Diagnostic radiography students' perceptions of interprofessional collaboration

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Abstract

Interprofessional collaboration (IPC) is believed to be a key ingredient in delivering high quality patient care and addressing failings within the NHS. The means to improving interprofessional collaboration within healthcare teams is unquestionably through interprofessional education (IPE). This is a global concern, and as such it is important to drive the agenda forward within my own profession of diagnostic radiography.

Consequently, the aim of this research study is to explore diagnostic radiography students' perception of interprofessional collaboration and the factors that influence it. The ultimate purpose being to utilise the findings of this study to better prepare diagnostic radiography students for collaboration through improvements in the interprofessional education curriculum.

A phenomenological approach was used, and semi-structured interviews were carried out using carefully constructed vignettes as prompts. The vignettes reflected interprofessional collaborative teamwork and included ineffective collaboration to allow for comment on the factors perceived to influence it. A sample of twelve third year diagnostic radiography students from a London University participated in the study.
The data was analysed using thematic analysis as specified by Colaizzi (1978). The overarching themes that emerged were:

- Personal capabilities
- Skills Mix
- Interpersonal relationships
- Radiography culture
- Organisation/environment

With a central theme of role-taking

The study concluded that diagnostic radiography students appear ill-equipped for interprofessional collaborative teamwork. The analysis shows that the students are

lacking in leadership capabilities needed to navigate the persuasive hidden curriculum and resist normalisation into the culture of compliance of the team or organisation. Furthermore, the results oppose findings on professional identity, which is considered to cause turf protectionism and tribalism hindering collaboration. Instead this study proposes that a strong professional identity breeds confidence and resilience aiding collaboration. It is not just IPE that influences collaboration however. Organisational pressures such as funding, time frames and workload appear complicit in fuelling a culture of compliance.

A representation of a model of profession social closure is presented, demonstrating similarities and differences from Witz's (1992) model, based on the perceptions of a small group of diagnostic radiography students. This small-scale study rejects the suggestion that professions work as a single entity to demarcate with domination and subordination. There were no perceived exclusion strategies between the subordinate professions. Instead, it suggests that exclusion occurs between in and out groups with normalisation to the group. Inclusionary strategies through advanced expert knowledge appears to be successful with improved collaboration between dominant and subordinate professions.

Enhancing interprofessional collaboration is recommended through application of the three successive levels of transformative learning within the diagnostic radiography curriculum. This should include strengthening professional identity, continued interprofessional socialisation and the introduction of leadership skills alongside reflective practice, to enable students to negotiate the hidden curriculum.

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Glossary

CFP Career progression framework

DH Department of Health

HC Health care

HCP Health Care Professional

HCPC Health and Care Professions Council

IP Interprofessional

IPE Interprofessional Education

IPC Interprofessional Collaboration

MDT Multidisciplinary team

NHS National Health Service

ODP Operating Department practitioner

PHE Public Health England

SoR Society of Radiographers

SCoR Society and College of Radiographers

WHO World Health Organisation

Chapter One

Introduction

The introduction will provide an overview of the topic as well as the rationale and purpose for undertaking the research. It will elucidate its originality and contribution to new knowledge, then outline the core research questions.

1.1 Rationale

In 1999, the US Institute of Medicine launched a patient safety movement *'To err is human'* (Institute of Medicine, 1999). The report not only measures the results of medical errors in terms of monetary cost, but also in terms of loss of trust in the system by patients, and diminished satisfaction by both patients and healthcare professionals. While, in 2011, Kennedy's review into concerns about breast surgical practices in Heart of England NHS Foundation Trust, pointed to flaws; autocratic leadership, challenges in managing difficult and powerful members of staff, interprofessional (IP) animosities, failures in communication and an organisation where staff did not feel they were able to speak out. Kennedy (2011) concluded that the culture which affects all aspects of the service patients receive, must develop and change. The Institute of medicine however, blamed the decentralised and fragmented nature of healthcare delivery with its rigidly defined areas of specialisation and influence as an impediment to patient safety. Hammick *et al.,* (2009) argued that in modern times the complexity of delivering specialised healthcare where each professional has specific expertise cannot be meaningfully provided by a single professional. Peltonen, *et al*., (2020) agree stating there is growing understanding worldwide, that interprofessional collaboration (IPC) is essential to provide well-functioning, high quality healthcare.

So, while it might be human to err, the Institute of Medicine believe that it is also part of our nature to create solutions and find better alternatives for the delivery of care (1999). They recommend that care should be better co-ordinated with clear lines of accountability throughout the organisation and that the workforce and professional bodies should focus on improving reliability and safety of care for patients.

Furthermore, that no group can offer a complete solution to the problem but that there should be collaboration across disciplines to break-down cultural barriers considered an impediment to safety. A report by the Institute of Medicine in 2001 followed, arguing that better (IP) teamwork and communication could vastly reduce the death toll and injuries to patients. While these reports are contextualised within the United States of America, these findings are reflected in the United Kingdom repeatedly over the years by the WHO (1987), Department of Health (DH) (2001a), DH (2001b), Kennedy *et al.*, (2001), WHO (2010), Kennedy (2011), Health and Social Care Act (2012) and Francis (2013a). Professor Lucian Leape cited in Kennedy (2011) argued that the culture of the NHS is not nebulous or powerless to change; it is so much more than the actions and attitudes of individuals. He suggested that if regulations, incentives and behaviour were changed then ultimately attitudes would follow. Professor Sir Keogh, the national medical director of the NHS at that time, supported these findings. He revealed that to make real improvements in the collaborative process it is essential for all healthcare experts to work together in a co-ordinated way, stating that care is not the role of one person alone (Keogh, 2014). Bearing this in mind, the definition of interprofessional that will be used for this study is:

> 'When two or more professionals work together collaboratively to improve patient service delivery' (WHO, 2010 p.10).

A move towards this interprofessional approach has been correlated by WHO (1987); (2010), Kennedy *et al*., (2001); Kennedy (2011), Mitchell *et al.*, (2010), Francis (2013b), Kertcherside *et al.*, (2017) and NHS (2020) to improve policy development, clinically effective services, enhanced problem-solving, improved patient care and reduced errors. The greatest value of collaboration lies in its potential for offering multiple expert perspectives on a clinical issue enhancing care of the patient. Buring *et al.,* (2009) stated that this results in a shift in knowledge and communication of individual professions (regional knowledge) to a form of interprofessional knowledge and protocols for communication. The underpinning philosophy suggests that it motivates, engenders productive learning relationships, and creates opportunities between professional groups, which will translate to practice according to Carpenter (1995), Carpenter and Hewstone (1996) and Kertcherside *et al.,* (2017). Finch (2000) and Lovedeep and Eman (2018) suggesting that historical demarcation lines between

doctors, nurses and allied health professionals (AHP) would ideally be eroded, giving nurses and AHPs the bigger roles that their expertise and qualifications deserve and moving towards the delivery of optimal patient centred care.

It was recommended by the WHO (1987), (2010), Barr and Low (2011) and Chan and Wood (2012) that preparation of healthcare professionals for collaboration within an interprofessional team should take place by way of interprofessional education (IPE). IPE was first introduced in North America and Europe by the World Health Organisation (WHO) by entrenching it in their 1988 policy: 'Health for all by 2000' (WHO, 1987). In total agreement with the recommendations, the UK governments' response stated that health care professionals will develop these skills through joint learning and working at all levels of the NHS (DH, 2001).

In defining interprofessional education (IPE) it is necessary to categorise the language used so that in consulting the evidence base, the researcher and reader can draw correlations. Hammick *et al.,* (2009); Barr and Waterton (1996); Gilbert (2005) confirm the bewildering array of terms associated with IPE. Hugh Barr, president of the UK centre for the advancement of interprofessional education (CAIPE) defined IPE as:

> "Occasions when two or more professions learn with, from and about each other to improve collaboration and the quality of care" (CAIPE, 2002 no page).

This definition will be used within this study because it is the most widely recognised and highlights the importance of understanding of one another's' profession, breaking down barriers.

IPE is thought to develop the ability to share and integrate knowledge and skills, facilitate competent teamwork, decompartmentalise curricula enabling students to become competent at collaboration. Furthermore, DH (2001b) and the Interprofessional education collaborative expert panel (2011) are of the opinion that it eases IP communication breaking down barriers between professionals and ensuring consistency of curriculum design. Specifically, shared learning and core competencies in non-clinical aspects should be part of a common learning approach across professions (recommendations 57, 58) in Kennedy *et al.*, (2001), aligning with Tope

and Thomas (2011) and the Interprofessional education collaborative expert panel (2011). Recommendation 60 of the Kennedy report refers specifically to communication and the ability to engage with and respect the views of fellow healthcare professionals. Recommendation 61 acknowledges that the education, training and continuing professional development of all healthcare professionals should be joint, with courses no longer designed exclusively for doctors or nurses (Kennedy *et al.,* 2001). This sentiment is echoed by several prominent authors such as Herbert (2005), Barr and Low (2011), Barr, Low and Howkins (2012), IPE collaborative expert Panel (2011), CAIPE (2017) and Van Diggele *et al.,* (2020). This is no different for radiographers. Price and Le Masurier (2007), highlighted the important implications for future education and training needs for radiographers due to the continual advancement, changing priorities and blurring of role boundaries in skills mix. IPE models have increasingly been adopted by health care faculties within universities (Mandy, Milton and Mandy, 2004).

Despite a global drive for IPE, Barr *et al.,* who are leaders in the field believe current IPE is still not as effective in preparing students for this role as it should be with long term success difficult to prove (2016). Reeves *et al.*, (2010) who were active experts in the domain of interprofessional education (IPE), stated that while progress has been made in strengthening the evidence base, further studies are needed to provide clarity of its effect on professional practice and patient care. This is further demonstrated in post- graduation feedback from the clinical radiography departments, indicating that undergraduate diagnostic radiography students are technically proficient yet lack confidence in their knowledge and find collaboration challenging.

It is clear from the evidence base that while IPE is considered essential for IPC it has not been proven to be effective. It is therefore, necessary to further develop the IPE curriculum to include pedagogical strategies found to improve the effectiveness of IPE (Rotz and Duenas, 2016).

1.2 Purpose

The reasons for undertaking this research study in my role as a radiography educator and in fulfilment of an education doctorate, stems from my passion for developing

radiography as a profession. A professional educational doctorate is the ideal way of generating your own evidence base and informing practice, which in this instance would be solely applicable to diagnostic radiography. The research findings will be used to challenge my own assumptions, enrich my own comprehension and inform decisions on the educational approach that should be taken to achieve an optimal and effective outcome.

My main objective as an educator is to prepare collaborative-ready diagnostic radiography students for interprofessional healthcare practice so that they can practise as confident, autonomous expert practitioners. By exploring students' perceptions, I was able to gain a sense of the collaborative process at play within the interprofessional team as viewed by the student. Furthermore, it allowed me to identify the factors students' perceived were influencing collaboration and subsequently the requirements for collaboration. Thus, this study will offer a new theoretical perspective on the context, dynamics and social interactions as perceived by one group of professionals i.e. diagnostic radiographers. For the purposes of this study the word radiographers will infer diagnostic radiographers. The study calls into question if theory is the reality, establishing critical links between the students' real world of the clinical setting and the interprofessional education curriculum; links that need to be taken into account in developing the radiography curriculum.

1.3 Originality and contribution to new knowledge

The findings of this study will be contributing to the generation of new knowledge in interprofessional collaboration and interprofessional education, by adding to existing research. More importantly, it will be providing a niche perspective as there is very little published research national or internationally on IPC and IPE within diagnostic radiography specifically. This makes this study original in this respect, adding a new dimension and addressing a gap in the existing body of knowledge.

While the use of social closure theory is an accepted model utilised in healthcare professions research, what makes my study distinctive is that it addresses the major limitation of all social closure theory. Social closure theorists fail to tackle the relationships amongst the rules of closure, while in my study I purposively explored

the relationships between professionals rather than assuming that, all professional groups act homogenously.

Another distinctive feature of this study lies in the methodological approach which used vignettes to explore the students' perceptions of reality. While these are commonly used within nursing research, no studies that have used vignettes within the radiography setting to examine interprofessional collaboration could be found.

1.4 Core research questions

The core research questions were designed taking into account the rationale of the study, as defined above

- How do diagnostic radiography students perceive collaboration in interprofessional practice?
- What factors influence collaboration in interprofessional practice as perceived by diagnostic radiography students?
- What recommendations could be made to enhance the preparation of students for interprofessional practice?

Two vignettes were specifically designed to act as prompts to initiate discussions within semi-structured interviews. The vignettes reflected interprofessional collaborative teamwork and included ineffective collaboration to allow for comment on collaboration and the factors perceived to influence it.

Background and context

This section will set the scene by describing my position as the researcher, the field of study, highlight the research problem and contextualise radiography education.

1.5 My position as a researcher

After training as a diagnostic radiographer and therapeutic radiographer, I worked full time as a diagnostic radiographer in many different specialities within the profession for 22 years. I have been a full-time radiography educator for the last 21 years while continuing to do part-time work over the weekends within the clinical environment for a number of years.

My main interest lies in the preparation of students for the role through interprofessional education (IPE); empowering them to practice collaboratively, yet ethically with confidence and pride in their chosen profession, irrespective of level of study. My position is that interprofessional practice is essential for improved patient services, but that current IPE is not as effective in preparing diagnostic radiography students for this role as it should be. A stance verified by Reeves *et al.,* (2010), Francis (2013a) and Barr *et al.,* (2016).

As a diagnostic radiographer and radiography educator I have my own perceptions of the role. Furthermore, my perceptions as the researcher are possibly outdated as I have not worked full- time in practice since 2001 and was an undergraduate student 40 years ago, educated in a very different environment. The programme of study that I completed, a higher national diploma in diagnostic radiography in South Africa in 1981, was different to the present-day degree programmes. Radiography education was regarded as training in agreement with Price (2009) and was based within a hospital with time shared between the classroom and the clinical environment. Interprofessional education was not formal or explicit but occurred ‘on the job’ and time was spent on the wards to learn about the work of other healthcare professionals. The emphasis of education was on the acquisition of technical skills. It was my belief that an accepted hierarchal culture existed, which I neither questioned nor felt entitled to contest, with doctors considered to be in a position of power over all other healthcare

professionals. Anecdotally, my healthcare peers acknowledged and accepted the hierarchical culture. But there appeared to be a continued jostling amongst health care professionals to be regarded in a position of higher status.

I always accepted responsibility and felt that I was fully accountable for my practise as a radiographer and gained promotion to become a superintendent radiographer. While I felt respected for my knowledge and skills by both doctors and other HCPs, ultimately the accepted hierarchy seemed to prevail. There was little career progression and no advanced practice as this would have resulted in an overlap of the domain and skill-set of the radiologist.

On moving to the United Kingdom, I worked as a superintendent radiographer for two years before becoming a senior lecturer in diagnostic radiography. With the development of specialised postgraduate radiography knowledge and skills, my confidence increased, and I embarked on my doctorate in education. During the doctoral education process, I have been able to reflect on my career and my progress over time. Not only have I acquired new knowledge and skills, but I have challenged the way that I view myself and the radiography profession within healthcare (Fulton *et al.*, 2012). I found myself questioning the hierarchical culture which also seemed to exist in the UK. It has forced me to confront my established ideas about the culture of healthcare and view it through a more critical lens, but my life experiences have inevitably encumbered me with pre-judgements as explained by Habermas (1987) and it is very likely that my perceptions will differ from the participants'. Equally, my professional experience and observations of radiographers' and students' interactions within the culture has provided a foundation upon which to base this study. These experiences and observations may also impact on this study.

1.6 Field of study

The setting for this research was a Department of Radiography at a London University which was part of a Faculty of Health, Social Care and Education hosted jointly across two Higher Education (HE) institutions.

The department offers an undergraduate three-year full-time BSc (Hons) degree in both diagnostic and therapeutic radiography in addition to postgraduate degrees. Diagnostic radiographers are responsible for the production of medical images using x-rays, computerised tomography, magnetic resonance imaging amongst other modalities, for the purpose of diagnosing disease. They may specialise within one area of clinical expertise becoming advanced practitioners and progress to consultancy level. Therapeutic radiographers are responsible for the planning and delivery of radiotherapy treatment to patients that have been diagnosed with cancer with the same opportunities for career progression (SoR, 2018). Although the degree offers courses of study in both diagnostic and therapeutic radiography, this study focusses on diagnostic radiography students only. I work within this profession and am only able to influence this discipline by contribution to the evidence base and curriculum design. Both disciplines are expected to work within an interprofessional team where several healthcare professionals work together towards a single goal, to achieve the best possible outcome for the patient. Therapeutic radiographers always work alongside other therapeutic radiographers, oncologists and nurses within a team when delivering treatment to cancer patients, providing more opportunities for them to collaborate interprofessionally. In comparison, as frontline healthcare workers contributing to diagnosis of trauma and disease, diagnostic radiographers often work on their own or after hours, where lone working is commonplace. In these situations, they are solely responsible and accountable for patient outcomes. Frequently, they work in settings such as theatres or wards where they are the only radiographer as part of an interprofessional team, consisting of doctors, nurses, operating department practitioners amongst others. It is in these situations where there is a requirement for face-to face collaboration amongst the team. Moreover, Hammick *et al*., (2009) and NHS (2011) maintain that the appropriate interprofessional team member should take responsibility and lead at any given stage during the patient's journey according to their unique expertise knowledge base. An example of this would be, when a patient is referred to the diagnostic radiography department for imaging, it should be the radiographer or radiologist who leads on the decision of which imaging modality or technique would be the most appropriate, rather than the referrer dictating which imaging should be done. It would also be the radiographer or radiologist who would perform the examination as this is within their realm of expertise.

1.7 Contextualising radiography education

Radiography education has undergone significant changes, progressing from a 2-year national diploma to three years until becoming a BSc (Hons) degree in 1989. By 1993 all programmes were graduate entry, resulting in significant changes to the role of the radiographer. Examples of changes to the role include a broadening scope of practice e.g. radiographers were starting to provide an opinion on whether an image is normal or abnormal where previously they were considered to be 'image takers' only. In addition, the advent of MRI and ultrasound became main stream imaging modalities requiring radiographers to expand their knowledge and skills. It is these changes in role that are relevant to this study.

In 2003 the UK government identified radiography workforce issues as critical; staff shortages, increased demand for services and pressure from radiographers to develop effective career pathways (DH, 2012). To address these needs the National Skills Mix project was introduced in the form of a four-tiered service delivery model, referred to as the Career Progression Framework (CPF) (Price and Miller, 2010; NHS, 2018). The four tiers of the CPF allow progression from an assistant practitioner, (which is pre-registration), to practitioner level (registered radiographer), advanced practitioner and consultant through formalised education and training. This according to Nixon (2001a) changed the landscape dramatically from radiographers being portrayed as passive technicians implementing the designs of others, to a progressive structure recognising professional standing and their unique expert knowledge. Furthermore, Price (2010) reported that the relaxation of restrictions on reporting by radiographers resulted in the introduction of advanced practice.

Radiographers' commitment to the development of expert knowledge is evident. Despite all the concerns over the abilities of radiographers to accurately report on images many studies have concluded that with training there is no substantial difference in the performance of radiographers to radiologists, nurse. Loughran (1994), Friedenberg (2000), Brealey *et al.,* (2005), Van den Biggelaar, Nelemans and Flobbe (2008), Coleman and Piper (2009), Piper and Paterson (2009) and Moran and Warren-Forward (2010) provided evidence of the accuracy, sensitivity and specificity performance of radiographers in reporting images compared to other healthcare

professionals. The study by Coleman and Piper (2009) revealed that radiographers gained statistically higher scores and values than those attained by nurse practitioners and emergency medicine doctors in image interpretation. In Piper and Paterson (2009) radiographers (without training), achieved better overall performance than nurses both pre and post training in image interpretation. This suggests that radiographers have risen to the challenge and developed expert knowledge and skills. Despite radiographers having the expertise in interpreting images, nurse practitioners are the professionals that make clinical decisions on images in the accident and emergency department, not the radiographer. The Society of Radiography (SoR) states that radiographers do not require the permission of any other professional to undertake roles in image interpretation and clinical reporting provided they have received accredited postgraduate training (Kelly, 2017). Nonetheless, it appears that radiographers cannot undertake the role within a hospital unless they have the delegated authority of a radiologist, which may be evidence of the medical professions' continued dominance over radiographers. Certainly, in my experience of undertaking and teaching advanced practice modules, support for radiographers advanced practice is varied.

Parallel to career progression for radiographers, the concept of interprofessional practice was introduced into the United Kingdom with interprofessional education (IPE) established by Department of Health in 2000 (DH, 2001b). Interprofessional practice aided the CPF in pushing decision-making down to lower levels in the organisational hierarchies, cementing the CPF but also placing the responsibility to lead (where appropriate) squarely onto the state registered practitioner (newly qualified radiographers), not just being reserved for the consultant radiographers (DH,2003).

This flatter hierarchical structure requires collaboration between professionals but DH (2003) reported concern amongst radiographers and radiologists that the framework would dilute standards and the scope of their professions. Yet according to Mandy, Milton and Mandy (2004) and Hammick *et al.,* (2009) interprofessional collaboration had not often found a place in the education and practices of health professionals despite IPE models being increasingly adopted by health care faculties. Sunguya *et al.,* (2014) found many challenges to the adoption and implementation of IPE despite acceptance of IP competencies by academic institutions.

All these changes and challenges highlight the urgent need to examine the radiography curriculum (both undergraduate and postgraduate) in terms of interprofessional education. To address the educational needs of radiography students, we need to scrutinise the current curriculum content to illuminate any disparity and alignment. The curriculum should be examined alongside regulatory and professional body and NHS IP requirements in addition to contemporary research on interprofessional education. Of utmost importance is the need to identify the students' perceptions of the 'real' world of interprofessional collaboration to establish critical links between the curriculum and their 'real' world of IP collaboration. With the lack of literature surrounding diagnostic radiography students' and radiographers' perceptions of interprofessional collaboration, it is considered an important starting point in bridging the gap between interprofessional education and interprofessional practice which, according to Hammick *et al.,* (2009) and Arain e*t al.,* (2017) is long overdue.

1.8 Research problem

Despite the expectation that interprofessional working requires collaboration, I have observed many instances where students and qualified radiographers fail to collaborate in an interprofessional environment. These were situations where they clearly have the expertise to make professional judgements and importantly, a professional responsibility to make decisions, advise and lead on these judgements as required by the Health and Care Professions Council (HCPC) (2013a). I will use the following scenario from radiography practice to illuminate the problem.

Working in an operating theatre the interprofessional team consists of doctors, nurses, operating department practitioners and radiographers (amongst others). Each team member has their own field of expert knowledge. The radiographer is there to image the patient but also as the radiation protection supervisor with the expertise and duty to limit the dose to everyone in the theatre and especially to the patient. I have observed occasions when radiographers have failed to challenge a member of the team when they refuse to wear a lead coat (worn in order to limit radiation dose) or refuse to irradiate a patient if they are not allowed the time to place lead shielding on the patient. Furthermore, even if radiographers do challenge the situation, they tend

to back down when met with resistance rather than insisting that these safety regulations need to be adhered to by all members of the team. Equally e.g. radiographers working in an accident and emergency department receiving requests for imaging are required to justify the request before undertaking the examination. I have witnessed occasions when the radiographer has not considered the request to be clinically justified or in the best interest of the patient, but when pressurised by a medical professional they will agree to undertaking the examination.

