and Unwin 2007). The picture that is painted is an idealistic view of conflict being resolved in an equitable manner. Inequalities of power characterise relationships within an organisation and between different communities of practice. The way that power is exercised can make the experience 'empowering' or 'disempowering' for the newcomer (Fuller et al 2005). From both the manufacturing industry and secondary schools used in their research, organisational structures and the working of power relations within the organisation were of a central significance in determining the existence of communities of practice, their nature and their boundaries (Fuller et al 2005). Similar situations are found in the

health care setting where staff are organised into successive ranks or grades, and professions have a status which positions them relative to others.

3.4 Legitimate Peripheral Participation

The image of legitimate peripheral participants moving towards full participation suggests that the newcomers acquire the community's viewpoint and learn to speak their language, and that they align themselves with established members. However workplaces are often dynamic and conflicting environments. Newcomers may come with their own ideas that challenge existing practices. One significant gap in the theory is that it does not take into account the effect on the community of practice when the newcomer is an experienced worker or knowledgeable practitioner from elsewhere (Fuller et al 2005). For example a graduate diagnostic radiographer will often have trained in different hospitals and have developed their own ideals, positioning techniques and way of doing things.

Change is a constant feature in many situations so it is important to discuss how this affects the theory of communities of practice. Eraut (2002) dismissed the concept of communities of practice as unhelpful because workplaces lacked the condition of stability with no predictable cycle from newcomer to old-timer in contemporary industry. The original concept of community of practice placed situated learning in a context where identity and participation were long-term endeavours. This is now far removed from the majority of contemporary work spaces that are rapidly changing, and values are being constantly revised according to the political climate (Macpherson and Clark 2009). Another important point to consider is the range and types of participation available, and to acknowledge that participation, for many workers, is limited (Rainbird, Fuller and Munro 2004). This could be due to limited access to formal support or training, restricted autonomy, or confined work routines. However, the climate within health services, including diagnostic radiography, is one where role expansion is encouraged (Price Miller and Mellor 2002; Srivastava et al. 2008). Thus when exploring the trajectory towards full participation it is important to consider the nature of the participation and how it is experienced by the individual. It cannot be

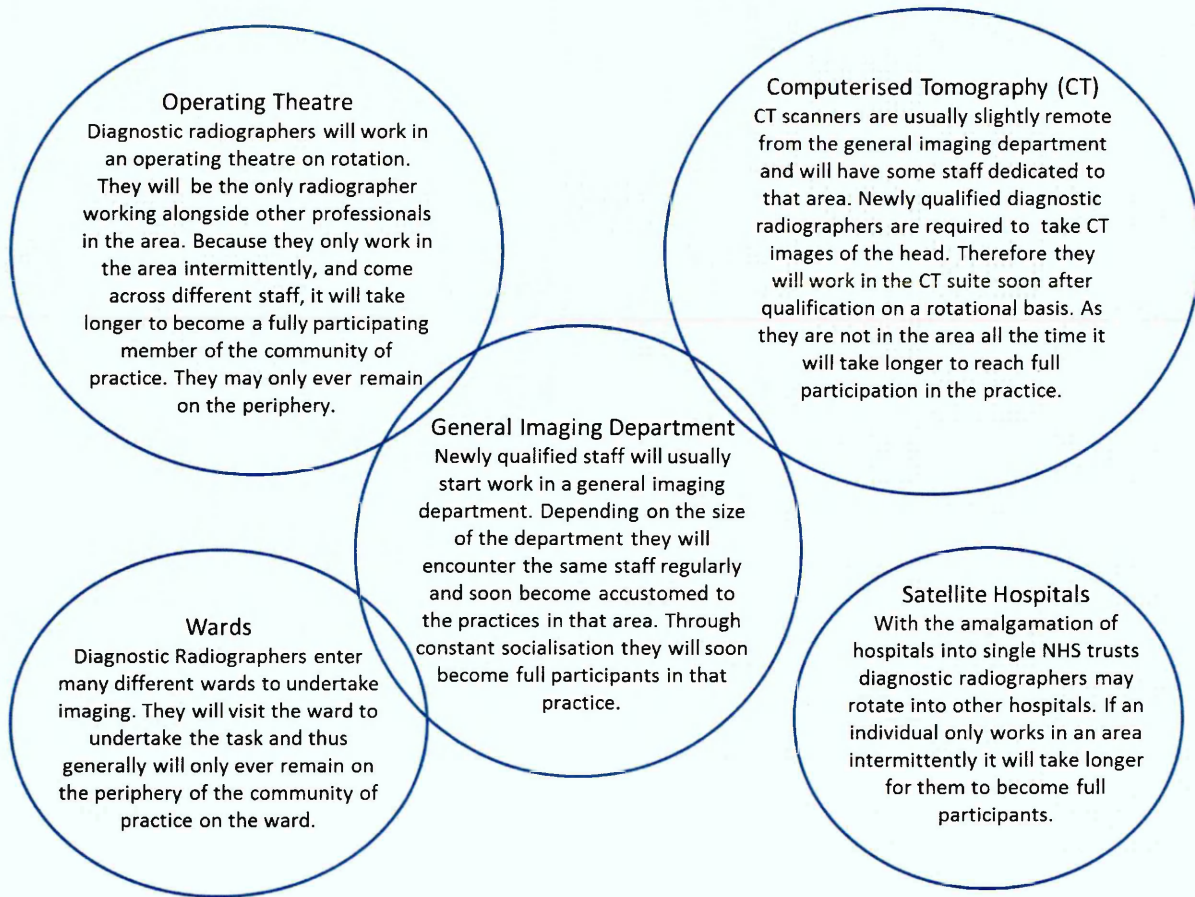
assumed that all forms of participation will involve 'good' learning (Rainbird, Fuller and Munro 2004).

Fuller et al (2005) explored learning and peripheral participation in communities of practice as part of a funded research project into contemporary workplace settings using case studies from the manufacturing industry and secondary schools. Their aim was to establish the extent to which Lave and Wenger's (1991) theories adequately illuminated the nature and process of learning and work. They concluded that their theories had significant limitations but can provide theoretical insight and inspiration for research into work. In their research Fuller et al (2005) found three contrasting case studies of legitimate peripheral participants who were engaged in very different models of participation with respect to the scope, length and aim of their apprenticeship. One case was particularly restrictive, where a tightly bound community of practice enabled a swift journey towards full participation and, in contrast, another case had unclear aims and very loosely planned and supervised training which led to confusion about their role in the community of practice. This supports Lave (1996) in his assertion that there are differences in how learners come to shape their identities with respect to their practices. Contrary to this, Wenger (1998) presented a complex structure of universal principles through which he claimed all workplace learning, and the relationship between learning and identity formation can be understood (Hodkinson and Hodkinson 2004). In their research, using a case study of secondary school teachers, Hodkinson and Hodkinson (2004) identified three influences on workplace learning; the structures and practices, the nature and culture of the departments and the dispositions and actions of individual teachers. Through observation and interviews they found that all teachers learnt, but those in collaborative departments had an additional social dimension to their learning.

In his book Wenger (1998) recognised that communities have increasingly problematic and permeable boundaries and thus adopts the notion of constellations of communities of practice which refers to multiple communities of practice that are in some way connected. The significance of the constellations of communities of practice is that they are interlinked, overlapping or tied in some way and one individual may

simultaneously belong to several constellations. This is a more accurate way of viewing the working environment of a radiographer. This concept adds to the complexity of viewing a single centripetal trajectory towards full participation, as constellations will facilitate multiple learning experiences and trajectories (Hughes, Jewson and Unwin 2007). Wenger (1998) identified other trajectories of participation, a peripheral trajectory either by choice, or from necessity, are trajectories that never lead to full participation. This can explain the relationship as a radiographer enters a community of practice of a ward or operating theatre. An insider trajectory indicates that the formation of an identity does not end with full participation, suggesting that there is movement within the community of practice. A boundary trajectory is one that spans boundaries and links communities of practice. This can be seen where radiographers working in different areas in an imaging department, for example, may be a full participant in a community of practice in the main imaging department, where they undertake general radiography and also a participant in the community of practice in the suite where computerised tomography (CT) is undertaken. The final trajectory is an outbound one leading out of a community of practice such as when an individual is preparing for retirement. A diagrammatic representation of these communities of practice and trajectories can be seen in figure 5 overleaf. The journey to full participation in their main area of work is likely to be quicker than in areas where they work less frequently such as a CT suite. Newly qualified diagnostic radiographers tend to spend most of their time in the main imaging department, but as they are required to undertake CT head scans, they will work in the CT suite occasionally. They will undertake mobile imaging on many different wards and in the operating theatres. According to this theory, a diagnostic radiographer will be slower to achieve full participation in a community of practice on a ward, and may only ever remain on the periphery. As mentioned earlier, newly qualified diagnostic radiographers may find themselves working in different hospitals as part of their contract. Their trajectory towards full participation in these separate communities of practice may be slower than in the main imaging department where they spend most of their time.

Figure 5 Examples of Communities of Practice and possible trajectories for a newly qualified diagnostic radiographer.



3.5 Summary

The theory of legitimate peripheral participation in communities of practice does shed considerable light on the processes involved when people enter a community. It does have its limitations, in that the theory focuses on the formation of the learner identity, but does not give enough importance to what the worker brings to the community from outside (Fuller et al 2005). Most newcomers will enter a workplace with already formed beliefs, skills and attitudes. Their journey towards full participation in the community of practice will be affected by the extent to which these are aligned with those of the workplace. Newly qualified diagnostic radiographers entering a workplace have prior learning and education which has helped to construct the whole person.

A diagnostic radiographer will participate in different communities of practice, for example in the imaging department, operating theatre and wards. If a community of practice has closed boundaries they will resist newcomers, and new ideas. A strong community of practice with permeable boundaries will have a culture of shared learning which will facilitate the transition into practice.

A person learns to belong to their new setting, adapting, developing and modifying their whole person in the process. As this is done through interrelationships between people and the community, new members will change the nature of the community (Lave and Wenger 1991). The culture of the community of practice and how learning is facilitated will impact on the journey towards full participation. This study will look at the journey of diagnostic radiographers as they enter a workplace and move towards becoming full participants in communities of practice.

Chapter 4 Methodology

4.1 Introduction

The literature review identified that most studies into the transition into practice used a qualitative methodology, commonly a phenomenological approach. The methodology used for this study was Interpretative Phenomenological Analysis (IPA). IPA has facilitated the close examination of the transition into practice of newly qualified diagnostic radiographers. It has helped to gain an insight into their lived experience over a period of one year. The aim of this chapter is to give an appraisal of this methodology, and in doing so, justify the approach for this study. The method of data collection and analysis will be critically evaluated, and issues of quality and ethics addressed.

4.2 Interpretative Phenomenological Analysis (IPA)

Interpretative Phenomenological Analysis, as a research methodology, has gradually increased in popularity since the mid-90s. The number of IPA papers published each year has grown steadily since 2003 and the papers are published primarily in the UK (Smith 2011). However, IPA is also gradually growing in popularity outside the UK but primarily in the English speaking world (Smith, Larkin and Flowers 2009). About a quarter of the papers reviewed by Smith (2011) are relating to patient's experience of illness. There are also 23 papers published on the experience of health professionals or therapists (Smith 2011). IPA is not without its critics. Giorgi (2011), who was attempting to operationalize a phenomenological approach for psychology, suggested that it is methodologically unclear and lax. However Smith, Larkin and Flowers (2009) provided a structure for conducting IPA which can be followed by first time researchers, but which also allows for the more experienced to be innovative with the methodology. An attraction of IPA for this study is that it has a clear method and stages in a research process which offer support to the researcher, but is flexible enough to not stifle the creativity necessary for an interpretative study.

IPA is concerned with a detailed examination of an individual's lived experience and how they make sense of that experience (Smith, Larkin and Flowers 2009; Willig and Stainton Rogers 2008). The three major influences on IPA are phenomenology, hermeneutics and idiography (Smith, Larkin and Flowers 2009); so although IPA is relatively new it has the theoretical underpinnings of phenomenology and hermeneutics (Willig and Stainton Rogers 2008). Phenomenology in itself is both a philosophical approach and a range of research methods; therefore it is important to highlight what makes IPA distinct from phenomenology.

The word phenomenon comes from the Greek word 'phaenesthai' which means to flare-up, to show itself, or to appear (Dowling 2007). There are varying approaches to phenomenological research such as Husserlian and Heideggerian (as discussed further below), which make it difficult to have a clear definition of phenomenology. However, the commonality is that they are all interested in the 'lived experience'. What unites phenomenological philosophers is the need to explore what the experience of being human is like (Smith 2011). The kind of knowledge that IPA aims to produce is an understanding of how participants view and experience their world (Willig 2008). IPA starts with the assumption that people's accounts tell us about their private thoughts and feelings (Willig 2008). Thus it was an appropriate methodology for this study which aimed to gain an understanding about what it is like to be a newly qualified diagnostic radiographer, from their perspective.

Researchers using IPA believe that there is a chain of connection between a person's experiences, how they talk about that experience, how they make sense of that experience and the emotional reaction to that experience (Smith 2011). This linguistic focus puts IPA close to discourse analysis. However, discourse analysis is focused on the linguistic resources that participants are drawing on in order to provide their accounts of experience, and on the conversational features that occur whilst the participant is giving the account (Smith 2011). Although some semantic cues are useful and can be integrated into IPA, the intense sensitivity to language is less important than the hermeneutic, ideographic and contextual focus of IPA (Smith, Larkin and Flowers 2009). Therefore, while they are both concerned with the reading and

analysing of participant's reports in great detail the rationale is different. IPA researchers talk to participants, and analyse what he or she says in order to learn how they make sense of their experience, whereas discourse analysis focuses on how participants are constructing accounts of their experience (Smith 2011). Discourse analysis is sceptical of the possibility of linking verbal reports to underlying cognition whereas the analytical process in IPA is trying to make transparent something about what a person is thinking (Smith, Larkin and Flowers 2009).

IPA is close to grounded theory which is often seen as an alternative method for this type of research (Smith, Larkin and Flowers 2009). Grounded theory is more established than IPA and exists in a number of different forms (Smith, Larkin and Flowers 2009). The similarity with IPA is that they are both a broadly inductive approach to inquiry. However, grounded theory strives towards a conceptual explanatory level leading to a theoretical claim, whereas IPA aims to illuminate potentially broader issues from the micro analysis of individual accounts. IPA is more suitable than grounded theory for this longitudinal study which aims to illuminate issues rather than build a theory from the data.

4.3 Connection to Phenomenology

Giorgi's (1997) phenomenology is based on the original phenomenological philosophy of Husserl (1931). He was concerned with the description of a given phenomenon and used a systematic process in order to illuminate the lived experience (Willig and Stainton Rogers 2008). IPA also uses a systematic process and values rich description, but it has an affinity with hermeneutic phenomenology, and therefore puts emphasis on interpretive features of analysis. What it has in common with Giorgi's phenomenology is the attempt to reduce outside influence as much as possible and to focus on the presented transcript (Willig and Stainton Rogers 2008).

IPA is ideographic in nature, which means that it is concerned with the particular (Smith, Larkin and Flowers 2009). It is committed to gaining a sense of detail by using a systematic and thorough in-depth analysis. It is interested in the diversity of human experience and micro-analyses the convergence and divergence within a small set of

accounts whereas Giorgo focuses on expressing the relationship between the variations within a lived experience (Willig and Stainton Rogers 2008).

Interpretive phenomenology does not try to separate out description and interpretation. It aligns itself with the hermeneutic tradition in arguing that description constitutes a form of interpretation (Willig 2008). Heidegger's (1962) hermeneutic version of phenomenology allows what the researcher brings to the text to be an integral part of the analysis (Willig 2008), unlike Husserl's phenomenology which requires bracketing (Husserl 1931). This is when the researcher attempts to truly represent the phenomenon as it manifests itself by trying to suspend all presuppositions and biases (Willig 2008).

Hermeneutics is the theory of interpretation or understanding. The hermeneutic circle shows interpretation as a cyclical process where the parts can be understood from an understanding of the whole, and the whole understood from an understanding of the parts. Double hermeneutics takes into account the self-interpretative dimension of humans (Ginev 1998). Smith, Larkin and Flowers (2009) suggested that IPA uses a 'double hermeneutic circle' where the participant makes sense of their experience, but then the researcher makes sense of what the participant is saying. The iterative process initially takes the insider perspective, which is the first hermeneutic circle, as the researcher puts themselves 'in the shoes of' the participant, and produces a rich description of the phenomenon (Reid, Flowers and Larkin 2005; Willig and Stainton Rogers 2008). The second hermeneutic circle is the researcher making sense of the participants' experiences, which produces a deeper analysis (Reid, Flowers and Larkin 2005; Willig and Stainton Rogers 2008).

IPA is influenced by Gadamer's philosophical phenomenology. Gadamer (1976) followed on from the work of Heidegger (1962) (Fleming, Gaidys and Robb 2003). His position was that it is pre-judgement and preconceptions that make understanding possible. He argued that detachment from these prejudices will obstruct our understanding and that the hermeneutic task is to acknowledge any tension between the horizons viewed by the participant with those of the researcher (Dowling 2007). To

acknowledge and utilise these, IPA requires a reflexive attitude from the researcher (Willig 2008).

Reflexivity plays a key role in interpretive phenomenological methods including IPA and helps to address any practical and ethical issues that may arise during the research process (Dowling 2007). Reflexivity is used in this study as a thoughtful self-awareness, to explore the power relationship between the researcher and the participants (Powers and Knapp 2006, Finlay and Gough 2003). It has also helped to root out any preconception that may have occurred due to the previous experience of the researcher (Lynch 2000, Finlay and Gough 2003). The recognition of any personal factors which may have influenced the research is explored in Chapter Seven page 141.

4.4 Method

The source of data collection is via a focus group and in-depth, semi-structured interviews. It is a longitudinal study, which is common for research into transition (Brown and Edlemann 2000; Newton and McKenna 2007; Kelly and Ahern 2009; Brennan et al 2010). The time period included pre and post-employment which is an approach used in previous research (Deasy, Doody and Tuohy 2011), and recommended by others (O'Shea and Kelly 2007; Agllias 2010).

A focus group was chosen as the initial exploratory method in preference to using current literature to inform the semi-structured interviews due to the lack of literature specific to diagnostic radiography in this area. Focus groups are commonly used in qualitative research and use the interaction between participants to discover how they think or feel about a situation (Holloway and Wheeler 1996). Smith, Larkin and Flowers (2009) recommend caution when using focus groups for IPA. However, they can be used, and are perfectly acceptable when used in conjunction with interviews (Palmer et al 2010). They are useful for exploratory work as they produce a considerable amount of information in a short space of time but are limited for accessing in-depth accounts of marginal opinions which are less likely to be explored in a group setting (Green and Thorogood 2009).

Interviews are a staple method of collecting data in qualitative research and there is a general belief that words are an adequate way to access and interpret the world (Cook 2009). In phenomenological research the researcher should adopt a perspective of unknowing and let the research participants be the knowers, the ones who hold the meaning of their experience (Munhall 2012). To do this it requires the researcher to place what they think they know to one side and listen with the third ear, the one that is completely open to discovery and possibilities (Munhall 2012). This influences the interview questions and the use of open questions such as “Can you tell me about.....?” rather than leading questions such as “Do you think.....?” were used. An interview schedule was only used as a framework with each set of interviews being analysed and used to inform the next.

Longitudinal studies explore progress and change in status, which makes them a suitable strategy for research into transition (Hermanowicz 2013). The length of time over which data is collected needs to be determined by the rate of change, but is also influenced by the practicality of time and funds available. There should be sufficient change from one point of data collection to another (Brennan et al 2010; Hermanowicz 2013). Attrition is a major concern for longitudinal studies. Maintaining contact with the participants and sustaining their motivation in the study is essential (Brennan et al 2010; Hermanowicz 2013). The participants were contactable by both email and mobile telephone; generally email was used as the first point of contact as this was less intrusive.

Attrition can lead to issues of missing data (Schaie 1998). The interviews were undertaken over a 12 month period which resulted in some attrition. Sufficient remained for the study. One participant missed participating in the interview at six months following qualification due to personal reasons. This was not problematic as at the subsequent interview she was able to reflect back over the previous months' experience. The timing of the interviews can either be predetermined, as in this study, or negotiated as the study progresses (Hermanowicz 2013). The advantage of the predetermined interview schedule is that participants are fully aware of what will be required of them from the onset of the study. The disadvantage is that it does not

allow the researcher to be reactive to situations as they arise and may lead to missed data.

4.4.1 Sampling Strategy

Volunteers were recruited into the study from a single cohort of 34 final year students undertaking BSc (Hons) Diagnostic Radiography. This degree equips them to work in a hospital as state registered professionals. The undergraduate course that the participants completed was a three year course with blocks of experience in a clinical environment interspersed throughout the three years with academic sessions on the university campus. The students remain attached to one hospital for a year and go to a minimum of two hospitals within the three years.

Those who volunteered were placed into two groups. Eight of the participants, who had already secured employment, were selected for the longitudinal study, which enabled the interviews to be clustered into a discrete time frame. The remaining volunteers (10), who at the time of recruitment had not found employment, were invited to a focus group, 4 attended. Purposive sampling was used so that the participants had experience of the phenomena, the transition into practice being studied (Williams, Wilford and Cutler 2010). This was achieved by using a largely homogeneous sample as suggested by Smith and Osborn (2008). The homogenous sample allowed the ideographic, detailed examination of the lived experience and deep analysis of a particular phenomenon. It could be argued that a too narrow and homogenous sample will make the findings too specific or unique (Pringle et al 2011). However, IPA seeks to draw conclusions that are specific to a particular group rather than striving for generalizability (Brocki and Wearden 2006). A rich and transparent research account, closely relating to current literature, enables the reader to assess the transferability of the finding into a wider context (Smith et al 2009).

Of the eight participants recruited to the longitudinal study, seven were female and one male. This imbalance reflects the demographics of the profession. The participants were all in their twenties. All of the participants recruited for the interviews had some experience of working as students in the hospitals where they were being employed. Approximately 80% of the students from the higher education institute from which the

participants were recruited obtained employment in a hospital where they were placed as students. Thus recruiting participants who have this experience was valid. The timeline for data collection can be seen Figure 6 below.

Figure 6 Time Line for data collection

May 2011		Invitations sent to participants
June 2011		Focus group n=4 1 st interviews n=8
July 2011	}	Participants of the interview group start work
August 2011		
September 2011		
October 2011		
November 2011		2 nd interviews n=6
December 2011	}	3 rd interviews n=5
January 20112		
February 2012		
March 2012		
April 2012		
May 2012		
June 2012		
July 2012		4 th interviews n=5

Table 2 shows the data collection schedule for the interviews which highlights the attrition from the study. Over recruitment to a study is advised to allow for adequate data collection if participants drop out of a study (Holloway and Wheeler 1996). Pseudonyms are used to preserve anonymity.

Table 2 Data Collection Schedule

Participant	Student experience	1st interviews	2nd interviews	3rd interviews	4th interviews
Claire	Worked in hospital (a) as a 1 st and 3 rd year	Face to face	Telephone interview at 4 months	Telephone interview at 6 months	Telephone interview at 12 months
Sam	Worked in hospital (a) as a 1 st and 3 rd year	Face to face	Face to face interview at 3 months	Face to face interview at 5 months	Face to face interview at 12 months
Heather	Worked in hospital (b) as a 1 st and 3 rd year	Telephone	Telephone interview at 4 months	No reply	No reply
Mary	Worked in hospital (b) as a 1 st and 3 rd year	Telephone	Telephone interview at 3 and a half months	Telephone interview at 7 months	Telephone interview at 12 months
Pauline	Worked in hospital (b) as a 1 st and 3 rd year	Telephone	Telephone interview at 3 months	No reply	No reply
Louise	Worked in hospital (c) as a 1 st and 3 rd year	Face to face	No reply	No reply	No reply
Emma	Worked in hospital (d) as a 2nd year	Face to face	Too busy to participate	Telephone interview at 5 and a half months	Telephone interview at 12 months
Kathy	Worked in hospital (e) as a 1 st and 3 rd year	Telephone	Telephone interview at 3 months	Telephone interview at 6 months	Telephone interview at 12 months

Participant numbers used for IPA vary and are dependent on a number of factors (Smith and Osborn 2008). The sample size depends upon the degree of commitment to the level of analysis of the individual case study, the richness of individual cases, as well as organisational constraints (Smith, Larkin and Flowers 2009). The ideographic nature of IPA means that a small sample size is the norm (Brocki and Wearden 2006). The primary concern of IPA is with the detailed account of individual experience, with an emphasis on quality not quantity, and studies benefit from a concentrated focus on a small number of cases (Smith, Larkin and Flowers 2009). The iterative nature of analysis means that passages were analysed repeatedly in the light of new data and insights obtained. Smith, Larkin and Flowers (2009) suggest using four to eight interviews for a doctoral level study. However, because the study was longitudinal over a twelve month period, 24 interviews were undertaken in total. A small sample size is acceptable because IPA is concerned with examining the convergence and divergences of a small number of accounts, rather than to establish claims for a broader population (Brocki and Wearden 2006).

4.4.2 Focus Group

Four female participants attended the focus group meeting. Smith, Larkin and Flowers (2009) advocate small homogeneous groups of four to five people for an IPA focus group. This is to enable the gathering of rich, in-depth data. The suggested number for other focus groups is 6 to 12 people (Holloway and Wheeler 1996; Williams, Wilford and Cutler 2010). It is thought that any less than this might result in a lack of stimulus for discussion, or dominance by one participant (Williams, Wilford and Cutler 2010).