The evidence base supports my observations. Yielder (2006) highlights the power dimensions within medical imaging with medical domination and administrative power over medical imaging requests. It is acknowledged that this is an old resource however as corroborated by Cowling and Lawson (2020), there is very little research in the field of radiography with Yielder (2006), Smith *et al.,* (2008), Lewis *et al.,* (2008), Strudwick and Day (2011) and Yielder *et al*., (2014), some of the very few authors who have studied radiographers. One of the major factors in the maintenance of medical power is its control over diagnosis per se, for any action stems from diagnosis. If both radiographers and doctors, consider themselves to be experts in the field of diagnosis of disease, this may well be the source of tension between them. Furthermore, Yielder (2006) emphasises that we rely on 'experts' to solve problems, inform and advise us but that professionals tend to protect their domain by turning decisions into technical jargon. This could perhaps suggest that radiographers might be resorting to this technique to rationalise and protect their expertise? Justifying a medical imaging request is however the duty of a radiographer, reinforced by the HCPC (2012) and an expectation of the ionising radiation medical exposure regulations (DH, 2003; 2012a). Despite these regulations, Lewis *et al.,* (2008) reported that radiographers felt inferior and 'unable to uphold ethical conduct in face of professional abuse', yielding to someone in 'higher authority' p.94. Furthermore, Hammick *et al.*, (2009) reported that it seems medicine had at that point still retained its position of dominance and authority, while the apathetic syndrome as outlined by Lewis *et al*., (2008), of 'I am just the radiographer' persists, resulting in radiographers who fail to question, challenge and lead p.94. Yielder and Davis (2009) claim that the low self-esteem and apathy that seems to characterise the culture of radiography needs to be challenged, or it may limit the development of radiographers and the profession. This could in the opinion of Lewis *et al.*, (2008) and Yielder and Davis (2009) reinforce the hierarchical power of

medical dominance hindering collaboration. The literature is a number of years old, but no recent literature could be found. This further reinforces the importance of my study as it will explore current perceptions of IPC.

The WHO (1987), Finch (2000), Buring *et al.,* (2009), WHO (2010), Barr and Low (2011), Rotz and Duenas (2016) and O'Keefe and Ward (2018) amongst others all provide guidance on the competencies required for collaboration and the Centre for Advancement of Interprofessional Education (CAIPE) (2017) urges that there should be an outcome led curriculum. Despite this, there is no agreed national curriculum in the UK with variability of content and delivery across institutions. Furthermore, Fung *et al.,* (2015) reported on the lack of dialogue or agreement on assessment strategies. Moreover, IPE in the clinical environment is ad hoc and teaching is by mentors who lack formal training creating additional challenges according to Chen *et al.,* (2016) and Van Diggele (2020). Robson (2007), Van Diggele *et al*., (2020) and Sabato *et al.,* (2020) state that IPE is not always prioritised, with staff often undertaking IPE teaching in addition to other teaching, with scheduling challenges and lack of opportunities for IPE. This certainly reflects my own experiences challenges as an education professional delivering IPE.

Robson (2007) and Van Diggele (2020) caution that this inconsistency and lack of agreement and commitment does not provide a sound foundation for curriculum development. Sabato *et al.,* (2020) are of the opinion that establishing a curriculum and benchmarking is further compounded by the lack of available IPE data resulting in several challenges for the education professional committed to IPE. They also concluded that school, faculty and institutional level support is essential for success. With this lack of consistency, it is difficult to assess whether the IPE curriculum is successful in developing IPC, an additional challenge for this challenge for this study.

Chapter Two

Literature Review

The literature review provides an overview of the evidence base on IPC, the radiography curriculum, IPE and the IPE curriculum in radiography and the wider healthcare setting.

The search of the evidence base was carried out predominantly via 'icat', the university's online library catalogue as it provides access to a vast array of data bases and journals.

In addition, the Department of Health, Higher Education England, NHS, and Gov.co.uk were consulted for key policies along with the Health Care Professions Council and the Society and College of Radiographers from a professional perspective.

Initial key words that were used to perform the search were: interprofessional, interprofessional collaboration, interprofessional education and interprofessional curriculum, including a combination of these search teams alongside radiography.

After an initial period of reading significant key words that emerged from the literature were, hierarchy, power, leadership, shared leadership, respect, communication, professional identity, status, respect, trust and competence and confidence. These terms were searched in conjunction with interprofessional and/or radiography.

'CINHAL' and 'Education Research Complete' were the primary data bases utilised with the Cochrane library emerging for collaborative reviews.

The journals, 'Radiography' and 'Journal of Interprofessional Care' appeared repetitively in the searches. 'Radiography' is the UK's leading international radiography journal so was an important source for information relating to the profession. The 'Journal of Interprofessional Care' is the official journal of CAIPE which is the leading organisation and independent 'think tank' in the UK for interprofessional

education and collaborative practice but, has a far-reaching international membership and influence.

This literature review has been structured to ensure all aspects of the core questions are included, thus starting with an overview of interprofessional collaboration. The key themes that emerged from the evidence based on IPC and the factors considered to influence IPC were; hierarchy, leadership, power and professional closure, respect and communication, professional identity, status, respect, trust and understanding of roles and competence and confidence. It is for this reason that this chapter has been structured to reflect these key themes. This is followed by a synopsis of the radiography curriculum, interprofessional education and the IPE curriculum.

After analysis of the data the additional clusters of information that emerged where; hidden curriculum and role taking. Subsequent literature searching was carried out to explore the evidence base to include these aspects within the literature review.

Although professions such as pharmacists, social workers and midwives are not usually included in the IPE programme at the institution where the study took place, and radiographers seldom work alongside either pharmacists or social workers, literature from these professions were included. In searching the evidence base on IPC a wealth of literature on IPC within these professions was revealed. All three professions work very closely with both doctors and nurses thus information on IPC between these professions was considered valuable and pertinent.

2.1 Interprofessional collaboration

The term interprofessional is a problematic term with many variations and descriptions and gets used interchangeably with multidisciplinary, multi-professional or interdisciplinary. The term multidisciplinary suggests members working alongside each other are from the same profession which consists of several disciplines e.g. diagnostic and therapeutic radiography rather than individuals from different health professions e.g. nursing, radiography, medicine etc. (Oandasan and Reeves 2005a; Pirrie *et al.*, 1998 and Hammick *et al.*, 2009). While according to D'Amour and Oandasan (2005), interdisciplinary relates to the development of integrated

knowledge. Multi-professional suggesting that professionals work alongside each other while interprofessional according to D'Amour and Oandasan (2005), Hammick *et al.,* (2009), Buring *et al.*, (2009) and Barr and Low (2011) requires an element of interaction and a means by which professionals can practise collaboratively. Reeves *et al.*, (2008), Baker *et al.*, (2011), Lapkin, Levett-Jones and Gilligan (2011), Green (2013), Green and Johnson (2015) and Prentice *et al.*, (2015) are all of the opinion that although there is little to substantiate the efficacy of collaboration in patient care outcomes, it is believed to be a powerful strategy of improving and achieving optimal health outcomes.

The lack of joined up care is seen as the biggest frustration for patients, service users and carers. '*They want continuity of care which is responsive to all their service needs*' (NHS, 2014, p.14). Unfortunately, it would seem, collaboration is often a positive response to unfavourable circumstances. Kennedy *et al.,* (2001) and Meads *et al.,* (2008) offered a powerful reminder of the cost of failing to get relationships right within our public services. In conclusion to his public enquiry into children's heart surgery at the Bristol Royal Infirmary, Professor Kennedy stated:

> 'Teamwork is the collaborative effort of all… patients do not belong to any one profession; they are the responsibility of all who take care of them.'
>
> (Kennedy *et al.*, 2001 p. 277)

The 'Interim NHS people plan' NHS (2019) and Ford and Gray (2021) further outline the need to develop a new operating workforce model which requires collaborative working and workforce transformation with a more varied skills mix to deliver improved care. According to Salas, Sims and Burke (2005) teamwork is defined at its most basic level as two or more people who interact interdependently towards a common goal with each individual performing a specific function without necessarily knowing who the other team members are and what expertise they contribute. This is akin to an interprofessional team in accident and emergency, where the specific function of the radiographer is to take the x-ray images contributing to diagnosis but there is not necessarily a shared understanding, trust or respect for their expertise. West is of the opinion, that although healthcare workers are obliged to work together towards a

common goal, the dynamics are so complex that many teams function ineffectively (2012). Collaborative teamwork on the other hand, would encompass these values.

Kennedy *et al.,* (2001) are of the belief that interprofessional teamwork serves to break down 'tribal barriers' with collaboration at the core of teamwork. Furthermore, that HCPs seem to believe that they have always worked in teams but that the team has always consisted of individuals from one dominant profession being in charge while the rest are expected to follow. They believe this historical arrangement of teamwork might constitute professional etiquette but is not in the best interest of the patient; a sentiment explained in the 198 recommendations made within the report. A number of these recommendations are only achievable by interprofessional and inter-agency practice. Recommendation 19 aimed to avoid giving patients conflicting advice is only possible if healthcare professionals responsible for a particular patient communicate effectively with each other. Recommendation 60 refers more explicitly to communication skills and the ability to engage with and respect the views of fellow healthcare professionals; an essential component of collaboration (McDonald, Jayasuriya and Harris, 2012).

As highlighted previously, Hammick *et al.*, (2009), NHS (2011), and NHS (2012) propose that the model of service delivery is intended to act as a rotating wheel with the appropriate person leading at any given stage during the patient's journey. In this model, Buring *et al.,* (2009) states that each team member is valued and empowered to assume leadership on patient care issues appropriate to their expertise. DH and NHS policies e.g. commission of leadership and management, dominate the literature clearly identifying the need for a healthcare workforce who can embrace change and demonstrate innovative approaches to work through complex leadership with flexibility and confidence (Smith *et al.*, 2008; DH, 2008; 2010; DH, 2012a; Leigh *et al.*, 2012; Francis, 2013a; NHS, 2020). Davidson, Elliott and Daly (2006), Smith *et al.,* (2008), and Roebuck (2011) agree that enhanced leadership processes improve performance by 10-20% and is a major factor affecting the speed and frequency of innovation and change to the prevailing culture. The focus of this literature is however based on the characteristics of highly innovative organisations and may not be totally applicable to NHS public service. Moreover, the literature appears to be written as drivers for policy change despite their remit being improved patient care, with no clear implementation

strategy outlined. Mangan, Miller and Ward (2015) say this might go some way to explain why, despite interprofessional collaboration being high on the policy agenda for years, empirical literature has not evidenced a high level of IPC success.

To accelerate leadership development within the NHS, the Department of Health launched a new leadership framework in June 2011. Its single agreed standard provides a more consistent approach to leadership development, spanning all health professions and aligning the educational and regulatory sectors of the NHS (NHS, 2011). It places leadership within the context of health and care and states that it is not restricted to designated and traditional leader roles but is most successful where there is a shared responsibility providing useful guidance for staff about leadership behaviours. According to Sanfillipo (2021) shared-leadership is a modern approach to getting work done. It requires collaboration between individuals for the shared-leadership model to be successful so that power and influence are shared within the group. This could mean individuals have more autonomy over decisions related to their positions or an open-door policy where everyones' ideas are given fair consideration. At the heart of this framework is the Clinical Leadership Competency Framework (CLCF) which elucidates the link between the self-leadership qualities/behaviours required for shared-leadership within interprofessional collaboration (NHS, 2012). The NHS (2012) suggest that the qualities required are; self-awareness, managing yourself, integrity, ability to maintain relationships and influence others, decision-making, developing a shared vision and application of knowledge. The NHS has continued to embrace the concept of shared-leadership and has embedded it into the current healthcare leadership model (2014); (2018). It is applicable to staff at all levels and the notion of the CLCF is supported by the (HCPC, 2012b) making it applicable to radiographers. A strength of the framework is that it does not expect pure knowledge as expertise but dictates application of knowledge. As identified by Freidson (2006), expertise is not merely knowledge but the application of that knowledge and this could be equated to the difference between theory and practice. Walia and Marks-Maran (2014) maintain that the CLCP seems to be an ideology and the flaw of the leadership framework appears to be in the absence of an underlying evidence base to support it. It closely resembles the 'utopian hospital'; an ideology outlined by Freidson (2006) which is orientated towards dissolving all essential axes of an organisation such as hierarchy and functional differentiation.

Furthermore, Freidson (2006) argues that an ideology cannot be overcome by ethical dedication just because there is a sincere belief that it is the correct approach to take. Despite this, Houghton and Yoho (2005), Pearce, Manz and Sims (2009), Lovegrove and Long (2012), Pearce and Congor (2012) and Houghton, Neck and Manz (2012) all agree that reorganisation should result in a different form of leadership, with shared responsibility throughout the organisation; a key component of effective interprofessional collaboration.

Research demonstrates that healthcare workers agree that IP collaboration is necessary and of value. A survey by Leipzig *et al.,* (2002) which included nurse practitioners, master's level social work students and 2nd year post graduate doctors, revealed that they all felt interprofessional collaboration benefitted the patient. While focus group discussions with doctors, nurses and AHPs on collaboration, yielded interesting results. No participant in Nugus *et al.*, (2010) and Collette *et al.*, (2017). from any staff group, challenged the importance of working collaboratively, demonstrating its strong cultural currency and the value of contribution of unique expertise.

2.1.1 Hierarchy

The move towards an interprofessional approach in healthcare is not straightforward. With equality of team members as a key ingredient, phenomena such as status and power distribution being measures of equality, have long been issues in the history of collaboration according to Thylefors (2012), O'Carroll, McSwiggan and Campbell (2016) and Collette *et al.*, (2017). All healthcare professions, including medicine, are relentlessly pursuing expanded professional boundaries and seeking or defending the right of self-governance and autonomy. Salhani and Coulter (2009) consider these as essential ingredients of being a professional, but it conflicts starkly with traditional ways of working within healthcare. Hammick *et al.*, (2009) and Francis (2013a) describe management of the health service which was historically modelled on the military system: as a top-down hierarchical model where subordinates were given and carried our orders. Lewis *et al.*, (2008), Hammick *et al.*, (2009), Yielder and Davis (2009), Roebuck (2011) and O'Carroll, McSwiggan and Campbell (2016) agree, stating that traditional teams are typically led by long standing, high status, dominant

professional groups like medicine. Moreover, collaborative interactions by autonomous healthcare workers have been shown by Baxter and Brumfitt (2008), Salhani and Coulter (2009) and Mangan, Miller and Ward (2015) to be selective and largely at the discretion of medicine. An arrangement of this kind of power is framed as medical dominance by Freidson (2006) and Nugus *et al.,* (2010). And is, even in the opinion of medical colleagues Thylefors (2012), a crucial factor interfering with effective IP teamwork. Foucault was of the opinion, that power should not be entrusted to one person, for in doing so, we would be back to monarchical type of power (Foucault 1977).

Seaton *et al*., (2021) and Walmsley (2021) highlight that evidence of a hierarchy and imbalances of power still exist today resulting in conflict and cause a lack of autonomy in Allied Health Professionals. This lack of imposed or perceived lack of autonomy, demoralise AHPs who felt their knowledge, skills and expertise were underutilised. Until the 1980s, the monarchical power appeared entrenched in the system. Nugus *et al.,* (2010) reported that medicine was free from external evaluation allowing it to retain its position of autonomy and ability to exercise authority over other healthcare professions (Nugus *et al.*, 2010). This is further reflected by Allsop, (2006) who stated that medicine has resisted invasions into its scope of practice in English speaking countries and has retained its power base, particularly in terms of authority and status, resonating with my own experiences. Though, not all doctors believe that the hierarchy is acceptable, expressing concern that AHPs were not able to use their knowledge, and questioning why they were not utilised when they are experts in their field (Ebert *et al*., 2014). They also expressed a dislike for the title 'Allied Health Professional' considering it to reinforce the attitude of hierarchy. Ebert *et al*., (2014) found that doctors valued interprofessional placements that promoted collaboration with other HCPs, stating that working together on patients allowed them to teach each other and gain an understanding of their roles.

Despite recognising the value of IP collaboration, research would suggest that doctors tend to be less disposed towards the construct of IP collaboration. Two separate action research programmes by Braithwaite *et al.,* (2013) and Collette *et al.,* (2017) aimed at improving collaboration across a healthcare system in Australia, revealed that doctors had the least favourable attitude towards IPC. Furthermore, they were least likely to

endorse the success of the intervention, while AHPs were found to be the most supportive of IPC, followed by nurses and administrators. Then again, the sample of AHPs did not include radiographers. What is more, Nugus *et al.,* (2010) and O'Carroll, McSwiggan and Campbell, (2016) report that 80% of the doctors believed they had the right to change patient care plans without consent from the team. Furthermore, that they had the final word on all team decisions which appears to reflect doctors' perceptions of their power and position in the hierarchy. Only 35% of nurses and social workers agreed with this standpoint, revealing some acceptance of that power, reinforcing the perceived 'hierarchy'. Yielder and Davis (2009) write prolifically about the culture of radiography which they characterised as having low self-esteem, apathy and being resistant to change. In agreement, Wylie and Gallagher (2009) highlighted that radiographers scored consistently lower than any of the six largest Allied Health professions in Scotland across the five transformational leadership behaviours. Behaviours, that according to Den Hartog and Belschak (2012), are necessary to inspire and motivate radiographers to challenge the status quo of the hierarchy. Kvarnström (2008) supports this, reporting that hierarchical and status differences hinder collaboration. The Kennedy report (2011) found that speaking out by members of staff was not easy, due to the hierarchical culture. While Ebert *et al.,* (2014) observed a hierarchical healthcare environment which aids a culture of tribalism and subdues mutual respect and understanding of each other's' roles thus emphasising conflict, aligning with Lewis *et al.*, (2008), Kennedy (2011) and Mangan, Miller and Ward (2015).

Excerpts in the Nugus *et al.,* (2010) study, bears witness to this conflict as well as the resistance to domination, with 65% of nurses and social workers refusing to accept the perceived powers of doctors. Furthermore, the SoR (2017) diagnostic radiography workforce report shows an increasing number of radiographers in advanced and consultant level practice. Practice that requires autonomous and interprofessional collaborative working, indicating that radiographers are preparing to take up roles which challenges the hierarchical structure.

2.1.2 Shared leadership

As evidence above by Hammick *et al.*, (2009) and Francis (2013a) the NHS is traditionally built on a hierarchical leadership structure. Contemporary evidence by De Hoogh *et al.,* (2015), Sfantou *et al.,* (2017) and Fernandopulle (2021) support this stating that the importance of which, in their opinion, is overemphasised and ineffectual. Furthermore, De Hoogh *et al.,* (2015), Sfantou *et al.,* (2017) and Fernandopulle (2021) report that steeper hierarchies often demonstrate autocratic leadership where a single person makes the decisions without taking into account the conflicting opinions of others in the team. They also inform us that with autocratic leadership, mistakes are not tolerated and are blamed on individuals which does not promote team morale and performance. While it supports psychological safety and facilitates acceptance of the hierarchy by its members when team members do not accept the hierarchy, it results in power struggles which are not productive. Interestingly however, de Hoogh *et al*., (2015), Sfantou *et al.,* (2017) and Fernandopulle (2021) all show that autocratic leadership has been shown to be beneficial in emergencies, but only in these dynamic circumstances and a return to a flatter hierarchical structure immediately post the emergency should be facilitated or it results in poor team outcomes. Shondrick, Dinh and Lord (2020) advise the leadership theory has advanced beyond autocratic control by a single leader. Instead modern interpretations define dynamic leadership as transitory and shared by a group of individuals rather than being stable and hierarchical.

Gibb (1968) introduced the concept of shared leadership in 1954, which was later described by Harris (2013) as distributed leadership. While not a new concept, Spillane *et al.,* (2001), Harris (2013) and Keshmiri and Moradi (2020) affirm it provides a powerful and contemporary lens through which leadership practice should be viewed. It is defined as positive interactions between people in a specific setting and differs from a sharing of tasks or responsibilities (Gibb, 1968 and Wang, Waldman and Zhang, 2014). Harris (2013) emphasises the importance of the ‘we’ in the leadership process, re-enforcing the theory that there are multiple sources of influence in a team/organisation. This might sound confusing, as though leadership is collective or a process of negotiation.

Instead, Foucault, (1980) and Pearce and Conger (2002) explain that each member of the team is individually responsible for their own tasks and that it is an influence process in a group where the objective is to lead one another to the achievement of the groups' goals. Considering that the capacity and equality of individuals to influence the team through the application of their expert knowledge when needed, the concept of shared-leadership might be important when forming a collaborative IP team.

Despite its capricious meaning, Wang, Waldman and Zhang (2014) believed there is substantial empirical evidence to prove a positive relationship between shared-leadership and improved trust and collaboration and that team members identify more strongly with the group. The concept of shared-leadership in healthcare is addressed in detail by many authors, namely Pearce and Sims (2002), Alimo-Metcalfe and Alban-Metcalfe (2003), Bligh, Pearce and Kohles (2006), Pearce, Conger and Locke (2007), Pearce, Conger and Locke (2008), Pearce, Manz and Sims, (2009) Barr (2015) and Keshmiri and Moradi (2020) and forms the basis of the Clinical Leadership Competency Framework (CLCF) which is at the heart of the Leadership Qualities Framework (LQF). Alimo-Metcalfe and Alban-Metcalfe (2003) found that team members were most effective when they were confident, competent, self-aware of their own behaviour, good at networking and politically aware; qualities required for effective shared-leadership in addition to, managing yourself, integrity, decision-making and application of knowledge. As identified earlier, the NHS Leadership Academy (2015; 2018) support this but further include the qualities of self-control, reflection, resilience and determination in the new healthcare leadership model. They are insistent that areas identified for development within the model are as much about how you manage yourself as how you relate to others. Furthermore, that the leadership behaviours are an expectation of all healthcare staff.

But, standardising the capabilities of leadership is tantamount to a 'one size fits all' approach. Molden and Dweck (2006) argue that this approach is idealistic and that focusing on the universal principles of thought and action describing the average person, risks describing no-one at all. They maintain that it is important to recognise that people vary greatly in the way they perceive and process information and regulate themselves. Storey and Holti (2013) consider shared-leadership productive but confusing regarding the role of those occupying leadership positions. Pearce and

Conger (2002) clarify that shared-leadership refers to the qualities required by individuals to influence on matters related to their sphere of expertise instead of the leaders of an organisation. Rather than qualities which suggests an attribute possessed by someone, Barr and Low (2011 p.3), CAIPE (2017) and NHS Leadership Academy (2018) refer to these qualities as *'*capabilities' that enable collaborative interprofessional practice.

Despite the LQF stating that it is an overarching framework for all healthcare staff, a separate document: 'leadership for doctors' reinforces confusion and influences the perceptions of hierarchical leadership by suggesting that leadership for doctors is different. Storey and Holti (2013) suggest a fresh approach of duality: addressing shared-leadership and behaviours required of those in leadership positions, separately, colloquially known as the little l and big L respectively. Additionally, practical application of the framework is challenging and appears to be optional, which is unlikely to achieve its aim of improving the self-leadership capabilities essential for shared-leadership of all team members, especially students. Xyrichis and Lowton's review demonstrated however, that lack of a clear leadership structure causes frustration and leads to poor decision-making and this could be compounded by the fact that shared-leadership is not known about or understood by all professionals (2008).