The focus group was conducted in a room at the students' higher education institute. It was carefully managed to ensure that the discussion took place within a reasonable and ethical environment (Smith, Larkin and Flowers 2009). To facilitate this, the focus group was undertaken with the four participants, using a strategy taken from nominal group technique. This strategy for the focus group was used to reduce the influence of the researcher given the nature of the relationship between the researcher, a lecturer, and the participants, who at the time were students. It was also to smooth the group

dynamics and reduce dominance by any particular group member (Green and Thorogood 2009). This is reflected upon later in Chapter Seven page 141.

Nominal group technique was initially designed as a method of group decision-making (Delbecq, Gustafson and Van De Ven 1975). The strategy generates ideas from participants individually, which are subsequently discussed with equal importance, thus reducing any issues caused by outspoken members of the group overshadowing more quiet ones and the group being overly influenced by the facilitator. These issues will be discussed further in Chapter Seven as part of the reflexivity process. The stages of nominal group technique used include a five minute silent period during which individuals note down their ideas from a predefined question, a round robin collation of those ideas, followed by a discussion of those ideas. The full process of the nominal group technique includes a vote on the items of importance followed by further discussion on the pattern of the voting and a final vote to rank the ideas according to their level of importance. These final voting stages were not required for this research as they are designed as a method of reaching consensus rather than exploring ideas.

The trigger question for the focus group was 'How do you think you will feel during your first months working as a diagnostic radiographer?' Once this was presented a silent generation of ideas gave each individual time and opportunity to reflect, and allowed participants to record their thoughts (Van de Ven and Delbecq 1971). This maximises the range of issues and ideas that can be explored (Carney, McIntosh and Worth 1996) and encourages the generation of minority opinions which are more likely to be voiced using this technique rather than other forms of group discussion (Van de Ven and Delbecq 1971). During the round robin stage the participants are encouraged to 'hitch hike' on one another's ideas and this increases the range of issues generated (Fox 2007; Delbecq 1974). The democratic style of the focus group encourages all participants to express their opinions and overcomes the difficulties caused by dominant group members (Carney, McIntosh and Worth 1996; Williams et al 2006). It encourages shy or reticent participants to make a contribution, which is crucial for inclusion and equality (Gaskin 2003). The discussion was carefully facilitated to reduce the 'focussing effect' where groups pursue one train of thought for a long

period (Gallagher et al 1993). Each idea was given equal attention and items were not removed if disagreed with (Fox 2007). The process assists with ideas being judged on their merit rather than their source (Fox 2007). The students liked having time to generate ideas and found having a clear focus beneficial as they were not left unsure about what to say. The fact that participants could miss their turn in the round robin stage helped the more reticent participants to feel more comfortable than if they were forced to contribute in every turn (Gallagher et al 1993). Students commented that they felt less pressure to perform, and felt comfortable in the environment. With the reduction in the influence of group dynamics a representative view is more likely to be obtained (Gaskin 2003). The students found that issues were raised that they had not thought of and that it made them less self-focussed as they could see things from other peoples' points of view.

As a lecturer facilitating a group of students, the issue of power is relevant in the relationship between the facilitator and the group as a whole (Williams et al 2006). The structure of the technique kept this imbalance to a minimum and the practice of reflexivity, which is made more explicit in Chapter Seven, ensured that this influence was acknowledged. Although ideas are presented without authorship the participant has to verbally put forward their idea which may be intimidating and there will still be some participants who are apprehensive about making their ideas known (Carney, McIntosh and Worth 1996; Fox 2007). At the other end of the spectrum, whilst the structured process forces equal participation, some may still dominate the discussion stage if not carefully facilitated.

The meeting was recorded and transcribed verbatim. This was analysed using IPA which is discussed later. The themes generated from this initial analysis were used to inform a guide for the first round of semi-structured interviews as can be seen in Table 3 overleaf.

4.4.3 Interviews

Interviews were undertaken with a cohort of eight students just before qualifying. Follow up interviews were then conducted at approximately 3 months, 6 months and 12 months following employment. By the 12 months interviews the number had

reduced to five participants. In reality there needed to be flexibility with the interview schedule because it was difficult to find an appropriate time to interview some of the participants due to their personal and work commitments. They were working overtime with different shift patterns including evenings, nights and weekends. Therefore the interviews ranged from 3 to 4 months for the second interview and 5 to 7 months for the third interview. There were at least two months between interviews with a participant.

Below is a table of themes which were used to guide the interviews. The interview style was quite open to allow for the introduction of new topics. The general interview themes were used as guidance and the questions tailored to each participant to allow for issues raised in previous interviews to be followed up.

Table 3 Interview Guides

1 st Interviews	2 nd Interviews	3 rd Interviews	4 th Interviews
Can you describe how you are feeling about starting work?	Particularly stressful time?	First on call shift?	How they feel about responsibility?
What type of support do you expect to receive?	How prepared are they?	Asking others?	Interaction with students
Can you tell me about anything that you are particularly worried about?	Any difference between what was taught in university and practice?	Preceptorship/ support programme?	Confidence
What are you looking forward to most?	Fitting in to the department?	Role of their manager?	Support
		Experience in theatre?	Manager
			Departmental politics
			Thrown in at the deep end

It is generally accepted that face-to-face interviews are the gold standard, with telephone interviews being depicted as a less attractive alternative (Novick 2008; Lechuga 2012). At the request of participants, telephone interviews became the

primary source of data in this study. The participants requested telephone interviews for convenience as they were working many different shifts and extra hours, as well as having other social pressures on their time. In a self-funded project the cost savings were advantageous and relieved financial and time pressures on the researcher. It also alleviated the problem of finding a suitable place to meet in which to undertake a face to face interview.

One of the participants requested meeting face to face which was at a convenient location in a relaxed environment, but did have the disadvantage of back ground noise which, whilst not too distracting while the interview took place, did make the transcription more difficult. Most interviews were undertaken, via the telephone, with the participant in their own home, and as found by Novick (2008) this allowed the respondents to feel relaxed and able to discuss sensitive information. The environment proved to be problematic on only one occasion when the participant was still on the work premises, although they had finished work. This interview was less relaxed, shorter and lacked the depth of some of the other interviews. The choice of data collection tool is invariably constrained by the resources and time scale available and a pragmatic approach is sometimes needed with compromises being made (Finlay and Ballinger 2006). Initially, although undertaken at the request of the participants, the use of telephone interviews was seen as a compromise with the advantages of reduced travel and time.

Drawbacks to telephone interviews have been linked to telephone coverage and ownership (Sturges and Hanrahan 2004; Novick 2008). On one occasion there was a loss of telephone signal however this was restored very quickly, and the interview recommenced with no ill effects caused by the interruption. It has also been argued that telephone interviews must be kept short to reduce participant fatigue, and that this will produce inferior data due to it diminishing the ability to probe participants in-depth (Novick 2008; Lechuga 2012). As all the participants were young professionals and of the age group to have grown up with the use of mobile telephones this was not found to be problematic. Indeed telephone conversation in this age group is perceived as a natural part of life (Carr and Worth 2001).

The loss of visual cues is seen to be one of the major negative aspects of telephone interviews (Novick 2008). There is some thought that the absence of visual cues deters disclosure of sensitive information and the communication of emotions, on the other hand the social distance and the fact the participants are in their own environments may make them disclose information due to the comfort of having that distance (Novick 2008; Cook 2009; Lechuga 2012). It was an initial concern that proved unfounded that the telephone interviews would lack depth as highlighted as a risk by others (Sturges and Hanrahan 2004; Novick 2008). The loss of visual cues could potentially reduce the ability to develop rapport but as the participants were already known to the researcher, rapport was already established, and did not appear to inhibit the conversation. The loss of visual cues has the potential to lead to misinterpretation of responses (Opdendakker 2006). However, these can be compensated for by having an awareness of auditory cues such as laughter, sarcasm or curt responses (Novick 2008). In some situations telephone interviews may be unsuitable because they reduce the researcher's ability to comfort a participant who may become emotional during an interview (Sturges and Hanrahan 2004). This aspect was not considered a barrier in this project in which it was not anticipated that strong emotional reactions would be generated. Further reflection on this can be seen in Chapter Seven page 141.

As well as the convenience there was the added safety aspect for both the researcher and the participants, for example eliminating risk due to the travel to, and location of the venue (Sturges and Hanrahan 2004; Lechuga 2012). Telephone interviews also permit the researcher to take notes unobtrusively which allows the conversation to flow naturally (Lechuga 2012). Finally, in this age of frequent unpleasant cold calling, recruitment to a project can be problematic via telephone. However, as in the study by Sturges and Hanrahan (2004) the participants were recruited face to face and the telephone interviews used once the participants had become established. All the interviews were recorded and professionally transcribed verbatim in preparation for analysis.

4.5 Analysis

There is no one prescribed approach to the analysis of IPA, there is however a set of guidelines that can be adapted by the individual researcher (Smith and Osborn 2008). The important factors to consider when undertaking the analysis include double hermeneutics, reflexivity, immersion in the data and the balance of emic (coming from within the person) and etic (viewed as an outsider) positions. The interpretive process must be grounded in the participant's account of the experience in their own words (Eatough and Smith 2006). The procedure adopted for this study is as follows. Each individual interview was treated as an individual case and followed the same process. The transcript was read several times and viewed alongside listening to the recording. With each reading the researcher can expect to become more immersed in the data (Eatough and Smith 2006).

An example of the analysis can be seen in Appendix 4. In the left-hand margin phenomenological analysis notes were made which tried to identify what the participant was actually saying. The second stage involved looking at the transcript afresh alongside any phenomenological analysis notes made and using the right hand margin making notes of any interpretation. During the process any thoughts raised about how the interpretation could be conceptualised were noted. It was very important to this research that the connection between the participants' words and the researcher's interpretations was not lost. Therefore alongside any notes made in the right-hand margin a clear link was identified to a quote from the transcript that captured the essence of a person's thoughts. These stages of the analysis were very thorough and provided an audit trail of the process. The next stage involved separating the interpretive analysis notes from the transcript and using these to develop themes, an example of these interpretive analysis notes can be seen in Appendix 5. As this analytical process moves away from direct contact with the transcript it is important to take a reflexive stance and acknowledge any influence the researcher may have on the interpretation of the data. This is discussed in Chapter Seven page 141.

After each interview had been analysed as an individual case, comparisons were made with the other interviews undertaken at the same stage. For example all the interviews

with the newly qualified participants undertaken prior to commencing work were analysed specifically to look for areas of commonality and diversion. Notes were made of any emergent themes, thoughts, observations and reflections. These were then used to influence the interview guide for the next round of scheduled interviews undertaken when the participants had been working for approximately 3 months. All the interviews undertaken followed the same analytical process. The emergent themes following the 3rd interviews were summarised and presented to the participants as a form of member checking. These also formed the basis of discussion at the 4th interviews conducted at 12 months. As part of the hermeneutic circle, once all the data had been collected a longitudinal analysis of each individual participant was undertaken. An example can be seen in Appendix 6. The whole iterative process helped to refine the researcher's understanding and interpretation yet kept it grounded in the participants' own interpretation of their experience which is the essence of double hermeneutics. Although computer programmes are available to aid the organisation and analysis of qualitative data they were not used in this study. The use of NVIVO was explored but the barrier of the computer inhibited the creativity of the analysis. A simple Excel programme, which was kept securely and password protected, was used to store and keep track of the data, an example of which can be seen in Appendix 5. Further reflection on this can be seen in the reflexivity chapter, Chapter Seven page 141.

4.6 Data Quality

In order to establish the credibility of this study different strategies have been utilised including member checking, peer-review, reflexivity and by providing a rich description of the participants' accounts. Member checking within a phenomenological study is contentious. It consists of taking the data and/or the interpretations back to the participants so that they can confirm the credibility of the information and its interpretation. This process can identify if the interpretation resonates with the participants and to discover if there is anything missing (Goldblatt, Karnieli-Miller and Neumann 2011). Several pitfalls have been identified when using member checking. If this is done via a focus group a participant may be adversely affected when their

private story is publicly presented (Goldblatt, Karnieli-Miller and Neumann 2011). Returning to participants for member checking puts additional demand on their time, which may be an excessive burden on them (Goldblatt, Karnieli-Miller and Neumann 2011). Time will elapse between the original data collection and the request for member checking. IPA, as with Heideggerian phenomenology discussed by McConnell-Henry, Chapman and Francis (2011), focusses on the truth from the perspective of participants during a particular period of time. Consequently during the elapsed period of time the participants may have formed a different perspective (Goldblatt, Karnieli-Miller and Neumann 2011). Other issues to be aware of are the halo effect where the participants are trying to please the researcher and feel unable to disagree with findings and interpretations (Goldblatt, Karnieli-Miller and Neumann 2011; McConnell-Henry, Chapman and Francis 2011). Finally it is important to preserve the anonymity and confidentiality of participants (Goldblatt, Karnieli-Miller and Neumann 2011).

During this study the participants were given the option to view a transcript of their interviews. Only one participant took up this offer and on only one occasion. There was concern that the participants might find the verbatim transcriptions of their interviews slightly embarrassing because they highlighted in some cases the common misuse of English-language such as the overuse of the word 'like'. McConnell-Henry, Chapman and Francis (2011) highlighted the risk of a participant withdrawing from the study when faced with transcripts of their words. Luckily this was not the case. However, potential embarrassment may have contributed to the decision of the participants not to view the transcriptions. In this study at the final interview undertaken at 12 months the participants were presented with a provisional interpretation. A list containing a summary of themes was emailed to participants for their consideration prior to interview. It was a possibility that participants might not agree with the interpretation or have changed their minds, which could then bring into question the integrity of the study (McConnell-Henry, Chapman and Francis 2011). Whilst not all the issues resonated with each participant, the themes did stimulate additional information, as is one of the purposes of member checking suggested by Doyle (2007). It also prompted further description of experiences that gave credibility to the interpretation, in addition to ensuring the validity of the interpretation member

checking showed the participants that their contribution to the study was valued and respected.

Peer review or debriefing was undertaken periodically throughout the data analysis. Peer reviewers, who were colleagues or supervisors familiar with the research or phenomena being explored, were presented with highlights of the analysis. This process, suggested by Creswell and Miller (2000), challenged the analysis, prompted discussion and provided a sounding board for ideas. This ensured that there was robustness to the emerging themes.

Reflexivity was used in this study as a continual process of self-reflection on personal biases, preconceived notions and assumptions (Greenfield 2002; Powers and Knapp 2006). Using reflexivity as a thoughtful self-awareness during the research process can transform the problem of inter-subjectivity between the researcher and the researched into an opportunity to challenge and examine aspects of the research process (Finlay and Gough 2003). It allows the researcher to examine the effects they have on the research process (Andrew and Halcomb 2009).

Some of the diverse meanings and use of the term reflexivity appear to have little in common (Lynch 2000). Some suggest that reflexivity can be treated as a methodological tool to ensure truth and it is often mentioned in connection with the effort to root out sources of bias (Finlay and Gough 2003, Lynch 2000, Powers and Knapp 2006). Others surmise that the concept of reflexive practice is so complex that many attempts at reflexive analysis are superficially or inconsistently carried out (Lynch 2000). It is difficult to identify one's inter-subjective understanding, and confessing to methodological inadequacies can be uncomfortable, therefore not fully exposed (Finlay 2002). It is not always possible to stand back and examine the effect of one's preconceptions, and one may not even be aware what they are (Parahoo 1997). Therefore, whilst researchers use reflexivity as a method of demonstrating the integrity of their research, there is the danger of the researcher's voice overshadowing that of the participants if the reflexivity is too introspective. There is also the possibility that focussing on the interpersonal process will detract from the phenomena under

investigation (Finlay and Gough 2003). McGhee, Marland and Atkinson (2007) warn against becoming so reflexive as to stifle creativity.

Rich description of the participants' accounts is used in reporting of an IPA study. Describing the environment, the participants and the themes in vivid detail establishes credibility in the study (Creswell and Miller 2000). It does this by creating a semblance of truth that can resonate with the reader, thus the credibility is established by the reader, who is transported into the situation. They can then make the decision about how applicable the findings are to other settings or context.

4.7 Ethical Considerations

Regulations are required in medical research to ensure that the interests of society and the enthusiasm of the researcher do not override the needs of the individual (Hope, Savulescu and Hendrick 2008). The higher education institute granted ethical approval for this study (Appendix 9).

Maintaining anonymity can be problematic. All names have been changed in order to preserve anonymity. However, it could be rightly assumed that the researcher will use their own academic establishment and hospitals which are conveniently located (Pope and Mays 2006). Thus although pseudonyms have been used, in a small field such as diagnostic radiography it could be possible to identify if not the individual, the group from where the participants were drawn with very little detective work. Consideration has been given to preserving anonymity during the writing of this thesis which has influenced the amount of contextual detail provided about the hospitals and the participants.

In keeping with good ethical practice the participants were provided with an information sheet detailing the aims of the study, the requirements of them as participants and their right to withdraw from the study without giving any reason (Appendix 8). Each participant was contacted via email to arrange a suitable time for an interview and one reminder email sent if no response was received. This ensured

that the participants only took part in the study if they were willing to do so, not as a result of pressure put on them by the researcher.

Informed consent was obtained and documented prior to data collection (Appendix 8). However, with exploratory research, outcomes of the analysis cannot be predicted, therefore in accordance with best practice further verbal consent was obtained from the participants that they were happy for the issues they identified to be used as part of the research process (Finlay and Ballinger 2006). According to Benner (1994) the ethical stance of the interpretive researcher is one of respect for the voice and experience described. The participants were offered the opportunity to review their transcripts and member checking was undertaken towards the end of the data collection to ensure that the analysis reflected their experience.

Holloway and Wheeler (1996) raised the issue of a dual role of the researcher. In this case there was a possible conflict between the researcher and academic role. This was particularly relevant in the recruitment of the participants. It was important to recognise that the students might feel an obligation to participate in the study, or feel powerless to refuse (Green and Thorogood 2009). There was a possibility of coercion due to the nature of the relationship between the participants and the researcher (Booth and Brown 2010). In order to minimise the possibility of this situation a general request was issued to the whole cohort of students at the same time. Those willing to be approached to take part in the study provided their contact details. This was preferable to approaching the students on an individual basis where they might have felt an obligation to participate due to the nature of the relationship.

A balance was necessary in this study between gaining analytical distance from the data and having adequate insider knowledge for a valid analysis (Green and Thorogood 2009). Insider knowledge was valuable in understanding the terminology used by the participants and in asking pertinent, prompting questions during the interviews. Reflexivity and peer review helped to ensure that the past experience and inside knowledge of the researcher did not overshadow the participants' voice.

4.8 Summary

The methodology used for this research was IPA. This has close links to phenomenology and was a suitable method for exploring the transition into practice from the participants' perspective. This method is becoming increasingly popular in health care as it can provide a detailed examination of a lived experience.

One focus group with four participants was used as the initial source of data collection. Using the findings of the focus group, a second group of participants were interviewed over a period of a year. The individual interviews were semi-structured and conducted either face to face or over the telephone. The volunteers were all recruited from a single cohort of diagnostic radiography students who were close to qualification.

All the participants were provided with an information sheet about the study and informed of their right to withdraw from the study at any time. Anonymity has been maintained by the use of pseudonyms and limiting the contextual information provided in the paper.

IPA was undertaken on each individual interview. This is an iterative process which requires interpretation on the part of the researcher, whilst remaining grounded in the participants' own interpretation of their experience. The quality of the research was maintained via member checking, peer review and reflexivity.

Thus the following results, which are illustrated by the participants' own words, have been obtained through voluntary participation. Whilst the researcher being immersed in the data could have potentially influenced the findings this has been carefully managed and it is the lived experience of the participants which is illuminated in the following chapter.

Chapter 5 Results

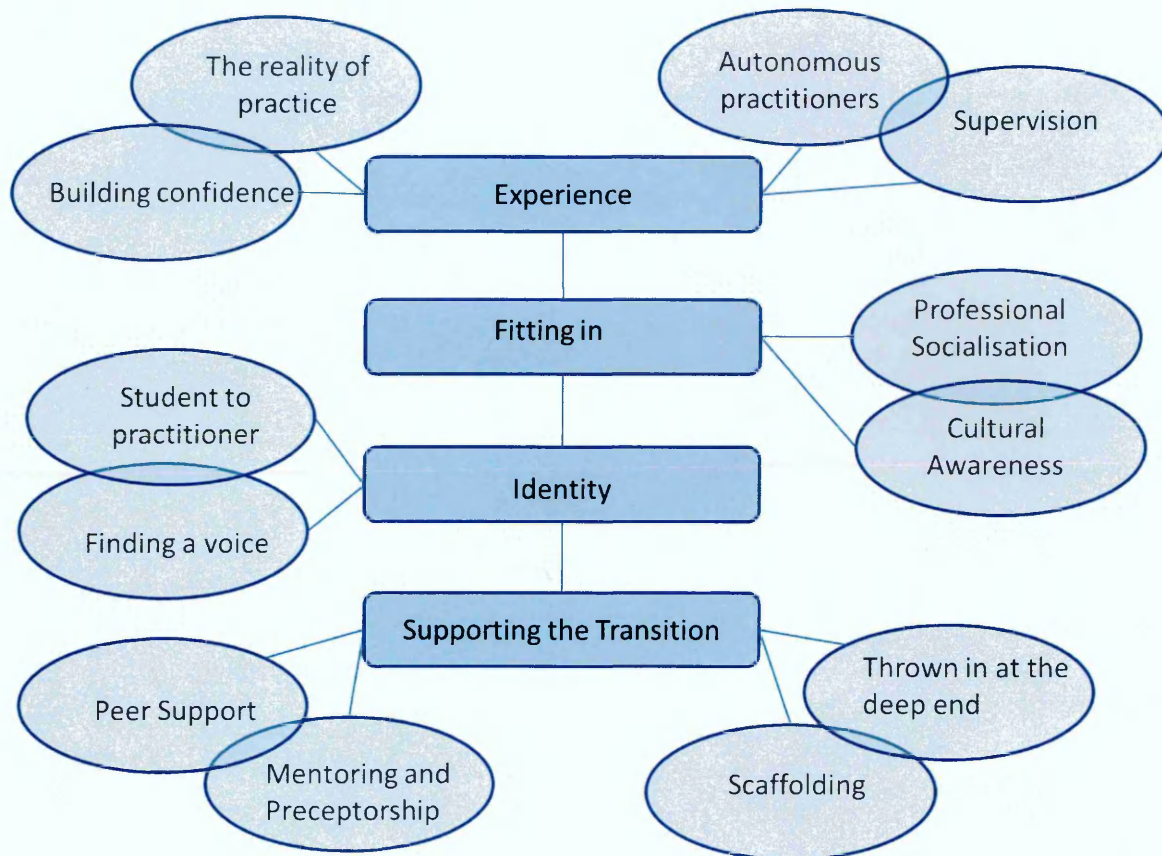
5.1 Introduction

The aim of this chapter is to present the results of this longitudinal study exploring the transition into practice using Interpretative Phenomenological Analysis (IPA). This analysis is a joint product of both the researcher and those being researched. Being mindful of the phenomenological and interpretative aspects of IPA, a large proportion of this chapter is made up of quotes, interwoven with the analytical comments, as evidence that the interpretation is grounded in the data (Smith, Larkin and Flowers 2009). In the quotations a series of dots (.....) indicate where editing has occurred to remove less pertinent information.

The analysis produced the super-ordinate themes of experience, fitting in, identity and supporting the transition; and lower level themes shown in the schematic diagram, Figure 7 overleaf. The results are an integration of the findings of the focus group and interviews, and are presented under these separate headings for ease of reading. However, there is some overlap and merging of the themes. For example there are clear links between scaffolding and being thrown in at the deep end, and peer support forms part of preceptorship in some cases, and stands independently in others.

As is common with IPA, the results are presented without reference to existing literature and separate to the discussion (Smith, Larkin and Flowers 2009). The next chapter discusses the findings in a wider context through engaging with what is already known.

Figure 7 Schematic diagram of themes



5.2 Experience

The clinical education experienced as students impacted on the transition into practice. It was essential for the development of clinical skills and attitudes as well as for the integration of theory and practice. There was a link between the clinical experience gained and levels of confidence. The participants felt less anxious and more confident the more experience they gained. However, clinical education obtained as students could not fully prepare students for employment and, particularly in the first three months of practice, the pace and pressure of work left the participants feeling tired. Higher education had prepared the students to be autonomous learners and they felt comfortable taking responsibility for themselves. However they struggled to take responsibility for students. These issues will be discussed individually below.

5.2.1 Building Confidence

The students who participated in the focus group had not yet found employment in a hospital and they were worried about the possibility of going to a different hospital and having to learn how to use new equipment and new protocols. They were concerned about the 'unknown', of experiencing different practices and cultures, and getting to know different equipment and people.

"What if they are all horrible, what if they are nasty? What if you don't get on with people? I'm worried about learning the protocols and what they do." (focus group)

The participants interviewed in the longitudinal study had secured employment as diagnostic radiographers. One had worked in the hospital for one year as a second year student. Seven of the participants had worked in the hospital where they secured employment for two years, during their first and third year of training. Having worked in a hospital as a student at some point during their training was viewed as an advantage because they were familiar with the layout of the hospital and the equipment.

Claire worked in the hospital where she gained employment during her final year

"I'm not as nervous as I would be if I was going to a department where I've never been before, you know, 'cos obviously you're just continuing through from xxx, it's like I know the staff, I know the environment." (Claire 1st interviews)

Pauline had not worked in the hospital where she had found employment for a year, but she had worked in one which was part of the same NHS Trust.