The NHS leadership model addresses this by stating that individuals can build capacity and act as role models for others to develop their leadership qualities, resulting in engagement, mutual respect and empowerment. Furthermore, it is not meant to facilitate autocratic hierarchical leadership or take responsibility away from others, but to be a collaborative sharing of power. This brings us back to the rotating wheel model of service delivery where, true collaborative interactions are based on empowered individuals who assume leadership and contribute their expertise to provide quality patient care. Owen and Cooke (2016) identified the need for interprofessional collaboration through shared-leadership and governance, a strategy which they believe will dismantle the healthcare hierarchy.

It is also apparent from the Lancet's commission into the future of healthcare education, that there is a necessity to reform education to address the demand for

leadership capabilities, which are necessary for effective teamwork (Frenk *et al.*, 2010). Coltart et al., (2012) confirm that doctors' education already includes leadership training. Furthermore, many studies state that an IPE curriculum should also include leadership qualities and espouse the value of shared leadership, but O'Keefe and Ward (2018) and Van Diggele (2020) bemoan the fact that they do not always elaborate on the capabilities required. So, despite the scepticism around the LQF and CLCF its value is in outlining the capabilities required for collaboration.

In designing this study, it was important to prompt discussion around interactions to decipher whether student radiographers had the leadership capabilities required to engage in truly collaborative IP teamwork.

2.1.3 Power and professional closure

Weber (1909) theorised that to understand social action (i.e., engagement with collaboration) we should explore how individuals relate to each to other. Importantly, this needs to be founded on an insight into the subjective meaning and intention that participants assign to the social action. Attempts to understand the role of the professions within a group and the relationship between them, Johnson (1972) suggests that an essential element has previously been excluded; the attempt to understand professions in term of power relations, the sources of power and authority, and the ways in which they use them. Baker *et al.,* (2011) agree that it is an important yet under-explored aspect. Yielder and Davis (2009) identified the same omission within radiography stating that there is a need to explore key issues of professionalism within the context of power dynamics and hierarchy. It is for this reason, that this study is concerned specifically with unequal power relationships in IP collaboration.

In his readings of the eye of power, Foucault states that power should be arranged as a machine working by a system of cogs, reliance cannot be placed on a single (cog), person alone (1975). This suggests that there is a weariness of the traditional hierarchical 'great man' theory, but Harris (2013) clarifies that it does not imply that formal leaders are redundant. Foucault (1980) and Lewis *et al.*, (2008) clarify that the division of labour cannot be attained without a distribution of power where everyone is able to influence decisions So, for this study power is defined as:

‘the ability or capacity to influence’ (Lukes, 1986 p.18).

Power can be competitive suggesting domination, a negative entity that results in repression. Foucault’s opinion is that this representation is a widespread yet narrow perspective and that not all problems of power should be conceived in terms of war-like relations. He questions; if power was never anything other than repression and if it never does anything but say no, what makes it be accepted? Importantly, he argues that power should be considered a productive network, which can be shared throughout the social body forming knowledge and producing discourse, and that where discourse is taking place, domination will not be present (Foucault, 1980).

There is little evidence in the literature that power struggles produce discourse; midwifes in a study by Van, Driessen and Scheele, (2016) reported power imbalances between them and obstetricians, in which they felt obstetricians ranked themselves above the midwives despite their willingness to collaborate. Foucault’s notion that power does not reside in someone, needs to be considered here. It asserts that power is not something that obstetricians are doing to the midwives but is perhaps being created in the relationship between the midwives and obstetricians (1975). This power imbalance is echoed by social workers who are of the opinion that there is a power imbalance between themselves and GPs, but that GPs are not even aware of this perceived imbalance, Mangan, Miller and Ward (2015), insinuating that domination is not intentional. This might of course also imply that the imbalance is accepted and viewed as a normal part of everyday practice. I am interested in uncovering the perceptions of my own students’ views; if they do perceive that there is a power imbalance, do they perceive it to be intentional or do they view it as normal i.e., have they normalised it as suggested by Foucault (1975).

In the focus groups conducted by Nugus *et al.,* (2010) nurses felt subjugated by AHPs and some AHPs felt subjugated by nurses, which supports Witz’s theory that power imbalances may be multi-directional within the medical social body. In their ethnographic study on how nurses use power to expand jurisdiction of their autonomy, Salhani and Coulter (2009) found that the nursing team itself was not as united as it first seemed. Distinctions were made amongst themselves e.g., between degree holding nurses and diploma nurses and those with different roles e.g., administrative,

reflecting my own experiences. Tensions of male supervision by female nurses, was also evident. When it came to exercising power and autonomy Salhani and Coulter, (2009) reported that nurses often fell back into a complaint handmaiden role, while other nurses saw their handmaiden role as appropriate believing that to work equally would be upsetting the established order of the team. Traditionally nurses were considered housekeepers or secretaries to doctors to do their bidding. This was influenced by Florence Nightingale's vision of nursing; '… a dedicated calling more akin to religion, with status and rewards considered of little importance' (Witz, 1992, p. 131; Freidson, 2006). This resulted in the 'established order' that nurses referred to in Salhani and Coulter (2009), echoing Foucault's concept of normalisation and development of a 'natural attitude (1975). Interestingly, Schein and Schein (2017) refer to this natural attitude as the taken for granted assumptions which subsequently fade out of awareness and essentially become the cultural DNA of a group/organisation (agreeing with Foucault's normalisation). Furthermore, they argue that such assumptions can be very stable and serve as a way of doing things and are learnt early on. Foucault (1975), Gutting (2005), Merleau-Ponty (2008), Dowling and Cooney (2012) and Waggie and Arends (2021) believe that this natural attitude is achieved by a subtle and pervasive method of subordination though influence, that changes attitudes and produces docile bodies. This normalisation is comparable to habituation within the NHS as described by Francis (2013b). These concepts inform an important focus of the research, which is to establish whether students consider IPC relationships to be occupied with power, dominance or discourse? Furthermore, to explore whether normalisation played a part in forming their perceptions.

Conformity and compliance were dominant themes in Levett-Jones and Lathlean (2009), revealing that student nurses adapted to institutional values rather than 'rock the boat' p.346. They thought that to challenge the status quo or established order as outlined by Salhani and Coulter (2009), would undermine any chances of acceptance by staff. A few participants had even knowingly engaged in unsafe practice as directed to 'fit' into the team. This was one of the key issues identified by Francis, (2013a) and certainly reflects some of my own encounters within an interprofessional team. The question that is raised here is whether this attempt to fit in, is in itself, an attempt at gaining favour and access to the ranks of the dominant group or whether it is due to influence by dominant professionals Rogerson and Ermes (2008) and Sergeant and

Laws-Chapman (2012) advise that integrated healthcare teams need resilient employees who can persevere when exposed to adverse situations maintaining a sense of moral purpose to resist the influence exerted upon them.

Exercise of power is the source of tension between the nurses and other health professionals in Ebert *et al.,* (2014) where rehabilitation counsellors and pharmacists felt 'left out of the team' and resented the nurses' blatant attempt to supervise their work. So, it appears that 'medical dominance' is not the only kind of power at play. Interestingly, Collette *et al.,* (2017) reported that doctors do not appear to be as aware of these tensions and consider collaborative behaviour to be at a greater level than did the nurses. This reflects the views of Mangan, Miller and Ward (2015), insinuating that attempts to influence is unintentional. Neither do doctors identify other clinicians as dominating them but they did report feeling disempowered by management and administration according to Salhani and Coulter, (2009), Nugus *et al.*, (2010) and reported by the NHS (2020). This might be because doctors see themselves as the manager of the patient, reporting that the patient comes under their authority and they have the right to make decisions Nugus *et al.,* (2010), resulting in conflict with managers who attempt to direct their tasks.

Freidson (2006) and Nugus *et al.*, (2010) consider it inevitable that there are tensions between the perceived need for management and the call for care to be delivered collaboratively. This tension is clearly articulated in the Kennedy report where issues of who was responsible for the management of the patient and lack of collaboration between healthcare professionals resulted in mismanagement of patients (2011). Nugus *et al.,* (2010) are of the opinion, that patient management should be viewed as co-ordination of patient care, which involves the use of collaborative power. However, I would argue that co-ordination is merely a functional perspective on power sharing. Contrarily, collaborative power involves interdependent participation, decision-making with self-evaluation of performance, evidence of accountability and a sharing of responsibility within a team as outlined by Nugus *et al.*, (2010) and Thylefors (2012). Blue and Fitzgerald (2002) refer to this collaborative power as mutual power, deeming it an essential criterion for collaborative relationships. Importantly, Thylefors states that it represents equality amongst team members with regards to influence (a core component of collaboration).

In exploring radiography specific literature, independence, autonomy and ability to influence are not evidenced in the historical development of the radiography profession. In Witz (1992), Nixon (2001b), Price and Paterson (2002), Lewis *et al.,* (2008), Cowling (2008) and Yielder and Davis (2009) radiographers are portrayed as passive technicians implementing the designs of other healthcare professionals. However, it is evident that radiographers have risen to the challenge of advanced practice which requires autonomous working (SoR, 2013; 2020). Consultant radiographer posts are now well established. I believe radiographers no longer wish to be subordinate and compliant within an interprofessional team as was the expectation. They are aspiring to greater professional status and recognition with a desire to utilise and grow their professional knowledge and expertise. This will require radiographers to have the ability to lead and exert influence in their field. Price (2010) and Rees (2013) believe radiographers are ready to rise to the challenge of addressing the unequal power relationships that are perceived to exist and actively collaborate as a member of an interprofessional team, thus leaving the past behind.

Larkin (1978), Abbott (1988), Witz (1992) and Johnson (2016) all illuminate the issue of unequal power distribution amongst healthcare professions. They reject the trait and functionalist theories of the professions. The trait theory being the professions' distinctiveness which requires identification of the attribute required to be a profession (Johnson, 2016). For example, radiography's' distinctiveness is delineated by DH (2017) as their ability and authority to justify imaging requests, operate imaging equipment and deliver radiation. These distinctive characteristics are used to legitimate consequences of delivery of radiation by an unauthorised person. Johnson (1972) argues that these theories do not take into account the power struggles and conflict of the development of an occupation as a profession (Johnson, 1972).

According to Parsons (1954), the functionalist theory is based on the professions' place in society i.e., it possesses knowledge that is of great importance to society, fulfilling an essential function. Because it is open to abuse, Berlant (1975) advised professionals to work according to a framework based on moral practice. Barber (1967) argues however that control of their unique knowledge and functions is overseen by the professions themselves, as is evidenced in radiography by the formation of the professional body, Society of Radiographers (SoR). Johnson (1972)

once again agues the functionalists' theory too ignores the development of the profession and the power and conflict between professions. Johnson's framework defines a profession not in terms of an occupation but an institutional means of controlling occupational activities (1972). He argues that the 'institutionalisation of power relationships continued to develop under neo-Weberian perspectives of professionalism' (p.41). Weber (1909) was of the opinion that dominant groups protect their status position as the dominant profession by excluding outsiders through tight regulation of work activities and entry to their group. Parkin (1982) elaborates that the central point here is how particular occupations regulate the field of work in their favour through the state or organisations by legally restricting access/ opportunities to another eligible professional group. Where radiography is concerned, Witz (1992) chronicles how occupational activities have historically been controlled by medicine. Freidson (1977) however argued that a profession is an occupation that has struggled for a right to control its own work and has been granted legitimate autonomy by an elite or dominant state. My study aligns with Freidson; that although radiography was historically controlled by medicine it has now been granted legitimate autonomy. However, it has been engaged in a struggle to exercise that autonomy and therefore takes into consideration Foucault's emphasis on power.

Larkin (1978), Abbott (1988), Freidson (2006) and Johnson (2016) all conceive that the development of professions is based on professional closure strategies; distinct projects aimed at protecting exclusive knowledge, tightly regulated entry and work practices for the sole purpose of economic, social and political advantage. Furthermore, Johnson (2016) warns it is centred on control and monopolisation of practice, exertion of and institutionalisation of power. Some of these closure tactics are certainly reflected in the development of radiography as a profession; entry is tightly regulated, and exclusive knowledge is protected by the requirement of registration as a radiographer to be able to practice. Furthermore, the career progression framework (CPF) where advanced practice is evident has resulted in economic advantage for radiographers.

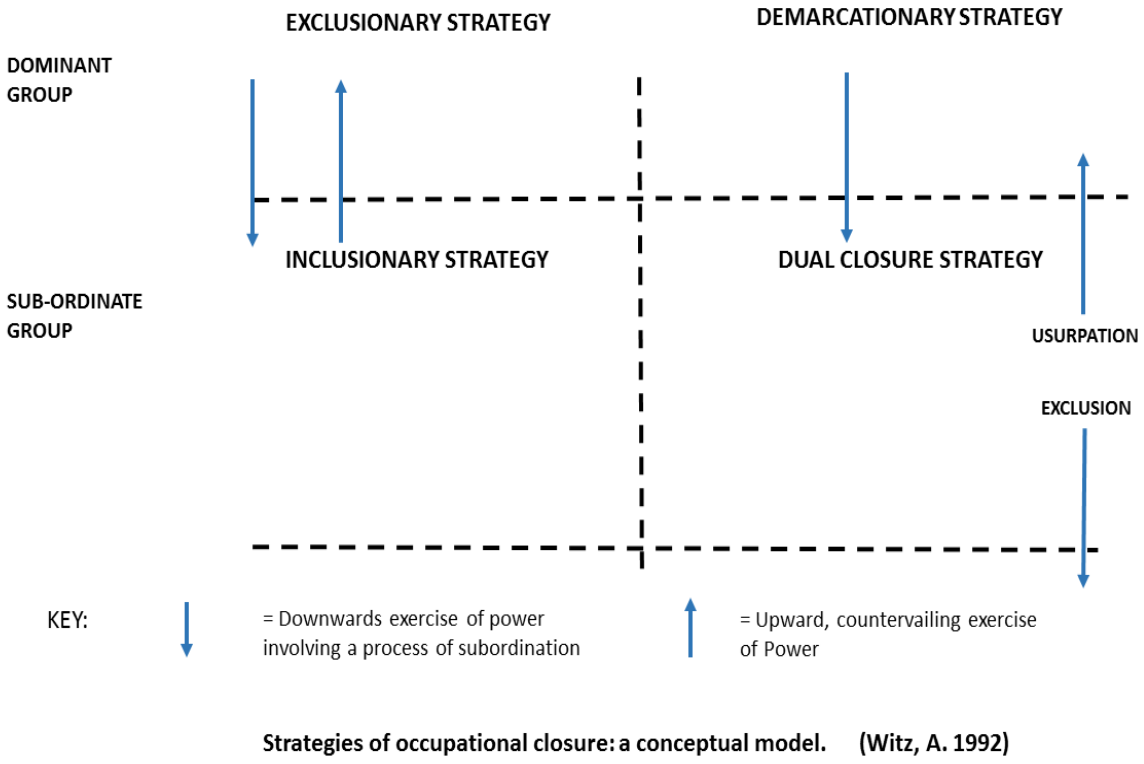
Witz (1992) expands on the work of sociologists such as Johnson (1972), Larkin (1978) and Abbott (1988) but in particular Freidson (1970) in her model of occupational closure, in which she illustrates the complex relationships between the various closure

strategies utilised by the professions. Turner and Samson (1995) found that closure involves relationships of dominance and subordination between occupations with the exercise of power a dominant attribute. In her seminal book, Professions and Patriarchy, Witz (1992) explores the occupation of radiography as a case study for her conceptual module: strategies of occupational closure. While she emphasises gender issues and feminisation of radiography during the 1920s and 1930s, she acknowledges that a study of the gendering process in radiography cannot ignore the complex inter- occupational relations in which radiographers were entangled. In fact, Witz (1992) recognises that the inter-occupational relations of medical dominance and para-medical subordination is not merely a backdrop for gender differences but became increasingly to be articulated in the hierarchical structure of the division of labour around the medical application of x-ray technology. It is this hierarchical structure and occupational power that played a part in the historical development of radiography as a profession that is considered significant and ontologically relevant to this study. Relevant because, historical development would according to the social constructionism perspective be responsible for the lens through which radiographers view the hierarchical structure and division of labour and subsequently, how they construct what interprofessionalism means to them.

The research problem broaches the issue of hierarchy, unequal power relationships and authority, and how it has become entrenched within an interprofessional team as outlined by Foucault (1994) and Johnson (2016). All these issues appear to be factors that influence interprofessional collaboration, therefore, raising the research questions; 'how do current radiography students perceive interprofessional collaboration?', 'what are the factors that influence collaboration'?

It would seem pertinent therefore to utilise Witz's (1992) model of professional closure to analyse the students' responses. Reeves *et al*., (2010) agree that modern health and social care professions would be better understood by drawing on this theory of professional closure. Witz's (1992) model of professional closure is outlined and discussed below.

Figure 1: Model of professional closure



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The model is arranged into four quadrants. The exclusionary and demarcationary closure strategies (top) are engaged in by the dominant occupations in the hierarchy (Witz, 1992). Based on Freidson's work on the opposing tactics of the professional power of doctors, these areas suggest that they (dominant groups), enjoy occupational monopoly and a position of dominance in relation to adjacent occupations in the medical division of labour (1977). Grace *et al.*, (2017) is of the opinion that his can be seen in the control of radiography by medicine who prevent encroachment into their knowledge domain by the delegation of tasks e.g., image reporting. While the inclusionary and dual closure strategies are a description of the sub-ordinate groups' (i.e. radiography) opposing approaches. It is these strategies which are important to this study, as closure would be considered counter-productive to interprofessional collaboration. By delving into diagnostic radiography students' perceptions of

collaboration, it might be possible to determine which if any, closure strategies are perceived to be employed within the IP team.

The left-hand side of the model is concerned with the exclusionary strategies which aim for intraprofessional control over the internal affairs of the related professions and described by Freidson (1977) and Parkin (1981) as a downward exercise of power in a process of subordination. (Witz (1992) and Baker *et al.*, (2011) explain how the group seeks to secure a privileged status by exclusion and refer to entry requirements into the profession creating a monopoly over their skills and knowledge. Entry to medicine requires a personal statement, specified work experience, Grades AAA at A Level and successful completion of an admissions test (Medical Schools Council, 2017). This very prescriptive, high achieving set of entry requirements is exclusionary and achievable by only a select few. This is an example of Freidson's (1977) explanation of professions that have been granted legitimate autonomy. On the other hand, this exclusionary strategy is not exclusive to medicine. All healthcare professions have minimal entry requirements with some form of admissions test and minimal grade achievement, albeit lower grades, so all are involved in exclusion which involves subordination. Simultaneously, inclusion (bottom left) is used by subordinate professions to challenge exclusion. Witz (1992) and Baker *et al.*, (2011) state that it involves an upward push of power by the group seeking inclusion to the structure from which it has been barred. This is evident in the career progression framework which has resulted in advanced radiography practice where radiographers are carrying out tasks previously considered to be entirely the radiologist's domain e.g., image reporting, independent caseloads within ultrasound and mammography, including biopsies. These are plans to gain acceptance and inclusion into the domain of medicine from which it is barred.

The right side of the model is concerned with interprofessional (between professions) closure strategies and suggests that professions act as single organised bodies, with traditions, strategic focus and an aspiration to defend and advance their profession (Baker *et al.*, 2011). Demarcationary strategies (top right) are interprofessional means of controlling, monitoring and regulating the labour of others and is a process of closure resulting in the negotiation of separate spheres of competence and the control of boundaries between professions to secure their position of power on the professional

hierarchy (Witz, 1992). Demarcation is evident in radiography practice by the fact that radiographers are only able to report under the delegated authority of the radiologist, while they also influence which aspects of imaging radiographers may report on. Despite the Society of Radiographers stating that radiographers do not require the authority of other professions to report (2013), the reality is different; issuing of an imaging report by a radiographer is historically considered to be contentious by the Royal College of Radiologists (RCR) (1996); (2012) and SoR (2010). The RCR state that a clinical radiologist should delegate authority to a radiographer, must monitor all aspects of the work and are fully responsible, suggesting that radiographers have no responsibility for the report. Parkin (1981) is of the opinion, that a privileged group (such as radiologist who are free from delegation) must constantly protect its control against attempts by subordinate groups to usurp that domination. A counter argument suggests that rather than an attempt to control radiographers, radiologists are concerned that standards of quality and safety are compromised by allowing radiographers to report on images (Modern Medicine Network, 2010). Claims, that according to Piper and Paterson (2009), Coleman and Piper (2009) and Society of Radiographers (2010) are unproven. But Grace *et al.,* (2017) claims this attempt at tight control of radiographers' occupational activities and responsibilities by the dominant profession is executed to mould the division of labour to prevent encroachment into their knowledge domain, which Larkin (1983) maintains ensures they retain financial income and status. Radiologists reporting on medical images are paid significantly more than radiographers that carry out the same task (NHS jobs, 2017). Furthermore, Larkin (1983) suggests that this is not intended as a mere distribution of skill but a conflict between professions shaped by the disparity in accessible power resulting in sub-ordination to the dominant group i.e. sub-ordination of radiographers to radiologist. The dispute between the SoR and the RCR because radiologists continue to pronounce upon the roles of radiographers was reported by the Modern Medicine Network (2010), evidencing that closure strategies were at that point still being employed and are worthy of research within this study.

Demarcationary strategies are considered by Witz (1992) essential to understand how relations are created and sustained within a professional hierarchy. As this study is concerned with unequal power relationships within an interprofessional team, this aspect of the closure theory is deemed extremely relevant in considering collaboration

within the team. Weeden (2002) suggests that it also seems logical to assume that closure is not static and will fluctuate over time and between professions and should therefore be treated as an empirical question focusing on consequences rather than the process. The consequence, ultimately being the collaboration between professionals in an interprofessional group. Hence this enquiring strategy is useful because it supports my focus of students' perception of these consequences (the collaboration in an IP team) and the factors that influences collaboration.

The dual closure strategies on the bottom right of the model, deals with the subordinate group's response to the demarcationary strategies of dominant groups: a simultaneous exercise of power in an upwards and downwards direction. Witz (1992) and Baker *et al.,* (2011) suggest that it is two-fold; usurpation which unlike the fight for inclusion into the ranks of the dominant profession, is a fight to challenge demarcationary strategies and change the structure of the hierarchy. But, this countervailing exercise of power, results in oppositional rather than a redistribution of power (collaboration). The radiologists might view this as an encroachment into their knowledge domain while radiographers might consider the demarcation of roles as a means of control.

This very act of usurpation also results in exclusion – a simultaneous exercise of power in a downwards direction which is used by the subordinate profession to secure their place in the hierarchy according to Murphy (1984) and Baker *et al.,* (2011). An analogy would be people undermining and side-lining colleagues in order to achieve promotion. Usurpation is evidenced within the four-tier career structure of radiography which demarcates levels of education and results in a hierarchy within radiography itself. Murphy (1984; 1988) identified real problems in the Weberian social closure theory. He argues that Witz's explanation that usurpation is the opposite mode of closure to exclusion, obscures the fact that exclusion is involved in usurpation. By the very action of usurpation, it excludes members of other professions from the radiography profession. So, the question that is not addressed, is how can usurpation which, in itself consists of exclusion be interpreted as a mode of closure which is distinct and different from exclusion? Murphy (1988) suggests that rather than being a separate entity from exclusion, it is a sub-type. So, it might follow that in recognising usurpation involves exclusion then it must be concluded that they have much in common.

A major limitation of closure theory is its weak conception of the relationships between rules of closure and their structure. The original Weberian social closure theory was introduced in response to the prevailing social theory to produce a new more general approach which encapsulates the diversity of the foundations of domination. Weber (1909)'s stance was that social action is entwined with historical contexts. Furthermore, that social researchers should pursue knowledge of social actions by studying historical contexts of collectives/groups (Weber, 1909). But, this assumes that all sources of monopolisation are equal (e.g., by class or by power and opportunities e.g., race ethnic etc.) and founded on one and the same generic kind of process. Murphy (1984) asserts this is a serious limitation which is common to the work of all closure theorists: i.e., they neglect the relationships among the different rules of closure and hence they fail to analyse how rules of closure are structured and the consequences of that structure. This would be akin to assuming that all doctors monopolise, and all radiographers are subordinate, and all interactions are uniform i.e., either domination or subordination. My study addresses this limitation by concentrating on the students' reality of the relationships and collaboration between individuals and different interprofessional groups rather than assuming homogenous actions.

Social closure strategies could be construed as a barrier to collaboration. It is for this reason that this work was designed to unpick which, if any closure strategies are at play amongst/between professions. Identifying any closure strategies would allow for a redesign of the interprofessional education curriculum to address these.

2.1.4 Communication

Communication between healthcare professionals is known to have an impact on service and standard of patient care, with Fox (2000) stating that rigid distinctions between status and power limits communication creating conflict. Keegan *et al.*,'s model demonstrated how nurses manage conflict with physicians, stating that it is the key to understanding collaboration (1998). Firstly, they predict the communication style they expect the physician to use, before deciding which approach to take to combat the potential conflict. Keegan *et al.,* (1998), Thylefors (2012) outline the five styles of combating conflict as collaborating, avoiding, dominating, obliging and

compromising, with collaboration being the only effective style promoting positive interactions. Moreover, Fox (2000) and Abramson and Nizrahi (2003) cited positive communication as an important means of improving collaboration to address patient needs. Positive communication in this study is concerned with interactions where information is asked for and listened to, with equal influence of all team members which is a core component of collaboration according to Baker *et al.*, (2011). It is for this reason that communication, in particular (positive communication) is being examined within this study.

In exploring interprofessional communication there appears to be a dearth of literature pertaining to radiographers so, the evidence base was consulted for interprofessional communication per se. This will set the scene of the environment within which radiographers work and communicate. Sirota (2007), Ebert *et al.*, (2014) and Van Driessen and Scheele (2016) consider collaborative practice to be the exception rather than the rule with relationships characterised as competitive with poor communication between obstetricians and midwives, causing adverse patient outcomes. Reeves *et al.,* (2009) found that within the sphere of localised interactions, communication between members was terse and unidirectional and highlight that other healthcare professionals shared this viewpoint. Midwives in Van, Driessen and Scheele (2016) reported being treated as inferior partners and perceived that obstetricians had a condescending and haughty attitude when communicating with them.

Reeves *et al.,* (2010) consider authentic dialogue as the assumption that everyone has the right to have their opinion taken seriously. Interactions between doctors of different specialities (teams that know each other) were found to be considerate, courteous, and respectful and not characterised by dominating power (Nugus *et al.*, 2010). Further observation however, confirmed that doctors exercised and reported to exercising role dominating power and uni-directional communication towards staff of other occupations and this appears to be exaggerated in an acute setting such as a&e where the teams did not know each other. Not surprising, as these are stressful situations where decisions need to be made quickly with no time for proper introductions. It is these clinical areas that this study focuses on, making these observations particularly relevant. These findings were substantiated in Nugus *et al.,* (2010) by a doctor who confirmed that communication was one way. What is more,

participants in Nugus *et al.*, (2010) and Ebert *et al.*, (2014) stated that when the medical team needs something to get done, all they have to do is ask. This alludes to a culturally endorsed, role dominating power and communication by doctors and concerns raised by Thylefors (2012) who suggested that it puts unreasonable demands on doctors and reduces input from other health professionals. Conflict avoidance behaviour by nurses and HCPs who do as they are bid even if they do not agree, results in an additive instead of an integrative attitude towards problems. Thylefors (2012) agree that while this may save time, it does not contribute to decision-making or promote effective team collaboration. This reluctance to voice their opinions compared to physicians led Atwal and Caldwell (2005) to conclude that this type of domination and sub-ordination would not contribute effectively to patient care. Furthermore, it appears that role dominating power (influence) in teamwork is often exerted and even defined in terms of communication and that verbal activity meticulously follows salary which according to Thylefors (2012) implies medical dominance.

A degree of professionalisation also appears to be relevant, with professionals demonstrating a higher level of verbal participation in team meetings than paraprofessionals (Thylefors *et al.*, 2000). Although it is unclear exactly what they mean by paraprofessionals, it appears to be all professionals who are not doctors. The prefix para is defined as side-by-side Dictionary.com (2018), hence all professionals (to include allied health professionals, nursing and pharmacy) working alongside each other and doctors. Hewitt, Sims and Harris (2015) evidenced tactical communication where team members consciously control the information they share to avoid disagreement and negotiate hierarchies. Moreover, that they preferentially communicate with decision-makers who are more likely to agree with their ideas. So, while tactical communication maintains collegiality, explicit hierarchies are preserved. Team members also tended to communicate jointly to increase their influence, demonstrating a lack of confidence in communicating across boundaries. The higher status professionals were found to use silence or sarcastic communication to undermine the professions that they considered to be of a lower status and who, in turn, try to assert themselves; an example of a demarcationary strategy controlling the boundaries between professions to secure positions of power, maintaining the hierarchy (Hewitt, Sims and Harris, 2015).

A lack of communication was reported by Xyrichis and Lowton (2008) and Ebert *et al.*, (2014) as causing misunderstanding about each professions' roles and responsibilities. They also found that communication and conflict resolution was greatly enriched through team meetings where open communication was employed. A systematic review by Hewitt, Sims and Harris (2015) found confidence, experience and flexibility to be key personal attributes influencing open communication. This is confirmed by Ebert *et al.,* (2014) where participants felt that if they were confident and had knowledge and experience they would have the power to 'talk back'. Ebert *et al.,* (2014) do counsel however, that AHPs' lack of confidence in communicating with doctors without undermining their professional judgement, is a concern. Despite this Nugus *et al.,* (2010) believed that domination and the hierarchy are being questioned and resisted, albeit not publicly, verbally or systematically. What is particularly encouraging, is both physicians and nurses in Collette *et al.,* agree that communication is a key feature in positive collaborative behaviour (2017).

2.1.5 Professional identity

Hall (2005), Pearce, Conger and Locke (2008) and MacAuthur, Daily and Villigran, (2016) maintain that collaboration is further complicated by how professions come about, with their own histories, professional cultures, ethics, education and socialisation processes and career pathways. The culture of a profession involves values, beliefs, attitudes, customs and behaviour which are passed down from generation to generation. This is of course subject to change and varies from one clinical site to another, however through anecdotal discussions with students the culture of radiography is perpetuated. This aligns with the social constructionist perspective of this study, that no single person's perception is untainted by the society which influenced them. Tajfel and Turner (1979) offer further explanation of inter-group prejudice and bias in their social identity theory (SIT). SIT proposes that part of an individual's self-concept is based upon their identity as a member of the group to which they belong. It also suggests that behaviour between individuals (interprofessional collaboration) is determined by the customs of the group to which they belong. Furthermore, that individuals strive to maintain or enhance their collective identity by evaluating themselves in terms of their group or profession, with in-groups and out-groups, creating further differentiation between professions. Tajfel and Turner (1979;

2010) do acknowledge however that the relationships are complex, and that social context is a mediating variable. But, Ivan Illich who was an extreme critic of all healthcare professionals claimed that they purposely control and mystify their expertise for purposes of power and control (1971). Hall (2005) argues that this has arisen as professions have struggled to define their boundaries and establish an identity to openly challenge the boundaries of medicine. But they acknowledge that boundaries work to heighten the contrast between rival professions. Baxter and Brumfitt acknowledge that the professions have evolved separately with well-established boundaries (2008). Medicine being the most established and dominant profession, while other professions have faced substantial difficulties in developing their position, status and identity.

Baxter and Brumfitt are of the view that the professional differences may be because of the philosophical foundations of their training, with leadership being vested in medical practitioners (2008). It is not only the education and skills but also the socialisation processes which occur that allows the student to assume the professional identity and solidify their 'world view'. As identified by Mann *et al.,* (2005) all practitioners are trained to be independent and autonomous within their professions and adopt the identity, norms and stereotypes of their faction, described as tribalism by Beattie (1995). It is considered by Nyatanga (1998) part of the normal part of social identity and self-perception, also termed ethnocentrism. Reeves and Pryce (1998) believe this was incorporated into nurses and doctors' education giving greater sense of identity but also separateness, resulting in an in-group and out-group perception. Tajfel and Turner (1979) and Tajfel (2010) offer further explanation of inter-group prejudice and bias proposing that part of an individual's self-concept is based upon their identity as a member of the group to which they belong. This in/out-group perception means that healthcare professionals will tend to judge people within a group as similar and people from a different group as dissimilar. Furthermore, SIT also suggests that behaviour between individuals (interprofessional collaboration) is determined by the customs of the group to which they belong and that individuals strive to maintain or enhance their collective identity, reinforcing the in/out-group differentiation between professions. Reeves and Pryce (1998) believe this acts as a barrier to shared-learning between professions. History reflects the evolution of professions and has led to each profession working in silos. A thought that aligns with

Weberian theory of social closure Weber. Dumont *et al.,* (2012) reported that professional silos, tribalism, stereotyping and discrimination remain, although they suggest that increased role awareness may lead to a decrease in these behaviours. Additionally, Hall and Weaver (2001) and Hall (2005) state that cognitive learning theory proposes, that each profession attracts individuals with a particular set of cognitive learning skills, strengthening the walls of the silo. Exacerbating this, Ebert *et al.,* (2014) found that undergraduate students appear to need to belong to their socially and professionally identified group. This is certainly visible on our undergraduate programme; within a few weeks the radiography students have gravitated towards each other and tend to sit together in a group. Bluff and Holloway (2008) suggest this is reflected within the clinical environment, where students emulate the behaviours of the group role models in the clinical setting. Role modelling can have a positive or negative influence and this along with perceptions of tribalism and loyalty to the group is explored within the interviews of this study, an attempt to identify the factors that influence IP collaboration as perceived by the students.

2.1.5 Status, respect, trust and understanding of roles

The terminology to denote a higher or lower status profession is interesting. Freidson (1970; 2006) is of the opinion, that this stratification of status is largely of professional origin and is related to division of authority with the purpose of alienating other professions. Pullon (2008), Kvarnström (2008) and Dumont *et al.*, (2012) are of the opinion that erroneous professional stereotyping and perceived inequalities in status, are some of the factors hindering IP collaboration despite all the years that healthcare professionals have been working alongside each other. Other contributing factors are knowledge contribution not being valued or utilised and organisational hierarchical values which affect the experience of being appreciated. Atwal and Caldwell (2005) confirm these findings, with AHPs and nurses reluctant to voice their opinions. An excerpt from a focus group in Nugus *et al.,* (2010) aptly confirms this; 'nursing and allied health relationships with medicine still has a long way to go…… doctors don't really respect other professions*'* (nurse manager) p. 901. Although they do point out that there appears to be a greater amount of respect within the community care team setting as opposed to the acute care setting where radiographers work. Participants in the Van, Driessen and Scheele (2016) study reported a lack of respect for their

knowledge stating that obstetricians did not always trust their decisions and actions. While general practice staff seemed to demonstrate a lack of respect for the profession of social work according to Mangan, Miller and Ward (2015), a view echoed by radiographers in Matilainen *et al.*, (2017). Morris and Matthews (2014) and Matilainen *et al.,* (2017) participants deemed respect as recognising and appreciating scope of practice and rights of all professionals in the patient care process, with Matilainen reporting from a radiography perspective. The NHS Leadership Academy (2015), Johnson *et al.,* (2021), Waggie and Arends (2021) and Walmsley (2021) support the importance of respect (particularly mutual respect) stating that it is essential for influencing others and building collaboration.

In Ebert *et al.*, interpretive focus groups, nurses and pharmacist participants felt their role was not valued, understood or appreciated by other professionals within the IP team (2014). These perceptions were acknowledged by the opposing team members e.g., the pharmacists said that nurses did not understand their work and it took nurses twelve months to figure out that the pharmacist had a role on the ward. A viewpoint supported by Larkin and Callaghan (2005) where mixed teams of nurses, occupational therapists, psychiatrists and social workers were questioned. Most of the professionals stated that they were clear about their own roles but thought that other team members did not understand their roles or acknowledge the importance. It could be argued that improved communication might easily dispel these challenges. In contrast, the doctors in Larkin and Callghan (2005) were confident that they understood the nurse's role and would ask them when they needed help, suggesting a lack of respect for their role and as though they were just there to serve the doctor. This is of course a dated study, but conversely one could question whether the reverse i.e., a nurse asking a doctor if they needed help would signify a lack of respect?

Collette *et al.,* (2017) also identified the lack of mutual respect between nurses and physicians. This was also linked to understanding, with nurses stating that the physicians needed to better appreciate the professional role of the nurse rather than focus on task orientation of the role i.e., giving drugs as directed, bathing the patient etc. Collette *et al.,* (2017) found that nurses considered respect and communication to be key aspects in collaborative behaviour, while physicians cited roles and task division more frequently. Nurse participants in Ebert *et al.,* adamantly agreed that

doctors 'don't have a clue what nurses do' (2014 p.546). Conversely, doctors expressed similar misgivings saying that other healthcare professionals had limited knowledge of their roles, but nurses stated that they clearly understood what their medical colleagues do, even expressing sympathy for them saying that they are always 'flat out' (p. 3). Although respect for doctors by the nurses and pharmacists was strongly suggested, it was interesting to note that pharmacists admitted to having less respect for nurses than for the doctors. Respect was used frequently in Ebert *et al.,* (2014) with all groups stating that they experienced a lack of respect from other professions. The nurses were particularly vociferous stating that they 'think nurses are airheads and think we are here to serve them' (Ebert *et al.*, 2014, p. 3). Rotz and Duenas (2016) explored pharmacy and medical students' perspectives on collaboration. Students specifically highlighted learning about each other's roles and responsibilities of other professions to cultivate mutual respect. Waggie and Arends (2021) also propose that without knowing the team, respect would not follow.

Pullon (2008) draws attention to the fact that trust is often referred to in connection with respect and assumed to be a static factor in successful IP relationships, reflecting my own views. Increasingly however, it is being acknowledged that trust and collaboration between individuals and within institutions are not stable entities and in the opinion of Nielsen (2004), Pullon (2008) and Lewicki and Wiethoff (2012) depend on circumstances and importantly, are influenced by previous experiences. This reflects the perspectives of Moskowitz (2004) and Pennington (2012), who define how we think and respond to a situation as social cognition. Positive previous experiences of collaboration where people were reliable in their behaviour are more likely to result in trust, known as calculus-based trust (Lewicki and Wiethoff, 2012). This seems to suggest that working together on a regular basis where positive experiences are reinforced would result in greater trust between IP team members. Therefore, to understand students' perceptions of trust between IP team members it was important to explore previous teamwork experiences within the interviews. This allowed me to draw correlations between experience and their perceptions of collaboration.

Pullon's (2008) study on competence, respect and trust, demonstrated that interviewees considered the importance of working together and building relationships as key in establishing trust. This appeared easier to achieve in a community-based

setting than in an acute situation. This study focusses on the acute environment of accident and emergency and an operating theatre scenario, to reflect the challenges faced by radiographers in these settings. Working alone in these settings means that radiographers often do not have any immediate support from colleagues and because they are not a regular part of the interprofessional team, with Strudwick and Day (2014) reporting that integration is often a problem. Interprofessional education was also considered as an opportunity where these relationships could be developed. This is defined by Pullon (2008) and Lewicki (2012) as identification-based trust which occurs where team members share beliefs, goals and more fully understand each other's roles. This would appear to be the type of trust that IP education would be cultivating. The step from respect to trust and vice versa does not appear to be automatic and must be developed and earned over time as consistently reflected in Pullon (2008) and Lewicki (2012). Respect and trust are factors presented within the scenarios in this study and while roles are not specifically stated, it is presented as actions carried out by the characters within the vignettes.

Trust and respect follow competence or perceptions of competence Pullon (2008) but, need to be mutual to be effective. Notably it was not enough for healthcare professionals to be competent or to demonstrate competence, it was considered essential that competence be acknowledged by other team members. This relates to understanding each other's roles so that when a professional demonstrates competence it can be recognised as that.

2.1.6 Competence and confidence

Price-Dowd (2017) deliberates competence and confidence; stating that competence is the very essence of being a nurse. Furthermore, that it is all important in being a professional. As part of an exclusive group who have undertaken a programme of study, professionals are required to be competent at specific elements of practice that are assessed (Hammick *et al.,* 2009; HCPC, 2013). But competence alone does not reflect the complexity of being a professional; it is not just about knowledge and skills but the attitude to perform well. Price-Dowd (2017) elaborates, stating that competence is about being conscious of your abilities and is inextricably linked to confidence. Confidence could also be considered as self-assured or assertive

(dictionary.com, 2018). But Price-Dowd (2017) warns that there is a fine line between confidence and arrogance so finding the right balance of confidence is all important. Kroner and Briemann (2007) agree that confidence is one way of assessing competence (certainly not the only way) and that the public tend to fear an expert who is not confident.

Confidence in one's own ability to be successful at any given endeavour, is referred to by Luszczynska (2005), NHS Leadership Academy (2015) and Williams *et al.*, (2017) as self-efficacy and determines the belief a person has in their ability to influence a person or situation. Quite conceivably then confidence confers power. The Society of Radiographers' codes of conduct list confidence as an expected standard and state that it is linked to the publics' trust in the profession (Freeman, 2013 p. 10). Moreover, Foucault (1980), Pearce and Conger (2002), Barr and Low (2011), Wang, Waldman and Zhang (2014) and NHS Leadership Academy (2015) list it as a vital attribute/capability necessary to influence relationships in a group and redistribute power i.e., shared -leadership with a strong correlation with improved trust enabling collaborative interprofessional practice This is clearly a key element influencing IP collaboration and as thus essential to explore in this study.

An increase in stress is thought to result in a loss of confidence and affect competence. Verrier and Harvey (2010) investigated work pressure and performance and found that newly qualified radiographers lose confidence and display reduced competence more quickly than established radiographers i.e., have a reduced tolerance to workload pressure. Uncertainty and lack of confidence was also reported by Eyal and Cohen in medical students when first entering practice (2006). This is contrary to Hall (2005) and Nugus *et al.*, (2010) who believe medical students are socialised and educated to be confident decision makers with leadership skills embedded within their curriculum. Either way differences between groups stem from the fact that people in these two groups 'live' in/work profoundly different circumstances according to Sidanus and Pratto (2008), thus making it important to explore the perceptions of diagnostic radiography students specifically.

2.2 The radiography curriculum

In developing graduate attributes, Gunn, Bell and Kafman (2010) are clear that the major responsibility for smooth integration of graduates into professional life lies with higher education institutions (HEIs) and that they should explicitly take account of the learners' future employment needs.

The undergraduate curriculum is designed to enable student radiographers to accumulate expert knowledge and achieve the proficiencies necessary to be eligible for registration as a diagnostic radiographer upon completion of the degree. The key components that are included in the curriculum include the proficiencies taken from the HCPC standards of proficiencies for radiographers (HCPC, 2012b). As healthcare professionals, radiographers should understand and apply the key concepts of the knowledge base relevant to their profession and be autonomous practitioners able to exercise their own professional judgement. In addition, effective communication, relationship building, and collaborative teamwork is essential. The regulatory body, the HCPC sets an expectation that radiographers should understand the role of other professions and services in health and social care (2013). The need for our students to develop their ability to collaborate with other professionals is also evident in the evidence base. Buring *et al.*, (2009), Rotz and Duenas (2016) and Van Diggele *et al.*, (2020) affirm that IPE has become an important approach for preparing professionals providing patient care in a collaborative team. The main aim according to Barr and Low (2011) is to keep best practice central to all teaching and learning while instilling interprofessional values.

Ultimately however, it seems the goal of the WHO (1987) was to develop the ability to share, creating new areas of knowledge and skills, thus generating new roles?skills mix. Hammick (1998), Hammick *et al.,* (2009) and Buring *et al.,* (2009) agree that it is an important pedagogical approach but rather than generating new roles, the solution lies in collaborative practice that is not about blurring professional boundaries creating a generic care worker. Instead, it is about developing professionals confident in their skills and expertise who are empowered to assume and share leadership and conduct their own practice in a collegiate way within a team. Mandy, Milton and Mandy (2004), O'Keefe and Ward (2018) and Van Diggele *et al.,* (2020) all attest to IPE models

increasingly being adopted by healthcare faculties within universities, including the institution that I was working for at the time of undertaking this study, albeit not as actively as is suggested. The very first module of all healthcare degrees in the faculty was shared amongst professionals with common core clinical and non-clinical competencies. This strand ran throughout the radiography degree with shared academic modules in year three. Year two modules were interdisciplinary rather than interprofessional.

The WHO (2010), IPE Collaborative Expert Panel (2011) and Reeves *et al.*, (2013) state that this advocacy and implementation of IPE assumes that IPE will develop healthcare workers with the knowledge and skills to work in a collaborative manner. However, Price and Le Masurier (2007), SCoR (2017) and PHE (2019) report that over time the scope of radiographic practice has widened significantly, with radiographers now performing tasks which were once the remit of medical practitioners. Rather than being interprofessional, these advances are considered 'specialisation', requiring education to focus on skills that support advanced practice. Hall and Weaver (2001) and Gilbert (2005) stated that the trend is for professions to specialise as they mature requiring distinct professional systems creating fewer opportunities for interaction between professions. This is mirrored in nursing where the RCN (2018) describes advanced clinical practice as an opportunity for nurses to use their expert clinical skills with the authority to make autonomous decision in the diagnosis and treatment of patients. It makes little mention however of interprofessional teamworking other than in the midwifery sector. Health Education England (HEE) (no date) outlines advanced practice as a pathway designed to transform effective sharing of skills. The standards and education are guided by the multi-professional framework which supports the requirement for expert knowledge and skills but outlines that advanced practice provides enhanced capacity, capabilities and efficiency within a multi-professional team. Reassuringly this suggests that education of advanced practitioners is still an interprofessional endeavour. Shanahan, Herrington and Herrington (2010) and the Global Future Council (GFC) (2016-201) advise that the healthcare system is in a rapid state of change and radiographers must continue to study throughout their lives to stay up to date with the changing knowledge base of their profession. Higher education institutions (HEIs) have responded to the needs for specialised education and training

for role development by establishing specialised postgraduate educational programmes.