"Luckily it's the same equipment. Which is amazing, it's a big load off my mind." (Pauline 1st interviews)

There was a general feeling of concern about working in areas where they lacked experience and a 'fear of the unknown' similar to that experienced by the participants of the focus group. This was particularly highlighted with regard to working out of normal working hours. As students they mainly worked between the hours of nine and five o'clock, four days a week. The newly qualified diagnostic radiographers worked different shift patterns including evenings and weekends when there would be reduced staffing levels which resulted in them working on their own if their colleague was working in a different part of the hospital. Some of the hospitals ran an on-call

system where the participant would be the only diagnostic radiographer in the hospital after midnight.

"I suppose my first Saturday, my first weekend I've done, and it wasn't too bad actually, it was alright, so, I was a bit nervous because didn't really know what to expect, but it was just like being on a night, or you know, just like an after-hours shift." (Claire 2nd interview)

"I mean, I s'pose it'll be interesting to see what happens on a really busy one, 'cos maybe that would get you a bit like" (Sam 2nd interviews)

There was still some anxiety after six months in practice before doing an on-call shift.

"I've got another on-call next week as well, so, I still worry the night before, still get a little bit worried, but no, it's going well." (Mary 3rd interviews)

All the participants interviewed found that experience has shown them that they could cope with the work presented.

"I definitely feel now you go on night shifts when the bleep goes I am not bothered what it is. I can't think of anything that I couldn't have a go at.... when you first start you are scared of it going off because you don't know what it's going to be. Yes you are scared that when you ring the phone number you're going to get 'we've got this' and you think I don't know how to do that. Whereas now I just think I've had lots of things like, lots of little experiences just like being on your own at night and getting a...." (Sam 3rd interviews)

Another area that caused concern initially was working in the operating theatre. This was an area where they frequently lack practice and always required direct supervision as a student. The thought of going to work in the operating theatre was scary at first.

"I used to be scared of being made to go to theatre." (Claire 2nd interviews)

"I think that that theatre was a big thing for me, I was scared about it." (Heather 2nd interviews)

"It's really like sort of scary when they ask you questions though and you're like, oh no, and like do something wrong." (Mary 2nd interviews)

This could be attributed to the lack of practice working in an operating theatre. It could also be associated with the concern of being in an area where they work outside the close proximity of another diagnostic radiographer.

"Before I'd always got somebody with me and if it looked like you were even slightly struggling they'd take over.... Which is probably why I wasn't confident in it, because I was never actually left to do it by myself properly, um, yeah as soon as they started leaving me I was fine." (Emma 3rd interviews)

*"You just feel like when you go to theatre on your own, you're, oh I need the company."
(Mary 2nd interviews)*

With experience their confidence grew

"I ended up going into theatre for erm about literally 2 or 3 weeks running like constantly every day." (Claire 2nd interviews)

"I think being left on my own to do it I realized I can actually do it." (Heather 2nd interviews)

For some it became one of their favourite places to work.

"It's my favourite place, I know, I can't believe I said that (laughing) because I never thought I would, but I really don't know what I was worried about." (Claire 2nd interviews)

"I absolutely love theatre now..." (Heather 2nd interviews)

In contrast, Sam found that once his anxiety had subsided he found the work in theatre boring. It appears, as he highlighted that no-one talked to him, that he was just there to provide the images and did not integrate into the community of practice.

"The whole thing will be fine in theatre to be honest, more than anything else just the boredom and that sounds really bad now, but, once you stop being so like panicked about the actual imaging, if you're in a big long case where they're only using you for a minute every half hour while they're doing something and you just, no-one talks to you and you're just sat in there for like, 4 hours just trying to occupy your mind rather than, it really, really frustrates me that does." (Sam 2nd interviews)

There are other areas where there was a clear link between how experience builds confidence, for example working in the accident and emergency department (resus) and the CT suite. The radiographers felt less confident and were worried about areas where they had less experience.

"I'm not very confident with the resus because I've not really been to a trauma series yet it's just sort of getting used to doing that on your own rather than having someone there helping you." (Mary 1st interviews)

"I'm confident in doing them (CT scans), but I think it's just with the setting the machine up and everything, because I don't get to do that on a morning and close it down at night, that's the thing that I struggle with more than actually scanning the patient I think." (Kathy 2nd interviews)

Before he started work Sam felt that he had lost confidence in a particular area of work because he had not practised this for a while and he was worried that he had forgotten what to do.

"The general radiographer On call does the CT heads and so I am a bit anxious about that now because I feel that ... if I could have done it at the weekend after I had finished my assessments I'd feel a lot more confident whereas now I'm like Oh God I've forgotten it, forgotten how to do it." (Sam 1st interviews)

Later on in the transition there is an indication that, with experience, having a time lapse between work areas becomes less problematic. Emma worked in a large hospital where the roster was long, which meant that there was a gap before returning to a particular area of work. She found that even with a gap of 18 weeks, although she had to re-familiarise herself she did not find this stressful and could easily correct herself if necessary.

"It can be sort of 18 weeks before you get back to a particular roomby the time you're back round there you kind of have to sit and re-familiarize yourself before you do anything,..... and you find that you forget the little bits..... it's not as stressful. I find you generally just go, oh yeah this is that, never mind it's done now..... whereas before I wouldn't know how to correct it if something was wrong..... it's a lot easier now." (Emma 4th interviews)

After four months Kathy changed jobs and she was worried that she might have to start completely again and feel like a person who was newly qualified. This was not the case.

"I was a bit more nervous because I felt like I was going have to start again, I started to feel a bit like a student again, but I didn't, it was fine, they were all really welcoming so I settled in well." (Kathy 4th interviews)

She found that she took her experience and confidence with her to her new role. When she moved jobs she found that it was easier because she had made a transition before and it was not such a big step.

"I found it much easier working in the new place on-call on my own at night because I'd already done it before so it wasn't as big of a step as first time." (Kathy 4th interviews)

"They put me on weekend shifts after a month and then after the 2nd month I was back on nights so, I'm like pretty much back on to my normal working now, so it's all good." (Kathy 4th interviews)

5.2.2 The reality of practice

When they first start work newly qualified radiographers are tired and consider the imaging department to be busy. Maybe because they are new and have to work harder to achieve the same results as someone who has been qualified a while or the reality might be that it is busy with staff shortages. This appeared to be unexpected and

something that they were unprepared for. It was interesting that three of the radiographers described the situation as 'crazy' and that this term, which can mean mad or insane, and also used to describe a very intense situation, was used over the 12 month period.

"You think you're tired as a student, but, this is crazy". (Heather 2nd interviews)

"Pretty shattered most of the timethe night shift seemed to go crazy, like we we're getting an average of about 27 – 30 patients a night." (Emma 3rd interviews)

"We were so short staffed we've just got a locum last week as well, so it's been a bit crazy." (Mary 4th interviews)

When the participants started in employment they found that they are working shift patterns that resulted in them working extra hours in a week and several weekends. Although most students gain some experience of working outside the normal working day these are not additional hours. They thus went from working 28 hours a week primarily 9am to 5pm, to working more than a standard 37.5 hours a week and covering any time during the 24 hour day, so it was not surprising that they felt tired.

"I don't get as much free time, as I used to as student,obviously I don't now because I've worked a lot of weekends" (Sam 1st interviews)

"I normally get about 4 on-calls a month, but I've been working Christmas and New Year, so it's all added up, we do do quite a lot." (Kathy 2nd interviews)

"I feel tired, really tired because I've done a lot of weekends, and, you don't really stop do you." (Mary 2nd interviews)

Some of the participants found it particularly difficult adjusting to the change in routine.

"It takes you a few days, I seem to get ill though after them, I tend to get a cold after, I don't know whether it's just lack of sleep or something." (Claire 3rd interviews)

"I have found it quite tiring, it's difficult to adjust at times as well, because we do um, the on-call is 4 pm to 8 am, we've got the day before and after off, but then you can be on-call again the next night." (Emma 4th interviews)

Once they got used to the different working pattern they liked the shifts because it facilitated a good work-life balance.

"You get 2 days off the day before and the day after an on-call, so I like the flexibility of the week." (Kathy 3rd interviews)

"It is nice to get your day back in the week, get jobs done" (Claire 4th interviews)

"Technically I have worked more hours, more physical hours but I feel like I have had more of my own time." (Sam 4th interviews)

It is possible that anxiety was contributing to levels of tiredness and reduced physical well-being. The pressure of work eased as procedures became more routine and less of a worry.

"I know when I go into a procedure I know exactly what, how I'm doing it, what angle they need to be at, what projections I'm doing, I just know..... And it makes it so much easier that you can just do it and don't have to worry about it." (Claire 3rd interviews)

5.2.3 Autonomous practitioners

During the 2nd interviews, four of the five interviewed highlighted the need to do things on their own. They found that managing on their own increased their confidence when they had to figure things out for themselves. However, they also recognised when they needed support and were able to access it.

Going solo builds confidence. The transition from being supervised as students to being unsupervised autonomous practitioners was a concern, but they felt that it was beneficial to their development.

"I think it was just being let loose on my own and just now it's like I've no idea what I was worried about." (Claire 2nd interviews)

"You could do everything, and they just stand there [the supervisor] and do nothing, but it's not the same as going on your own.... I think you do learn a lot more going on your own. You really should do that, kind of thing quick as you can really...." (Sam 2nd interviews)

"I think when you qualify and you do it on your own you do gain that confidence." (Mary 2nd interviews)

Although they found that doing things on their own increased their confidence, they also recognised the need for support and appeared to find no problem on asking for support when required.

"They were wanting me to..... I've not done this for ages, and I said just do one with me and then I'll be fine after that, and I just, I seem to pick it up really quickly." (Claire 3rd interviews)

Some were happy to seek clarification if they were unsure, either from written protocols or from the person requesting the procedure.

"...and the surgeons, if you tell them that you've not done a procedure before, they'll talk you through it before they start, and say where they want you and everything." (Emma 2nd interviews)

"I just either find the protocol book or you know speak to the doctor and like, why do you need it, and then they'll explain a bit further so, yeah, it's not too bad." (Mary 2nd interviews)

There was a general concern about taking on responsibility for both them and for students once they were qualified. The most prominent additional responsibility the radiographers encountered was checking their images for technical acceptability and justifying the request cards. The discordant case of Claire below illustrates how, although the ultimate responsibility was not hers at the time she was a student, she had practised the decision-making process and thus felt confident in taking on these additional responsibilities. Those who were concerned soon found that taking responsibility gave them job satisfaction.

"It doesn't worry me actually, checking my images; I know it's a responsibility..... I feel confident enough to know now, if I don't know now I'm not really gonna know am I? ... If you if you've already practised I suppose, yeah, made your own mind up before you check with them..." (Claire 1st interviews).

5.2.4 Supervision

Some imaging departments had a policy that restricted newly qualified staff from supervising students. However, in reality all the participants were supervising students after a few weeks and there was a general concern about taking responsibility for students, particularly in taking responsibility for their images.

"I think they're trying their best to get them to work with seniors rather than every other radiographer, but I have been supervising them this week, it's a bit weird actually....." (Kathy 2nd interviews)

Once they had grown in confidence in checking their own images, they felt more comfortable supervising the students.

"I probably have been quite confident in checking my own films now, I don't mind checking students, like when I first started I didn't really want to check students because I didn't want to release anything that I wasn't sure about myself." (Kathy 2nd interviews)

"I think, once I got over checking my own films now I'm more confident checking theirs, it's just the same really." (Kathy 3rd interviews)

Although some of the participants enjoyed the company of the students others found it problematic. Mary highlighted that the students made her think and helped her to retain her knowledge base. The quotes highlight her growth in confidence and the acknowledgement that it is easy to forget what it is like to learn. It also raised the issue of the pressure of work impacting on the service she wanted to provide for the students.

"It's really like sort of scary when they ask you questions though and you're like, oh no, and say something wrong....." (Mary 2nd interviews)

"It makes me think again as well, because when they're asking questions you have to think back and think oh, you know try and remember everything....." (Mary 3rd interviews)

"Because obviously you've got your own work and the responsibility of a student as well and I found, because obviously it's only been a year but you forget how easily you try and learn as a student..... and I'd love to sort of have 5 minutes to talk about a X-ray or a piece of anatomy, but you just don't realistically have that time." (Mary 4th interviews)

Although she enjoyed the company of the students she also found it hard supervising the students and not taking over.

"So it's been really nice, having the students back, it's so different when they're not there." (Mary 2nd interviews)

"We've had students so that's been really nice, teaching them..... I find it a lot harder than I thought I would, especially when you're positioning for just a, any X-ray, you, it's easier to take over and take control of the tube rather than explaining it, which now it makes me realize how radiographers used to be with me, I try and go through it with them and try and not to take over." (Mary 3rd interviews)

Sam also found it hard not to take over when he was supervising and recognised that he needed to give the student more time.

"So she [the student] was perfectly capable of actually doing something to help me with it, but I think I remember just kind of, just went and did it and then quite honestly, I was like did she actually do much there really, I was like, I s'pose I should have let her get on, you know..... It's like you don't quite give them time 'cos they're a bit timid and they would probably get involved but 'cos you've rushed and done it all already, they've missed out of it." (Sam 2nd interviews)

So although there were benefits to supervising students in the retention of knowledge and the company, they all found it very difficult in the beginning. Assessing students was particularly problematic for all the participants even after 12 months.

"This week I've found it quite difficult because I worked with one of the students, and I had to fail him because he was a bit dangerous to be honest, but I've never been in that situation before, so that side of the responsibility I don't, I don't really enjoy that, but it's got to be done, so..." (Kathy 4th interviews)

Assessing students was found to be difficult, particularly finding the right words to give negative feedback. This indicated that there was a development need in this area which should have possibly been fulfilled while they were still students.

"I've done quite a few assessments and I've found the ones that you do with the students who know what they're doing and they're quite confident enough for 3rd years and things, they're quite easy to do because you're just writing nice things anyway,..... it's when you've got the 1st years and they need to improve on things, it's wording it in the right way that it's not sounding like a negative as such, so that you're not knocking their confidence back and things." (Emma 4th interviews)

"I think I may be a little bit lenient.I try and put one or two things but it is easy to fall into the trap of just being very positive and not wanting to be so negative." (Sam 4th interviews)

5.3 Fitting in

The participants who had not found employment were worried about whether they would find a hospital where they would fit in, whereas those who knew where they would be working were less concerned because they had already met some of the staff and had a positive experience. The four participants who worked in the hospital during their third year of training found that they were already being integrated into the imaging department. This was mainly positive but one participant highlighted that she was so integrated that other staff did not offer her support. In contrast, there was also some concern about at what point they would stop being viewed as a student. Socialisation into other communities of practice, such as theatre, was sometimes a concern and their experiences depended upon the culture of the area. During the transition the participants became gradually more aware of, and involved in the politics within the imaging department. This was an issue that was not raised until the final interview by the majority of participants. They also recognised the influence that a manager has on an imaging department and the role they played in their transition.

5.3.1 Professional Socialisation

The participants of the focus group, who did not know where they would be working, were concerned about fitting into the imaging department and whether the people that they would be working with would be 'nice'. They identified that it would be terrible to not like the people and that it would make the transition easier if they did fit in.

"I'm worried whether I will fit into the new department because the staff that are already there they have already got their friendships and things like that so especially if you are moving somewhere where you haven't actually got, or know anyone outside of work." (focus group)

"If I fit in to the department I won't be as scared about flying solo as if I was doing it on my own because I would have the support of everybody else there." (focus group)

At the focus group concerns were raised about joining a 'cliquey' imaging department and the need to join an established group.

"You want to hopefully be able to tag along on any activities that they do outside of working. You don't want it to be a cliquey department." (focus group)

"You want to make sure you fit in and you want people to think nicely of you" (focus group)

It is human nature to be concerned about what people think and the desire to create a good impression. This then, in turn, prompts concerns about what is expected behaviour. Concerns were raised in the focus group about being unpopular if not conforming to the norm.

Students who were familiar with the hospital where they were being employed were much less concerned about fitting in as they had a positive experience when meeting staff or already knew the people they would be working with. This was viewed as a clear advantage. For those who worked in the hospital during their third year of study it meant that they were already partly integrated into the community of practice. It was seen mainly as an advantage because they knew the people and they already felt partly integrated into the team.

"And, yeah they're all really nice, so I think, and 'cos I've been there for 2 years that, I do know everyone, so it's..." (Louise 1st interviews)

"That's quite nice, you just feel like, everyone's like, oh you're part of the team now, which is really nice, so..." (Claire 1st interviews)

"Because all the equipment I've worked with, I've met the people quite a few times, you know". (Heather 1st interviews)

The four participants who worked in the hospital during their third year of training found that staff were already integrating them into the imaging department and started to treat them like qualified staff once they had been offered the job. Thus the integration process started while they were still students and their transition was already underway.

A couple of the students had already started to work different shifts outside of the normal working day. This was encouraged for students to enable them to broaden their experience. However, one of the participants highlighted the negative aspect to this situation in that if she was no longer identified as a student they might not give her the support that she needed. Similarly, during her first interview, Kathy was anxious that staff might find it difficult to stop treating her like a student, but once she started, felt so integrated into the imaging department after three months that she was not treated as 'new' with any special needs. This could potentially have been a problem if Kathy had needed additional support that was not available.

Some were already starting their transition while they were still students.

"Since I got the job, it feels like it's totally different, we went to a conference as a group, me and Sam went with a group of 6 radiographers, and it's like we're part of the team when we go out with them, it doesn't really feel like I'm a student anymore."
(Claire 1st interviews)

A couple had been asked to undertake different shifts to help them integrate into practice.

"...not really (laughing) 'cos they've already started asking me to take certain shifts, but not on my own, so that's good like out of hours, like lates and stuff like that, so..."
(Louise 1st interviews)

"I have been doing a few later shifts to get used to being on my own and stuff, so they have let me do that and a few long days as well so they are trying to integrate me into working properly as opposed to being a student." (Kathy 1st interviews)

Looking back at the twelve month interview Kathy saw the drawback to such swift integration.

I think because they have integrated me into the team so well no one's really asked if I'd any problems or anything, but I haven't so..." (Kathy 4th interviews)

Diagnostic Radiographers enter other areas to work such as theatre, Accident and Emergency department (resuscitation) and other wards to do mobile imaging. This involves moving away from the main imaging department where they are surrounded by other radiographers to an area that is the domain of other professionals and where they are usually the only radiographer. This is something that they would not experience as a student as they would always be supervised, so although they might be proficient at the examination, the circumstances of being amongst other professionals and remote from the imaging department can be a source of anxiety. What helped Mary were the welcoming, friendly staff members who made an effort to find out her name.

"everyone's just been so welcoming and even from other departments like, sort of theatre and that, they get to know you, know you on a first name basis and when you go up to ward, do mobiles and everything, it's really nice so." (Mary 2nd interviews)

"I still worry sometimes when I go into theatre, I'm like, oh no, I don't wanna go, but then when you're there, it's not as bad..... and obviously it depends on what surgeon is in and when you find out it's a certain surgeon you're more scared, but all the theatre staff are really lovely at xxxx, really really friendly, like they know your name and it's quite a nice atmosphere. (Mary 4th interviews)

Even if the rest of the theatre staff were friendly it was the surgeons who gave the orders when and when not to take the image. This meant that they could influence the radiographers' experience in theatre. As Mary and Kathy found, some surgeons were more frightening than others

"I get on with the surgeons quite well, and no problems as yet..... it depends who's operating obviously, 'cos some of them are not as nice as others, but, yeah, quite a nice atmosphere." (Kathy 2nd interviews)

5.3.2 Cultural Awareness

During the transition all the participants interviewed became gradually more aware of, and involved in, departmental politics. Issues about the organisation and running of the imaging departments were only raised prior to the interviews at twelve months by Sam, who had previous managerial experience. The other participants were only slightly aware of any politics as students because it did not concern them.

"As a student you just think I'll leave it I know that I suppose it's not really your Department to meddle with." (Sam 4th interviews)

"I think as a student you don't need to know it, so you know, things would kind of bounce over your head because you're on a little off-shoot to most of the department anyway as it were as the worker. (Emma 4th interviews)

The newly qualified diagnostic radiographers realised that they needed to get involved in issues that affected them.

"There's quite a lot going off at the minute, with the shift patterns they're all going to change and there's an ongoing dispute within the department about working time directives so it's all quite up in the air at the minute..... I get involved really because things that they are talking about are gonna affect me for 40 – 50 years." (Kathy 4th interviews)

Initially the newly qualified staff members were working to protocols and rosters that were organised for them. They had little control over their working conditions. By 12 months they felt that they had more control over where they worked, and that they had their opinions listened to.

"You choose your lates and your earlys and you can fit it around what you're doing in your personal life which I find quite good," (Kathy 4th interviews)

I feel like we're getting a bit more actually involved." (Sam 4th interviews)

"You have the option to go if you want to and so they asked me if I wanted to go so, it's not as far as where I am now so I thought it would be a good experience." (Mary 4th interviews)

The line manager played an important role in the transition process. They facilitated a smooth transition by organising rosters so that the newly qualified staff members were exposed to suitable experience. They organised support for the new staff and checked that they were 'getting on OK'.

The influence that a line manager has on an imaging department became clear to Mary and Sam when their manager left.

"She left a couple of weeks ago as well, and she does the rotas and everything, so they're waiting to employ someone else so it's a bit chaotic at the minute." (Mary 3rd interviews)

"We had a young manageress who did do a bit more... I would say did a bit more towards making us happy, you know she was a lot more involved she really got stuck in if you got busy. You know she would come out of the office and things and she seemed to keep on top of all that other stuff as well and then she left to go on maternity leave." (Sam 3rd interviews)

Claire and Kathy found their line managers to be helpful and supportive. They were someone who checked that they were okay and someone they could go to with any issues.

"Jane (the manager) was really good because the day before I was due to do a stand-by, she said "do you feel happy with doing stand-by on your own tomorrow night", and I said yes,..... She said, "You know you can, it's not a crime for you to say, I don't feel confident enough yet". (Claire 3rd interviews)

"She is here all the time and she's been helpful if I'd had any problems or anything or any issues on-call which she has sorted out." (Kathy 3rd interviews)

Most of the participants initially had positive comments to say about their line manager, but Sam who was in the same hospital as Claire saw a very different side to Jane, his line manager.

"I think she just has zero man management skills. She demoralises people with little things. I just think she's.... I find these people who get some management sometimes treat you in a childish kind of way. They speak to you like your five and talk to you like a teacher would rather than a.... I can imagine like you're in primary school so [laugh] so instead of you know trying to pull people together to be happy about what they are doing and why they are doing it." (Sam 3rd interviews)

This may have been a personality clash. However, as time went by Claire also saw personality flaws in their line manager.

"And she cares about you as a person as well, like when I did my return to work, she said are you alright, you know just with everything, and just, she's genuine. I think when she's stressed and people are getting on her back she can be a bit nasty, you know, but I suppose she puts on her boss' head then, but when she's one to one she's a really nice person with you." (Claire 4th interviews)

5.4 Identity

Newly qualified diagnostic radiographers, as well as changing from student to practitioner have other aspects of their personal life that are in a period of change. There was a desire to cast off the student identity as they moved into practice. One concern was how they would be perceived by other qualified staff. Their identity was constantly changing and after six months some participants were looking ahead to their future identity. The interaction with doctors was raised as an issue by all the participants. Most met with medical dominance to some extent and felt unable to interact with doctors as an equal professional. However, as their professional identity

grew stronger, they felt more confident and able to put forward their professional opinion. There was one particular incident described by Claire that raised the idea that it could be radiographers' subservience that sustains medical dominance.

5.4.1 Student to Practitioner

In addition to the transition into practice, with the exception of Mary and Louise who remained at home, the participants had other major life events occurring during the transition such as moving house, getting married and having an operation. The impact that this had on the transition has not been noted or explored and could be a topic for further research.

"I've got to sort all that kind of thing out I'll be moving out with my girlfriend now so we've got to sort that out and get a house and stuff and that's... That is going to be quite difficult in a way, just choosing somewhere really." (Sam 1st interviews)

Some were concerned that they would still be treated like a student for a while once they were qualified but this was not experienced.

"I will be interested to see what it is like if the people will treat you a bit studenty because you have always been a student here." (Sam 1st interviews)

"No I don't think really get treated like a student which is good." (Sam 2nd interviews)

"straight away [stopped treating her like a student], they were all really good surprisingly, because last time I spoke to you I think I were a bit worried that they would treat me like a student." (Kathy 2nd interviews)

"I definitely don't feel like a student, definitely part of the team now." (Claire 2nd interviews)

After six months, some of them were looking to their future. This is an area not fully explored and is an area for further research.

One participant had already moved to a position that was linked to a promotion. The others were looking towards their future and exploring different options.

"I've been sort of half enquiring, I've always wanted to do Obs and Gynae ultrasound, but I don't particularly want to do it just yet. There was a vascular ultrasound position come up just recently and the interviews I think are next week, and I did think about it, but I thought no because I don't want to go to Uni to study something, I'm not interested in doing vascular at all." (Claire 4th interviews)

"I want to do something... I either want to do MRI or I want to do something reporting to start with. I looked into it a little bit..." (Sam 4th interviews)

5.4.2 Finding a Voice

When the newly qualified diagnostic radiographers interacted with doctors they had different experiences. As shown earlier, Emma and Mary were happy to seek clarification about requests from doctors if they were unsure what to do (section 5.2.3). Sam found that the way he interacted changed over time. Although Sam had a general feeling of growing in confidence after three months he still lacked confidence when questioning doctors. With experience, by twelve months he had learnt how to deal with the doctors' requests. He had gained enough knowledge and the confidence to discuss a request and explain the reasons for declining a request. He had a shift in self-perception and as he gradually grew in confidence he found that he could speak to the doctors as fellow professionals.