2.3 Interprofessional education

2.3.1 Professional identity

Hammick (1998), Daly (2004) and Hammick *et al.*, (2009) emphasise that traditionally professional education was established for production of specialised knowledge specific to an occupational group e.g., diagnostic radiography. Furthermore, that there is a need for specific knowledge to be strong in order to produce experts and to support specialisation. But Hammick (1998) and Daly (2004) also warned that specialisation establishes clear boundaries between professions with the philosophy of professional education situated in proving your worth to your chosen profession enhancing professional identity. Hammick (1998), Daly (2004), Hammick *et al.*, (2009) and Frenk *et al.*, (2010) all ascertained that a strong identity does lead to further rigid distinctions between professions, insulating one from the other (creating boundaries) so that professional groups tend to act in isolation or even in competition to each other. This strong framing of boundaries is described by Bernstein (1996), Bernstein and Solomon (1999) and Daly (2004) as centrism and along with Homeyer et al., (2018) suggest that it is a significant barrier to IPE.

However, Meads *et al.*, (2008) and Buring *et al.*, (2009) insist that the IPE framework should be based on evidence that being interprofessional enhances a professions' specific identity. Funnell (1995) argued that a lack of professional identity leads to inflexible role boundaries and a reluctance towards role sharing. In agreement, Ahonen and Liikanen (2010) found a lack of a strong professional identity and image of the radiography profession is suggested to affect the implementation of evidence-based practice and research. Once again these are older studies so may not necessarily reflect contemporary thinking. In her research on good team working, Molyneux's respondents felt, that they were not threatened by staff from other professions if they felt sufficiently confident in their own professional role (2001). Furthermore, Barr and Low (2011) maintain that the identity of the professional should be sustained, power and status differences should be acknowledged but set aside and

diversity within and between professions respected. A viewpoint, that resonates with me as a radiographer and educator who is passionate about advancing the profession of radiography. These principles were included in creating the vignettes so that the analysis could reveal whether these tenets are reflected in practice.

2.3.2 Socialisation

Pratt *et al*., (2006), Gofton and Regehr (2006), MacAuthur, Daily and Villigran (2016) and Lee and Yang (2019) believe the transfer of profession specific attitudes, knowledge and behaviours occurs through socialisation and a professional culture is born and perpetuated. Because of this socialisation, Oandason and Reeves (2005b) and Jowsey *et al.,* (2020) propose that stereotypes of their own professional identities develop and for those of other professions, occurring even during IPE simulation.

The IPE framework proposed by D'Amour and Oandasan (2005) cites socialisation issues (professional cultural beliefs and attitudes) as a key component of IPE development. In fact, Mazur *et al*., (1979), Mandy, Milton and Mandy (2004) and suggested that IPE reinforces negative stereotypical views. These views are known as turf protectionism according to Pirrie *et al.,* (1998) or tribalism as described by Frenk *et al.*, (2010). Waggie and Arends (2021) refer to turf protectionism as professional jealousy, stating that over-lapping scopes of practice (skills mix) cause professionals to feel threatened, so they strive to preserve their professional identity and unique autonomy, which is counter intuitive to IPC. These cultural factors negatively impact on participation in IPE causing isolation, obstructing socialisation and impeding collaborative learning.

The radiography degree at the institution where the study was undertaken has a small intake of diagnostic radiography students per year compared to nursing and medicine. Student feedback from IPE modules at the time of undertaking this study indicated that they did not appear to have a voice in the large numbers of students (cohort of 400) and felt intimidated in group work where they might be the only radiographer. Most radiography students tended to cluster together rather than to share or socialise.

But, there was also some conflicting feedback which suggested that some students enjoyed the socialisation aspects stating it encourages interprofessional communication. However, enthusiasm appears to wane in the year three modules where the students' main focus is on becoming radiographers and radiography specific knowledge is high on their agenda. Schwartz (1999) reported that the participants in his study expressed a desire for more formal and informal interactions between different health care students suggesting that informal intergroup socialisation is an equally important component of IPE. This was a large-scale study, but it must be noted that it is rather old and applies to the /Australian IPE framework and all participants had different experiences at undergraduate level. In agreement though, more recent studies by Frenk *et al.,* (2010 and Van Diggele *et al.,* (2020) recommend that professional education should include both formal and informal interactions. While Ebert *et al.,* (2014) and Jowsey *et al*., (2020) stress that socialisation does not always results in a negative stereotyping and some positive attributes are also entrenched through socialisation. Furthermore, reflection on the role of other professionals is enabled, disbanding stereotyping improving chances of future collaboration and mutual respect.

2.3.3 Hidden curriculum

O' Donnell (2014) and Petersen *et al.,* (2018) caution that what we should not lose sight of, is the hidden curriculum; the invisible pedagogy, where students are exposed to unstated norms and values through educational activities and socialisation. MacAuthur, Daily and Villigran (2016) support this, stating that it is not just the formal, but also the informal socialisation that occurs that needs consideration. Hidden curriculum is a set of pressures that manipulate and sway the culture or organisational structure and Tekian (2009) and Mossop *et al.,* (2013) warn that it can be quite pervasive as there is no hidden agenda or intention but rather, it is hidden to both the supervisor and student. Formal mentoring does not happen, and learning takes place through interpersonal interactions, informal role-modelling and observation, all of which according to Karneilli-Miller, Steir and Pressach (2009) and Gaufberg *et al*., (2010) are of variable quality. Gordon *et al.,* (2021) found that AHPs application of knowledge, effective communication, collaborative and ethical behaviour, ability to work independently and connect across boundaries, was strongly reliant on the hidden

curriculum of work placed learning. Of concern, is that this hidden curriculum might negatively influence the students, resulting in them mimicking substandard behaviour particularly if it is not perceptible to the students.

2.3.4 Effectiveness of interprofessional education

Despite being an advocate of IPE Finch (2000) questioned whether shared learning is the most effective learning for each professional group. Research in Dundee suggests that while groups gained mutual tolerance, effective learning for each group may have been compromised (Gilbert, 2005). This is an outdated study, so this outlook may have changed but there is little evidence of opposition to shared learning in more recent literature. Recognising the diversity and professional specific identity of the groups engaged in IPE, whilst ensuring that the methods employed apply justices to all participants does not appear to have been considered within the available literature. Braithwaite *et al.,* (2013) agrees, reporting that doctors tended to dislike the teaching styles of combined professional groups because they believed it lacked scientific basis and viewed social sciences (the basis of IPE), with scepticism.

So, it would appear that despite admirable efforts, findings still indicate that most students recall IPE as intermittent, optional and of little value in relation to their role, responsibilities and practice. Braithwaite *et al.,* (2013) is of the opinion that reduction of professional rivalry and improvement in trust and communication between professions were less successful components of IPE. This was however, an intervention undertaken within a practice setting rather than an education institution. They do report however that the goals of knowledge sharing, improved attitudes towards teamwork and interpersonal communication were seen by individuals as relatively successful. But, Reeves (2015) highlight that there seems to be little discussion or agreement on how these competencies are assessed.

Oandasan and Reeves (2005b) and Barr (2007) revealed that little changed in relation to evaluations and outcomes of IPE. Despite having conducted a Cochrane review of the literature in (2000), Zwarenstein *et al.,* found no studies for inclusion. A further review by Zwarenstein *et al*., again produced similar findings (2009). Freeth *et al.,* (2002) launched their own systematic review entitled the ‘Jet Review’, asking

questions in relation to learning experiences, outcomes and how impact may be measured. The review resulted in a reclassification of Kirkpatrick's (1976) typology of IP educational outcomes from four to six, but findings were sparse. A review conducted by the Institute of Medicine (2015) failed to identify any high-quality evidence supporting the effectiveness of IPE. Outcomes suggested however that students enjoyed the experience and that IPE may contribute to attitude changes and understanding of the role of other professions. A review of twenty-one articles by Buring *et al.*, (2009) illustrated positive reactions, perceptions and attitude changes necessary for collaboration between professions and an improvement in the knowledge domain. However, minimal evidence for persistent behaviour change related to group interaction, problem-solving and communication skills was demonstrated by Remington, Foulk and Williams (2006). Comparing six studies on traditional and interprofessional education on professional practice and patient care outcomes, Reeves *et al.*, (2008) found four with favourable outcomes while two found no impact at all. Only three studies reporting gains attributable to IPE were sustained over time. From this we can deduce that students enjoyed IPE and had positive attitude and perception changes however, there is minimal evidence to support that changes contributed to an improvement in patient care or were sustained over time. While in 2009, Zwarenstein *et al.,* stated that IPE was 'promising rather than proven' (p.8). An updated Cochrane collaboration by Reeves *et al.,* (2013) located an additional nine studies to build on the review of six studies in 2008. All studies measured effectiveness of IPE interventions compared to no interventions, with seven studies indicating favourable outcomes in a number of situations. Outcomes of relevance to this study are the following; emergency department culture and patient satisfaction, collaborative team behaviour, a reduction of clinical error rates for emergency department teams and collaborative team behaviour in operating rooms. The restricted number of studies found to be relevant for review limits our understanding of the key components of IPE and its effectiveness. It is also important to note that the review excluded studies that reported the impact of IPE on participants' attitudes, knowledge and specific skills of collaboration.

This critique has discussed undergraduate IPE only. Herbert (2005) agrees there is little available literature to support the value of IPE especially in relation to pre-registration (undergraduate) health care education. There are two types; Type I

(undergraduate/ pre-experience/ registration) and type 2 (post graduate / registration) (Hammick, 1998). The suggestion is that the process at the heart of type 2 IPE is the re classification of categories of knowledge. Studies that evaluate work based focused CPD are more likely to identify positive changes in service delivery and patient benefit outcomes with Mazur *et al*., (1979) and Hammick (1998) advising that it is preferable to wait until a student has developed a sound professional identity before engaging in interprofessional learning. Even Barr (2007) cautioned against expectations of interprofessional learning at undergraduate level given the inexperience of the participants and time limitations. Finch (2000) questioned whether it would be more effective to envisage IPE taking place in the clinical settings where students are dealing with real life circumstances with Barr (1996) suggesting that IPE needs to be located later in academic education, after a period of clinical exposure. This aligns with Cox *et al.,* (2016) who's model illustrates IPE learning opportunities throughout the learning journey. The show that IPE learning opportunities are maximised as students move into the clinical setting where new co-dependent relationships are formed and employed. They argue that most IPE occurs in the classroom where co-dependent relationships are fragile of non-existent. Furthermore, they reason that when IPE is not placed within a clinical environment there is no way of connecting IPE to patient care outcomes. After all, Hammick (1998) argued that the value of IPE lies in the potential to offer multiple perspectives on clinical issues. Perhaps, as suggested by Hammick (1998), Finch (2000), Barr, Low and Howkins (2012) and Cox *et al.,* (2016) we should be promoting postgraduation IPE particularly within the clinical setting. Healthcare professionals will have established their own identity and be able to contribute their own expertise to the team. The contributions of team members will become more obvious, they can learn to work together fostering mutual respect and sharing leadership where appropriate, resulting in collaborative patient care.

Delivery of IPE in the clinical environment is problematic as it is not explicit or formally organised and Chen *et al.,* (2016) and Van Diggele (2020) report that mentors often consider themselves capable to teach students from their own profession, even without formal training. Baker *et al*., (2011) state however that IPE of students in the clinical environment requires specific skills. Furthermore, that an array of attributes are needed, such as confidence, ability to manage conflict and most importantly a commitment to IPE. Chen *et al.,* (2016) stress that there should be a move towards

students from different professions being trained together in the clinical environment, so they can learn how to work together. In addition, there does not appear to be any assessment of IPE within the clinical environment. Another crucial factor is the variability of perception of the providers' role (clinical supervisors) and inconsistent expectations of programme goals between students and the educators. Additionally, they advise that evaluation of student feedback is critical (Rotz and Duenas, 2016). Robson (2007) and Van Diggele *et al*., (2020) agree, stating that inconsistent expectation of programme goals should be given high priority along with campus/site locations and student schedules. The evidence presented by Robson (2007) and Pippett *et al.,* (2015) aligns with the difficulties that we experienced within the institution where I was employed.

Newer studies have emerged however, which indicate more favourable outcomes. Homeyer *et al.,* (2018) found that there were more enablers than challenges for IPE in a study involving medical and nursing students. There appeared to be improved outcomes of mutual understanding and respect, improved attitude to teamwork and provided opportunities for communication skills and how to collaborate in an IP team.

2.3.5 Resources

Gunn *et al.,* (2010) state that to maximise the opportunities for undergraduates to develop the necessary graduate attributes there needs to be collaboration both at strategic institutional level and local disciplinary level requiring effective interprofessional working within the institution. At the institution where the research was carried out, the most common means of delivering IPE was through case-based learning (CBL) and facilitation of small group work. While the value of this method of teaching and learning is not disputed as advocated by CAIPE (2017), additional funding to fulfil the IPE strategy appears to be lacking. Funding across departmental boundaries is immensely difficult particularly in matters of curriculum. Budgets are targeted to those activities that fulfil the core disciplinary imperatives. Within my own practice the schools who shared IPE were within one faculty each controlling their own budget. Compounding this was the geographic locations of the schools, which according to Hall (2005) acts as limiting factor to IPE. Gilbert (2005) highlighted the difficulty for faculty members who wish to engage in interprofessional activities, as they

do so at their peril, since promotion and merit adjustment tends to be based on service to a single department. As Oandasan and Reeves (2005b) demonstrated, IPE activity is usually undertaken on top of a normal workload by a committed few enthusiasts, so this can however encounter problems of continuity when individuals move on. Reeves *et al.*, (2013) highlighted the urgent need for research into understanding IPE in relation to the resources that are needed. So, one must question the sustainability of this programme if funding is not forthcoming.

Homeyer *et al.,* (2018) are of the opinion that the barriers that need to be overcome are standardisation of learning content levels but that this is challenging to implement because the width and depth of knowledge required by medical students differs from nursing. Furthermore, they state that trying to chronologically align learning between healthcare programmes is extremely difficult as timetables and schedules are quite different and driven by differencing professional regulations. This study included only two professions, so making it truly interprofessional will only expound the barriers encountered. Robson (2007), Gunn, Bell and Kafmann (2010), Homeyer *et al*., (2018), Van Diggele *et al*., (2020) and Sabato (2020) all elaborated on a common theme; the difficulties of organising IPE which requires additional personnel, appropriately qualitied teaching staff, time and financial resources. They emphasise that this will require collaboration at strategic institutional level and local disciplinary level.

2.4 Interprofessional education curriculum

2.4.1 Core competencies

Developing a shared curriculum and setting standard benchmarking and best practice are extremely difficult due to the lack of available IPE data. However, Barr and Low (2011) state that interprofessional education should lead to interprofessional capability. So, what are the specific objectives of the IPE programme in terms of content and the essential elements of interprofessionalism? Barr and Low (2011) suggest that IPE should be embedded within the curriculum and interprofessional values should be instilled throughout uni and multi-professional learning. The objectives as designed by WHO (1987), Finch (2000) and WHO (2010) are: fostering mutual respect, thus leading to understanding of professional systems, cultures and

roles thus easing interprofessional communication. Buring *et al.,* (2009) and O'Keefe and Ward (2018) suggest that student core competencies and objectives should include: Intra team communication skills, organisation and function (co-ordination), leadership as well as conflict resolution. Norsen *et al.,* concurs but suggested additional skills of co-operations (respecting and acknowledging others' viewpoints), willingness to examine and change personal beliefs, accepting responsibility and the autonomy to work independently (1996, cited in Hall, 2005 p.186). Rotz and Duenas (2016) and Barr and Low (2011) urge educators to consider the learners perspective when developing and revising existing IPE experiences and education to ensure students are ready to collaborate and have interprofessional capability. They report the following themes: mutual respect, enabling effective communication, exhibiting teamwork and problem-solving skills, the ability to adapt to changing environments and finally sharing patient-centred goals. CAIPE (2017) insist that there should be an outcome led curriculum allowing educators to develop teaching and learning responsively and agree that capabilities rather than competencies be formulated to convey ongoing flexible learning. O'Keefe and Ward point out that this lack of agreement creates an unstable bases for curriculum development and delivery (2018).

The core competencies for IPE are currently summarised as;

1. roles and responsibilities – the thinking being that the more team members understand about each other's roles and recognising the value of each professional's contribution to patient care the better they will be at functioning as a team.

2. ethical practice – to instil the understanding that ethical practice is heavily reliant on collaborative practice and that ethical decisions need to be made as a team.

3. conflict resolution – to encourage a positive manner and addressing disagreements in a constructive way.

4. communication – central concept to enable skilful communication. It is needed to negotiate differences and reach a consensus. Important for both communication with and about patients to ensure good patient outcomes.

5. collaboration and teamwork- without effective collaboration there will be no effective teamwork. This is facilitated by including a multitude of professionals in learning activities.

(Canadian Interprofessional Health Collaborative, 2010; Interprofessional Education Collaborative, 2016; Van Diggele, 2020).

2.4.2 Curriculum design

Fung *et al.,* (2015) believe incorporation of these core competencies into the curriculum is better achieved through small group work. While Barr *et al.,* (2005) suggests that with their different learning styles and expectations of didactic delivery, IP teaching will demand something extra. They suggest that given the importance accorded to interaction; exchange, action, observation and simulation-based learning (case-based learning) should be used. As previous stated case-based learning is an integral part of IPE in the study's institution with small group work the method of delivery. Recognising the challenges CAIPE (2017) suggest that a range of teaching and learning approaches should be adopted, but whichever they are, they must be: active, interactive, and reflective, all the while creating opportunities to evaluate roles and responsibilities, power and authority, ethics and codes of practice, knowledge and skills, to build effective interprofessional relationships and reinforce skills for collaborative practice.

Howkins and Bray (2007) believe good IP teaching should facilitate, and learning should be '*accommodative and transformative'* rather than *'cumulative and assimilative'* with the facilitator acting as a role model for reflective practice (p.22). Ng, Baker and Friesen (2018) propose that in teaching for transformation, we should be empowering students to view the world through an ethical lens so that they will challenge the status quo. Furthermore, that this status quo is upheld by power relations particularly in social relationships that involve power and hierarchy e.g. health

professions education. They highlight the importance to garner the students personal and emotional experiences through dialogue.

Aligning with Mezirow (1991), Anderson and Kimmel (2005) and Conner (2005), regard learning to be the highest of three successive levels; informative learning (acquiring knowledge and skills) to produce experts, formative learning (socialisation of students around professional values) to produce professionals, transformative learning (developing leadership attributes) to produce enlightened change. Participants in Conner (2005) and Anderson and Kimmel (2005) completed a leadership programme, reporting that they had developed a deeper understanding of themselves, were able to recognise hidden biases and the value and power of diversity and collaboration. Furthermore, they felt they learnt to trust others recognising that their ego prevented collaborative team work. Confidence was also cited as a key outcome. Newman (2010) contests transformative learning, stating that it is nothing more than 'good learning' but according to Mezirow (1991) transformative learning involves 'reflectively transforming the beliefs, attitudes, opinions and emotional reactions that influence our understanding and meaning*'* (p. 223). The need for transformation is a recurring theme with Hall (2005a), Reeves *et al.,* (2010) and O'Keefe and Ward (2018) stressing the need to develop leadership in all healthcare professionals.

A critique of IPE modules at the university where the research was undertaken, revealed that the curriculum includes informative learning as evidenced by the undergraduate degree programme modules which align with the proficiencies required by the HCPC (regulatory body). All aspects are successfully included within the theoretical delivery of the modules however providing clinical practical experience is sometimes difficult within the NHS. Naylor, Ferris and Burton (2015) explored student radiographers' confidence and knowledge gaps caused by limitations on student autonomous working. Gaining autonomous working experience in operating theatre environments were cited as particularly difficult due to safety and speed. This is reflected in the diagnostic radiographers' clinical education programme. In addition, newly qualified radiographers were often being given extra training limiting the opportunity for students to gain experience. Formative learning is facilitated through joint modules where professionals are randomly assigned to working groups to

encourage socialisation. The issues addressed in the joint modules include professional values. Belonging to clubs and the student union is also thought to facilitate socialisation so that students communicate and get to know each other in an informal environment. Transformative learning is however not a detectable component, with leadership capability not explicitly present within the curriculum.

The clinical education of diagnostic radiography students appears to sit outside of the IPE curriculum. How students apply what they have learnt in the academic institution to the clinical environment is not considered making this study all the more important.

Chapter Three

Research Design

This chapter will clarify and justify the overall research design within the framework above. The aspects included in this chapter are: epistemology, ontological assumptions, philosophical paradigm, research strategy, method of data collection, recruitment, validating the data, data transcription and analysis and ethical considerations. To demonstrate rigour in the research process, Lincoln and Guba's 'trustworthiness' approach is adapted and utilised (1985). The use of this approach has been justified in 3.3 below.

In developing a research paradigm Lincoln and Guba (1985) and Crotty (1998) propose that the following phases: epistemology, ontology, theoretical perspective, and methodology represent a level of understanding and each serve to inform the next stage in the research process.

The epistemology examines the type of knowledge that we believe will be attained by the research, ultimately informing and framing our reality of the topic. The epistemological standpoint of objectivism is that things exist as meaningful entities and are independent of experience and that an objective truth can be attained (Crotty, 1998). In exploring diagnostic radiography students' perceptions, the type of data that will emerge is qualitative in nature as outlined by Burns, Gray and Grove (2013). Thus, it would not be possible to elicit objective data by asking the research question which explores perceptions, because each student's perceptions of the truth about collaboration within IPC will vary. Furthermore, the data that is generated will be constructed to provide a description of the students' perceptions and experiences, adding depth of understanding and enriching the knowledge surrounding interprofessional collaboration (Crotty, 1998; Brough 2003). The epistemology in this study is therefore one of constructionism.

Perception is defined by Merleau-Ponty (2002) as 'how are things to them' (p.43). According to Moskowitz (2004), Merleau-Ponty considers perception to be an

expression of attitudes, emotions, ideas, purposes and traits (events inside the person), which in this study, is their personal attitudes and emotions regarding IP collaboration. In considering the term collaboration which involves a relationship with other members of the interprofessional team, it is obvious that it is not just related to a student's perception but also how they perceive their environment and how this influences the action of collaborating aligning with others. So, in essence, their perceptions and re-conceptions might dictate how they approach collaboration and influence their actions in collaborating with other members of the team. This study is focussed entirely upon diagnostic radiography students' perceptions of collaboration as part of an interprofessional team and in so doing adopts a socio-cultural perspective. Schutz (1967) and Crotty (1998) propose that when we first encounter the world (such as interprofessional practice) we are seeing it through the lens bestowed on us by our social world/culture (both our personal culture but also the culture of radiography and the NHS). A social construct is a concept that is a creation of that culture, and the focus of social constructionism is to uncover how individuals and groups participate in the creation of their perceived social reality i.e., the construct. Meaning in this study will come from the social world of interprofessional collaboration so the context of this study will be one of social constructionism. It attempts to explore students' perceptions of interprofessional collaboration with the aim of constructing their meaning of the world rather than it being created by the researcher, aligning with Crotty (1998) and Payne (2000).

The definition of social constructionism by Crotty (1998) will be adopted for this study:

> 'the view that all knowledge and therefore all meaningful reality is contingent upon human practices, being constructed in and out of interaction between human beings and their world and developed and transmitted within an essentially social context' (p. 42).