"When it's just you, and you're like, I'm not sure about this, you go and speak to a doctor and they'll convince you it's right." (Sam 2nd interviews)

"Being able to argue it better and being able to give the reasons why you are not doing it. Before when I was first qualified a lot of the time the protocol sits there and says no we don't do skulls or something but there is no real explanation, no one has ever told you the proper reason. You can roughly guess at it.... Whereas now because you've had the experience of someone coming up to you and saying, "I want skull X-ray" and you are going to have to say 'no we don't do them' and eventually you have a list of reasons why. So that satisfies them a bit more." (Sam 4th interviews)

In a different situation Sam still lacked confidence with other professionals. He discussed his experience in the resuscitation area where he stood back while other professionals were working on the patient and did not quite know when his turn would be. Eventually one of the doctors pushed him forward to take the images.

"When you are doing a lot of the films in resus like pelvis and chest whilst everyone is there doing things to the patient, I remember that first time I stood back a bit waiting and wondering when it's my turn because no one was telling me..... If that came up again I would still be a bit like you know, am I going to push my way in or am I just going to wait and say it is up to them...you decide." (Sam 4th interviews)

Claire described a situation where she was surprised when a consultant approached her for advice about a difficult procedure. She expected the doctor to be telling her what to do rather than viewing herself as an equal professional.

"The specialist who bleeped me said I'm ringing you for advice because I want to know what you want to do about where to do it." (Claire 4th interviews)

In contrast to this Emma experienced a more hierarchical attitude in a situation where a doctor refused to speak to her because she was new.

“There are certain doctors, that if someone else is around who can question them, I’ll get them to go, rather than me. Because I’ve been round to see them before and he refused to speak to me because I am new.” (Emma 3rd interviews)

5.5 Supporting the Transition

The participants of the focus group and those interviewed wanted tailored support and were led to believe, at their job interviews, that this is what they would receive. Two of the slightly more mature participants, who had previous experience of employment, were slightly cynical about this. A couple of the participants felt that once they were qualified they would be expected to be independent. All the participants were assigned a mentor but most did not use them. The only person who did mention meeting her mentor did so informally. What they found was that they could ask any members of staff as and when they needed help or advice. Surprisingly the topic of receiving feedback was not raised, and only two participants had a formal appraisal of their performance. There was no indication that the participants were ever out of their depth and felt that being stretched was a good learning experience. In three hospitals the participants received scaffolding where support was gradually withdrawn as they gained experience. This practice was well received by the participants and gave them a positive experience during their transition. In contrast to this, one of the participants had less support when she started on call which left her floundering. Peer support featured highly as a positive support mechanism either formally or informally. This support was highly valued. The formally organised peer support meetings reduced in value, but the informal support from peers continued to be beneficial.

5.5.1 Thrown in at the deep end

During the initial interviews it was identified that they generally wanted tailored support to suit their needs. They recognised that people develop their confidence and experience at different rates and wanted to be treated as an individual.

"I think that, it's usually a month or two months, depending on how you feel, because you need to get signed off in different areas, so they'll supervise you until then." (Louise 1st interviews)

"There's no kind of set time. It's whenever you're ready and obviously they know that we're all going to be different and like different times and that. Some will go a bit quicker. So it's entirely up to us really which is nice..... Though they seem very supportive and not throwing you in at the deep end too much." (Pauline 1st interviews)

Claire clearly negotiated what support she needed and received.

"They supported us a lot. We always had somebody go with us until we felt confident, like with theatre, right up until I felt confident, and then Jenny would say, do you think you can go on your own, and I'd be like, oh I'm not sure and she's like, well go on your own and ring us..... it was just to wean me off somebody really. (Claire 2nd interviews)

"If you don't feel confident you just say and they'll, you know, they'll accommodate you or they'll teach you what to do or whatever, they let you, they let you get on with it..... I just said if someone just comes in, sets me up, does one with me then I'm fine, they can go then." (Claire 3rd interviews)

The participants were told at their job interviews that they would receive support. Some expected good support but others were cynical. They had been told to expect support but whilst they had been working as students they had seen other new staff placed in difficult positions.

"They say you're chaperoned by someone if you want to, when you go to theatre and on mobiles, and down to resus, erm to give you like the support if you need it, so that's kind of good, and also they help you with, with shifts, so you don't really go on the on call rota for a couple of months." (Claire 1st interviews)

"They seem very, very supportive at xxxx. When I went for a chat and stuff and a look round, it was mentioned that they don't throw you in at the deep end, so, you know, say if you're not comfortable in theatre or I don't know, working in the A&E bit by yourself, they won't push you in there, they will make sure that you are comfortable." (Heather 1st interviews)

Emma and Sam were slightly older than the other participants. It is possible that their increased life experience had influenced their perception about support for new staff and made them more cynical.

"I would hope there will be some support. I don't actually know if there will be. When I had my interview though, I asked about mentorship and they said they do for as long as you need it. But whether that is actually the case, they're supposed to assign somebody to you and if you need help you would go to them, but the chance of them being around or even in the same room are probably quite slim so...." (Emma 1st interviews)

"They say that there's going to be a good preceptorship period where you won't be expected to even particularly work on our own as such..... however speaking to people

who've had that before I don't think it quite turns out like that..... whether that actually happens, whether they'll expect you to really to just work independently pretty much from day one" (Sam 1st interviews)

Claire expected to have to be independent once qualified.

"I don't know. You're very very independent once you've become qualified and it's like, oh you're a qualified radiographer so you don't need any support." (Claire 1st interviews)

All the newly qualified radiographers encountered supportive staff and felt that they could turn to anyone for help and advice rather than going to one particular person. Radiographers work in a team environment and being able to ask for help or advice from anyone on the spot as and when it was needed was an obvious advantage and reduced the need for an allocated mentor.

"All the rooms lead off from one viewing area so it's nice, even the fluoroscopy room, so we're all really together which is nice and I say there are lots of staff about to help." (Pauline 1st interviews)

Only two of the participants mentioned having an appraisal with their manager. Surprisingly the issue of obtaining feedback on their performance was hardly raised at all.

"They do a review, so we did one a month after we'd been there with a manager, who we'd go to and go through everything and then our senior who does the rotas and everything, she had a tick sheet and made sure you were comfortable in each room.... it was helpful... I thought it was going to be scary, but when we were sat there, I think 'cos I know her as well, it was more of a friendly chat" (Mary 2nd interviews)

As mentioned earlier in section 5.2.3 working alone built confidence and this research indicated that being stretched or 'thrown in at the deep end' was not necessarily a negative experience for the newly qualified diagnostic radiographer, but could be a good development opportunity.

"I think being left on my own to do it I realized I can actually do it." (Emma 3rd interviews)

I think if the staff would've still kept me like a student and kept checking if I were ok all the time, I think I would have been a bit hesitant, but because I had to get straight into it and make decisions by myself I think that's what made it better." (Kathy 2nd interviews)

"I think if you are kind of thrown in at the deep end you have to cope and you know, you will find the answer somehow, and obviously you'll use your initiative more, you'll look through text books or you'll go and ask the radiologist, yeah, I do find that it does help and it makes you sort of a stronger person as well." (Mary 4th interviews)

5.5.2 Scaffolding

An excellent practice of organisational support was identified in more than one hospital. This was scaffolding, where support was gradually reduced as the newly qualified staff gained experience. The same practice was observed in preparation for full participation in theatre, for on call and later on for CT on call. Claire and Sam explained the process from their perspective. The participants recognised the need for the support, and appreciated it but Sam felt uncomfortable about the high level of support.

"I think it was pretty good yes. They have a set thing, even if you don't want it, I think you have to have it now [support]. Do the first night with someone. The second one someone is at the hospital sleeping in the on-call room and the third one is on your own. I think that was about right really. (Sam 4th interviews)

"I didn't find it too bad actually. I found it [first on call] alright. I did it with Sue and she stayed up with me all night, obviously I took the calls and everything just to try and make it that I was doing it on my own. I did my second one at the end of November where Paul went and stayed in the on-call room, but I tried to pretend that he'd gone home, as though it was a real situation. That was quite a nice night as well actually, it wasn't too bad. For the third on call there was someone that they could ring.... She [the manager] said "You know, don't feel worried if you have to ring Ray". She kind of like reassured me a lot, which was nice..... thankfully I've not really been in a situation like that yet where I've felt I can't cope or, or I don't know what I'm doing or you know, something happened, but I do feel like I'd be able to ring someone." (Claire 3^d interviews)

Sam appreciated the support but felt uncomfortable about the amount of support he was receiving, in his view, unnecessarily.

I think if you have got confidence you can feel a bit... At times because when I was on my night shadowed by someone I did feel like I'd just kept them up for nothing like....They just kind of let me get on with it because that was what it was for, for me to get experience. At the same time I think that they felt they had to get up because they were getting paid the same as me and they can't go to sleep, but I did feel that they did not need to get up because nothing bad happened on that night so it was quite simple really. So I think that then gives you a bit more confidence." (Sam 4th interviews)

Mary, who worked in a different hospital, experienced a similar system for on call, and the same structure was used when she started CT on call.

"They obviously have some sort of structure that when you do an on call with somebody else and go to theatre with somebody else." (Mary 2nd interviews)

"I found that with like CT again as well, you know, it was nice I had someone there all night and I knew that I could just ask them any questions and then, like still because obviously I'm not competent in CT yet, but I still have someone on the end of the phone

if I need them, which is always nice and you know everyone will help you.” (Mary 4th interviews)

Emma described her experience of starting on call with less organised support when she did not have all the information that she needed and was left to find her own way. There is a clear contrast between the different experiences.

“ I started doing a few midnight shifts beforehand so you work up until midnight then you’re 2nd on-call for the rest of the night. I did a few of those before I started being the on-call, but yeah, it was fairly... I was doing the on-call within sort of 3 months, 4 months maybe.... when I first started doing it because I felt, I still felt that I didn't know exactly what I was doing, um, and they didn't necessarily show you how they normally do things, like how to prioritize and so it's just a case of finding my own way.” (Emma 4th interviews)

It is clear that there needs to be a balance between the amount of challenge presented and the support received.

5.5.3 Peer Support

In one hospital they had hired six new radiographers at the same time. These people formed an informal peer group and gained support from each other.

“...being five other new starters it kind of I think that sort of that made it easier for me. It is not just me turning up and the fact that I know two of them as well from uni” (Pauline 1st interviews)

“...there are five new people as well. So that's good not being the only one starting.” (Mary 1st interviews)

“It's really nice, really nice, it's, obviously, yeah, because it was six of us that started , it's just we all get on really well, and like every day we're all just really friendly.” (Mary 2nd interviews)

Emma had also started at the same time as other people who formed an informal support group. They felt the benefit of being able to share experiences and gained reassurance that other people felt the same as them.

“It was quite nice to have. It was like a mini support group when we first started because we all had the same problems and we all felt the same sort of insecurities that you weren't necessarily doing things right and yeah, it was nice to have somebody else saying, 'I don't think I can do very well either'.” (Emma 3rd interviews)

Even after 12 months, support was obtained from the peer group.

“I mean still now we all sort of help each other which is really nice.” (Mary 4th interviews)

5.5.4 Preceptorship and Mentorship

Claire and Sam experienced an organised peer group. This was referred to by them as preceptorship. What it involved was monthly meetings that lasted all day with other professionals. Claire likened this to an alcoholics anonymous support group. Initially, as with the informal peer support, they benefitted from being able to share how they felt in a safe environment.

"You sit in your groups and once a month you can talk about problems or any issues that you've got and as a group you try and either resolve them or tell the person how they're gonna help make it better for them..... basically it's like alcoholics anonymous. I think that's what it's like, you sit round and confess and it all just stays in the same room, and you all just try and talk about it..... but it's quite nice to like talk..... even if it's a nurse, you know obviously we all work in the same profession, even if they feel like they can't cope or they're tired, 'cos it's really tiring starting full time jobs..... Mentally and physically exhausting, and it's just nice for somebody else to say, yeah, I feel like that too, and to physically be in the same boat and not feeling like you're the only one feeling like that..... at first, I wasn't sure, I was like, oh my goodness, what's this, but I do really enjoy my sessions actually, it's really good." (Claire 2nd interviews)

"When you're in a group and you share your own experiences and try and solve them or give support, I think it's been really good, that's been really useful, just go once a month..... even though you wouldn't think that they have the same sort of problems, there is a lot of general things which is what we talk about that are the same, just even like time management or not fitting in, or organization skills and stuff like that..... it's been really nice to, hear other people's experiences as well, to know that, you're not on your own and you know.... it was a bit reassuring that other people are the same." (Claire 3rd interviews)

For Sam the benefit was short lived. The programme lasted for 6 months and by three months Sam felt that he was no longer gaining from the experience of meeting as a group.

"It is hard to say whether it has been really useful, I think. I have actually enjoyed it. Again it is one of those things when I first get there but it is quite nice to talk. Just for a couple of hours to talk about what the problems have been..... It's never in-depth problem is it is usually just the same sort of stuff like that we don't have enough staff..... So now I am thinking of the next one... I'm thinking oh this is just going to be the same again and we will just drag it out and it will get to 3 o'clock and it will be like oh that's it" (Sam 3rd interviews)

Claire may have continued to benefit but her group suffered from attrition.

"I enjoyed it and I think I've missed going. The problem is towards the end not everyone on our group turned up because they had a problem on the ward..... We knew at some point they were even close to wanting to quit you know, so it was good because they've got the support and like they could have a cry and you know, get it all off their chest. " (Claire 4th interviews)

Claire experienced a lasting effect of the preceptorship group meetings in that she had made lasting relationships with one of the participants which meant that when she entered the community of practice on the intensive care unit she saw a friendly face.

“One in particular who works on ITU, I'm really good friends with now, she's also Anna's friend and we always, like, 'oh are you on nights' or whatever..... so that's really good because you can go up there and you know you'll see a friendly face” (Claire 4th interviews)

Mentors were allocated to the new radiographers but were not used. What they were actually describing was more like a supervisor who goes through all the necessary paperwork, rather than a mentor.

“I've got a mentor at the minute I think we're meant to meet every couple of months and then I'll show her what I've done on my portfolioso I've got support in that way as well..... we've not met yet and I've been there 4 months. I think it's more of an informal chat(Kathy 4th interviews)

“We didn't really use them. ...They did a lot of stuff like making sure that you are familiar with all the equipment, making sure you knew all protocols and stuff. Everyone is given a mentor and you have to fill in all your equipment forms saying that you are competent to use them and all that stuff.” (Sam 4th interviews)

A few, like Kathy, mentioned that it was difficult to find time to sit down with a mentor.

“It's just time as well, 'cos we're always very busy so it's quite difficult to get that time together you know, protected for an hour.” (Kathy 4th interviews)

Whilst the thought of having a mentor was well received as someone to turn to for support, what was happening in practice was that they were getting their needs for support met by all staff in general.

“We had an individual mentor when we started, and it's never officially ended that mentorship so you've still got them to go to if.... I didn't use them in particular, I didn't have particular meetings or anything with them, um, but it was just nice to know that there was somebody in particular I could go to and ask if I had any questions or if I was struggling with anything, um, but I didn't use them to be honest.” (Emma 4th interviews)

5.6 Summary

The results have highlighted the themes of experience, fitting in, identity and supporting the transition.

The clinical education experienced as students impacted on the transition into practice. There was a link between the clinical experience gained and levels of confidence. Clinical education obtained as students could not fully prepare students for employment and, particularly in the first three months of practice, the pace and pressure of work left the participants feeling tired. Higher education had prepared the students to be autonomous learners and they felt comfortable taking responsibility for themselves. However they struggled to take responsibility for students.

The participants who had not found employment were worried about whether they would find a hospital where they would fit in, whereas those who knew where they would be working were less concerned because they had already met some of the staff and had a positive experience. Participants who worked in the hospital during their third year of training found that they were being integrated into the imaging department where they had found employment whilst still a student. Socialisation into other communities of practice, such as the operating theatre, was sometimes a concern and their experiences depended upon the culture of the area. During the transition the participants became gradually more aware of, and involved in the politics within the imaging department, and they recognised the influence that a manager has on an imaging department and the role they played in their transition.

Newly qualified diagnostic radiographers, as well as changing from student to practitioner have other aspects of their personal life that are in a period of change. As they moved into practice, one concern was how they would be perceived by other qualified staff. There was a desire to cast off the student identity. Their identity was constantly changing and after six months some participants were looking ahead to their future identity. The interaction with doctors was raised as an issue by all the participants. Most met with medical dominance to some extent and felt unable to interact with doctors as an equal professional. However, as their professional identity

grew stronger, they felt more confident and able to put forward their professional opinion. There was some indication that it could be radiographers' subservience that sustains medical dominance.

The participants of the focus group and those interviewed wanted tailored support and were led to believe, at their job interviews, that this would be the case, although some were slightly cynical about this. All the participants were assigned a mentor but most did not use them. What they found was that they could ask any members of staff as and when they needed help or advice. Surprisingly the topic of receiving feedback was not raised, and only two participants had a formal appraisal of their performance. There was no indication that the participants were ever out of their depth and felt that being stretched was a good learning experience. There was evidence of scaffolding, where support was gradually withdrawn as the newly qualified staff members gained experience. This practice was well received by the participants and gave them a positive experience during their transition. In contrast to this, one of the participants had less support when she started on call which left her floundering. Peer support featured highly as a positive support mechanism either formally or informally. This support was highly valued. The formally organised peer support meetings reduced in value, but the informal support from peers continued to be beneficial.

The four themes are used in the next chapter to structure the discussion. This is a dialogue between the findings and existing literature.

Chapter 6 Discussion

6.1 Introduction

The aim of this chapter was to use the findings of the literature review, results and analysis of the study, and relevant background literature, to provide a comprehensive progressive discussion on the themes that are relevant to the transition into practice of a diagnostic radiographer. The conceptual framework of situated learning in communities of practice provided theoretic insight and inspiration and, with the discussion chart, found in Appendix 7, structured the discussion presented in this chapter. The discussion is divided into four sections; prepared to be a diagnostic radiographer, supporting the transition in to practice, integration into the culture of an imaging department, and professional identity from student to practitioner.

6.2 Prepared to be a diagnostic radiographer

Although there was some anxiety initially, there was no evidence that any of the participants in this study experienced reality shock and they were all prepared for their role as a diagnostic radiographer. Kramer (1974) first put forward the notion of reality shock in 1974 and suggested that reality shock was experienced when newly qualified nurses thought that they were prepared for practice but found that they were not (Kramer et al 2012; Kramer, Brewer and Maguire 2013). Her work drove forward preceptorship schemes for nursing in order to combat reality shock. Research using focus groups over an 18 month period suggests that reality shock still prevails in nursing in Australia, and that there is still an element of nurses being unprepared for their profession (Newton and McKenna 2007). Reality shock also came out strongly as a theme in a phenomenological study in the USA (Martin and Wilson 2011). Diagnostic radiographers, including the participants of this study, were well prepared for most clinical practice (Mackay, Anderson and Hogg 2007). O’Kane (2012) suggested that effective student placements eased transition and reduced reality shock. The lack of reality shock within diagnostic radiography could be attributed to the pattern of workplace learning undertaken as students. The participants, as students, stayed at

one placement for a year before moving to another, thus they were more likely to be integrated into a community of practice through sustained engagement in that practice (Lave and Wenger 1991; Harvey-Lloyd, Stew and Morris 2012). This reflects the survey of new graduates undertaken by the Society of Radiographers (2012) who cited clinical placement as contributing to their preparedness for practice.

Clinical education relies on experiential, situated learning, which is essentially learning by doing, underpinned by reflective practice which is fundamental to professional learning (Schon 1991). If carefully facilitated, the more experience the students have the more they learn and grow in confidence. Clinical education is situated learning which is learning as a social experience. Banduras' (1977) social learning theory explained human behaviour in terms of a continuous reciprocal interaction between cognitive, behavioural and environmental elements. He put emphasis on learning through observation as it allows people to acquire patterns of behaviour without the need for trial and error. This is important in a critical or dangerous clinical environment such as found in diagnostic radiography, particularly in an operating theatre. However, pure observation will keep the student on the periphery of the community of practice. If students are learning through observation it reinforces the need for the clinical environment to provide a positive learning experience through the social aspect of discussion and explanation. This means that their experience will depend upon the clinical environment and the organisation of placement experience.

Due to the supernumerary status and need for supervision, clinical education cannot fully prepare the students for the reality of practice. The participants demonstrated different aspects of this in their interviews. One area that exemplified this was working in an operating theatre. As students they must always be directly supervised whilst working in theatre. With this as a contributing factor, the readiness of diagnostic radiography students for undertaking imaging procedures in theatre has been questioned (Feusi, Reeves and Decker 2006). Once qualified, working in theatre involves entering a different community of practice as the only diagnostic radiographer. In this area they are working with other professionals and lack the immediate support of other radiographers. The newly qualified staff members were

anxious about this. This was similar to the findings of Olson (2009) and Kelly and Ahern (2009) in that their participants felt like 'fish out of water' when moved to a different area of work. With experience and thus situated learning, for some participants, theatre became a favourite place to work. This was influenced by the culture of the theatre. Those who enjoyed working there encountered friendly staff members who made an effort to learn their names, which facilitated the integration into the community of practice (Thrysoe et al 2012). The ones who entered an operating theatre with a hierarchical culture reported that the surgeons were frightening. Inequalities in power impact on the formation of a community of practice (Fuller et al 2005). It is beneficial for diagnostic radiography students to learn how to integrate into the community of practice in an operating theatre as well as how to perform the technique.

During the 2nd interviews it was frequently mentioned about how tired the participants were. This issue was never raised prior to starting work and was possibly unexpected. Even after six months they were working extra hours and feeling tired. As mentioned earlier, due to the need for supervision and their supernumerary status, clinical education cannot fully prepare students for the reality of practice. There were many reports from the participants of being busy and this was often described as 'crazy'. The term was used over the 12 month period. The word crazy, which can mean mad or insane, can also be used to describe a very intense situation, or feeling that they had more work than they can handle (Whishner 2011). This may have been in reality due to imaging departments being understaffed or the increased demand for imaging and radiography being a profession under pressure (Brown 2004; Harvey-Lloyd, Stew and Morris 2012). However, being crazy-busy was associated with time management (Lowenstein 2009). Therefore the crazy situation might have been their perception due to being new to the reality of work and the need to develop coping strategies for busy periods, as in the study by Toal-Sullivan (2006). This can be done through situated learning.

Throughout many of his publications Eraut made reference to the pace and pressure of work and questioned when workers have time to think (Eraut 2004). Radiographers,

like the nurses in the robust longitudinal study by Olson (2009), spoke of fatigue and being totally exhausted. Some of the fatigue could have been attributed to being a newcomer, particularly as they were getting used to working different shift systems and working overtime, whilst trying to integrate into the community of practice. However, Eraut (2007) suggested a different reason for feeling busy, and that the survival of newly qualified staff was dependent upon them being able to reduce their cognitive load by being able to progress quickly from deliberative modes of cognition to instant reflex modes. This was similar to the notion of Dreyfus and Dreyfus (1986) and Benner (1984) that professionals will move through a scale from novice to expert and that there is a need to develop routinized behaviour in order to reduce the pressure of work from the individual. Even after twelve months some of them still reported being really tired but linked this to working on call and extra weekend shifts.

Being familiar with a hospital, and the staff, alleviated some of the stress of starting work as a professional. One of the participants described the move that some of her colleagues were making as 'dramatic'. The higher education institute where the participants trained has several clinical placements that work in partnership to train students. A high proportion of students found employment in a hospital where they had trained. From a Delphi study involving different stake holders from all areas of the UK it has been suggested that the timescale for full competency following qualification will be shorter for newly qualified staff members who are familiar with an imaging department (Williams and Berry 2000). In this situation the trajectory from legitimate peripheral participation towards full integration commences as a student. This meant that if a student towards their third year would like to find employment in a particular geographical area it would be beneficial to both students and the imaging department for them to spend their final year in that hospital if it can be facilitated.

Higher education aims to equip students to become autonomous practitioners. Academic input is necessary in order to support clinical education and reflective practice. According to Richardson (1999) professional knowledge is crystallised through the personal experience of synthesising facts, theories and intuition to the practice setting. There is the danger that students will be socialised into outdated

practice, attitudes and perspectives found in a community of practice with closed boundaries as well as good practice. This was one aspect that led to the traditional apprenticeship style of training losing favour. The model of apprenticeship training has been around for centuries. This traditional training method involved experts showing an apprentice how to do a task. Most of the training is undertaken in a social context, while the learner is at work. The process involved the learner gradually taking on more complex work until he or she achieved mastery of the skill. Before the move to higher education, the education of health care workers closely followed an apprenticeship model. Learners would have continual access to experts, and possibly other learners, on which to model their practice (Collins, Brown and Holum 1989).