Having a long history of working within the interprofessional environment as a diagnostic radiographer, my ontology or reality of 'what is' in relation to the research topic will be grounded in assumptions, informing my theoretical perspective as articulated by Crotty (1998, p.10). By exploring my own view of the reality of interprofessional collaboration (IPC), allowed me to appreciate the appropriateness of

the philosophical paradigm and justify my choice of methodology and method (Crotty, 1998).

Bowling (2002) and Bryman (2008) suggest that a case study is a valuable methodology for the study of complex social settings and to gain a narrative of a respondent's life providing an understanding of the wider situation. Stake (1995) reports that case studies are used extensively in sociology and tend to focus on a single community or organisation with intensive scrutiny of the setting. While this study does focus on a particular organisation, the main aim of the study was to explore the phenomena of collaboration, thus the focus is on exploring perceptions of the phenomena within a setting rather than the setting per se. Meanwhile, Remenyi (2011) considers it a versatile way to test a hypothesis, with Bryman (2008) proposing that the researcher will already have a well-developed theory and the purpose of undertaking the case would be to prove or disprove the hypotheses. As this study did not have a well-developed theory, it was not considered the most appropriate methodology. Bryman (2008) argues however, that in addition to hypothesis testing case studies can be utilised to generate theory, but Williams (2000) state that in order for researchers to analyse their findings and make them transferrable, they are required to make comparisons to other applicable cases. There does not appear to be any evidence of comparable case studies within radiography that explore the topic at hand, thus a case study was not considered applicable. A weakness of case study is that the sample is for one case only meaning that only one participant would be interviewed or observed (Bryman, 2008 and Remenyi, 2011). Besides the selection bias, Remenyi (2011) warns that because the respondent would be a single student there is a possibility the participant might feel vulnerable providing such an in-depth description of a sensitive topic. (Woodside and Wilson (2003) propose that in order to achieve deep understanding it would require the use of multiple data collection methods across multiple time periods. As the participants were students at a university this the data collection period was time limited and would not be suited to the collection of data over a period of time. It was for these reasons that a case study approach for data collection was discounted.

In keeping with the aim of the research questions, I realised that I needed to choose a methodology that would bring to the fore the phenomena in question (IP

collaboration). hence, this study employed a phenomenological methodology. Furthermore, phenomenology being intertwined with constructionism means that insight into the phenomena will be constructed from the data.

Hopkinson (1999) explain that while phenomenology does not employ a single method, all methods used in phenomenological studies share the characteristic of interpreting human experiences. Bowling, (2009) states that approaches anchored in phenomenology are concerned with hermeneutics (interpretation) and depending on their focus are known as humanistic or interpretive. Rather than just a formal interpretation of the data in isolation Agosta (2010) clarify that humanists aim for a meaningful understanding of individual responses as well as the whole social situation Furthermore, Menon, Anindya and Svreekantan (2014) add that reflection is needed to uncover the principal thoughts and construction of the experience. By uncovering the constructs of the experience, Shaw *et al.,* suggests learning occurs providing the chance to address the situation (culture) establishing a beneficial collaborative environment (2012). This research questions students' perceptions of collaboration, but importantly considers how collaboration functions within interprofessional practice making a humanist approach wholly appropriate. It explores individual students' perceptions and experiences as well as the social situation of interprofessional collaboration, with the ultimate aim of addressing the culture of interprofessional collaboration. To deal with the specific social situation of IPC in diagnostic radiography, vignettes were utilised as prompts in semi-structured interviews, as they are extensively used in collecting situated data as well as the analyses of perceptions (Brauer *et al*., 2009; Jenkins *et al*., 2010; Lapatin *etc al*., 2012).

My conceptual framework creates the scaffolding around which my ontological assumptions are built and is founded in the context of social constructionism. My own value position is that students' perceptions of collaboration are influenced by the culture of the interprofessional team (the social world of the NHS). Although, I believe that a culture shift is occurring with the emerging workforce (the participants in this study), there might still be issues that exist within an interprofessional team exerting influence on students' perceptions of collaboration. It is necessary to confront and question my ontological assumptions to answer the questions presented. In contesting my beliefs, I might construct how students perceive IP collaboration, but

also how the IP practice and the interactions between team members exerts an influence on their perceptions (why they perceive things the way they do).

3.1 Research questions

This study's research questions are:

- How do diagnostic radiography students perceive collaboration in interprofessional practice?
- What are the factors influencing collaboration in interprofessional practice as perceived by diagnostic radiography students?
- What recommendations could be made to enhance the preparation of students for interprofessional practice?

It is also important to clarify that this study deals with perception of the social world and not necessarily 'actuality'. In this case, I aim to unravel students' experiences (lived reality) of the phenomena of interprofessional collaboration.

3.2 Theoretical perspective (philosophical paradigm)

In describing my theoretical perspective, one must bear in mind the ontological assumptions articulated above. The key ingredient in the aim is the students' perception of IP collaboration. The philosophy of phenomenology in considered by Merleau-Ponty (2002) and Findlay (2012) to be inextricably linked to perception as it is the study of 'essences' (phenomena), perception being one of the essences and an attempt to understand its nature and meaning.

As with all phenomenological perspectives, lived experience (reality) is a common concern and aptly described by Findlay (2002), Koch (2006) and McConnel-Henry, Chapman and Francis (2009) as capturing a holistic sense of the un-reflected experience (true meaning) that participants take for granted in their world. Edward Husserl who is viewed by some as the father of phenomenology was concerned with

discovering reality and held views similar to those of the natural scientist stresses Hopkinson (1999). Dowling and Cooney (2012) explain that the Husserlian perspective considers the world to be a highly ordered system which is created and preserved by people who are unaware that they created this order and wrongly assume it to be a natural phenomenon or attitude. Foucault was hugely influential in the perspective of the natural phenomena, stating that norms can become so entrenched that they are beyond our perception (1975). Foucault was also of the opinion according to Gutting (2005) that this natural phenomenon or 'normalisation' is insidious and is a means of disciplinary control concerned with normalising our judgement. Furthermore, Foucault argues that normalising occurs through the exercise of power which is invisible so that it remains undetected (1975; 1980). There are suggestions within the evidence base that normalisation exists within radiography and the NHS, outlined by Lewis *et al.,* (2008), Kennedy (2011) and Waggie and Arends (2021). Moreover, that along with normalisation, marginalisation of some members of the interprofessional team occurs and that the only way they can define themselves is through the struggle of power that Foucault refers to (Gutting 2005).

The research problem, the IPC literature and my own viewpoint tussle with the issues of unequal power relationships within an interprofessional team. By undertaking an extensive literature review, the findings that emerged informed the choice of theoretical framework utilised for this study. Furthermore, discussions with a subject expert, Professor Scott Reeves further re-enforced the choice of the theoretical framework. The framework concerns relationships of dominance and subordination between occupations of which power is a dominant attribute, with the emphasis on the exercise of power. Foucault purports, that power is not inherent in the institution per se but resides in the methods of exercising that power (1975). Foucault is not clear on precisely who uses the power but insinuates that the dominant group is the one that benefits most. Further readings of Foucault do elaborate, stating that the power resides in the one trusted monarch, the one chosen as the leader or king. These readings reflect the research problematic which broaches the issue of hierarchy, unequal power relationships and authority, and the ways in which power is exercised within an interprofessional team. It is my belief that this 'natural attitude' of a hierarchical interprofessional team structure currently still exists to an extent within the NHS, as reflected in the report by Francis (2013a), but that attitudes towards

collaboration are changing. The aim of this study is to explore students' perceptions of IP collaboration and highlight their natural attitude towards it aligning with Crotty's (1998) explanation.

Walters (1995), Crotty (1998) and Hopkinson (1999) maintain that Husserl believed that there was an objective reality and that a person's relationship with the world exists as an absolute truth which is constant over time, culture and personal opinion, rather than a perception personal to them, as outlined by Merleau-Ponty (2008). But Farina (2014) warns that such a definitive definition of phenomenology is impossible as it is an ever-changing experience with different results and acknowledges that this can perplex those wishing to define phenomenology. If the researcher is to uncover the true reality, they need to set aside or bracket their own preconceived assumptions or subjective experience phenomena. Once the preconceptions have been 'bracketed' the researcher can then start to describe the phenomena, constructing understanding through interpretation. Crotty (1998) criticises Husserlian phenomenology, stating that it fails to identify the phenomena itself but rather gives a description of the phenomena. A student of Husserl, Heidegger's phenomenological viewpoint differs from Husserl and was relativist as opposed to positivist, grounding his opinion on the assumptions that there are many subjective experiences of reality and that there is no single 'reality' to discover i.e., no single 'truth'. Generally, the important feature about the phenomenological approach to research, is that the key to knowledge is obtained by fully understanding how a phenomenon is perceived and how the participants make sense of the phenomena Maltby (2010), which is what this study is striving to achieve. The description of the phenomena can however never be free from subjective interpretation and a persons' understanding cannot be isolated from their contextual world referring to the situatedness of experience as described in existential philosophy by Olson (1962).

Crotty, 1996, Merleau-Ponty (2002) and Dowling and Cooney (2012) advise that we should break with our familiar acceptance of the order of the world, allowing the phenomena to be examined and that reduction techniques which involve 'bracketing' should be employed. Mulhall (1966), Heidegger (1967) and Burnham and Papandreopoulos (no Date) purport however, that the best that can be achieved is awareness and an attempt to take ones' own view into account. Moreover Findlay

(2002) believes that before we can bracket our preconceptions we need to be aware of what they are and our natural attitude towards them. This opens doors to new perceptions rather than being stuck in the 'natural attitude'.

As the researcher, I am entrenched in my contextual world therefore bracketing is not possible. By undertaking this research, I have endeavoured to challenge my own natural attitude of interprofessional collaboration by employing reflexivity. This allowed me to identify my own viewpoint and biases that might influence the perceptions of the participants as detailed by Elster (2017), opening the doors to the students' perceptions in a 'new world' of interprofessional collaboration. In response to this limitation the research design of this study incorporated the use of a reflective diary allowing for reflexivity during the analysis of the data.

3.3 Demonstrating rigour

Koch and Harrington, (1998) and Murphy and Yielder (2010) warn that the most common criticism of qualitative research is that it is impressionistic, anecdotal, not reproducible or generalisable and subject to researcher bias, and the write up engineered. Shenton (2004) and Bryman (2008) suggest that criticisms levelled at research which embraces qualitative design focusses largely on the limitations associated with its trustworthiness. In agreement Koch and Harrington (1998) and Trowler (2012) consider legitimation or robustness of the research process to be closely linked to demonstrating rigour in the method. But, Lincoln and Guba (1985) and Merriam (1995) are of the opinion that the criticism arises out of confusion over the terminology which is grounded in the world view of qualitative research and has termed this 'rigour' as trustworthiness. Lincoln and Guba (1985) provide a comprehensive rationale for non-positivistic approaches to research. They created a table of comparison of terminology which clarifies and compares traditional positivist terms and how these might be articulated within naturalistic inquiry.

Table 1 Positivistic and naturalistic inquiry

Traditional Terms (Quantitative Terms)	Trustworthiness (Qualitative Terms)
Internal Validity	Credibility
External Validity	Transferability
Reliability	Dependability
Objectivity	Confirmability

(Lincoln and Guba, 1985 p. 293)

Trustworthiness terminology applied within this study is expanded upon below:

Credibility: aligns with the positivist researcher's internal validity where they seek to ensure that their study measures what was actually intended. According to Lincoln and Guba (1985) this deals with how compatible the findings are with reality and what precautions the researcher has taken to ensure that they have accurately recorded the phenomena being researched. Validity is considered the most important characteristic; a test or measuring instrument can possess. Gay, Mills and Airasian (2014) assert that validity relates to the appropriateness of the analysis made from the tests performed. This means that when we test, we test for a purpose. In this instance the purpose is to develop appropriate pedagogic strategies to address any divergence between students' perceptions of IPC and the requirements of practice. Communicative validity is concerned with judging the quality of the research process including carefully argued interpretations and claims and adequate evidence to support them in the final study report. Pragmatic validity views research from a prescriptive-driven perspective. This is where solutions to problems in a multifaceted field of practice (such as IPC where there are several professions working within many different contexts), is developed in a way that, while valid for a specific situation, needs to be adjusted according to the context in which they are to be applied. A view that is wholly applicable to this research study.

Transferability (generalisation): aligns with the positivist's external validity and the extent to which the findings of one study can be applied. Stake (1994) and Denscombe (2010) explain that while each case might be unique it is also an example within a

broader group and the prospect of transferability should not be immediately rejected. As with this study where the findings will be unique to a single cohort of diagnostic radiographers at an institution, they may well be applicable to the broader community of diagnostic radiography students. There is a query however, whether the notion of producing truly transferrable results from a single study is a realistic aim and if in so doing one is disregarding the importance of context which is such a key factor in qualitative research warns Shenton (2004). Context within this study is incredibly significant because as the researcher I can only design and implement pedagogic strategies within the context of diagnostic radiography and the organisation within which I work. Furthermore, not everyone considers transferability to be essential. Bassey (1998) regards studies of single experiences to be of significant value and suggests that the term relatability of a study is more useful (i.e. the degree to which the reader can associate the results to their own practice). He suggests that this 'fuzzy generalisation' encourages duplication, resulting in adaption of the results, contributing to the structure of educational theory (p.1); the ultimate purpose of this study.

Dependability: Bryman (2008) states that addressing reliability employs methods to show that if the work was repeated step by step in that same context, with the same participants, the same results would be achieved. This is problematic in qualitative research as highlighted by Florio-Ruane (1991), because the researcher's observations are static and frozen in the moment and tied to the situation. Lincoln and Guba (1985) stress that in order to address reliability the study should be reported in detail, enabling future researchers to repeat the study even if they don't gain the same results. Thus, the research design would be viewed as a prototype model. This also allows the reader to assess the extent to which proper practices have been followed. The method of data collection (below) strives to detail the process that has been followed, addressing the concerns regarding reliability and making the study dependable.

Confirmability: comparable to objectivity. Total objectivity in the positivist sense is the use of instruments that are not dependant on human skill, however as Patton (2002) admits, even tests and questionnaires are designed by humans. Actions should be taken in qualitative studies to ensure that the results are indeed the ideas, opinions

and experiences of the participants rather that of the researchers. Miles (1994) recommends that a key criterion is the degree to which the researcher admits their biases. I have acknowledged my views and assumptions of interprofessional collaboration as situated within diagnostic radiography in 1.5 of this study. The use of reflexive field notes was used as a reminder of my own perceptions and thoughts. I continue to weave these acknowledgements throughout the analysis making them explicit, differentiating the opinions of the participants from my own, thus confirming that the results belong to the students.

While there are many different interpretations of rigour within qualitative research, the *'*trustworthiness*'* approach will be used in this study. How I as the researcher strived to align with these criteria is expanded upon and woven throughout the method of data collection and evaluated in the conclusion.

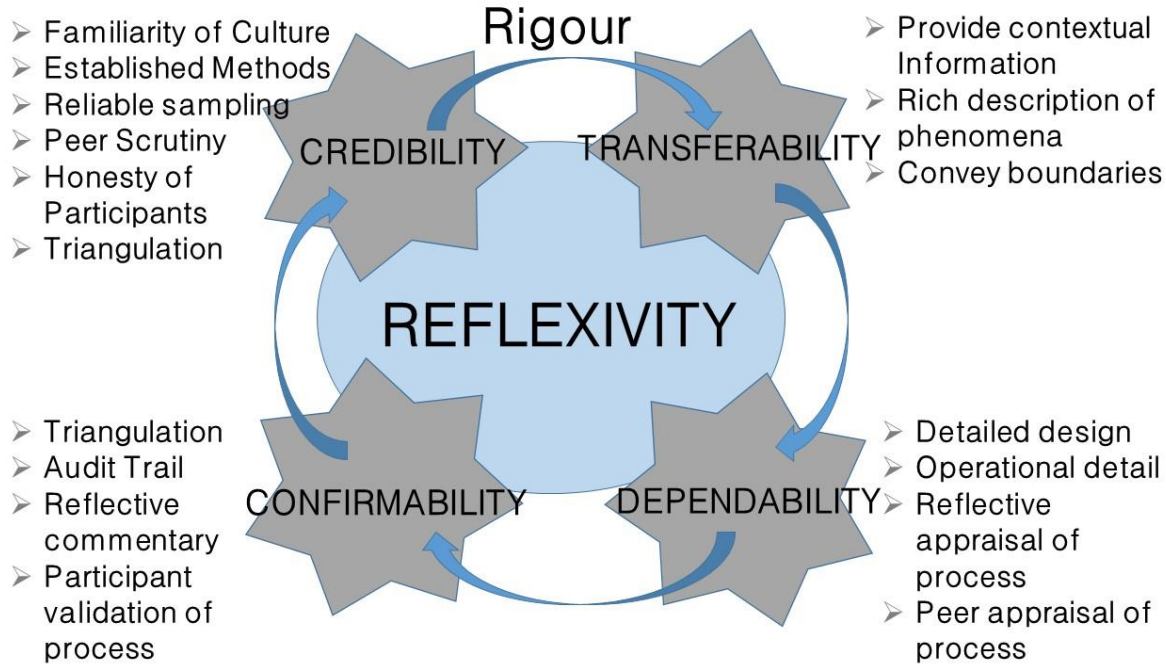
Reflexivity: In addition to demonstrating trustworthiness, central to any contemporary dialogue on research design is reflexivity, to ensure rigour in qualitative analysis. Reflection is practical problem solving: what happened, why, what did I think and feel and how can I do it better next time i.e. what did I learn? Reflexivity is a much deeper thinking process. It is a questioning of our attitudes, thought processes, values, assumptions, prejudices and habitual actions to strive to understand our complex roles in relation to others. Fook (2002) and Bolton (2014) suggest it has the potential for understanding the myriad ways in which one's own presence or perspective influences the knowledge and actions which are created. Research relationships are social relationships according to Karneili-Miller, Stier and Pressach (2009) and as previously highlighted, my position as a senior lecturer put me in a position of perceived power. Furthermore, Karneili-Miller, Stier and Pressach (2009) caution that inequalities structured around gender, race, sexuality and disability may enter the context.

Koch and Harrington (1998) and Findlay and Gough (2003) urge us to consider the entire research process as a reflexive exercise, providing answers to what is going on in our methods. This should be characterised by ongoing self-critique and self-appraisal so that the outcome can be moulded by the environment or context. Koch and Harrington (1998) and Holland (1999) advise that if the study is well signposted the reader will be able to journey through the world of the participants and that of the

researcher to determine for themselves whether the research is rigorous and believable. With this in mind; the notion of reflexivity for this study will be defined as: 'project of examining how the researcher and intersubjective elements impact on and transform the research' (Findlay and Gough, 2003 p4.). Bourdieu (1987) and Findlay and Gough (2003) remind us that it is only by being reflexively mindful of our viewpoint and the effect of that position, that we can distance ourselves from it, improving rigour in the study.

The figure below outlines the model that this study utilises to demonstrate rigour. The design is based on Shenton's (2004) approach for trustworthiness, Lincoln and Guba's (1985) criteria for quality which is also clearly articulated in Bryman's (2008).

Figure 2: Model of rigour



Spencer (2014)

In the method I endeavoured to be reflexively aware of my own pre-conceptions as suggested by Findlay (2002) and Findlay and Gough (2003) making them transparent so that I might begin to critically examine my own and the participants' perceptions. This required continual reflection and reflexivity on my position in relation to the phenomena, revealing the students' perceptions as an independent reality giving them

a voice and placing their personal views at the core of the research. This notion of reflexivity as outlined by Bourdieu, (1998), Findlay (2002), Findlay and Gough (2003), Koch (2006) and Murphy and Yielder (2010) became a key feature in my research design. Van Manen (1990) is of the opinion that this allows for multiple realities in the sense that the participants may each see things differently. This aligns with Pascal (2010) who describes the nature of reality as subjective, socially constructed, value laden and meaningful.

This was achieved by ongoing self -critique and appraisal through the use of a reflective diary, alongside reflexive field notes highlighting my own preconceptions and raising my awareness of the effect I might have on the study. Thoughts are interwoven throughout this study, evidencing that I am not suggesting an uncontested reality but making my own value position and biases as the researcher, transparent.

3.4 Method of data collection

The data collection tools utilised were semi-structured interviews with two fictitious vignettes used to support the interview process. Data collection took place over a six-week period between April and May 2015. Lapatin *et al.,* (2012) state that vignettes serve as a basis of discussion and enable all participants to respond to the same stimulus. The vignettes represented the common clinical areas where diagnostic radiographers most commonly work independently within an interprofessional environment (i.e., operating theatre and accident and emergency). Use of more than one vignette allowed for the same issues to be explored from different viewpoints, in this instance, within different clinical contexts as suggested by lapatin *et al.,* (2012) suggest that where students' responses to the issues are comparable across contexts this confirms the data and acts as a method of validating it and conveying confirmability.

As outlined by Crotty (1998), Merleau-Ponty (2002) and Findlay (2012), phenomenology is the study of phenomena. Perception being one of these phenomena, making this method of data collection wholly appropriate as it allowed for each individual student's perception of the phenomena of interprofessional collaboration to be explored.

3.4.1 Interviews

Semi-structured, focussed interviews were used. Being semi-structured allowed for informal questioning using prompts, and phrasing and sequence of questions to vary from interview to interview (Bryman, 2008). Bryman (2008) explains that the term focussed interview refers to an interview using open ended prompts about a specific situation, which in this instance are the scenarios within the vignettes. For the interview schedule please see appendix 1. No set questions were prepared in advance of the interview, but neutral open-ended probing offered participants the opportunity to express their perceptions of interprofessional collaboration in their own words as advised by Patton (2002) and Maltby (2010). Brace (2013), recommended gentle probing be used for elaboration and clarification increasing richness and depth of the responses. Bryman cautions that probing is problematic because how the interviewer intervenes, and the consistency of the probing might influence the participant's response (2008). As the interviewer, I needed to probe but took care not to prompt to avoid suggesting an answer and maintained a neutral demeanour as specified by Bowling (2002). I did this through reflexivity as outlined by Koch (2002) which involved introspection during the interviews by reminding myself of my assumptions. Furthermore, I actively avoided introducing opinions and biases into the prompts and had to be open-minded to their opinions as there was a possibility that the students' response may conflict with my own experience and opinions. Miles (1994) and Findlay and Gough (2003) emphasise that the degree to which the researcher admits their biases is a key criterion to demonstrating confirmability in qualitative research. While the interviews were designed to be semi-structured, in reality when the interviews took place the participants were eager to share experiences and little prompting was required. The vignettes naturally guided the responses to the issues at hand resulting in interviews that were more open in nature.

The interviews were scheduled to suit both the participant and the researcher and were conducted in a neutral environment i.e. not in the researcher's office. As recommended by Bowling (2002) a room was booked to avoid being disturbed and away from other distractions. Face to face interviews were conducted which removes anonymity and can introduce interviewer effect (Denscombe, 2010). Bowling (2002) also describes a reactive effect commonly known as the hawthorne effect, where

participants feel they need to make a good impression if they feel they are being tested. These effects were an important consideration because as their lecturer I could be considered to be in position of power and responses given may exaggerate the interviewer and hawthorne effect. Sedgwick and Greenwood (2015) highlight that the researcher may also be prone to the hawthorne effect, especially if their performance was being appraised. Importantly however, I was not part of the phenomena under consideration, as I did not work within their clinical environment, so the student would not be examining my role or practice. Triangulation of the research data is suggested by Sedgwick and Greenwood (2015) to reduce the hawthorne effect, a strategy utilised in this study. Moreover, Brauer *et al.,* (2009) and Lapatin *et al.,* (2012) suggest that the use of vignettes are thought to reduce the threat of being tested in an interview as the participant will be commenting on a fictitious character's performance, rather than their own. This is discussed in greater detail below. A combination of these strategies may have tempered the influence of the effect. Furthermore, Sedgwick and Greenwood (2015) warn that the Hawthorne effect can have implications for generalisability of the findings. As this this study was not aiming to generalise this has less impact. To further reduce Interviewer bias, I rehearsed speaking in a neutral and non-judgemental manner but retained visual cues of friendliness and good eye contact. Bryman suggests that it is important to establish a rapport with the respondents to put them at ease (2008). I was in the fortunate position that I already had a friendly rapport with the participants, but Bryman also warns that too much rapport can result in interviews going on too long or questions to be answered in a way designed to please the interviewer. I strove to avoid showing any emotion to their responses and keep the probing focused on the situation in the vignette to reduce interview time.

In accordance with Rubin and Rubin (2012), meaning was confirmed throughout the interview. All interviews were audio- recorded to increase accuracy and credibility, as it allowed me to revisit the recordings multiple times both during transcription and analysis, facilitating accuracy. This enabled reflection and consequently separation of my own perceptions from those of the students', in a bid to ensure confirmability as is the requirements of this study's model of rigour. Furthermore, tone of voice, emphasis, hesitations etc were also considered.

3.4.2 Vignettes

Vignettes are defined by Jenkins *et al.*, (2010) and Lapatin *et al.*, (2012) as 'short stories' about hypothetical characters in specified circumstances to which the interviewee is invited to respond, formulating opinions on how they or the central character would / should react. Thus, they collect situated data on their values, beliefs and norms of behaviour (Jenkins *et al.,* 2010), an important aspect in this study. The notion of producing truly transferrable results might not be realistic, however they will be germane to the diagnostic radiography profession so would relatable. Furthermore, in doing so one is disregarding the importance of context which, according to Shenton (2004) is such a key factor in qualitative research. Context in this study is significant because as the researcher I can only design and implement pedagogy within the context of diagnostic radiography and the organisation within which I work.

Furthermore, Brauer *et al.*, (2009) and Lapatin *et al.*, (2012) maintain vignettes have also been extensively used to analyse perceptions of sensitive topics in a less threatening way, particularly in healthcare. A significant factor in the collection of data for this study; as there was a possibility that the students might feel uncomfortable discussing IP collaboration and the team with the researcher as they are aware that I may know the team personally. Using vignettes presented a way of overcoming this issue. Furthermore, there is widespread use of vignettes in nursing research to collect data on perceptions and attitudes of nurses and associated decision-making (Hughes and Huby, 2002). With their proven use within healthcare and effectiveness as a method for collecting data on perceptions and attitudes, it was considered an appropriate focus for the interviews for achieving the aims and objectives of this study, while addressing transferability of the study.

Brauer *et al.*, (2009) and Lapatin *et al.*, (2012) advise that the number of vignettes to be used should be based on feasibility with a trade-off between comprehensiveness and participant burden yet ensuring that they fully explore the issues at hand. To balance confirmability and feasibility with participant burden the exact number was decided post pilot study based on feedback from the participants and length of time taken to interview the participant.

Each vignette took the form of a 'snapshot' scenario presented on paper as suggested by Hughes and Huby (2002) and Bloor (2006) and participants were invited to express opinions on a hypothetical radiographer in an interprofessional situation. They were designed specifically for this study, appendix 2 and not previously used for teaching, so that participants would not have seen them previously, giving them time to prepare their answers.

According to Jenkins *et al.,* (2010) the first step in using vignettes is to clarify their purpose. The aim of a qualitative vignette within an interview should not be to accurately predict the participant's behaviour, but to gain an insight into the participant's perceptions and the social components of the processes. To support this argument, I have explained the relevance of perceptions and the cognitive process by which participants orientate themselves.

Schutz (1970) rationalises that the initial relationship between the participant and the 'actor' in the vignette as the we-relationship, sharing a common purpose (radiography). This we-relationship aids in identifying a second and less obvious relationship which exists virtually between the participant and the main character (fictitious radiographer) in the vignette. To participate in this relationship the participant is required to engage in the act of thou-orientation. This thou-orientation occurs when the participant is aware of the other person (in this instance the fictitious radiographer) but knows that the other person is not aware of them and therefore considers it safe to comment on their behaviour. Conversely however, Jenkins *et al.*, (2010) argues that the vignettes might be deemed threatening if used to elicit thou-orientations which could lead to participants revealing more about their conduct than if presented with direct questions. I would argue however that it is not the observation of the behaviour of the central character that is threatening; it is only when the participant is asked to interpret the motivation behind the behaviour that the thou-relationship becomes threatening. Schutz (1970) reasons that this is because when asked to interpret the behaviour, they (the participants) will search their memory for similar actions of their own and draw on them, assuming that their principles hold true for other people's actions as well, thus putting themselves in the place of the character. Having acknowledged the potential threat that vignettes might pose, I would suggest that because vignettes are central to case-based learning which is one of our key teaching and learning strategies, the

threat is greatly diminished. This is corroborated by Brauer *et al.,* (2009). Case-based learning was evident through the radiography degree from years one to three meaning that the participants were well versed in their use. Potency of case (vignette) based learning in interprofessional education (IPE) is well testified by Barr and Low (2011), lending further support for their use within this study. Both the researcher and the participants of this study were familiar with their use and the context within which they are situated. They would also provide a platform through which enhancement to the curriculum might be implemented. Hughes and Huby (2004) suggest that paper vignettes should be abandoned in favour of recorded presentations arguing that they allow for direct observation of events and individual behaviour. Despite this advice, I made the decision to use paper-based vignettes as I felt the recorded version could skew perceptions of the 'actors' in the recordings if they were of a particular category e.g. older, younger, male, female, from a different culture etc. In effect, Moskowitz (2004) reminds us that the participant might be influenced by how they construct meaning i.e. seeing features that capture their attention that serve their purpose e.g. age and making inferences based on that property. This effect would be inextricable from the participant's philosophical perspective and difficult to tease out, as it may not naturally surface during discussions. If these properties were considered a salient feature by the participant, it should be allowed to surface naturally during the discourse that followed.

The greatest threat to misuse of vignettes is the relationship between belief and action and Finch (2000) contends that a methodological distinction must be drawn between them. Mills (1940), Atkinson and Coffey (2002) and Jenkins *et al.,* (2010) argue that this distinction is a fallacy and that participants' speculation is about social actions in and of themselves and can be as illuminating as any other form of social action. So, if one rejects the notion that vignettes neither support or suppress the ability to predict behaviour then the participants' verbal and social forms of action can lead to greater descriptiveness in the data rather than act as a weakness (Finch, 2000 and Atkinson and Coffey, 2002). The aim of using vignettes should not be to arrive at an accurate prediction of action or behaviour but to gain an insight into the participants' perceptions and social processes which aligns directly with the aim of this study.

Plausibility: Jenkins *et al.*, (2010) is concerned with plausibility stating it as a crucial factor when constructing vignettes and more likely to produce rich data. They maintain that the more plausible the fictitious character's situation in a vignette the more likely the interviewees will be to align with the character (we-orientation) and therefore engage in the thou-orientation. Furthermore, Hughes and Huby (2002) and Lapatin *et al.,* (2012) expressed concerns regarding vignettes lacking the full clinical picture and their inability to completely capture the reality of peoples' lives. This raises the essential question of how generalisable the research is outside of the specific vignette situation. Moreover, implausible developments within a vignette can produce negative reactions such as confusion, anger distress or embarrassment from participants (Jenkins *et al.*, 2010). It is for these reasons that the process should be iterative, contain realistic characters, use succinct wording and be piloted advise Jenkins *et al.*, (2010) and Lapatin *et al.*, 2012).

In creating plausible vignettes, the radiographer in the scenario was a newly qualified radiographer; the participants were themselves about to embark on their career as newly qualified radiographers increasing the effect of the we-orientation. The vignettes were based on the researchers' experience of the interprofessional environment and were an adaption of the factorial study design by Brauer *et al.* (2009) allowing for the inclusion of baseline factors giving them plausibility. The baseline factors included in the vignette being the factors within the conceptual theoretical framework of this study as identified in chapter two i.e. hierarchy, shared-leadership, power, status, trust, respect and communication.

Williams, Widdowfield and Cosson (2014) reported that less experienced radiographers found working with an interprofessional team in theatre daunting, and that it made them anxious which mirrors my own experience. Often radiographers are transient members of the operating theatre team despite being an integral part of the team. Williams, Widdowfield and Cosson (2014) found that radiographers who work in established teams perpetrate power bases more effectively than radiographers in transient teams. It is for this reason that it was deemed pertinent to explore how student radiographers perceive collaboration within an operating theatre setting aligning with Williams, Widdowfield and Cosson (2014) and Strudwick and Day (2014).

Interestingly Strudwick and Day (2014) found radiographers also experience these emotions when working in accident and emergency. Even although there is a permanent, dedicated x-ray room in a&e they still felt isolated from the interprofessional a&e team. Radiographers are required to work independently and make autonomous decisions as part of an interprofessional team and communicate with various team members, particularly in relation to imaging requests, hence building the second scenario around this interaction.

In addition, Lapatin *et al.,* (2012) suggest the use of an expert review panel familiar with the environment to address the limitations. My expert panel were radiography educator colleagues. Each panel member was sent the vignettes to review and the panel was convened for discussion and agreement. They reviewed each vignette for authenticity of environment, realism, succinct wording and to ensure they are framed around the identified base-line factors. As experienced radiographers they were able to confirm realism and authenticity of the environments within the vignette. As experienced educators they were able to make suggestions for improvements to wording in order to avoid biases confirming plausibility.

Other aspects to consider were the interaction between the researcher and the participant in the vignette interview – the, we-relationship where participants may adopt the role of the expert Schutz (1967). If the development of the vignette (predetermined by the researcher), contrasts with the participant's opinion of what could/would happen, then the vignette represents a challenge to the researcher's perspective. For this reason, it was essential that reflection and reflexivity played a pivotal role, so that I might separate myself from the scenario and be reflexively aware of the influence I could have on my participant should my viewpoint be challenged.

3.4.3 Population sample, size and recruitment

Non-probability sampling was utilised as they are appropriate for labour intensive in-depth studies and based on cases fewer than fifty participants with the sample chosen on purpose (Bernard, 2011). Participants consisted of year 3 (level 6) diagnostic radiography students because according to Cleary, Horsfall and Hayter (2014) there should be a clear rationale behind selection of participants who fulfil a specific

purpose. The participants were the radiographers of the future and were selected because they have experienced interprofessional collaboration and participated in interprofessional education. Timing was carefully planned to coincide with the end of their final practice placement. This was deemed appropriate because, by this stage they are working largely independently, on their own, during unsociable hours or in settings where they are the only radiographer as part of the interprofessional team.

Bryman (2008) suggests study strength might have been improved if the sample had been randomly selected. When used correctly it avoids bias giving all potential participants an equal chance of being selected leading to a more representative sample of the target population Bowling (2014) and Aveyard and Sharp (2013) advise. The small target population of 3rd year diagnostic radiography students (54 in total) did not allow for randomisation. For this reason, all 54 third year diagnostic radiography students from the researcher's institution were approached to maximise the response rate (Bowling, 2014).

Of the 54 students approached, 12 responded and all 12 were subsequently invited to participate in the interviews as this was considered a manageable number of interviews. Considered by Schneider (2012) and Polgar and Thomas (2013) to be convenience sampling this exposes the study to convenience bias because participants self-selected. A method of counteracting this bias is careful vignette construction and method of interviewing. Bryman (2008) emphasises that it is equally important in participant recruitment to ensure that there was no coercion, therefore the researcher's supervisor was responsible for emailing an invitation to the target population, appendix 3. Appendix 3 also includes the participant information sheet. Ashcroft (2007) states this approach enables autonomy of potential participants, respecting their decision-making capacity.

3.4.4 Ethical considerations

Ethical approval was granted by the Faculty Research and Ethics Committee (FREC), Faculty of Health, Social Care and Education, appendix 4 and the study was conducted according to British Educational Research Association ethical guidelines BERA (2011), which were relevant at the time of undertaking this study.

All participants were fully informed of the aims and objectives of the study prior to agreeing and signing consent to participate in the study, and to the interview being audio recorded. The participant consent form can be found in 5. Participants were also given the option to withdraw from the study at any point during the interview or to withdraw consent to use their data in the study at any during the research process. Collection, storage and retention of data e.g. audio recordings and transcriptions were safely stored without any personal details ensuring anonymity. Work was stored on the researcher's home and work computers in a password protected folders. This was in keeping with the good guide for research practice (KU, 2014).

The vignettes were carefully created to accurately represent clinical practice and checked by an expert panel to reduce bias and confirm that they were representative of practice. Interview prompts were sensitively worded, and participants were reminded that they could stop the interview at any point. The research did not focus upon issues which may be viewed as sensitive and therefore it was not deemed necessary to provide information to any counselling services.

Furthermore, all participants were offered a copy of the abstract of the final thesis and reminded that the study is likely to be disseminated and reassured that their information would be kept anonymous. Following the write up of the thesis all data collection materials will be safely stored until dissemination or further research is completed and for a minimum of ten years aligning with Kingston University's research data policy (2019, p.3).

3.4.5 Pilot study

In addition to the vignettes being checked by an expert panel of radiographers it was important to verify their user friendliness and participant burden. For this reason, a pilot study was carried out. Aveyard and Sharp (2013) advise that it tests the authenticity of the vignettes and interview method, reducing risk within the study. The vignettes and interviews were piloted on level 5 diagnostic radiography students i.e. a similar group to the main study albeit an educational level below, as per the guidance by Bowling (2009). Schneider (2012) proposes this as a means of increasing rigour and credibility without diminishing the potential participant pool for the main study. It

was also thought that if level 5 students were able to understand the vignettes then it would be appropriate for level 6. Feedback from both the expert panel and the pilot study indicated that a few minor modifications were necessary; One vignette featured a male while the other a female radiographer allowing the participants to respond to the vignette and any presumptions regarding gender influencing their responses could be cross correlated. Information from the pilot was also used to predict moral response, questions and techniques for ease of understanding and time taken. Timing of the pilot was crucial as these students needed to be approached towards the end of their first 6 months of placement once they had experience of the environments discussed within the vignettes.

3.5 Validating the data

The data was validated by several methods; a pilot study, informal notes, interviews, use of a reflexive diary, member checking along with triangulation of the data.

Informal notes: At the time of undertaking this study I was the module leader on a level 6 module where vignettes are used as a teaching and learning strategy. I and three experienced colleagues facilitated their use in group work. Facilitators were asked to keep informal notes on any discussion that arose during the group work on the related aims of this study which were then used to confirm/refute findings collected at interview. The vignettes were different to the ones used in this study; however, they did include baseline factors similar to the ones used in these vignettes. No discussion was specifically prompted but any relevant comments or discussions were informally and anonymously noted because the comments were general comments not directly related to the research vignettes.

A reflective diary was annotated immediately after each interview, alongside reflexive field notes to recall and reflect on learning, interpersonal interaction and to highlight my own preconceptions, making them transparent. This allowed my personal assumptions, beliefs and philosophical perspectives to be clearly articulated within the analysis as suggested by Koch (2002) and and Crotty (2006) and avoid interpretations overlaid and saturated with the voice of an inherited tradition and culture. As a phenomenologist, I made a sustained effort to reflect upon my reality of the culture

of radiography, making it apparent. This allowed the data to 'speak' and present the true essence of the students' perceptions as articulated by them, giving them a voice. In presenting the data no claims of knowledge were made where there is no substantive evidence to support it.

Most importantly and in keeping with Colaizzi's phenomenological method, member checking was undertaken (1978). Each participant's transcriptions were returned to them via email allowing them to confirm accuracy and the opportunity to withdraw any part, or all, of the transcript validating the accuracy of the data.

In addition to the trustworthiness approach, data source triangulation was conducted as suggested by Patton (2002) so that a comprehensive understanding of the phenomena of IP collaboration could be developed. This was done by the following means:

1. The evaluation forms from a level six interprofessional module, were audited to extract feedback from the students on the themes relevant to this study. The responses were compared and contrasted against the responses of the participants to verify whether there was any alignment.

2. Radiography departments that have employed our undergraduate students are routinely audited six months after our graduates have commenced employment. The feedback gained from the business managers in those departments was scrutinised for information that aligns or refutes the transcriptions of this study. This also confirmed credibility as it demonstrated how compatible the findings are with reality in the radiography departments.

3. Each participant's transcription was returned to them for confirmation that it was a true reflection of the interview, certifying that the researcher's own viewpoint had not been recorded thus giving the study confirmability. Participants were not invited to add any additional information or clarification. All participants confirmed that the transcripts were a true reflection of their interview responses with one participant providing additional clarification of some comments. However, no additional data

was added to the transcripts after transcription so that only dialogue that took place during the interview was transcribed and included for analysed.

3.6 Data transcription and analysis

Interviews were digitally recorded with the consent of the participants and transcribed verbatim without presumption of meaning. This allowed for deconstruction of the interviews and the data to be considered in its rudimentary form. Transcription included coughs, pauses and non-verbal communication and contextual gestures which according to Silverman (2009) might infer meaning. Field notes accompanied the transcription to include my reflexive thoughts in appendix 6. Cross correlation of field notes and reference to the audio files allowed for meaning to be assigned to the dialogue considering non-verbal and inferred meaning e.g. sarcasm, wit, etc. Reflection at this point assisted in separation of the participants' voice from that of the researcher. Furthermore, reflexivity allowed for identification of any areas where I might have in advertently influenced the data. Thorough re-reading of the transcriptions was undertaken to identify topics emerging within each transcript, as well as commonalities between the participants' responses

The open-ended prompts were particularly successful in gaining depth of information. I found that during the interviews the participants addressed me, the interviewer but also themselves, confirming the thoughts of Merleau-Ponty (2002) that talking is the externalisation of meaning, giving me an insight into their inner thoughts. As suggested by Merriam (2014), keeping in-depth notes immediately after the interview, provided a valuable context for analysis of the transcripts.

Two commonly used approaches to data analysis in a qualitative descriptive study are thematic and content analysis. Despite similarities which includes identification of themes and clusters, Vaismoradi *et al.,* (2013) reports that content analysis allows for quantification or frequency of data. Thematic analysis was chosen over content analysis as the aim was to achieve a rich description of the phenomena identifying implicit and explicit ideas within the data rather than measuring frequency of occurrence of ideas Smith and Osborn (2015), which Vaismoradi *et al.,* (2013) warns should be used with caution as an alternative to significance. Colaizzi's method of

analysis is the only descriptive method that calls for validation of results by returning to the study participants (1978). Giorgi's analysis relies solely on the researcher and review could be done by external judges while, Van Kaam's method requires inter-subjective agreement to be reached by other expert judges (Findlay, 2012)

Colaizzi's phenomenological method of analysis requires the researcher to read all protocols to acquire a feeling for them (1978). Analysis was enhanced by rereading the transcripts because as you gain familiarity with the content, new insights, meaning, patterns and correlations emerged (Saldana, 2012). After initial transcription and reading I returned to each transcript and extracted phrases or significant statements and formulated meaning as suggested by Saldana (2012). This was repeated for each transcript, with meanings classified into themes and themes clustered together where appropriate and tabulated. A summary of the table is available in appendix 7.

Colaizzi (1978) advises that clusters of themes be referred back to the original transcript in order to validate them, avoiding the temptation to ignore themes that do not fit. The results were then integrated into an exhaustive description of the topic under investigation. As per the directives of Colaizzi (1978) and Saldana (2012) detailed analysis was woven into the discussion of the research, bearing in mind the theoretical framework for the study and evidence base.

Chapter Four

Results and Discussion

This chapter presents the critical discussion of the findings presented as clusters of information, with each cluster comprised of themes as identified during analysis. To make it apparent how the clusters and themes were derived during analysis, a table of sample results and the method of coding has been presented in appendix 7.

4.1 Data analysis and presentation

Reconstruction of the data was through coding of each participant's views as specified by Colaizzi (1978) and Saldana (2012). The themes that emerged were topics that were commonly held views amongst the participants. Once the main themes had been identified they were analysed, and the data reconstructed into clusters of information. The transcriptions were intricate and during analysis the themes were often difficult to isolate. They were frequently interconnected with other themes, resulting in an overlap or repetition of themes within the clusters. Upshur, (2001) states that to describe themes as though they have distinctive clear-cut boundaries would be an abridged depiction of the narrative. For this reason, there may be some overlap and interconnectedness as the chapter develops.

A distinction is drawn between myself and the participants to allow the students' perceptions to be revealed separately, giving them a voice and setting apart my own viewpoint. Moreover, the aim was to capture the inferences of the narratives as suggested by Rubin and Rubin (2012) in order to present a rich description of the data. The frequency and regularity of the themes' occurrence within the interview transcripts are considered by Rubin and Rubin (2012) to increase the dependability of the themes. The number of participants that mentioned the same theme was identified by Smith and Osborn (2015) as an occurrence of ideas which could indicate importance but was not considered to indicate significance as advised by Vaismoradi *et al.,* (2013). Analysis of the data also takes into consideration conformity and nonconformity of the data in relation to the theoretical framework of this study i.e. the closure strategies:

exclusionary, inclusionary, demarcationary and dual closure strategies; usurpation and exclusion as outlined by Witz (1992).

Twelve semi-structured interviews were conducted using two vignettes as prompts, from a total potential sample of 54 level six diagnostic radiography students. Marshall (2005) states that studies with a small ample size should not present data in percentages as it might be suggestive of disguising the true sample size e.g. 75% would only represent the perceptions of nine students. In Cottrell's opinion this would pose a risk to the transferability of the conclusion as the percentages might be misinterpreted as actual views of the radiography population (2005). The use of two vignettes tested dependability as similar themes were identified in both vignettes. The problematic was situated within different clinical environments i.e. theatre and a&e within two difference fictitious situations and thus included a different mix of interprofessional team members.

While a distinction has not been drawn between responses from male or female students or in terms of culture or age, participation from various members of the cohort was considered advantageous for the sample to be diverse. Recognising the importance of maintaining anonymity yet be able to distinguish the participants, a number was allocated to each participant as advised by Bryman (2008) e.g. participant 1 is represented as P1, participant 2 – P2 etc.

No data relating to gender identification, age or culture was collected because irrespective of these attributes, all radiographers are expected to perform to the same codes of conduct. Furthermore, this would have widened the scope of discussion around these factors which was not the remit of the study. Thus, it was considered unnecessary and unethical to collect data that would not be utilised. However, previous work experiences emerged during the interviews as the students used examples from their experiences to clarify their responses. This served to highlight if this might have influenced their perceptions of interprofessional collaboration in keeping with the social constructionism.