The gradual change towards a more outcome driven, didactic style of education eroded the apprenticeship style of training. This led to the well-publicised theory, practice gap (Kramer 1974). This gap can be reduced via situated learning which exposes students to the complexities and ambiguities of a clinical environment (Lave and Wenger 1991). The gap will also be reduced if the community of practice embraces new ideas that the student takes with them. One way of maintaining academic rigour whilst facilitating quality clinical education is via the model of cognitive apprenticeship. Cognitive apprenticeship is a strategy that will transfer training from the class room setting to practice (Bates, Dolce and Waynor 2012). In a similar way to traditional apprenticeships, the students are exposed to authentic practices, and socially interact in the workplace (Brown, Collins and Duguid 1989). However, it goes beyond the mastery of physical skills, to include cognitive skills more usually associated with academia (Brown, Collins and Duguid 1989).

Cognitive apprenticeship encourages the movement towards independent learning, which is required of an undergraduate via six teaching methods; modelling, coaching, scaffolding, articulation, reflection and exploration (Collins, Brown and Holum 1989; Bates, Dolce and Waynor 2012). In particular the last method 'exploration' encourages autonomous learning. The six stages are described below:

- Modelling is where the teacher actively demonstrates and explains the skill to the student.

- Coaching refers to the teacher observing the student whilst providing specific, concrete feedback.
- Scaffolding is the support from the teacher, tailored to the individual need of the student, which is gradually withdrawn as the student becomes more competent.
- Articulation involves the teacher questioning the student and stimulating them to ask questions.
- Reflection is where the student analyses what they have learnt and how it can be improved.
- Exploration is aimed at encouraging the student to explore personal learning goals.

The important difference between a traditional apprenticeship model and cognitive apprenticeship is that the teacher's thinking must be made visible to the learner and vice versa. This is what takes the model beyond the 'sitting with Nellie' approach which has lost favour in recent years. However, this will rely on the experts' ability to make their tacit knowledge explicit (Stalmeijer et al 2009).

A balance between academic and clinical learning, using this model, will ensure that students become reflective practitioners who can constantly evaluate practice to become fully participant members of the community of practice. It will also facilitate a strong, progressive community of practice, rather than one which stagnates.

When the newly qualified diagnostic radiographers had worked in a hospital as students they were already on the journey towards full participation in the community of practice by the time they started work as a qualified member of staff. They had all worked in other hospitals as students and started with fresh or different ideas but had already assimilated these ideas into their practice. Lave and Wenger (1991) suggested that effective community of practices are dynamic and involve a learning process for everyone, thus reducing the learning curve of new staff. In the study by Brown (2004) using focus groups with radiographers of mixed grades it was pointed out how more experienced radiographers had learnt from the newest member of staff. This was contrary to other professions where the newly qualified nurses experienced resistance to their new ideas (Mooney 2007b). An effective community of practice needs a

questioning culture where new ideas are welcome and a learning environment is fostered and encouraged. Full participation means that the newly qualified diagnostic radiographers take responsibility for their own learning, and are autonomous, reflective practitioners. Higher education aims to equip them for this. In the literature review the studies found universally that the newly qualified staff were unprepared for their newly acquired accountability and responsibility (Gerrish 2000; Van der Putten 2008), but they did have the ability to draw on their theoretical knowledge and felt that responsibility gave them ownership of their practice (Hollywood 2011).

The participants in this study felt comfortable in taking responsibility for themselves, and one in particular mentioned that it gave her job satisfaction, but struggled taking responsibility for students. Supervising students takes more effort, because a practice that has become a seamless task needs to be unpicked into description and explanation to pass on to the learner (Claxton 1998). Some imaging departments have policies aimed at restricting the exposure of new staff to students, but in practice all participants were supervising students after only a few weeks. Studies with nurses also found that their participants felt stress at supervising students or other members of staff (Gerrish 2000; O'Shea and Kelly 2007; Hollywood 2011). Although the participants quickly became confident in supervising students, they found that, even after 12 months, there was still some anxiety at assessing students.

One of the problems identified with clinical education was that students may be supervised by professionals who lack academic training and research skills due to being trained in the diploma system rather than obtaining a degree (Ehrenberg and Haggblom 2007). This problem will be reduced as more of the workforce becomes trained in higher education. It has also been identified that supervising staff have a lack of training in supervision skills (Ehrenberg and Haggblom 2007). This research supported this and leads to the suggestion that undergraduate education should put emphasis on supervision and mentoring skills, as required by the Society of Radiographers (2013a).

6.3 Supporting the transition in to practice

This research confirmed earlier findings that the support newly qualified staff received during the transition in to practice varied (Bain 1996; Brennan et al 2000; Tan et al 2011). However, it is also recognised that support should be tailored to the individual (Department of Health 2010). This was both what the participants wanted and experienced. The participants of the focus group and those interviewed expressed a desire for tailored support, and were led to believe at their job interviews that this would be the case. They recognised that people develop their confidence at different rates. The messages that the participants were hearing from qualified staff, as part of the recruitment process, was that they would not be rushed into anything hearing words like *'ease you in'* and *'it depends how you feel'*; *'when you are ready'* and *'until you are comfortable'*. However, it was emphasised that this was what the imaging department staff were saying during the job interview. The participants, from observation, knew that, due to staffing levels and pressures in the imaging department, this was not always the case in practice. Two of the participants, who were slightly more mature and had experience of previous employment, had a cynical tone to their voice when discussing the support they anticipated receiving. A couple of the participants felt that once they were qualified they would be expected to be independent and were therefore unsure about what support to expect. They were hopeful of not being *'thrown in at the deep end'*.

The participants in this study encountered supportive and welcoming staff similar to findings of others (Ross and Clifford 2002; Rungapadiachy, Madill and Gough 2006; O'Shea and Kelly 2007; Wangensteen, Johansson and Nordstrom 2008). They did not experience *'back stabbing'* and unsupportive staff as experienced in nursing (Pellico, Brewer and Kovner 2009). Nor was there any evidence of marginalisation or of diagnostic radiographers being unapproachable. This meant that the participants could ask any members of staff for support and advice. This is indicative of a strong community of practice in which diagnostic radiographers support each other through the culture of sharing experiences (Strudwick, Mackay and Hicks 2013). This could have impacted on their need for an assigned mentor.

Mentors were allocated to the new radiographers but were not used. This was possibly because they were getting their needs for support met by a variety of staff. However, there was confusion about the term mentor, as what they called mentoring appeared to be more like supervision. Morton-Cooper and Palmer (1999) stated the need for clarification so that people can plan and prepare for the relationship. The participants and their mentors may have not been clear about the purpose of the mentorship which would have inhibited its use as a support mechanism. This scenario was also seen in the research undertaken by Eraut (2007) where all their participants were provided a dedicated mentor but most support was provided by 'helpful others'. This situation is echoed by others (Brown 2004; Toal Sullivan 2006; Brennan et al 2010). According to Boud and Middleton (2003), only a few of the people who individuals learn from at work are recognised by organisations as someone having a role in promoting learning such as a mentor.

The barriers to receiving support from other colleagues, which were concerns for the diagnostic radiographers prior to starting work, appeared to be unfounded. These included workplace cliques that might inhibit the support a worker received or being marginalised for a variety of reasons such as age or part time working (Billett 2006). Another barrier to receiving support from colleagues, as cited by Ross and Clifford (2002) and Brown (2004), and an unwarranted concern of the participants in this study, was staff shortages. Diagnostic radiographers generally work in a team environment and can be working with different people throughout the day, rather than working closely with one particular person. This means that it is more practical to be able to turn to the most convenient person available at the time for advice rather than needing to seek out one particular person. As radiographers tend to have a clan type culture, in which they work as a team, they can share problems and learn from each other, which will assist new comers (Strudwick, Mackay and Hicks 2012, 2013).

The need to receive feedback on performance during the transition period was important to other professions (Jackson 2005; Olson 2009). This was not raised by the participants in this study. It appeared that the participants were reflective practitioners who had developed the ability to be autonomous learners. This was highlighted by

their ability to recognise their development needs, and seek support when required. This skill, which is fostered in higher education, may have reduced the need to receive feedback from others.

There is a triangular relationship between challenge, support and confidence (Eraut 2000). Getting the balance right between the degree of challenge and support was essential to a smooth transition and helped the new practitioners gain confidence. The more experience that the newly qualified professional had, the greater their confidence, and this reduced their anxiety. This could be seen most prominently in situations where they had less experience as students, such as working in an operating theatre. Some were very anxious to start with and did not look forward to this aspect of their role, but after they had been a few times their confidence had grown and they enjoyed the work. In his earlier work on mid-career learning Eraut (2007) highlighted the importance of confidence. This is because much of the learning at work occurs through doing things and proactively seeking learning opportunities, which requires confidence (Eraut 2007). Confidence can surface when faced with a challenge (Brown 2004). The radiographers found that their confidence grew and they could transfer their experience to different situations because they could recognise what they needed to know. This is similar to the case study presented by Hargreaves and Lane (2001) who described a nurse moving from one area of practice to another and being able to recognise and address her deficit in knowledge and skill. One of the participants moved to a different hospital after about eight months and found that she was soon integrated into full participation in the new imaging department.

Being challenged or 'thrown in at the deep end' was not necessarily viewed negatively as it can be a valuable learning experience if given the correct support. Eraut (2007) found that, for a novice to progress, they needed the right degree of challenge because if left unchallenged they failed to develop. The right support is dependent upon the quality of relations in the workplace (Eraut 2007). In the literature review cases were found where support from staff was key to alleviating feelings of being 'thrown in at the deep end' and 'left to drown' (Ross and Clifford 2002; Rungapadiachy, Madill and Gough 2006). Most participants in this study were well

supported. However, one participant experienced being thrown in and left fumbling along when she moved to a new area of work. She reported going to a unit and not knowing the simple things like where to send the images to. A lack of direct support was not always seen in a negative light (Hollywood 2011). It was recognised by one participant in this study that, by being left on their own, they realised that they could actually manage to do the work on their own, which built their self-confidence. Gerrish (2000) and Van der Putten (2008) found that their participants experienced a 'step-by-step' induction rather than a 'jump and swim' approach. Although one participant in this study was thrown in at the deep end, most experienced a structured support, which was similar to the scaffolding which was first described in an educational context by Wood, Bruner and Ross (1976) and stems from Lev Vygotsky's work on the zone of proximal development (Vygotsky and Cole 1978).

One of the main worries that the participants had before starting work was about being on-call. This was because it was one of the areas that they could not fully experience as a student, as in many places it involved lone working at night. The allocation of on-call duties was a major problem for the radiographers involved in the focus groups in Brown (2004) because less experienced staff did not feel confident to undertake the full range of duties that might be required, especially when they did not have anyone to consult with. It was also one of the more challenging experiences found in the oral history project undertaken by Decker (2009). In this study scaffolding was used in some imaging departments for staff commencing general on-call. The participants described how at the first on-call they had someone working with them, the second night they had someone on site, but not directly with them, and the third night there was someone who they could call on the telephone. This structure left the participants feeling well supported and built their confidence in a short period of time. This strategy was also used for other areas of work such as in the operating theatre and when commencing CT on call.

Peer support was valued by the participants in this study. The team-working environment within an imaging department fosters peer support (Strudwick, Mackay and Hicks 2012, 2013). According to Solomon (2004) it can offer a sense of belonging,

which it did for these participants. It also reduced the feeling of isolation as found by Morris and Turnbull (2004). The participants found it easier starting work knowing that they would not be the only new person. One actually described it as a mini support group because peers experienced the same problems and insecurities. This supports the notion of Parker, Hall and Kram (2008) that peers identify with contemporary situations better than more experienced staff. Kelly and Ahern (2009) found in their study that peer support was described as the 'blind leading the blind'. This will be the case if peers are the only source of support.

In this study peer support was experienced both informally and formally. Some started in an imaging department at the same time as others and formed their own support network. They were still supporting each other twelve months after they had started work. In one hospital organised sessions were arranged once a month with other new practitioners from different professions. These groups had a facilitator. The same benefit of being able to share experiences was observed but this appeared to be short lived. After six months the participants were no longer gaining from the experience of meeting with the other professionals. One lasting effect of this organised support for one of the participants was that she developed a lasting friendship with one of the nurses which meant that when she entered the environment where the nurse was working she felt that it was a benefit to see a familiar face. This formal peer support was described as preceptorship and likened to interprofessional education.

Despite the recent guidance from the Department of Health (2010) and the Society of Radiographers 18 month continuing professional development programme, preceptorship is not well established in radiography (Bain 1996; Tan et al 2011). Only one organisation out of the five encountered in this study, in which the participants were employed, appeared to have a preceptorship programme for newly qualified diagnostic radiographers. The main activity discussed from the preceptorship programme was that of the organised peer support. This concurs with other reports from the literature that only a small percentage of newly qualified nursing staff received support from a preceptor or mentor (Brown and Edelman 2000; Deasy, Doody and Tuohy 2011; Hollywood 2011).

6.4 Integration into the culture of an imaging department

The participants who had worked in the hospital during their third year of training found that staff members were already integrating them into the imaging department and starting to treat them like qualified staff once they had been offered the job. One participant in particular felt so integrated into the imaging department after three months that she was not treated as 'new' with any special needs. She was viewed as being a fully participating member of the community of practice. This could potentially have been a problem if she had needed additional support that was not offered. In contrast to this, a concern was raised that they might not be treated as a qualified member of staff straight away and might be still treated as a student for some time after they started work. This was not found to be the case.

Knowledge of the culture of the organisation will smooth the transition into professional practice. However, people are generally unaware of their culture until they have experienced a new culture, as in the move from higher education, or if made explicit through a framework such as the Competing Values Framework (Quinn and Rohrbaugh 1983). Because the newly qualified radiographers had worked in a hospital as students they had already worked with more experienced radiographers, and thus developed some cultural knowledge. Cultural knowledge is generally gained informally through social participation. As this knowledge is gained informally it is taken for granted because people are unaware of its influence on their behaviour (Eraut 2007). The well documented research by Newton and McKenna (2007) identified the need to gain knowledge of social hierarchy and where a newcomer fits in. This knowledge is gained tacitly through a series of encounters which are generally set up for other purposes (Eraut 1998, 2000). The staffroom has been identified by Solomon, Boud and Rooney (2006) as a place where informal 'talk' can occur in a safe environment where hierarchy is suspended. Diagnostic radiographers readily talk to each other and share experiences which will assist with the development of cultural knowledge (Strudwick, Mackay and Hicks 2013). Other professionals, such as occupational therapists, also found that they learnt through social interaction (Toal-Sullivan 2006). Some of Michael Eraut's early work looked at the development of professional knowledge and learning

in the workplace (Eraut et al 1998; Eraut 2000). He suggested that one of the most important features of the workplace was the people with whom one interacts such as colleagues and service users. If learning is viewed as a social act then it involves relationships between people and the conversations and tasks that occur between them (Boud, Rooney and Solomon 2009).

Getting on with the people that they worked with was very important to the participants. Where a clan type culture is found it is thought to be a friendly place to work, and where some colleagues are likely to be classed as friends, as found by Claire. It affected their enjoyment of work. There were illustrations given of 'fitting in' such as when others sought their opinion. Embracing newcomers' ideas is a feature of a strong community of practice that will flourish and grow rather than stagnate (Wenger 1998). A clan culture is held together by loyalty, tradition and collaboration, all of which can be seen in an imaging department where radiographers readily work together and support each other (Strudwick, Mackay and Hicks 2012, 2013). One of the participants, Sam, was anxious to fit in but he found that he got on better with his peers than the more senior staff. By six months he was aware of a divide in the imaging department between the new staff and the old staff. He felt that he lacked a voice in the imaging department and that the senior staff had all the say in the running of the imaging department. This is indicative of a hierarchical culture which is a formalised, structured workplace with well-defined processes, formal rules and policies (Quinn and Rohrbaugh 1983). A hierarchical culture will have leaders who are coordinators and organisers, whereas leaders in a clan culture can be viewed as mentors.

Line managers have the ability to influence the culture in an imaging department and thus newly qualified staff's experience during the transition period. Evidence from the literature reviewed identified that the manager influenced some of the culture in the workplace and had the power to facilitate or inhibit a smooth transition (Tan et al 2011). According to Boud, Rooney and Solomon (2009) the intervention by managers can enhance learning in the workplace. They are the ones who will generally organise the workload, check that new staff are getting on okay and provide support where

necessary. They also carry out appraisals, which one participant found particularly useful, to air their views and receive feedback. It would appear that the participants in this study had mixed experiences, from a manager who was supportive and provided feedback, to one who lacked consistency and was sometimes supportive and at other times authoritative. Organisations do not operate in any one organisational type; they operate across types with one being dominant at any one particular time or place. It appears that the newly qualified radiographers encounter a mix of clan and hierarchical cultures which both have an internal focus on integration which will smooth the transition into a community of practice.

The majority of participants in this study found that the newly qualified Diagnostic Radiographers entered a supportive environment where they could ask anyone of their immediate colleagues for advice or guidance. In most situations in diagnostic radiography there is a team of people rather than working in isolation and this meant that the newly qualified staff asked whoever was around at the time for help and guidance which was forthcoming. This indicates that they entered a clan culture which was different to experiences in the nursing profession. Reports in the literature of approachable and welcoming staff were from occupational therapists, children's nurses and junior doctors, not those entering general nursing (Toal Sullivan 2006; Brennan et al 2010; Hollywood 2011). In the work by Eraut (2007) a questioning culture was not found in nursing unlike in engineering and accounting. It was found that, particularly in nursing, there was a 'blame culture' and that newly qualified staff experienced ritualistic practice that was difficult to question. There is a phrase used of 'nurses eating their young' (Kelly and Ahern 2009). This metaphor is referring to a situation when a less experienced nurse is bullied by a more experienced nurse, suggesting that there lacked a nurturing culture. The metaphor has zoological origins and refers to 'filial cannibalism' seen in some animals, possibly for an evolutionary benefit. Some nursing literature suggested that it was a reaction against change (Loring 1999; Bartholomew 2006), or that it related to behaviours associated with oppression (Harcombe 1999). It may also be due to a fear of being displaced (Billett 2006). This concept can also be referred to as lateral or horizontal violence which is defined as sabotage directed at co-workers who are on the same level (Bartholomew

2006). Embree and White (2010) suggested that lateral violence arises from several origins, including role issues, oppression, strict hierarchy, disenfranchising work practices, low self-esteem, perception of powerlessness, anger, and circuits of power. These result in a weak community of practice.

Newcomers enter the workplace unaware of the historical, social, and political frameworks that underlie institutional culture (Duchscher 2008, 2009). Towards the end of the longitudinal study the newly qualified diagnostic radiographers were showing signs of becoming more aware of the organisation and politics within an imaging department. Most of them found that decisions were made which directly affected them and therefore they could not avoid becoming involved. As students, the participants were on the periphery of the community of practice, thus shielded from the full impact of organisational culture and politics. Argyris's (1974) work on organisational behaviour highlighted a conflict between the needs of the individual and the needs of the organisation in that a newly qualified member of staff, who as student had been taught to be an autonomous practitioner, was forced to behave in a more submissive way. Sam, who had previous managerial experience wanted to challenge practices but felt that he needed to get established in the imaging department first. In the literature reviewed, cases were found where there was a lack of autonomy, bureaucratic administration, and a lack of voice in a medically bureaucratic culture (Mooney 2007b). It can be seen that institutional politics have a powerful influence over professional identity (Hurley 2009).

6.5 Professional identity from student to practitioner

Professional identity is a key issue in the transition from student to practitioner (Johnson et al 2012). While education is an important period in developing professional identity, graduation is not the end of the process (Johnson et al 2012). This concurs with the findings of this study and has important implications for undergraduate education and support given during the transition period. There is very little research about professional identity in the field of diagnostic radiography (Niemi and Paasivaana 2007). Other professions have explored this area, although research is still very limited (Johnson et al 2012). Professional identity can be addressed in terms of professionalism (Freidson 2001), perceptions of the role and what it means to be a radiographer (Crawford, Brown and Majomi 2008), or self-concept (Fagermoen 1997). Holden et al (2012) viewed professional identity formation as an integrative developmental process which involved the establishment of core values, moral principles, and self-awareness in students. However, it can also refer to the culture of the people, to a common identification with a collective, as well as used in a personal context (Stryker and Burke 2000).

Education is a key period for identity formation, because it is during this period that a person starts to be socialised into a profession. It was important to the participants of this study that they would be able to cast off the label of 'student' once working as a qualified member of staff. Professional identity is constantly changing and it starts before training commences (Johnson et al 2012). This is because previous life experience impacts on professional identity (Lordly and MacLellan 2012). This could be seen in the way Sam, with more life experience, related with his manager compared to Claire. There is on-going identity construction and deconstruction throughout educational experience (Johnson et al 2012) and professional identity can be developed as an individual develops their career (Ohlen and Segesten 1998). Continuing education and training, and learning through social participation shape the trajectory of professional identity (Johnson et al 2012). Thus professional identity formation progresses throughout our working lives as competence is built and role

extended (Nystrom 2009). After six months the participants were looking ahead to their future identity and role within the imaging department.

Identity is socially constructed, as such interaction with others of the same profession influences professional identity (Ohlen and Segesten 1998; Johnson et al 2012), and it also evolves through working and interacting with patients (Fagermoen 1997). The amount of time spent on clinical placements impacts on professional identity formation because clinical placements provide professional socialisation which can be conducive to positive professional identity formation (Johnson et al 2012; Machin, Machin and Pearson 2012). The indications from the results are that newly qualified diagnostic radiographers have some sense of professional identity on graduation but that it develops further over time. Initially they felt unsure and lacked confidence, particularly when entering a different community of practice such as an operating theatre. The amount of confidence that graduates have in themselves will impact on professional identity (Johnson et al 2012). Eventually, by twelve months all participants in this study had developed enough to be able to discuss requests for imaging with doctors as a fellow professional.

According to social identity theory, people classify themselves into various social classes. This leads to cognitive segregation and orders the social environment which can lead to stereotyping (Ashforth and Mael 1989). It was evident in this study that, due to limited involvement with doctors as students, interaction with doctors was difficult when initially qualified, but improved over time. Weaver et al (2011) explored the professional identity formation of medical students in Australia. They found that medical students knew what type of behaviour was expected and mimicked this with the use of role models. The medical students' sense of professional identity was created by exclusivity in how they were socially segregated from other student groups such as nurses, and via intra-discipline inclusivity into their professional group. In the study looking at role identity in relation to health visitors, Machin, Machin and Pearson (2012) found that interprofessional working influences role identity. Johnson et al (2012) also found that identity could be assembled and disassembled around interprofessional working. Machin, Machin and Pearson (2012) found that a well-

developed sense of professional identity was essential for effective interprofessional working and that the power balance between doctors and nurses might be changing as the identity of other health professionals grows. It has also been suggested that this is happening in radiography with the increase of advanced practice (Reeves 2008).

Education is gradually changing to include more interprofessional education, which has a positive effect on attitudes towards other health professionals (Jacobsen and Lindqvist 2009). However, it would appear that professional identity is still primarily constructed through social interaction with individuals from the same profession (Weaver et al 2011; Johnson et al 2012). This means that the historic identity of the profession is unlikely to be challenged and hierarchical social structure will be maintained. Sam described his inability to effectively challenge the request for imaging from doctors. Lewis et al (2008) found from their study, (using radiographers from both Australia and the United Kingdom to explore ethical commitment), that the subordination of radiographers and the feeling of inferiority left radiographers powerless in situations involving conflict. Yelder and Davis (2009), using data from United Kingdom, New Zealand and Australia, also identified low self-esteem as a key characteristic of the radiography profession. This low self-esteem was illustrated by Claire when she was contacted by a doctor who wished to obtain her professional opinion. At this early stage in her career she had assumed that it would be the doctor who would dictate the course of events. So it would appear that the power relationship between doctors and radiographers is reinforced by both groups.

This study demonstrated that, after a few months, the newly qualified radiographers found their voice. Finding a voice was generally used as a metaphor for empowerment (Johns 2004). Initially they found it difficult to discuss requests from doctors for imaging, and felt that the doctors would get what they wanted regardless of what was right. It is not uncommon to find this attitude in medical staff that disrespect and undervalue the contribution of other health care workers, and can be arrogant and rude (Sechrist and Frazer 1992; Brown 2003). Medicine has traditionally dominated the delivery of health care (Kenny 2004). This stemmed from the considerable autonomy possessed by medical doctors and their authority over other health care professionals

(Freidson 1988). The increase in the ability of occupational groups to self-govern, changes in legislation and increase in autonomy have all eroded the dominance of the medical profession (Lewis et al 2008). However, medical education and institutional culture are restricting cultural change (Weaver et al 2011), which results in radiographers still feeling inferior to radiologists and other health care professionals (Whitaker 2013). It is possible that the newly qualified radiographer's ability to speak to doctors was hampered by historically embedded feelings of subordination and the 'just a radiographer' syndrome (Murphy 2009; Yelder and Davis 2009). However, after six months the radiographers could discuss requests with the doctors as fellow professionals. This was because they had developed a stronger professional identity, and the knowledge and confidence to be able to defend their point of view, which was also found in nursing (Olson 2009).

Yelder and Davis (2009) identified that workplace culture impacted on professional relationships. In some imaging departments the radiologists were viewed as helpful and approachable; in another imaging department a doctor refused to speak to Emma because she was only a newly qualified member of staff. This was also seen in critical care where the nurses in the study by Saghafi, Hardy and Hillege (2012) had mixed experience when communicating with doctors depending on personalities. Some were supportive whilst others were intimidating. According to Billett (2008) there is an intertwined relationship between an individual's perception of their work and how they identify with it. A positive self-image is required for effective interaction with patients and other professionals (Ohlen and Segesten 1998). If the day-to-day role is ignored, such as when a radiographers' opinion is dismissed, there could be feelings of doubt and a loss of professional identity (Liaschenko and Peter 2004). This may explain the low self-esteem and inferiority complex that Sim and Radloff (2009) suggested radiographers have.

Yelder (2006) presented a discussion about leadership and power in medical imaging, and the medical dominance over other health professionals. There is an indication that this issue of power stems from the medical profession being traditionally male and associated health professionals, including nurses and radiographers, being female. This

hierarchical culture can be challenged if individual radiographers, and diagnostic radiography as a profession, develop a strong professional identity. Niemi and Passivaara (2007) in Finland attempted to identify the factors affecting the professional identity of radiographers. They suggested that professional identity could be conceptualised as being connected with every day practices and influenced by educational background and place of work. They went on to suggest that professional identity refers to the radiographer's conception of what it means to be and act as a radiographer, and that it defines the values and beliefs that guide the radiographer's thinking, action and interaction with the patient (Niemi and Passivaara 2007). Through a method of discourse analysis, using a variety of articles as a source of data, they came to the conclusion that the basis of radiographers' professional identity was:

"..the mastery of technology based on professional skills and expertise, which has a significant effect on patient care" (Niemi and Passivaara 2007 p. 261).

Indeed radiographers are often defined by the apparatus that they use, for example, a CT radiographer. The professional use of radiation, with the radiographers having the role of protector for both patients and other staff, was also a factor. The third aspect had a social-historical context relating to the changes in education and suggested that the move to higher education has strengthened the professional identity, mainly through the status of educational background and the increase in research activity of diagnostic radiographers.

Professional identity is not static (Johnson et al 2012). It is affected by temporal changes and different perceptions (Hurley 2009). Machin, Machin and Pearson (2012) stressed the importance of having a strong professional identity from the perception of the general public. Status was an issue for nursing academics in relation to the educational background of the profession (Andrew et al 2009). Andrew (2012 p. 846) stated that:

"Polarised opinion within the profession, media stereotyping and political vote catching have all contributed to a confused picture of identity".

She is discussing this within the context of the movement of the nursing profession to graduate status. However, this statement could also relate to other health

professionals who have also made this move, including diagnostic radiographers (Pratt and Adams 2003). She goes on to suggest the following:

“...a view of identity, shaped by communities (own and others), may go some way to liberate nursing from its fuzzy existence at the fringes of medicine. Redefining who we are will help to better articulate what we do.” (Andrew 2012 p. 848).

The similarities between nursing and diagnostic radiography regarding the relationship to medicine are striking. Therefore, this could equally relate to diagnostic radiography. Self-concept, how we think and feel about ourselves, and professional identity are intertwined, with professional identity being a component of overall identity (Ohlen and Segesten 1998; Johnson et al 2012). People generally want a credible public identity, however, there is an inner ‘real self’ behind the public face they might project (Tolson 2001). The different faces of radiographers were demonstrated in the article by Murphy (2009) where radiographers’ performances were seen to have a ‘front stage’, the identity they project to the public, and a ‘back stage’, the identity they have when out of sight of the patients.

Portrayal of the profession in the media can impact on professional identity (Niemi and Passivaara 2007). Coombs et al (2003) used interviews with various individuals including school pupils and radiographers to determine the attractiveness of radiography as a career. Many of their participants identified radiographers as button pushers and that radiographers had a lack of recognition in comparison to nurses. Giddens (1991) discussed self-identity in modernity, a term he used to refer to institutions and modes of behaviour in the industrialised world. He identified that media can influence self-identity, and that this is becoming pronounced in the current globalised digital world. Ahonen (2008) from Finland suggested that the concept of radiography was poorly determined and lacked a firm theoretical foundation. She used concept analysis to clarify the meaning of radiography.

“...expertise of radiographers in the use of radiation, which is dual, dynamic, social and situation related in nature, and typically based on versatile synthesis.” (Ahonen 2008 p. 290).

The study indicated that the meaning of the concept of radiography may vary, which has significance for the professional identity within multi-professional healthcare.

Professional identity could be considered a relationship between professional and personal aspects of life, which is dynamic and changeable (Nystrom 2009). Both learning and participation in work will contribute to the development of professional identity. As Wenger's (1998) theory of nexus of multi-membership suggested, work is only one part of the arena. The participants in this study were developing their personal identities throughout their first year in practice. Some experienced becoming a wife, a home owner and a patient which all impacted on their identity. Nystrom (2009) explored this concept in Sweden with a psychologist and political scientists. They found that educational programmes played an important part in a student's professional identity formation. However, they also suggested that there may be discrepancies between professional identity in higher education and in the workplace. This supports Wenger's (1998) theory that identity is constantly renegotiated. People will have as many identities as distinct networks, or relationships in which they occupy positions, and play roles (Stryker and Burke 2000). This suggests that diagnostic radiographers, as they move into different areas (for example an operating theatre), will present a different identity to that which they have when working in an imaging department with their peers.

6.6 Summary

The clinical education experienced as students impacts on the transition into practice. Situated learning is essential for the development of clinical skills and attitudes as well as for the integration of theory and practice. There is a link between the quality of clinical experience gained as a student and levels of confidence. There were clearly some areas of practice which caused anxiety. This suggests that the ability to manage anxiety is important. Participants felt less anxious and more confident the more experience they gained. However, clinical education obtained as students cannot fully prepare students for practice and, particularly in the first three months of practice, the pace and pressure of work left the participants feeling tired. Higher education had prepared the students to be autonomous practitioners and they felt comfortable taking responsibility for themselves. However, they struggled with taking responsibility for students.

The participants of the focus group and those interviewed wanted tailored support and were led to believe at their job interviews that this would be the case. Two of the slightly more mature participants, who had previous experience of employment, were slightly cynical about this. A couple of the participants felt that once they were qualified they would be expected to be independent. Although all the participants were assigned a mentor they did not use them as a source of support. What they found was that they could ask any members of staff as and when they needed help or advice. Surprisingly the topic of receiving feedback, which was important to other professions (Jackson 2005), was not raised, and only two participants had a formal appraisal of their performance during the period of data collection. There was no indication that the participants were ever out of their depth and felt that being stretched was a good learning experience. In three hospitals the participants received scaffolding where support was gradually withdrawn as they gained experience. This practice was well received by the participants and gave them a positive experience during their transition. In contrast to this one of the participants had less support when she started on call which left her floundering. Peer support featured highly as a positive support mechanism either formally or informally. This support was highly

valued. The formally organised peer support meetings reduced in value, but the informal peer support remained beneficial.

The participants who had not found employment were worried about whether they would find a hospital where they would fit in, whereas those who knew where they would be working were less concerned because they had already met some of the staff and had a positive experience. The four participants who worked in the hospital during their third year of training found that they were already being integrated into the imaging department. This was mainly positive but one participant highlighted that she was so integrated that other staff did not offer her support. There was also some concern about at what point they would stop being viewed as a student. Socialisation into other communities of practice, such as the operating theatre, was very important to the participants, and sometimes a concern. Their experiences depended upon the culture of the area. During the transition the participants became gradually more aware of an involved in the politics within the imaging department. This was an issue that was not raised until the final interview in the majority of participants. They also recognised the influence that a manager has on an imaging department and the role they play in their transition.

Newly qualified diagnostic radiographers, as well as changing from student to practitioner, have other aspects of their personal life that are in a period of change. As they move into practice, one concern is how they will be perceived by other qualified staff. There was a desire to cast off the student identity. Their identity was constantly changing and after six months some participants were looking ahead to their future role. Interaction with doctors was raised as an issue by all the participants. Most met with medical dominance to some extent and felt unable to interact with doctors as an equal professional. However, as their professional identity grew stronger they felt more confident and able to put forward their professional opinion. There was one particular incident described by Claire that raised the idea that it could be radiographers' subservience that sustains medical dominance.

This chapter has used the findings of the literature review, results and analysis of the study, and relevant background literature, to provide a comprehensive discussion on

the themes that are relevant to the transition into practice of a diagnostic radiographer. Chapter Eight, the concluding chapter, will summarise the preceding chapters and demonstrate the value of the research in light of the following reflections on the research.

Chapter 7 Reflexivity

7.1 Introduction

The aim of this chapter is to make explicit the effect that I have had on this research (Reeves 2010). This has helped me check whether my own biases or presuppositions have contaminated my research in any way (Williams, Wilford and Cutler 2010). Reflexivity, by virtue of its diverse nature, is a contested term and a myriad of variants of reflexivity are being practiced which can complicate the seemingly straightforward act of turning a critical gaze on oneself into a plethora of confusion and uncertainty about what constitutes reflexivity (Finlay and Gough 2003). According to Green and Thorogood (2009) there are two levels of reflexivity. The first level is to critically reflect on the research itself and explore the legitimacy of the research and the social and political context of the research. The second level is more personal, and considers the role of the researcher in generating and analysing the data (Green and Thorogood 2009). Using reflexivity as a thoughtful self-awareness during the research process can be a means of exploring the dynamics of the relationship between the researcher and the participants during the research process (Finlay and Gough 2003; Powers and Knapp 2006). It can also be treated as a methodological tool to ensure truth and is often mentioned in connection with the effort to root out sources of bias (Lynch 2000; Finlay and Gough 2003). Reflexivity implies that the researcher makes transparent their individuality and its effect on the research process. The recognition of personal factors that can influence or bias the research is seen as enriching and informative by qualitative researchers (Gough in Finlay and Gough 2003). It is considered important in establishing credibility and rigour in qualitative analysis (Green and Thorogood 2009).

Reflexivity involves an immediate, dynamic and continuing self-awareness (Finlay and Gough 2003). Although it is purported to be a powerful tool, Lynch (2000) argued that the tool is only as good as the person who used it and how it is used. Reflexivity is acknowledged as not being easy to undertake (Parahoo 1997), and the practice does not come naturally, but requires supervision and guidance, as it may not be possible to pin down one's inter-subjective understandings and confessing to methodological

inadequacies can be uncomfortable and therefore not fully revealed (Lynch 2000; Finlay 2002; Finlay and Gough 2003). Assistance to ensure that I practiced effective reflexivity was obtained via supervision sessions with two research supervisors and discussion with colleagues who acted as 'critical friends' both before and during the research process. Thus, in accordance with Powers and Knapp (2006) in this study I have used reflexivity as a continual process of self-reflection on my personal biases, preconceived notions and assumptions. This quote from Corbin and Strauss (2008) highlights how difficult this can be.

"The world is very complex. There are no simple explanations for things. Rather, events are the results of multiple factors coming together and interacting in complex and often unanticipated ways. Therefore any methodology that attempts to explain situations will have to be complex." (Corbin and Strauss 2008 p. 8)

Some of those complexities are the history, thoughts and actions of the researcher, hence the need for reflexivity during the research process. As suggested by Biggerstaff and Thompson (2008) I kept a reflexive diary and made notes during my analysis of the data. Memo writing, as recommended for Grounded Theory, for making researchers aware of their potential effects on the data was very valuable (McGhee, Marland and Atkinson 2007). It helped to capture my thoughts at various points that could be reflected upon at a later date. Below I have drawn on these and documented how I have strived for a thoughtful awareness, and attempted to minimise my influence on the research.

Throughout this reflection there is a recurring theme of my need for organisation and a measure of control. This was raised so frequently that it required some consideration as part of my reflexivity. Is this a personality trait or a coping mechanism? It is complex, but most likely to be a something that I have developed over my professional career, through life experience. It is what helped me to cope with a busy life which has included being a daughter, wife and mother as well as a diagnostic radiographer, manager and academic.

7.2 Why I selected the study

According to Maso in Finlay and Gough (2003), the importance of the research question cannot be underestimated. For research to really search for something, the research question should be 'true', in that there must be a real uncertainty that the researcher has a passion to answer. I was initially drawn towards my research question because during the planning phase I had two professional roles, one as a manager in a NHS imaging department, the second as a senior lecturer training diagnostic radiographers. During my time as a manager I had seen many newly qualified diagnostic radiographers enter into the profession. Their transition experience had not been at the forefront of my mind when the hospital in which I worked merged with a larger NHS trust. This merger highlighted the fact that the newly qualified radiographers were treated differently in different imaging departments. The size of the imaging department may have been a factor in the different practices but it did raise the question of what was good practice. This research topic was very timely as in 2010 the Government published guidelines for allied health professionals on preceptorship (Department of Health 2010).

Added to my experience as a manager I had also my own experience of transition into practice. Although this was many years ago it still influenced my perceptions. When I first entered the profession the training had been quite different to today's higher education. It was much more akin to an apprenticeship style of training. My first job was 60 miles from where I trained and involved moving away from my family home for the first time as well as moving from a city to a small town. The technical aspects of the job were not a main issue for me, as I felt well prepared for practice. My transition was into a different culture, as I found a predominantly white mining town different to a multi-cultural city. There was also the transition into living away from home. Similar to some of my participants during my first year of practice I also bought a house and planned a wedding.

A few months before the data collection commenced my role changed to becoming a full-time academic. Thus, while my interest was still focused on the undergraduate transition experience, I was also more interested in the preparation for the transition

into practice. During the data collection and analysis I was aware that I was undergoing my own transition from the NHS to academia. I believe that this has influenced the research process, particularly the analysis, as at the back of my mind I was continually thinking what could be done to better prepare students for practice.

7.3 Why I chose the Methodology

IPA was first brought to my attention by one of my peers on the same course. What attracted me to it was, as Biggerstaff and Thompson (2008) have found with other health care practitioners embarking on research, that I was excited by the possibility of analysing the data in a rigorous and systematic way. As a diagnostic radiographer, organisation and structure are ingrained and necessary qualities for the profession. Diagnostic radiography is often described as merging art and science where we work within protocols but with a creative flare. IPA provides an organised and structured way to thoroughly analyse the data but also required interpretation and imagination to create meaning from the data. Thus I felt comfortable with the process.

My original idea was to use Heideggerian phenomenology. This was mainly because I wanted to explore the 'lived experience' of the newly qualified radiographers. What IPA offered, that Heideggerian phenomenology lacked, was the structure for data collection and analysis. Following the meeting to gain approval for the research project a Grounded Theory approach was advised and thus considered instead of phenomenology. Some of the concepts and practices are similar. Although this was advice from more experienced researchers, I did not feel ownership of the project and it did not feel right. One of the main differences was that Grounded Theory research is open ended until data saturation is achieved. I needed organisation and a time scale for both personal reasons and in order to collect data over a twelve month period. The research needed to fit into my life in which I had a full time job and family commitments. Survival required organisation and time management. Not knowing where and when I would be going with my research would have been problematic and stressful. I needed to plan the data collection ahead so that I knew what time I needed to set aside. I also knew from reading the literature that a longitudinal study was the

best way to explore this transition period. Grounded Theory, in my opinion, did not seem suited to exploring a situation that would be transforming over time. From the minute I first heard about IPA it felt right and further reading, exploration and personal experience of using this method has not altered my perception.

7.4 Selecting the Participants

Power is always going to be an issue in the relational interplay between the researcher and participants (Juritzen, Grimen and Heggen 2011). It is important to address and minimise any hierarchical relationships or coercion and ensure that participation is truly voluntary and informed (Grady 2001). The initial selection was undertaken while the participants were still students in my care and I was aware that they might have felt obliged to participate due to our relationship. However, recruitment was undertaken by passing a sheet around the group for contact details so that a student could easily abstain unobtrusively if they wished. When gathering the data, as a lecturer facilitating a group of students, the issue of power is relevant in the relationship between the facilitator and the participants (Williams et al 2006). A structured technique used for the focus group kept this imbalance to a minimum and reduced the possibility of my opinions overshadowing those of the participants. Self-awareness when conducting interviews, the structuring of interview questions and member checking all helped to redress any hierarchical imbalance.

7.5 How I monitored my influence on the data gathered.

Regarding the focus group, from first learning about nominal group technique I was very taken with this organised and structured method of gathering data from a group of participants. I felt that because the participants were students and I their lecturer, I would need to address this potential influential relationship. NGT appeared to provide a solution to this dilemma but did it truly fit with qualitative research? The excerpts from my diary illustrate my on-going issues and solution to this.

An excerpt from my diary "Feeling downhearted! My application for funding has been rejected and the same message keeps coming back and it is a question I cannot answer. 'How is the NGT analysed?' I think that sticking to the format for the NGT

means that I will be losing some data therefore I am going to transcribe the recording and analyse this. There are many benefits to NGT, so I am not going to dismiss this altogether. The silent generation, collation of ideas and discussion have strengths and reduce the 'power balance' in the room."

An excerpt from my diary "A very productive day! I transcribed and analysed the NGT meeting and this was a good move. It has provided me with much more rich 'in-depth' data than just using the themes generated. I am still standing by the strengths of the first part of the NGT; silent generation and round robin production of a list and then the discussion."

My original intention was to conduct all the interviews face to face as I perceived this to be the 'gold standard'. I wrestled with the problem of where to meet, when I would find time for the interviews and how to cover the additional cost of the travel. This problem solved itself when early on one of the participants asked if I could conduct the interview via telephone. I had concerns about the quality of the data this would generate. I was also concerned whether I was keen to pursue this avenue because it was best for the participants, or because it was a solution to my problems. Upon reflection it was completely justified. Telephone interviews proved to be perfectly acceptable and in this situation, where I was trying to capture the experiences of busy professionals, they were easier to organise and more convenient for the participants.

An excerpt from my diary regarding the telephone interview with xx "It was difficult to arrange a face to face interview with xx because she has a lot going on in her life at the moment having just moved house"

They were not without some problems such as having limited control over their environment as noted below.

An excerpt from my diary "Short interview again with xx. She had just finished work and had changed but was still at work. The environment might affect the interview. As she was still on the hospital premises she might not have felt as free to talk."

An excerpt from my diary "xx was interviewed at the end of the day and she had just had a shower after getting back from work following a 40 minute drive. She was probably feeling tired but relaxed in a home environment."

Similar to the process utilised by Elizabeth McKay described in Findlay and Gough (2003) I developed a reflexive process whereby I reflected before, during, and after each interview which enabled effective learning. Interviewing was a skill that I did not possess at the start of my research and looking back at the transcriptions I can clearly identify leading questions posed in my early interviews where my influence on the research process was evident. This bias was addressed in later interviews and via

member checking during the final interviews. Thus I believe that I reduced my influence on the data collected.

Before an interview I would reflect on what I already knew about the participant and review their previous interview(s). I was mindful of themes emerging and that these were at the forefront of my mind, but did not want these to overly influence a participant's contribution at that moment in time. As Biggerstaff and Thompson (2008) suggested, the interviewer should have a prompt with main themes but that the interviewee should take the lead during the conversation. An IPA style of questioning which I adopted involves asking the participants to describe situations. This did help to place the participants at the fore of the research.

***An excerpt from my diary** "Good interview that flowed well. It helps to get them to describe experiences."*

Researcher's feelings and emotions when gathering the data will no doubt be conveyed to the participant and influence both how they respond to the participant as well as participant's responses (Corbin and Strauss 2008). These will often be unconscious but none the less influential on the data gathered (Corbin and Strauss 2008). During the interviews I felt it was important to be responsive to the direction that an interview was taking. Sometimes this was more problematic than others. I undertook a couple of interviews when I was not feeling at my best and having a headache made it difficult to really focus and concentrate on what the participant was saying. The use of an interview guide was invaluable at these times but did mean that the researcher influence could have possibly been more prominent than on occasions when I was more responsive to the interviewee.

***An excerpt from my diary** "The conversation went well. I left the conversation with xx quite open towards the end and she responded well to a very open question about how she felt in general."*

After each interview I documented my immediate post-interview feelings and impressions. I later returned to these during the analysis and before further interviews to inform my thinking as shown in the excerpt below.

***An excerpt from my diary** "I do not know xx as well as the other participants. It might be this or just that she is not a chatty person that the interview did not last as long as*

the other interviews. xx still gave responses but did not elaborate much. This may be my interview technique that needs development or that xx is a more private person."

This was a longitudinal study and based on other research I had defined a schedule for the interviews over a twelve month period. This time scale proved unrealistic and it was becoming increasingly difficult to maintain. I needed to pause and reflect on the need for the strict schedule and be realistic about what I could achieve as a part time researcher with a full time job. Time to pause and reflect is an essential component of reflexivity (Findlay and Gough 2003). Undertaking this research has revealed some of my weaknesses and my coping mechanisms and highlighted the need for an effective work-life balance in order to conduct quality research rather than just going through the motions.

***An excerpt from my diary** "Feeling tired! There is no room to take any more in but time is pressing ..or is it? Is it essential to keep the nine month interviews? If I go for member checking, which is the right way to go, then I need to do an initial analysis. There is a balance between what I can do and what would be a thorough job. How critical is the timing? Take the pressure off and move the gap of the interviews from nine months to twelve months. This will give me time to analyse the data and do member checking as part of the final interview at twelve months."*

7.6 Reflecting on my selection of a theoretical framework.

At one of my supervision meetings I was asked about my theoretical framework. I admit to some confusion over this question and I think that I am not alone. It was described as a framework on which to hang my data. This visual image has helped greatly throughout the development of themes and writing up my research. I have explored different theories and concepts during the period of the study but my main framework was decided upon relatively easily. I had kept in contact via email with some of the students who had taken part in the focus group. One of them emailed me and described a situation where she had performed a technique in a different way to that commonly practiced in her new hospital. The radiographers who she was working with were interested and asked her to teach them the technique rather than her being told that they do not do it like that there. This started me thinking about how this had affected her integration into the imaging department and led me to consider communities of practice.

An excerpt from my diary "One idea which has been mulling over in my head is that of communities of practice. If a department is a community of practice this should help newly qualified members of staff not to feel alienated and let them contribute their 'up to date' knowledge."

7.7 My influence on the data analysis

As mentioned earlier the structured analysis in IPA was attractive and it is reputed to reduce the influence of the researcher (Larkin, Watts and Clifton 2006). The use of the left and right margins as described in the method helped to ensure that the findings remained grounded in the data. This organised structure of first reviewing the text phenomenologically and pausing for time to reflect to ensure that the text was being reviewed with 'fresh eyes' for the interpretative analysis helped to reduce personal opinion or subjectivity and keep the emergence of themes grounded in the data (Lee and Prior 2013). It was advised that during analysis, notes of any thoughts, observations and reflections that occurred while reading the transcripts should be made (Biggerstaff and Thompson 2008). This practice helped me to reflect and identify any premature interpretation. It was important that during the first stage of data analysis the researcher suspended presuppositions and judgements and focussed on what was actually presented in the scripts (Biggerstaff and Thompson 2008). This involved the practice of bracketing, which required the suspension of critical judgement brought on by my own assumptions and experience (Willig 2008). This practice was considerably difficult given my involvement in the subjects and area being researched. I found that I was starting to make judgements and interpreting the data prematurely. I could only analyse the scripts for a short period of time. Prolonged exposure to the scripts led me to become too embroiled in the text and my mind would start interpreting what I was reading prematurely.

Computers have been used to analyse qualitative data since the 1980s (Holloway and Wheeler 1996), and for basic content analysis in humanities since the 1960s (Seale 2006). It is generally accepted that at this level of study some form of computer software will be used (Holloway and Wheeler 1996), thus the use of NVIVO was explored. However, I felt that the barrier of the computer inhibited the creativity of the analysis. Excel and Word programmes, which were kept securely and password

protected, were used to store and keep track of the data. Computer assisted analysis of qualitative data software packages were quite sophisticated over a decade ago (Seale 2006) and their sophistication has no doubt increased. However, they cannot do the thinking for you (Seale 2006; Corbin and Strauss 2008). Computers have obvious advantages of being able to store large quantities of data which can be shuffled and retrieved (Silverman 2001; Corbin and Strauss 2008). This makes the data easy to manage and quick to find (Green and Thorogood 2009). I have found that they were more use for this than for the analysis (Seale 2006).

The use of computer software packages for analysis is said to improve the rigour by producing counts of phenomena, or searching out deviant cases (Green and Thorogood 2009; Seale 2006), they also create an audit trail (Corbin and Strauss 2008). Green and Thorogood (2009) suggested that it makes the analysis more thorough and systematic. However, a paper based IPA analysis is systematic and thorough without the aid of computers. They also suggest that it increases transparency as there is a record of how codes and themes have been developed. However, as computer software packages cannot do the thinking for you, or produce reflection, or memos, a reflective diary increased transparency equally as well.

Analytical programmes are said to assist with the creative process as they enable to the researcher to try things different ways with relative ease (Corbin and Strauss 2008). However, there is also a concern about them stifling creativity and mechanising the analytical process (Holloway and Wheeler 1996; Seale 2006; Corbin and Strauss 2008). Drawbacks of the software include that it takes time to learn and is expensive to buy (Holloway and Wheeler 1996; Green and Thorogood 2009). However, I am relatively computer literate and managed to negotiate my way around NVivo, which I had installed on my computer at work, without too much problem. Seale (2006), a great supporter of these software packages, stated that they cost less than most statistical packages. But these are still not cheap and in addition my home computer would not support the software, thus increasing the potential cost. I would have invested in it had I believed that the expense was worthwhile. My main barrier to the use of software for analysis was that it stifled creativity. I spent long hours at work sat

in front of a computer and found it impossible to spend my leisure time at a computer. As suggested by others, the computer inhibited the closeness to my data, and thus my sensitivity to it (Holloway and Wheeler 1996; Green and Thorogood 2009). I needed the flexibility to move around to be able to think. I found that printing off the interviews and being able to pick them up and put them down at will and analyse bits at a time increased the thoroughness of my analysis. When it came to producing themes, I printed off my interpretations and moved them around a table where I could frequently return to them and regroup the data following time for reflection. Obviously I had undertaken a relatively small study and this strategy would prove problematic for larger studies with more data to handle.

7.8 My overall impressions

The creation of themes has been a journey that I have taken with the assistance of my supervisors. These have been changed, adjusted and agonised over, often in light of additional reading of literature. It has been very difficult to confine and maintain a focus for the research in regard to the theoretical avenues that I could have travelled. The final themes, I believe, reflect the findings and provide a balance account of the research. My initial concern about being too focussed on the preparation for practice was unfounded as much of the analysis discusses issues relating to practice. In addition, I managed to suspend my preconceived ideas and become open to new ones, particularly regarding preceptorship, which I initially felt unnecessary. The theme about peer support was a surprise finding and is an area which I will be interested in exploring further. As well as peer support being highlighted in my research my peers have been invaluable in supporting me during my transition into research for which I am very grateful.

An excerpt from my diary "I feel privileged to be given the permission to probe into these peoples' lives."

7.9 Summary

This chapter has made explicit the effect that I have had on this research and in doing so I have reflected on my own biases or presuppositions which may have contaminated my research. Throughout this reflection there is a recurring theme of my need for organisation and a measure of control which is used as a coping mechanism throughout my doctoral studies. It influenced the selection of IPA as my methodology and allowed me to explore the lived experience of newly qualified diagnostic radiographers in a structured way.

Chapter 8 Conclusion

8.1 Introduction

This chapter brings together the findings of, and the reflections on this research. It highlights any implications resulting from the discussion, makes recommendations for practice, and suggestions for further research. In doing so it answers the research question of ‘what are the expectations and experiences of newly qualified diagnostic radiographers?’ Limitations to the study are also highlighted. A summary of the findings and contribution to practice can be found at the end of the chapter.

8.2 Conclusion

This research was undertaken to explore the expectations and experiences of newly qualified diagnostic radiographers during their transition from student to practitioner. This is a short period of time in a professional’s career, but one which is important, as it is during this period that they move from being a supervised student to an autonomous practitioner. It has been recognised as a difficult, stressful, but exciting period and has attracted research and funding, particularly within the nursing profession. In this current climate of a competitive market and high patient expectations it is important that this transition is swift, and effectively managed.

The findings of the research will be of interest to both academic and clinical staff. It can be used to inform the development of undergraduate educational courses, as it brings to light some of the issues that newly qualified staff have found problematic, such as supervising students. Departmental managers may gain information about how best to support their new staff as it highlights good practice. Within this small sample there was considerable variation regarding organised support in the form of preceptorship and mentoring. These are frameworks that are strongly supported by current national policy; therefore findings from this research can inform how guidance might be implemented.

The study used a small, purposively selected group of participants. As such there is no intention of making broad generalisations from the findings of this research. Any claims made are bound within a relatively homogenous sample. However, theoretical generalizability can be applied. The reader, using their existing professional and experiential knowledge, can consider the value of the research and its relevancy to their situation.

This was a longitudinal IPA study, conducted over a twelve month period, using a focus group and semi-structured interviews as methods for gathering data. The subjects were diagnostic radiography students from one higher education institution, who obtained employment in five different hospitals, all of which were used as clinical placements for the higher education institution. None of the hospitals were large teaching hospitals, where organisation and culture may differ, due to the large number and range of staff. Further study undertaken using participants from this environment might bring to light different issues. All the participants found employment locally, and although they experienced different life transitions, they were not moving to a different part of the country or abroad, where they could encounter different cultures and practices.

8.2.1 Learning and development

There was a clear link between the quality of clinical experience gained as a student and levels of confidence. Because there were some areas of practice where it was more difficult to gain experience such as in an operating theatre, anxiety was experienced about working in these areas of practice. This suggests that an understanding about how to facilitate learning in these areas and reduce anxiety is required. The participants felt less anxious and more confident as they gained experience, but anxiety or stress management is imperative during the transition into practice. Thus, further work is needed to ascertain how best to prepare students for areas of practice that are less accessible during their training and for dealing with feelings of anxiety. One suggestion is that positive situated learning can be facilitated by using the cognitive apprenticeship model. This model can structure learning and development to produce autonomous health care professionals.

The theoretical concept of situated learning in communities of practice helped to make sense of the findings of this research. There were indications that the participants entered imaging departments with effective communities of practice. Strong communities of practice embrace new ideas and encourage a questioning culture. This is supportive of learning and development both for students and newly qualified staff members.

Under the terms and conditions of employment the participants worked over time. They were not fully prepared for the pace and pressure of work, which left them feeling tired, particularly while they were getting used to working different shift patterns. Although they appreciated time off in the week, tiredness was still expressed after 12 months in practice. Due to the need for supervision, students primarily work during the daytime. As health care is a twenty-four hour service, consideration could be given to students working outside normal hours in order to prepare them better for practice.

Higher education had prepared the students to be autonomous practitioners, and they felt comfortable taking responsibility for themselves. However, they struggled with taking responsibility for students. Although there was an attempt made in some imaging departments to restrict the exposure of new staff to students, this was not always practical. Thus part of the education and training of diagnostic radiographers should include the theory and practice of mentoring, supervision and assessment.

8.2.2 Support

Getting the right balance between challenge and support is essential for building competence and confidence. The participants wanted, and generally received, support tailored to their needs. There was no indication that the participants were ever out of their depth. They identified that being stretched, whilst receiving the right support, was a good for their development. In three hospitals the participants received scaffolding, where support was gradually withdrawn as they gained experience. This practice was well received by the participants and was a positive aspect of their transition. In contrast to this, one of the participants had less support, particularly when she started on call, which left her feeling sometimes uncertain about the right

course of action to take. Scaffolding was used in different circumstances such as going to theatre, starting on call and working in a more challenging area of practice. It is a practice which could be adopted by imaging departments and used in several situations.

Although all the participants were assigned a mentor they did not use them as a source of support. Only one of the hospitals in the study operated a preceptorship programme. This confirms that, although there is some guidance, there is no consensus about best practice for preceptorship. Instead of using a mentor or preceptor, the new radiographers found that they could ask any members of staff as and when they needed help or advice. Mentoring is common practice in many areas for different professions and therefore has some value. However, in view of these findings, the practice of assigning a mentor to newly qualified diagnostic radiographers does not appear to be effective. This research did not fully explore why mentors were not used, which may be information that would be beneficial to clinical staff. The two participants, who experienced an inter-professional preceptorship programme, did benefit from this. For one this was short term, but for the other it had lasting benefits in helping her build relationships with other professionals. The preceptorship programme facilitated peer support. Peer support featured highly as a positive support mechanism either formally via the preceptorship programme, or informally from other new starters. It would therefore be beneficial for imaging departments to explore how they could facilitate peer support.

The topic of receiving feedback, which from the literature review appeared important to other professions, was not raised. It was clear that the participants were autonomous, reflective learners who recognised what support they needed, and had the ability to obtain it. This may have reduced their need to receive feedback on their performance. Only two participants had a formal appraisal of their performance during the period of data collection. This study did not fully explore the value of, or need for, receiving feedback; nor did it evaluate the appraisal system. This could be an area for further research.

8.2.3 The Work Environment

The participants entered different working environments, and their experience was influenced by the culture they encountered. There was a general concern about fitting in, which was reduced when they were familiar with the hospital. Generally the participants entered a supportive, welcoming environment, but did experience some hierarchical practices. This research did not aim to identify different cultures within imaging departments, but through the experiences of the participants it was clear that cultures between hospitals varied, which could be explored further.

During the transition, participants became gradually more aware of, and had involvement in, the politics of the imaging department. This was an issue that was raised in the final interview in the majority of cases. Once established within the community of practice they wanted to become involved and have input into decisions made that would directly affect them. They recognised the influence that a manager had on an imaging department and the role they played in their transition.

Effective communities of practice are said to reduce the learning curve of new staff. Thus it would be beneficial for the concept of communities of practice to be explored further in relation to imaging departments, particularly regarding boundaries and inter-professional working such as in an operating theatre environment, or those work environments physically situated outside of the imaging department.

8.2.4 Professional Identity

As they moved into practice, one concern was how they would be perceived by other qualified staff. There was a desire to cast off the student identity. The development of professional identity started as a student and continued to develop further during the period in which the data was gathered. This was illustrated most profoundly in their interaction with doctors. Initially they lacked confidence when speaking to the doctors and viewed them as having more authority. However, as the radiographers developed as professionals they found themselves able to discuss requests for imaging and provide their opinion as autonomous professionals. Their identity was constantly changing and was also influenced by other life changes during this period such as getting married. There is very little research about professional identity in the field of

diagnostic radiography, and as it is important for effective inter-professional working, it is an area worthy of further exploration.

8.3 Summary of the findings

Experiential, situated learning is important, and a high quality hands-on clinical experience with a balance of theoretical input from a higher education institute develops autonomous, reflective practitioners. These newly qualified practitioners, prepared for practice in this way, were able to seek out the support they needed during their transition into practice.

The culture of the organisation into which the newly qualified practitioners entered affected their transition. Newly qualified staff members that enter a supportive environment feel able to ask for help and advice, thus have a smoother transition than if entering a hierarchical environment where power is exercised over them.

The professional identity of the diagnostic radiographers started as a student and further developed during the transition into practice. The initial lack of confidence quickly reduced as they became more integrated into the community of practice. They soon cast off the student label to become autonomous practitioners who could speak to doctors as fellow professionals.

Getting the balance right between challenge and support is essential for the development of confidence and competence. This will reduce the risk of newly qualified practitioners feeling out of their depth, whilst allowing them to progress into become fully functioning members of the community of practice.

Scaffolding provides excellent support in different situations. The gradual reduction in the amount of support was described by the participants in different situations. This was always discussed in a positive light and allowed the newly qualified staff to develop their practice safely.

Preceptorship is not well established in diagnostic radiography. One of the hospitals where participants were employed has a structured preceptorship scheme, but the

other four hospitals do not. All the participants were assigned a mentor, but they were not an effective source of support during the transition into practice.

Support during the transition into practice was obtained from peers. This was a valuable source of support whether arranged formally or informally.

The areas of practice where the newly qualified practitioners lacked confidence were ones where they had limited experience as students. These included working in an operating theatre, working out of hours, and supervising and assessing students.

8.4 Contribution to Professional Practice

The purpose of a professional doctorate is to contribute to the body of knowledge for practice. This is a small scale study which is open to theoretical generalizability, which allows the reader, using their existing professional and experiential knowledge, to consider the value of the research and its relevancy to their situation. This study suggests the following areas for consideration.

- ✓ Newly qualified diagnostic radiographers experience difficulty when required to supervise students. Consideration should be given to training and educating student radiographers in how to supervise and assess students. This could be done by incorporating peer coaching into undergraduate courses.
- ✓ Peer support is highly valued by newly qualified diagnostic radiographers. Imaging departments may like to consider how this could be facilitated.
- ✓ The practice of scaffolding support facilitates a smooth transition into practice and could be incorporated into the induction of new staff.
- ✓ As experience builds confidence, areas where newly qualified staff lacked confidence were working out of hours and working in an operating theatre. Pre-registration education programmes for diagnostic radiographers should include as much experience, either clinically, or via simulation, as is practicable in these areas.

8.5 Areas for further research

Further research is required into the practice of preceptorship in diagnostic radiography. Preceptorship is well established in other health care professions, particularly in nursing. There has been research demonstrating the success of this scheme (Whitehead et al 2013), and it is also supported by the Department of Health (2010) and the Society of Radiographers (2011). Yet research into the extent of its use, and preceptorship practice in diagnostic radiography is limited. It would be valuable to explore other forms of support for example receiving formal feedback, the appraisal system and peer support.

The concept of communities of practice in relation to imaging departments could be explored further. Effective communities of practice smooth the transition into practice by fostering a culture of sharing and developing knowledge with others (Wenger 1998). The more participation peripheral members have, the swifter they become integrated into the community (Lave and Wenger 1991). This can impact on the experience of newly qualified diagnostic radiographers when accessing different communities of practice such as on a ward or in an operating theatre. Communities of practice provide a sense of belonging, commitment and a shared identity (Wenger 1998). This will benefit the members, the organisation and the patient.

Further research is recommended into the professional identity of diagnostic radiographers. A positive self-image is required for effective interaction with patients and other professionals (Ohlen and Segesten 1998). It has been suggested that radiographers have a low self-esteem and inferiority complex (Sim and Radloff 2009), which is supported by this research, particularly for newly qualified staff, but not explored in depth.

Clearly diagnostic radiography is a profession under pressure (Brown 2004; Harvey-Lloyd, Stew and Morris 2012), and the newly qualified staff members in this study recognised that they had entered an environment which could be 'crazily busy'. Further investigation about how they cope with these periods would be beneficial to the profession.

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Word count excluding reference list 50, 601

Appendix 1

Literature Review Record

	Literature Review	Year	Profession	Country	Method	Participants	Methodology
1	Agllias	2010	social workers	Australia	Focus groups and interviews	25 and 8	heuristic inquiry
2	Bennan et al	2010	doctors	UK	Interviews and audio diary	31 and 17	longitudinal
3	Bjerknes and Bjørk	2012	nurses	Norway	Observation, interviews and document analysis	13	ethnography
4	Brown and Edelman	2000	nurses	UK	Questionnaire		longitudinal study
5	Deasy, Doody and Tuohy	2011	nurses	Ireland	Questionnaire	98 and 21	pre and post qualification
6	Fenwick et al	2012	midwives	Australia	Interviews	16	Qualitative descriptive approach
7	Gerrish	2000	nurses	UK	Interviews	25	grounded theory
8	Hollywood	2011	nurses	Ireland	Interviews	6	phenomenology
9	Jackson	2005	nurses	UK	Interviews	8	phenomenology
10	Kelly and Ahern	2008	nurses	Australia	Interviews	14	phenomenology

11 & 12	Mooney	2007a and 2007b	nurses	Ireland	Interviews	12	grounded theory
13	Morley, Rugg and Drew	2007	occupational therapist	UK	Questionnaire	45	
14	Newton and McKenna	2006	nurses	UK	Focus groups and interviews		longitudinal study
15	O'Kane	2012	nurses	UK	Interviews	8	
16	Olson	2009	nurses	USA	Interviews	12	longitudinal study
17	O'Shea and Kelly	2007	nurses	Ireland		10	phenomenology
18	Pelico, Brewer and Kovner	2009	nurses	USA	Questionnaire	1195	content analysis
19	Ross and Clifford	2002	nurses	UK	Questionnaire and interviews	19 and 13	pre and post qualification
20	Rungapadiachy, Madill and Gough	2006	nurses	UK	Interviews	11	grounded theory
21	Thrysoe	2012	nurses	Denmark	Participant observation and interview	9	phenomenology
22	Toal-Sullivan	2006	occupational therapist	Canadian	Interviews and journal	6	phenomenology
23	Van der Putten	2008	midwives	Ireland	Interviews	6	phenomenology
24	Wangenstein, Johansson and Nordstrom	2008	nurses	Norway	Interviews	12	

Appendix 2

CASP Assessment tool (example)

NEWTON, Jennifer M. and MCKENNA, Lisa (2007). The transitional journey through the graduate year: A focus group study. *International journal of nursing studies*, 44 (7), 1231-1237.

<p>1. Was there a clear statement of the aims of the research? <i>Consider:</i> <i>What the goal of the research was</i> <i>Why is it important</i> <i>Its relevance</i></p>	<p>There were very clear aims for this research presented in a separate paragraph. It explored experiences of nurses, pre and post graduation.</p>
<p>2. Is a qualitative methodology appropriate? <i>Consider:</i> <i>If the research seeks to interpret or illuminate the actions and/or subjective experiences of research participants</i></p>	<p>The qualitative methodology was appropriate in seeking the opinions of the nurses</p>
<p>Detailed questions 3. Was the research design appropriate to address the aims of the research? <i>Consider:</i> <i>If the researcher has justified the research design (e.g. have they discussed how they decided which method to use)?</i></p>	<p>The researchers have justified their method. Focus groups were appropriately used in order to generate natural talk and reduce the impact of the researcher.</p>
<p>4. Was the recruitment strategy appropriate to the aims of the research? <i>Consider:</i> <i>If the researcher has explained how the participants were selected</i> <i>If they explained why the participants they selected were the most appropriate to provide access to the type of knowledge sought by the study</i> <i>If there are any discussions around recruitment (e.g. why some people chose not to take part)</i></p>	<p>The recruitment strategy has been clearly presented and justified.</p>

<p>5. Were the data collected in a way that addressed the research issue?</p> <p><i>Consider:</i> <i>If the setting for data collection was justified</i> <i>If it is clear how data were collected (e.g. focus group, semi-structured interview etc.)</i> <i>If the researcher has justified the methods chosen</i> <i>If the researcher has made the methods explicit (e.g. for interview method, is there an indication of how interviews were conducted, or did they use a topic guide)?</i> <i>If methods were modified during the study. If so, has the researcher explained how and why?</i> <i>If the form of data is clear (e.g. tape recordings, video material, notes etc.)</i> <i>If the researcher has discussed saturation of data</i></p>	<p>The key questions used to generate discussion during the focus groups have been presented. These clearly address the research question.</p> <p>The focus groups were audio taped.</p>
<p>6. Has the relationship between researcher and participants been adequately considered?</p> <p><i>Consider:</i> <i>If the researcher critically examined their own role, potential bias and influence during:</i></p> <ul style="list-style-type: none"> <i>o Formulation of the research questions</i> <i>o Data collection, including sample recruitment and choice of location</i> <p><i>How the researcher responded to events during the study and whether they considered the implications of any changes in the research design</i></p>	<p>The researcher has examined their role to some extent regarding data collection but not analysis. There is limited evidence of reflexivity</p>
<p>7. Have ethical issues been taken into consideration?</p> <p><i>Consider:</i> <i>If there are sufficient details of how the research was explained to participants for the reader to assess whether ethical standards were maintained</i> <i>If the researcher has discussed issues raised by the study (e.g. issues around informed consent or confidentiality or how they have handled the effects of the study on the participants during and after the study)</i> <i>If approval has been sought from the ethics committee</i></p>	<p>Ethical issues have been considered in a clearly presented paragraph. Approval for the project was received from a university ethics committee.</p>

<p>8. Was the data analysis sufficiently rigorous?</p> <p><i>Consider:</i> <i>If there is an in-depth description of the analysis process</i> <i>If thematic analysis is used. If so, is it clear how the categories/themes were derived from the data?</i> <i>Whether the researcher explains how the data presented were selected from the original sample to demonstrate the analysis process</i> <i>If sufficient data are presented to support the findings</i> <i>To what extent contradictory data are taken into account</i> <i>Whether the researcher critically examined their own role, potential bias and influence during analysis and selection of data for presentation</i></p>	<p>There is limited discussion about the analysis process. They have stated that they used a validated process presented by Colaizzi.</p>
<p>9. Is there a clear statement of findings?</p> <p><i>Consider:</i> <i>If the findings are explicit</i> <i>If there is adequate discussion of the evidence both for and against the researcher's arguments</i> <i>If the researcher has discussed the credibility of their findings (e.g. triangulation, respondent validation, more than one analyst)</i> <i>If the findings are discussed in relation to the original research question</i></p>	<p>The findings are clear under suitable headings and use direct quotes to validate the results.</p>
<p>10. How valuable is the research?</p> <p><i>Consider:</i> <i>If the researcher discusses the contribution the study makes to existing knowledge or understanding e.g. do they consider the findings in relation to current practice or policy, or relevant research-based literature?</i> <i>If they identify new areas where research is necessary</i> <i>If the researchers have discussed whether or how the findings can be transferred to other populations or considered other ways the research may be used</i></p>	<p>The authors clearly bullet point the contribution their research makes</p>

Appendix 3

Critical Appraisal Framework (Example)

O'SHEA, Maria and KELLY, Billy (2007). The lived experiences of newly qualified nurses on clinical placement during the first six months following registration in the republic of Ireland. *Journal of clinical nursing*, **16** (8), 1534-1542.

The Introduction

- Is there a clear statement about the topic being investigated? **yes**
- Is there a clear rationale for the research? **yes**
- Is there a clear statement about the limitations of the research? **yes but limited**

The Literature Review

- Do the researchers use contemporary material about the topic being investigated? **Dated**
- Do the researchers link their work to a wider body of knowledge through the references cited? **yes**
- Do the researchers link the topic to the questions about theory? **limited**
- Is there a clear link between the literature and the formulation of the research question(s)? **yes**
- Is the research question clearly stated? **yes**

The Methods Section

- Is the research design clearly described? **yes**
- Are the research methods appropriate for the topic being investigated? **yes**

- Are any advantages or disadvantages of the design acknowledged by the researchers? **yes**
- Is there a clear statement about who participated in the research? **yes**
- Is there a clear statement about how the participants were selected? **yes**
- Is the selection of participants appropriate to the design? **yes**
- Is there a clear statement about the number of people taking part in the research? **yes**

Data Collection and Analysis

- Is there a clear description about how the data was collected? **yes**
- Was the data collected by appropriate people? **yes**
- Is the approach to data analysis appropriate to the type of data collected? **yes**

Qualitative

- Is there a clear reflexive statement about the researcher's role in the analysis?
no
- Is the approach taken to data analysis clear? **yes**
- Is the use of any electronic analysis package discussed? **no**
- Is there a clear statement about how the researcher validated interpretations?
yes

Ethics

- Is there a clear statement about ethical committee approval? **yes**
- Is there a clear description about gaining consent, maintaining anonymity and or confidentiality? **yes**

The Results/ Findings

- Are the results related back to the literature review? **yes**
- Are the weaknesses in research design acknowledged? **yes**

Qualitative

- Does the research present evidence of the data collected? **yes**
- Does the data presented as part of a theme support the analysis suggested?
yes
- Is there a clear audit trail? **no**

The Conclusions

- Are the implications for further research acknowledged? **yes**
- Are areas for further research identified? **yes**
- Are further recommendations made for practice that come from the results/discussion? **yes**

Moule, Gilchrist and Ingram (2003) *Critical appraisal framework*.

Appendix 4

An example of IPA analysis

Interview Mary3

Phenomenological analysis notes	No's	Transcript	Interpretative analysis notes
	1.1	Hello.	
	1.2	Hello, it's Sarah.	
	1.3	Hiya, you alright?	
	1.4	Yeah, how are you doing?	
	1.5	Yeah, good thank you, sorry it's taken me ages to get back to you.	
	1.6	Oh, that's alright, you changed your phone?	
	1.7	Erm, yeah, I had to get a new SIM 'cos my contract run out and then I was having so many problems trying to load it and oh it's been a nightmare.	
	1.8	Yeah, oh well.	
	1.9	Got it sorted now.	
	1.10	Sorted, yeah, yeah. So, last time we spoke you'd only done a couple of on-calls, so I presume you've done a lot more now, have you?	
Done loads of on call now	1.11	Yeah, I've done loads now.	
Good question	1.12	So, do you want to describe what they're like, now, how you feel?	
Much more confident but still a bit unsure. She has got to know the environment and what to do. Had a bad night with no porter and this made her very tired.	1.13	Yeah, I feel a lot more confident, obviously erm sometimes still feel a little bit like, little bit unsure really, um, but no, I do feel so much more confident doing erm, I suppose I've got to know more of the A&E stuff as well, erm, my last one was, that was a bit more of a challenge because I didn't have a porter, so um, I had to like keep bringing back and forth to the department and bringing the patient by myself and that, so I was a lot more worn out.	Her confidence is growing but still experiencing new and sometimes challenging situations where she is sometimes unsure. The challenge is more organisational than technique.MM(3) 1.13
	1.14	Yes, you would be.	
Found the	1.15	Erm, but yeah, no that one, that	

organisation of her workload a challenge when needing to organise conflicting demands on her.		one was ok, I've been to theatre on an on-call as well, so that was quite a challenge as well, because obviously A&E was busy at the same time, so I had to ring them and tell them that I couldn't be there and everything else, um and it was, it was for a patient that had had erm a C-Section and they lost the clip.	
	1.16	Oh.	
Different working in theatre at night, especially one she was not used to	1.17	So it was a totally different theatre, the equipment it obviously wasn't there, and this was like 1 in the morning, so I'm like having to run back to ground floor, get the equipment, go back, forgot the leg so I had to go back again erm, so that was yeah, a bit of a challenge, but, didn't find the clip either.	
	1.18	Oh.	
Still worrying the night before an on call	1.19	So, don't know where that was. But yeah, so it was, it's going well, I've got another on-call next week as well, so, I still worry the night before, still get a little bit worried, but no, it's going well.	She still worries a bit just before an on call shift but knows that she has coped so far. MM(3) 1.19
	1.20	Yeah.	
Confident talking to doctors	1.21	So, I feel a lot more confident accepting requests and speaking to the doctors and that sort of thing.	She feels confident discussing the requests with doctors. She knows where to turn to if in doubt. MM(3) 1.21
	1.22	Yeah, do you ever turn any down?	
She is comfortable sorting out requests and looks at protocols or discusses if in doubt.	1.23	Erm, sometimes, but then I just either find the protocol book or you know speak to the doctor and like, why do you need it, and then they'll explain a bit further so, yeah, it's not too bad.	
	1.24	Yeah.	
	1.25	No, no, it's going really well.	
	1.26	Ok.	
Likes to go to CT	1.27	I've been in CT a bit more as well now, so that's been quite nice.	She likes going to CT and is hopeful of more training in this area. She wants the

			responsibility of doing CT heads on call. MM(3) 1.27
	1.28	Yeah.	
Looking forward to being trained in CT heads	1.29	And hopefully, well, we're meant to be getting head, CT head training, erm, there's only been 2, 2 members of staff that have done it so far, I'm hoping that I'll be in the next lot that get trained so then I can just do that on my on-call as well.	
	1.30	Yeah, so at the moment do you have to call somebody else in?	
	1.31	Yeah, they have a set pro, sort of CT radiographer, erm, and they just do everything, so, because most hospitals, general radiography, you do the CT heads don't you.	
	1.32	Yes.	
Looking forward to doing CT heads	1.33	Whereas at xxxx they're still waiting to actually implement that, but that will be good when I get to do that as well.	Prefers to keep busy when on call MM(3) 1.33
	1.34	Yeah. Not just extra work then?	
	1.35	Yeah, exactly. Well that's true, but while you're up you might as well.	
	1.36	Yeah, yeah, keep busy.	
	1.37	Not call another radiographer in. Yeah, so it's going really well.	
	1.38	Great, so what about the interventional room, what was your training like for that?	
Expected some training but it did not happen because the application specialist did not turn up	1.39	Oh, well, I was meant to have my training and then it didn't happen because the apps man didn't turn up, so still haven't been trained in that yet.	The training she expected in IR did not happen but she was not bothered about this because she likes CT more and wants more training in this area. MM(3) 1.39
	1.40	Oh, right.	
Not too bothered as prefers CT	1.41	I'm waiting for that one, but I'm not too fussed at the minute, I'd rather be trained in sort of the CT head area and then have more	

		experience of CT which I do enjoy a lot more.	
	1.42	Yeah.	
	1.43	But yeah, I think it's just trying to get interventional radiographers sort of bit more trained up, a bit more confident, so, and then we've had one of the radiologists, um, he can't work in there because his radiation dose has gone up so it's been a bit of a nightmare this week.	
	1.44	Oh right, yeah, the waiting list going up.	
Organisation of training staff	1.45	Well, yeah. So, yeah, I think they're just trying to sort out that room first so everyone else is confident and then they can train us.	
	1.46	Yeah.	
Experienced some bad days with staff shortages due to sickness and wards closed	1.47	Trying to get the apps man in is a bit of nightmare as well. But yeah, so, been alright, everyone's been ill this week as well, so, not very good.	She has experienced some bad days with staff shortages and organization problems which have made then extra busy. She describes these as a 'nightmare', MM(3) 1.47
	1.48	So, it's been busy?	
	1.49	Yeah, definitely, been quite a lot of people off, we've had 2 wards shut with D&V, so.	
	1.50	Yeah.	
Communication with the wards was poor	1.51	That's been a bit of a nightmare going to do mobiles. Then not telling you that they've got D&V or anything, you know how it is?	Poor communication with the wards has made the situation worse. MM(3) 1.51
	1.52	Oh yeah, you find out afterwards, yeah.	
	1.53	Yeah.	
	1.54	Clean everything down.	
	1.55	Yeah.	
	1.56	Yeah, er, have you had your appraisal yet?	

Appraisal was a positive experience and all positive feedback. She asked for more CT	1.57	Yeah, I had that erm, oh God when was it now, end of January, yeah, so that was really positive, erm, didn't really have any negatives, said that I've fitted into the department really well, erm, the areas that I put was just to get more CT experience, so, hopefully that'll come in time as well.	Had her appraisal, this was not very important as she had to think about when it was. She came away feeling positive and liked the opportunity to say were she wanted to work. She is hopeful of getting in the area that she wants. <i>(is luck a recurring theme?)</i> MM(3) 1.57
	1.58	Yeah.	
The radiographer who did the rotas has left so she describes the department as chaotic	1.59	But I think there's quite a few of more that want to be in more CT, because there's quite a lot of members of staff just in the main department hopefully we'll get like a day a week, so that'll be quite nice, but our senior radiographer, she left a couple of weeks ago as well, erm, and she does like the rotas and everything, so they're waiting to employ someone else so it's bit chaotic at the minute.	This stresses the importance of the manager- the senior person who does the rotas. Described as 'Chaotic' now that the radiographer has gone and not yet replaced MM(3) 1.59
	1.60	Right, yeah, so did she help erm put you where you needed to go and things?	
	1.61	Yeah. So there's 2 of the part-time staff that are doing the rotas between them, but yeah, so, waiting to see if they find someone to fill her space when she left.	
	1.62	Yeah, so how are you finding going to theatre?	5.32 mins
Likes theatre because the people are all really nice in theatre. She likes teaching students because it makes her think	1.63	Yeah, very good, I love theatre, yeah, well I love ground floor theatre because that's all ???, not so interested in urology that kind of all ??? but no I do, I really like theatre, and the people are really nice, like they all make an effort to know your name so it's really nice going into theatre, so yeah, it's been quite good and we've had erm a student so that's been really nice, teaching them, so it's been	She likes theatre because the people are really nice. They know her name and make her feel welcome. MM(3) 1.63 She feels the benefit of having students with her as they make her think about what she is doing.

		quite good, and it makes me think again as well, because when they're asking questions you have to think back and think oh, you know try and remember everything.	MM(3) 1.63
	1.64	Yeah, yeah, is it, do you, how do you find teaching the students?	
She finds teaching students hard. It is easier to take over. It makes her realise what it was like for those teaching her.	1.65	Erm, I find it a lot harder than I thought I would, especially when you're positioning for just a, any x-ray, you it's easier to take over and take control of the tube rather than explaining it, which now it makes me realize how radiographers used to be with me, erm, I try, try and go through it with them and try and not to take over.	She thought that it would be easy to teach students but found it hard not to take over and now realises treated her the way they did when she was a student. MM(3) 1.65
	1.66	Yeah.	
She finds it fun helping the students and finds different ways of helping them	1.67	But no, I do enjoy it, I enjoy teaching them and try and help them and you know, if we've got a bit of time we'll just position each other and that sort of thing, so it's quite, quite good and like we've been going through anatomy so I've been printing off the diagrams for them to learn and then when they go through the x-rays they can point out bits and that so it's quite fun.	She enjoys teaching any trying to help the students. If there is time she likes to find different ways to help the students and make learning fun. This has the benefit of keeping her knowledge fresh. MM(3) 1.67
	1.68	Yeah, keeps it fresh in your mind as well.	
Found that she has forgotten some of what she has been taught already, mainly the more technical stuff.	1.69	Yeah, definitely, I know because you don't realize how much you forget until you try to teach them and when they're on about erm sort of the FFD and everything I was like, oh God, I can't remember this. <i>(laughing)</i> I remember why like, the sort of, you know, 100 or 180 but then try and explain to them, that takes a bit,	Teaching the students keeps her on her toes and makes her realise how much she has forgotten already. She finds it hard to explain some things (this links to the learning theory where when you become proficient you need to think less MM(3) 1.69
	1.70	Yes, yeah, like you say, you realize how hard it was you know when you were a student.	

	1.71	Yeah, definitely.	
	1.72	Right, so did you say urology theatre worries you a little bit, still?	
More concerned about going to areas where she has less experience	1.73	Yeah, um, just because I do more orthopaedic anyway and generally the interventional radiographers go and do sort of the urology cases because they do the angios as well.	She still worries about going to areas where she has less experience therefore competence however experience has shown her that she is OK when she gets there. She does find some of the work boring. MM(3) 1.73
	1.74	Yes.	
OK when she gets there but finds urology theatre boring	1.75	Um, so I don't go up there as much, I'm ok, I feel ok when I'm there, but I just, I don't really enjoy it as much because obviously it's just AP screening sometimes and, you know, it can take a while, but it's not too bad.	
	1.76	Sort of thing that's alright when you're up there and so.	
	1.77	Yeah, it's just the thought of it.	
	1.78	Yeah, just the same machine anyway.	
	1.79	Yeah, definitely.	
	1.80	Erm, so, erm, do you feel like just a fully proper member of staff now?	
	1.81	Yeah, yeah, I do, definitely with like the porters and nurses, I do, I feel like a proper radiographer now.	
	1.82	Yeah.	
She likes it when people ask her opinion, it makes her feel like a proper member of the team	1.83	And like, everyone, within like all the members of staff, you know, people that have been qualified a bit longer will come and ask me for my opinion and you know, it's really nice, we've got a really good team.	She fits in with other staff groups and is clear about her role. She feels fully integrated and people ask her opinion which helps to reinforce her 'belonging' MM(3) 1.83
	1.84	Yeah, oh it's nice if people are asking your opinion then, it just makes you feel.	

	1.85	I know, definitely	
	1.86	That you.	
	1.87	Yeah.	
	1.88	Yeah, so, what's the, what's the whole relationships like in the department, do they, are you all sort of integrated with the seniors and things as well, or there is, is there a sort of divide between the basic grade staff and the more senior staff?	
	1.89	No, we're all integrated yeah, um, to be honest there's not many band 6s in, or seniors, I mean we had the one senior and then she left 2 weeks ago and we've not replaced her and, I think, at the minute the 2 part-time band 6s they're not in that much but we have erm, a band 6 from MRI and they sort of get rota'd into general as well as MRI, same with CT, it's kind of all mixed so it's quite nice.	
	1.90	Yeah.	
	1.91	So no, it's really nice, and everyone just gets on with everyone so it's really, really good, there's no sort of divide or anything.	She feels that the staff all get on really well and that this small department works well as a team. MM(3) 1.91
	1.92	No, that's good, at least it er, it does make a nice atmosphere then, doesn't it.	
	1.93	Yeah, definitely, yeah, we have got a really good team, everyone knows everyone, so it's really nice.	
	1.94	Yeah. So, is there anything else then that you can think that's going off, yet? How about, how do you feel?	
	1.95	Pardon, sorry?	
	1.96	How do you feel just generally?	
Tired but enjoying it.	1.97	Yeah, no, I'm really enjoying it, I mean, I feel tired, really tired because I've done a lot of erm sort of theatre weekends, and, you don't really stop do you, but now, it	She is working a lot of extra hours so she is tired but enjoying it. MM(3) 1.97

		is really good, yeah, I'm enjoying it.	
	1.98	Good.	
Knows that she wants to go into CT in the future Feels settles and especially mentioned talking to the doctors.	1.99	Because hopefully, I think I know that I want to go into CT now, so I really really want to sort of get in there more, but yeah, I'm really enjoying it, it's really nice, I feel a lot more sort of settled and confident in my own ability, erm, because obviously when you're newly qualified you do worry a lot whereas now I feel quite confident, especially taking to doctors if they come round and say well, you know, I can't see a fracture and you show them and then you feel a bit better, so, it's quite nice.	Already looking ahead to her career path. MM(3) 1.99 Feels confident and less worried that she did. Finds it nice when she can advise the doctors and this boosts her confidence. MM(3) 1.99 Initially lacked confidence in talking to the doctors but now feels quite confident. MM(3) 1.99
	1.100	Yes, yeah, that's good, isn't it?	
	1.101	Yeah, so yeah, no, I'm getting on really well.	
	1.102	Oh, fantastic. So, I'm going to talk to you again in about 12 month, so I'll see if you're, you know looking well ahead then.	
	1.103	Yeah, crazy, I can't believe it's been 6 months already.	
	1.104	I know, has the time flown then?	
	1.105	Yeah, it has, really has, definitely, but it's been good, and I think it's a good thing that it has you know gone quite fast as well, but yeah, I do miss Uni still, but.	The time since qualification has gone fast. MM(3) 1.105
	1.106	Oh, you'll be doing some post graduate courses soon then?	
Very busy with not much time to study/reflect on her own work	1.107	Well, hopefully. <i>(laughing)</i> I know, I do, I've really, I think 'cos like you don't really get much time, we sort of get sort of study time but obviously when you're doing lates and it's busy, you don't really get to do it that much, um, but yeah, it's quite nice to sort of get time to go back and have a look at your work and everything. Which is, suppose	She is very busy which does not give her time to reflect on her work <i>(would preceptorship help this?)</i> Having the students helps her to think about her work/what she is doing. MM(3)

		is quite nice having the students here as well.	1.107
	1.108	Yeah, yeah, you don't fancy being a CLO then?	
	1.109	Yeah, I really, I wouldn't mind, because we've only got, well, the senior that left, she was a CLO and the other lady, she's on maternity leave, so we've only got 1 CLO at the minute, erm, but yeah I would, I would quite enjoy it to be honest, but I think they want someone that's been there a year, before they do it.	
	1.110	Yes, yeah.	
	1.111	But, no, I'd quite like that.	
	1.112	That'll be you very soon anyway, a year.	
	1.113	Well I know, yeah, ???	
	1.114	This 6 months has gone so quickly.	
	1.115	Yeah, definitely.	
	1.116	Alright, well thank you very much for your call and I'll be in touch again later.	
	1.117	Yeah, lovely, ok then.	
	1.118	Alright.	
	1.119	Thanks then.	
	1.120	Bye.	
	1.121	Bye.	

Appendix 5

An example of interpretative analysis notes used to generate themes

The codes placed at the end of the notes were used as signposts back to the original quotes.

She still feels uncomfortable about going to theatre but it is okay when she gets there and her confidence is growing. MM4 1.43

She has some control over where she works at chose to go for something that would give her more experience in lone working MM4 1.9

The staff influence her experience in theatre. Both staff are friendly but some surgeons are more scary. She feels included into the COP because they know her name MM4 1.45

She was put on the CT on-call roster when she did not feel ready, or adequately trained. However, she found she was well supported MM4 1.21

She thinks back to what it was like when she was a student. She would like to go through things with students more but does not have the time to do this. MM4 1.49

She must have voiced her opinion about the lack of training because more training and experience has been arranged. MM4 1.23

They are short staffed and busy she describes this as crazy MM4 1.53

She felt that she had only just settled in before being given more responsibility. She does like having more variety and having expanded her skills. MM4 1.29

Appendix 6

A longitudinal analysis of an individual case.

Summary of Interview 1

She worked there as a student and this has made her less nervous. She is already being integrated into the imaging department but thinks that the staff might find it difficult to stop treating her like a student.

She is looking forward to gaining new experience rather than being anxious but she does not want to lose the skills that she has though a lack of practice.

She knows the staff and feels confident that they will give her the support she needs i.e. personalised.

She is expecting extra responsibility and the main concern is checking students' images.

It is not an ideal location and she would prefer to work closer to home

Summary of interview 2

She works in a small hospital where she was a student. She gets on well with her colleagues and feels integrated into the team.

She gets informal support which appears to be sufficient to her needs. She can go to people if she has any problems but there is no formal mechanism of support.

The organisation helps by structuring her first on call and trying to limit her responsibility for students.

She sees responsibility as an asset to job satisfaction.

It is the people who are more important to her than the work.

Her confidence has grown as she has gained experience.

She is so integrated into the workplace that she is not treated as 'new' with any special needs.

Summary of interview 3

She is working her notice and looking forward to opportunities but has no clear career path.

She gets on well with the staff and has made some good friends.

Her line manager has been supportive and offered help if needed.

She still gets nervous about new experiences but finds that she can cope.

She now feels confident and is reluctant to return to the 'new' feeling.

She likes the autonomy of working at night.

She talks about supervising students rather than teaching them. And this is not an issue for her.

The confidence to check her own films was a hurdle that she has now overcome.

Summary of interview 4

She has moved to a new hospital and thought that she would need to start all over again as the 'new graduate'. This was not the case. She had taken with her the experience and confidence so quickly learnt the new protocols and equipment. She became fully functional very quickly.

She finds it difficult with failing students and finds it unpleasant but has a 'just get on with it' attitude.

She gets involved in the politics in the imaging department because they affect her.

Appendix 7 Discussion Chart

Theme	Background	Literature review	Results
Learning and development			
Building Confidence	Clinical education is an important part of undergraduate education.	The clinical experience gained as an undergraduate affects the confidence and competence of newly qualified professionals 'It is only when you are in the job that you can learn the job'	The education experienced as a student impacts on the transition into practice Concern about areas where they had less experience. Experience builds confidence.
The reality of practice	Dreyfus model of skills acquisition and the need for routinized behaviour.	OTs were overwhelmed by their workload but became more efficient over time (Toal-Sullivan 2006)	The participants found a busy 'crazy' workplace. They work extra hours and shifts.
Autonomous practitioners	Conflict between value of professional and cultural organisation	Universally they were unprepared for newly acquired accountability and responsibility	Going solo builds confidence. They recognise the need for support and ask for it.
Supervising	Radiographers are responsible for educating , mentoring and training within the profession (Society of Radiographers)	Unprepared for supervising support workers (Toal-Sullivan 2006)	Found taking responsibility for others difficult, especially assessing student.
<i>So what? – The value of experiential/situated learning and a high proportion of hands on clinical experience with a balance of HE to make autonomous, reflective practitioners</i>			

Organisational Culture			
Theme	Background	Literature review	Results
Professional socialisation	An effective community of practice assists a smooth transition (Lave and Wenger 1991).	Some nurses are marginalised and experienced 'silence' as they entered a ward (Kelly and Ahern 2008)	A worry about 'fitting in'. The socialisation process starts as a student.
Cultural awareness	Cultural knowledge, created as a social process plays a key role in the transition process (Eraut 2007).	A manager influences some of the culture in the workplace either by being supportive or fostering a 'blame' culture (Rungapadiachy et al 2006)	During the transition there is a gradual increase in awareness of departmental politics and organisational culture.
<i>So what? – The culture of the organisation into which the newly qualified enter affects the transition.</i>			

Professional identity			
Theme	Background	Literature review	Results
Student to practitioner	Professional identity is constantly changing and is impacted on by life experiences.		Other major life events occur during the transition which affects identity.
Finding a voice	Radiographers are still fighting for professional recognition and feelings of subordination (Lewis et al 2008; Yelder and Davis 2009)	The transition is influenced by the degree of hierarchy in the workplace. There was a lack of autonomy, bureaucratic administration, and a 'lack of voice', in a medically bureaucratic world, also lack of professional credibility.	There was a gradual growth in confidence in interacting with other professionals, particularly doctors.
<i>So what? – The professional identity of the radiographers starts as students but is developed further over their first few months in practice.</i>			

Support			
Theme	Background	Literature review	Results
Thrown in at the deep end	Eraut for novice to progress need the right degree of challenge – dependent upon the quality of the relationships in the workplace	The support from staff was key to alleviating feelings of being 'thrown in at the deep end' A questioning culture was not found in nursing Eraut experienced a 'blame culture' and experienced ritualistic practice. The phrase of nurses 'eating their young' was used. There were many reports of supportive approachable and welcoming staff	The participants wanted and expected tailored support but were unsure whether this would happen. They turned to anyone for advice and support.
Scaffolding	Vygotsky's zone of proximal development	a 'step-by-step' induction rather than a 'jump and swim' Lack of direct support was not always seen in a negative light.	Organised 'scaffolding' support was found in some departments which met the needs of most participants.
Peer support	Peer support is well recognised as having value in other areas such as behaviour change but limited literature on transition into practice	The only support that some received was from peers. This was described as the 'bling leading the blind' (Kelly and Ahern 2008).	Peer support either formal or informal was helpful.
Mentorship and preceptorship	No consensus in the literature about best practice for preceptorship. SOR CPD programme flying start programme	Formal feedback was sporadic and unreliable.	Only one department had a preceptorship programme and although all the participants were allocated mentors, these were not used.
<p><i>So what? – Getting the balance between challenge and support is essential. An excellent practice of scaffolding support was identified</i></p> <p><i>So what? Preceptorship is not well established in diagnostic radiography. More benefit from 'helpful others' and peers.</i></p>			

Appendix 8



*Sheffield
Hallam University*

Participant information sheet

Study title:	An evaluation into the expectations and experiences of newly qualified Diagnostic Radiographers.
Chief investigator	Sarah Naylor
Telephone number	07773058518

Study Sponsor: Sheffield Hallam University

We would like to invite you to take part in our research study. Before you decide we would like you to understand why the research is being done and what it would involve for you. Talk to others about the study if you wish. Ask us if there is anything that is not clear.

(This study is being undertaken as part of a Doctorate in Professional Studies)

Participant name:

You will be given a copy of this information sheet to keep

1. What is the purpose of this study?

This study forms part of a Doctorate in Professional Studies and will look at the expectations and experiences of newly qualified Diagnostic Radiographers during their transition from student to practitioner.

2. Why have I been invited?

You have recently qualified, or are about to qualify as a Diagnostic Radiographer. We are interested in what you expect from your first place of work and what you actually experience.

3. Do I have to take part?

Your decision to take part in this study is entirely voluntary. You may refuse to participate or you can withdraw from the study at any time. Your refusal to participate or wish to withdraw would not influence.

4. What will happen to me if I take part?

The research is in two parts. Part 1 involves a Nominal Group Meeting. This is a form of structured focus group designed to gain an insight into your expectations of your first post as

a Diagnostic Radiographer. There will also be a series of interviews to explore your expectations in depth. You will be asked to participate in the Nominal Group Meeting and/or the interviews.

Part 2 The individuals who participate in the interviews will be asked to undertake a further series of interviews at, 3 months, 6 months and 9 months following employment as a Diagnostic Radiographer. Those who are participating in email interviews will have more regular contact.

5. Expenses and payments

You will not be paid for taking part in this study.

6. What will I have to do?

If you agree to take part in the study the researcher will contact you to arrange the interview at a time and place of your choice. It is anticipated that the interviews will take no longer than an hour. They will be recorded and you will be given the opportunity to see a transcript of the interview afterwards to verify the content.

7. What if there is a problem?

If you have any queries or questions please contact:

Principal investigator: Sarah Naylor Sheffield Hallam University, Faculty of Health and Wellbeing

Sarah.Naylor@shu.ac.uk

Any complaint about the way you have been dealt with during this study may be directed to the Research Governance Committee of the Faculty of Health and Wellbeing, Sheffield Hallam University (0114225 25008).

Alternatively, you can contact my supervisor: Christine Ferris

If you would rather contact an independent person, you can contact Peter Allmark (Chair Faculty Research Ethics Committee)

p.allmark@shu.ac.uk; 0114 225 5727

8. What are the possible disadvantages and risks of taking part?

9. What are the possible benefits of taking part?

10. Will my taking part in this study be kept confidential?

The interview will be recorded and then written up word for word. The researcher will check that the recording and the written transcript are the same. He/She will then erase the recording. The transcript will be kept on a password-protected

computer. Identifying details will be taken out of any final report and any publication so people reading these will not be able to identify you. The written transcripts will have all links to you removed at the end of the study and will then be kept for as long as they might be useful in future research.

It might be that in the interviews something of concern arises relating to patient care. If that happens, the researcher will consult with his/her supervisor to discuss what to do. He/She will act in accordance with his/her professional Code of Conduct.

The documents relating to the administration of this research, such as the consent form you sign to take part, will be kept in a folder called a site file or project file. This is locked away securely. These documents will be destroyed three years after the end of the study.

11. What will happen to the results

The results of the study will form a dissertation thesis which will be filed in the learning centre at Sheffield Hallam University. They may also be presented at conferences and/or published. No individual will be identifiable in these reports. You will be informed of the results of the study if you wish.

12. Who is sponsoring the study?

The sponsor of the study has the duty to ensure that it runs properly and that it is insured. In this study, the sponsor is Sheffield Hallam University.

13. Who has reviewed this study?

All research based at Sheffield Hallam University is looked at by a group of people called a Research Ethics Committee. This Committee is run by Sheffield Hallam University but its members are not connected to the research they examine. The Research Ethics Committee has reviewed this study and given a favourable opinion.

14. Further information and

Thank you for taking time to read this information sheet and considering participating in this research.

You will be given a copy of this sheet and the signed consent form if you agree to participate. Further information is available from

Sarah.Naylor@shu.ac.uk



Participant consent form

Study title:	An evaluation into the expectations and experiences of newly qualified Diagnostic Radiographers.
Chief investigator	Sarah Naylor
Telephone number	07773058518

Participant name

	Please read the following statements and put your initials in the box to show that you have read and understood them and that you agree with them	Please initial each box
1	I confirm that I have read and understood the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	<input style="width: 130px; height: 35px;" type="text"/>
2	I understand that my involvement in this study is voluntary and that I am free to withdraw at any time, without give any reason.	<input style="width: 130px; height: 35px;" type="text"/>
3	I understand that relevant data collected during the study may be looked at by responsible individuals from the Sponsor and from the Research Ethics Committee where it is relevant to this research. I give permission for these individuals to have access to my records.	<input style="width: 130px; height: 35px;" type="text"/>
4	I agree to take part in this study	<input style="width: 130px; height: 35px;" type="text"/>

To be filled in by the participant

I agree to take part in the above study

Your name

Date

Signature

To be filled in by the person obtaining consent

I confirm that I have explained the nature, purposes and possible effects of this research study to the person whose name is printed above.

Name of investigator

Date

Signature

Filing instructions

- 1 copy to the participant
- 1 original in the Project or Site file
- 1 copy in the medical notes (if applicable)



Faculty of Health and Wellbeing Research Ethics Committee
Health & Social Care Research Ethics Review Group

Report Form

Title: An evaluation into the expectations and experiences of newly qualified Diagnostic Radiographers.

Principal Investigator: Sarah Naylor

Recommendation:

Acceptable:

Not acceptable, see comments:

Acceptable, but see comments:

<input type="checkbox"/>
<input type="checkbox"/>
<input checked="" type="checkbox"/>

Comments:

See attached feedback on review forms.

Signature : Peter Almark Date: 24.5.11

Peter Almark,
Chair
HSC Research Ethics Review Group

Please remember that an up-to-date project file must be maintained for the duration of the project and afterwards. The project file might be inspected at any time.

Note: Approval applies until the anticipated date of completion unless there are changes to the procedures, in which case another application should be made.

Centre for Health and Social Care Research

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