Table 2: Participants previous work experience

Participant	Work experience
1	Previous multidisciplinary teamwork experience outside of the NHS where they were an independent contractor so not a permanent member of the team.
2	No previous work experience
3	No previous work experience
4	Extensive work experience within a team in a senior position.
5	No previous work experience but have had done shadowing within a hospital environment and had observed IP teamwork
6	Extensive experience of teamworking outside of the NHS which they considered hierarchical
7	Previous teamworking experience outside of the NHS
8	Previous work experience as a very junior member of the team
9	Previous work experience within a family run business
10	No previous work experience
11	Previous teamwork experience as part of a group of volunteers abroad
12	Previous work experience was mostly independent but had contributed to teamwork

4.2 Perceptions of interprofessional collaboration

This section describes how participants perceive interprofessional collaboration within the context of the two vignettes, providing an insight into 'how things are to them'. This responds directly to the first core research question. They described what they observed, their experiences and also how they might act. The intention was to present the facts as described by the students and identify common themes, but not infer meaning to the descriptions. It provides an overview with some comparison to the evidence base to highlight alignment and divergence.

4.2.1 Hierarchy

All participants stressed the existence of a perceived hierarchy within interprofessional teams with comments such as

'... *there seems to be a massive hierarchy...*' (P10).

'*yeah, I think I think, it's a heir, heir can't say it as well – hierarchy?'* (P2).

'*Yes, there are higher people who are higher than us (pause), doctors'* (P4).

'so, there is that hierarchy thing where the doctor's kinda' always right and whatever he says kind of you know … is right' (P3).

P3 elaborated

'*I think it is a general consensus by all radiographers and those who may think they are below surgeons in terms of hierarchy and power such as theatre nurses.'*

This hierarchy is evidenced throughout the history of healthcare by Witz, (1992), Freidson (1977), Kennedy (2001), Lewis *et al*., (2008), Yielder and Davis (2009), Hammick (2009), Kennedy (2011), Thylefors (2012), Ebert *et al*., (2014) and Collette *et al.,* (2017), amongst others.

Also described, was the balance of power within the hierarchy, with students stating that surgeons/ doctors are at the top of the hierarchy in a powerful position overseeing all others, with even junior doctors more influential than experienced AHPs evidencing the existence of a doctor focussed organisation.

> *Obviously, doctors are seen at the top'* (P5).

> *Doctors are pretty much always seen as senior'* (P6).

> '…*where doctors have seniority even if they are junior or whatever*' (P10).

> *'In terms of hierarchy those that are seen to have greater power… have greater status and deemed higher in hierarchy. In my eyes, doctors, surgeons, consultants are top of the hierarchy followed by registrars and junior doctors, and usually go down to other healthcare professionals'* (P3).

Kvarnström (2008), Kennedy (2011) and even Nugus *et al.*, (2010) who are reporting from the perspective of the medical profession themselves, corroborate the existence of a medically focussed hierarchy. This unequal balance of power is equally well documented in Freidson (1977), Witz (1992), Kennedy (2001), Lewis *et al*., (2008), Yielder and Davis (2009), Hammick (2009), Nugus *et al.,* (2010), Kennedy (2011), Francis (2103b) and Thylefors (2012). Power is a built-in attribute of Witz's (1992) closure theory but there tends to be a one-sided emphasis on the exercise of power which neglects the possession of power. But, Foucault (1980) contested this position on the possession of power stating that power does not reside in someone but that a power imbalance is created in the relationship; an aspect which is explored in 4.3

There was no indication of a one-sided exercise of power between AHP's and diagnostic radiography students in this study. There was a strong indication that they considered all AHPs and nurses to have equal authority and tended to treat each other as equals. This is re-enforced by;

> '…*No, no, the nurses and physios are on our level'* (P7).

'…*I think the role of nurses and radiographers tends to be on a more balanced level and you tend to treat each other as equals'* (P12).

They also seemed to indicate that they perceive all healthcare professionals (other than medicine) to have equal influence within an interprofessional team; a core component of collaboration as outlined by Thylefors (2012), with most participants stating that there would be less pressure if it were a nurse requesting an image as outlined in vignette 2.

'no no … it wouldn't be so bad if the referrer was a nurse or physio (requesting an image), but not the doctors they are… I guess they are above us all' (P7).

'… it would be less pressure if it were a nurse or anyone else really… we on the same level… I don't think it would be ...' (P9).

However, there is little evidence in the literature to support this notion of equality. Atwal and Caldwell (2005), Salhani and Coulter (2009), Nugus *et al.*, (2010) and Ebert *et al.*, (2014) reflect power differentials and subjugation between healthcare professionals, with nurses revealing less respect for each other than for doctors; a differential which is evident and cited as a source of the crisis in the Kennedy report (2011).

Prompted to clarify their opinions of the doctor focussed hierarchy, participants provided several explanations ranging from,

'*well these guys just have an attitude blatantly'* (P1).

When prompted to expand on what this meant they responded,

'*well they just act like they are the head of everything you know!'*

All twelve participants in this study appear to believe that doctors exercise power by their attitude and the way they communicate, an attitude that was seen as

'Authoritative' and '*you feel intimidated'* (P1).

'…abrupt and unnecessarily harsh …' (P5).

It was revealed that this attitude was not only directed at radiographers but the rest of the IP team as well as can be seen from the extract below.

'*I have seen a surgeon yell at a scrub nurse for about 10 mins straight while the patient was anaesthetised'* (P12).

A perception of a haughty and condescending communication by doctors was also corroborated by Nugus *et al.,* (2010), Van, Driessen and Scheele (2016) and Matilainen *et al.*, (2017). But two students did not consider doctors to be haughty, rude or angry but rather described the stress, workload and time directives staff shortages.

'…work in a very stressful environment…a lot of stress encapsulating their (doctors') work' (P5).

'obviously they under pressure as well, so it could be pressure stress, they have time directives' (P1).

'you come to a situation where for example in a workplace you are having staff shortages and no one to cover…that puts stress on everyone' (P4).

Within this study, students alluded to the existence of a similar hierarchy and dominance and conformity between junior and senior doctors. They suggested that the NHS is a very stressful environment and that doctors bear the brunt of the stress, usually junior doctors. Statements reflected what had been experienced regularly in practice.

'… may be perceived, but I believe the juniors are trying to appease the seniors' (P5).

It was obvious that the students empathised with the junior doctors.

It would seem, that according to the participants there is a hierarchy of domination and compliance throughout the system which is reflected in Kennedy *et al.,* (2001), Kennedy (2011) and Francis (2013a).

4.2.2 Culture

Comments regarding the hierarchy were made in a matter of fact way as though it was implicit, and an accepted truth. At this point I needed to consider whether I was projecting my own beliefs of an accepted hierarchy on the data or whether it was indeed their perceptions. My field notes and audio files confirmed the perceptions of all twelve students. There appeared to be resignation and acceptance of the hierarchy with acquiescent statements reflecting the apathetic attitude of radiographers as described by Lewis *et al*., (2008).

> *'To be honest I kind of expected it … it's not the nicest but you get on with it (sigh) because it's just what it is'* (P5).

> '*I am used to it I know exactly what is going to happen…whatever goes whatever is acceptable and you just go with the flow and you don't question it'* (P2).

> 'I think it's again one of the, those things '… *you have to follow what they say .so its yeah*, (resigned sigh and shrug) *so a bit hierarchy again.'* (P3).

> *'… but I don't know (sigh) it's just like that'* (P9).

> *'…the way it's always been and always will be…'* (P4).

> *'you know it always been so that's how it always will be.'* (P6).

Furthermore, some believed that it is a consensus amongst radiographers, stating that they just accept and do what they are told

> *'some just shrug their shoulders*, (sigh) *yeah, you know'* (P1).

> '*From actual experience… obviously you are working side by side with a radiographer and some just kind of meekly accept'* (P12).

What was of concern, was what students were told by their supervising radiographers

> '…*these things happen, you get used to it…just do as you are told*' (P6).

This was reflected in vignette two, validating the responses

> '*Yeah, when we don't get like justifiable clinical indications… some radiographers' automatically know that the doctor will just add like, kind of like add an extra? pneumothorax on a chest x-ray. So, they will just do it without having the extra detail added'* (P7)

These are strong indications of a culture of compliance confirming Yielder and Davis (2009) and Yielder *et al.,* (2014)'s research into the culture of radiography

Furthermore, participants felt that challenging decisions would be seen as,

> *'questioning authority and stepping out of line'* (P5).

> *'sometimes it can be a thing like 'oh why are you pushing the surgeon? so you feel like it's expected… ok even though I know this isn't right, let me just do it like'* (P2).

This seemed to further imply the expectation of compliance. Levett-Jones and Lathlean (2009) and Yielder and Davis (2009) identified the same connection between conformity and compliance in nurses and radiographers suggesting that they are socialised to value obedience. Thus, indicating that the common culture of openness recommended by Francis (2013a) has not been realised. It would seem however, that it was not a uniform perception, as there was diversity between hospitals, different clinical areas, as well as in theatre at different times, when different teams would be working.

'…with the NHS in certain departments I think there is still a hierarchy the fact that he is a doctor … '*but it is different for different departments' … it could be due to the hospital's culture'* (P10).

'it is different in different hospitals and different doctors' (P7).

4.2.3 Normalisation

Even participants that had presented a confident mature approach to interprofessional working confirmed acceptance and conformity to the culture by saying,

'I think you just accept that it's a fact of life rather than trying to stand up and potentially just make the situation worse' (P12).

'it's normal so … just take it in my stride' (P9)

'*I would be reluctant to voice my opinion because I would think it was normal… so yeah, get used to it.'* (P10).

'…as a first-year student I didn't know what was happening and so how to react. I just kept it to myself and moved on ... maybe that's just the way it is' (P8).

This confirms the belief of Lewis *et al.,* (2008), Kennedy (2011) and Waggie and Arends (2021) that normalisation to the hierarchy exists in the NHS and radiography.

During the interviews the participants revealed instances where they accepted the opinions of staff members (both their mentors and other staff groups) being warned about situations or people and asked to comply.

I mean you know how it's going to be because they tell you… so at least you know like what to do" (P2).

'… this doctor always shouts at the radiographers, they are always like that, it's nothing personal. It's not fair but it's not only me they do it to, they do it to almost everyone… keep out of the way.' (P9).

'… even the nurses will warn you … to be nice because of Mr/Ms. so and so…' and the nurses pleaded with them to,

'*keep the peace*' (P7; P8).

'*The way I would handle it. I think I would keep my head down …'* (P10).

One participant felt that this was part of being prepared for the role of a newly qualified radiographer in order to be accepted into the culture that existed. They seemed to accept it as a necessary part of their training to fit in.

'… but as part of my training to become a band 5 I have been warned (by my superintendent) about the attitude surgeons have towards new radiographers in theatre, so like not to be upset/put off if they're rude or shout…to toughen up. It's sort of a case of proving you are efficient enough in order to be accepted as part of the theatre team. Another challenge of being qualified!' (P11).

However, it was evident from the data that pressure to comply was not always overt and explicitly stated or through domination, but many appeared to be exercised through subtle influence

'It's like ahhh, kind of manipulation' (P1).

'And sometimes they pressure you… the pressure, you don't notice it, it can be very subtle' (P9).

Interestingly this aligns with Foucault's analysis of the means of subordination, describing it as subtle, pervasive and able to change psychological attitudes (Gutting, 2005). This resonates with the existence of a hidden curriculum as outlined by Tekian (2009) and Mossop *et al.,* (2013), who believe that it is an unintentional coercion that

engineers the culture of a department or organisation which is not always visible to either the supervisor or student.

4.2.4 Personal attributes

While students evidenced acceptance of the hierarchy and indicted that they too would comply, there was one participant who did not readily accept the warnings as an accepted truth, resisting normalisation.

> *'I have heard about certain surgeons being rude to radiographers… always try go there with a like level headed attitude… judge it on its own merits and not take gossip or hearsay to be quite the truth.*' (P7).

While two participants did not agree with the apathetic compliance

> '*… it never sat quite right with me'* (P6).

> '*I don't think it is acceptable…'* (P9)

> *if you strongly believe and you have your morals in check and you know exactly should and shouldn't do and you stick by those, you cover your back and do things properly'* (P2).

The comment clearly defines integrity according to the Cambridge dictionary (2018). There was even evidence of resistance to the culture.

> '… *there have been cases where I have tried to do that … stand up for my argument and been completely shot down by the doctor'* (P12).

> '… *find a way of raising it…'* (P9) sound particularly angry.

> *'… I imagine this is very likely to happen especially out of hours or in the evening or in the night if the CT is still running. Very likely! So, we need to be very clear ourselves as radiographers, we need to know what is right and wrong, very important'* (P4).

With one student acknowledging that they would be hesitant initially but then asserting,

> '*I think naw, I probably would say something… wouldn't just do it''* (P3).

This participant had acknowledged in the interview that they were 'a *confident person'* and stating

> '*I am loud and can be tough – you need that in there'* (P3).

> *'you need to be able to raise it …even if they rude to me … but don't take it to heart … there is no time to get upset you have another patient to do!'* (P4).

These assertations demonstrate that the students believe they would be resilient enough to raise or confront the behaviour. An important capability as outlined by Rogerson and Ermes (2008) and Sergeant and Laws-Chapman (2012) who advise that resilient employees are needed, who can maintain their sense of morality in a challenging interprofessional team.

> *'I think I could apply my knowledge confidently'* (P11).

The confidence with which the participants responded with regards to their knowledge and skill, suggested they would be confident to collaborate in these situations. With Kroner and Biermann (2007) and Price-Dowd (2017) of the opinion that confidence is one method of assessing competence.

The confident attitude demonstrated by all the students was however withdrawn. This was completely unprompted as a process of thoughts in action, as they pondered the real situation they might face after graduation. In addition to competence and confidence one participant referred specifically to leadership.

> *'… confidence and leadership is another issue; as a newly qualified radiographer, I think I would struggle with these at first…*' (P2).

> *'…don't think you would act like you are sitting here'* (P11).

The 6-month post-graduation evaluation of radiography students concurs, with managers of radiography departments scoring our ex-students particularly low on those capabilities.

Students reflected on the response of supervising radiographers.

> *'Um … (sigh) I think some peoples' responses … they so lazy like... um and some people are not confident to even speak and say this is not acceptable and they will just do even if they are not correct or not sure, but um it takes an individual to make a difference. If you don't speak its always going to be a problem*' (P2).

> *'...in terms of real practice there is some give and take and communication… Then we think ok, write another request and I will do it'* (P11).

The focus of the interviews tended to be around the dominant position of doctors with little reference to the rest of the IP team. While this could be considered a biased perspective on my part, it was not for lack of opportunity to comment; participants chose to emphasise the doctor/AHP relationships. Interestingly, discussion around the rest of the interprofessional team indicated that all allied healthcare professionals and nurses were considered to have equal authority, status and influence within the hierarchy and tended to treat each other as equals. An interesting finding that does not align with Witz's closure strategies of exclusion within the sub-ordinate group or the evidence base which demonstrates power differentials and subjugation between HCPs interprofessional and intra-professional tension (1992).

4.2.5 interprofessional teamwork

The interview explored the participants' perceptions of interprofessional team working and how they perceived collaboration within a team with such a mixed skill set. It was clear that all students could accurately describe interprofessional collaboration and the shared team goal of patient care.

They demonstrated insight into how an IP team should function with the view that

'the concept of an interprofessional team means that everyone is working towards a common goal.' (P10)

'That's your equipment and the surgeon has nothing to do with your equipment as such. So, you are your own boss in there in a way but you also part of a team' (P1).

'*while doctors should be held in high esteem, it needs to be understood that they are not experts in all areas of healthcare and should be led by the clinicians within specialities, for example radiographers'* (P6).

I would scrap the hierarchy bit… because at the end of the day no matter what, everyone has to work together even if you are a doctor or a nurse no matter… you do your job and I do my job' (P2).

This thinking reflects the views of Reeves *et al.*, (2008), Baker *et al.*, (2011) and Green and Johnson (2015) who agree that each professional should apply their unique expert knowledge, skills and abilities to achieve the common goal of patient care. While students were able to describe ideal collaboration with shared-leadership in an interprofessional team, aptly describing skills mix as per NHS (2019), they did not necessarily conceive how the two concepts might work synergistically.

'*So, you are your own boss in there but you also part of a team. You are all part of a team in there so if you are not all working as a team and one takes charge. Mmhh, I am kind of contradicting myself, aren't I? (Perplexed)… but you kind of need a leader as well in a way to direct'* (P1).

This reflects the conflicted opinion on the topic as identified by Freidson (1988), Freidson (2006) and Nugus et al., (2010) and a challenge of skills mix between the need for management of the patient and collaboratively delivered care according to NHS (2019) and Ford and Gray (2021). Importantly to me as an educator, it demonstrates that students understand what is expected of them but have difficulty in articulating and enacting the concept of shared-leadership and collaboration within an IP team, also identified in Storey and Holti (2013).

Three participants seemed less confused about the concept saying

> *'I think they (doctors) are in charge of the patient overall but the theatre is just a place and we should all work as a team doing our own job properly for the best of the patient.'* (P7).

> '*Obviously the patient is in their hands'* (P1).

> *'And you have got your specialised knowledge with your area of expertise whereas with doctors the expectation is that they know everything and are in control of the patient and have that expectation that everyone should just be getting on with their part of the job (which is reasonable I think)'* (P12).

They were in no way suggesting they have the authority to manage the patient, a tension reported in Kennedy (2001).

This aligns with the new operating workforce mode outlined by NHS (2019) and Ford and Gray (2021), which continues to require skills mix in a team contributing their own expertise. However, West (2012) reports that the complexities of interprofessional teams can cause them to work ineffectively. This tension is also articulated in the Kennedy report where issues of who was responsible for the management of the patient and lack of collaboration between healthcare professionals resulted in mismanagement of patients (2011). Participants is this study also recognised the possibility of poor patient care where collaboration goes awry.

> *'We all need to do our jobs to be efficient, and obviously the patient is our main, we need to look after the patient. And if we are not all doing our jobs, not allowed to do our jobs, then something is bound to go wrong*' (P2).

Further exploration highlighted that the participants thought radiographers were valuable members of the team and felt *'needed'* (P6) and (P11) and should be respected for their skills.

It was obvious however that participants did not feel radiographers are respected for their skills, aligning with West's warnings of the difficulties associated with skills mix

where members did not understand each other's job roles (2012). Five participants perceived that other healthcare professionals and even nurses, (whom they appear to regard as allies and equals), thought that radiographers were button pushers, a term they considered derogatory.

> '*Even the nurses they just think we press buttons… think they just don't get what we do'* (P7).

> *'I don't think that surgeons naturally appreciate that there is more to a radiographer than just being a button pusher who moves the tube up and down'* (P12).

Smith and Jones reported that radiographers the world over have the same complaint, expressing their resentment (2007). When prompted the participants disagreed vehemently that they are button pushers with a resounding *'No!'* Interestingly one of the participants who had so vehemently rejected the notion of radiographers as button pushers later reflected,

> '… *but um, I do think you are sort of a button pusher. And there is a technical bit to it'* (laughs embarrassedly)' (P11).

They seemed rather embarrassed to say this but defended the statement by saying this is what other HCPs' think of radiographers not what they thought of themselves. However, in suggesting what they thought the fictitious radiographer in the scenario was thinking, they inadvertently exposed their opinion of radiographers.

> '*They probably thought that, you know* (shrug) *... he is a surgeon and I am just a radiographer'* (P8).

This demonstrates a tension in the way they view their own world of radiography and the difficulties of working within the interprofessional team where there is lack of understanding of each other's role.

Four participants were of the opinion that IPC was not particularly successful in theatre but thought interprofessional collaboration was very successful in some clinical areas where the team members knew each other, reinforcing the point with the following statement,

> *'Yes, I do, I do, in most areas especially for example interventional where everyone knows each other. They help each other they uhhh talk to each other about matters… and it seems the doctors let the radiographers get on with it you know.? They don't keep telling them what to do'* (P4).

> *'But I think it's all based on relationships with the different teams…it depends on the team'* (P1).

> *'… but only professionals who do not understand my role as it is such a new profession. Professionals who don't think we are button pushers I would say are radiologists, consultants and orthopaedic specialists'* (P11).

There was agreement that it was not a universally accepted impression.

> *'Whereas as I do think the nurse do have um more of an understanding of the role even if they don't know what we doing at the time, they do know that we are doing our sort of specific job'* (P12).

In discussing their specific radiography role within the team, the topic of decision making was raised with a general consensus that radiographers have the authority to challenge imaging requests and make the decision of whether it was justified or not as outlined in vignette 2, suggesting autonomy as defined by Ashcroft (2007). Autonomy being a key proficiency outlined by HCPC (2012b) as professionals exercising their own judgement.

> '*Yes! radiographers have the right or the authority to um, dispute a clinical request and say it's not appropriate'* (P1).

> *'Now if justification isn't present, it doesn't meet the criteria, then reject'* (P5).

This was echoed by five other students, but one participant did not feel they have authority in theatre but did acknowledge authority to dispute imaging requests in a&e. They also went on to added,

> '*if I was screening in fluoroscopy I feel there is more authority to my role I am also responsible for patient care and advocacy …'* (P11).

This raised an interesting perspective suggesting that they felt they had authority when they perceived that they were solely responsible for the patient. This is not a perspective I had encountered in the evidence base. It was also conflicting because a doctor is also part of the fluoroscopy team. This element was not explored further but relating to the statement by P11 above that stated radiologists understood what a radiographer does, might suggest a reason.

It follows therefore that they should consider radiographers to be accountable for their actions and decision-making. For this reason, they were prompted to consider who in the IP team would be accountable should there be an error in radiation delivery or justification of an imaging request. Curiously only three students were convinced that the radiographer would be accountable (as it fell within their jurisdiction) while several others thought it would be,

> '*both the doctor and the radiographer*' (P3; P5; P8 and P9).

> '…*because the doctor requested the examination*' (P5).

Five students were unsure and hesitated. This presents an interesting dilemma; throughout this narrative diagnostic radiography students have reported knowledge of their responsibilities, declared that they have authority, were prepared to accept responsibility, demand respect and consider themselves to be worthy of equal status within an interprofessional team, yet, when it came to being accountable for their actions, some were unsure and hesitant. This is contrary to the HCPC (2016) standards which clearly state that radiographers are autonomous and accountable professionals who might be subject to a tribunal if they were found to be negligible

4.2.6 Interpersonal relationships

Participants reported challenges to their perceived authority revealing the core tenets of interpersonal relationships

> *'… if you don't follow their instructions to the letter they become quite aggravated and say "do it my way or I will find someone else who will do it my way'* (P12).

These statements mirror Fung *et al.,* (2015) and Van, Driessen and Scheele (2016) who found IP communication to be one directional and harsh, with Thylefors *et al.,* (2012) stating that doctors think they ultimately have ownership in all matters relating to the patient. There were additional comments that reflect one sided communication making the radiographer feel alienated, reflecting the findings of Strudwick and Day (2014).

> *'You walk in and … then someone sort of barks something at you and you just like "ooh, ok, don't know who you are, and I don't even know your name and…You don't know who I am and what level of training I am at" …so you just kind of stand there getting ignored'* (P6).

> *'The rest of the team has so little to do with um, the radiographic side of things that I think there is a natural sort of disconnect between them, you are not really communicating unless it's sort of to fight about stools to sit down on'* (P12).

> *'They all seem to know each other and are generally very fluid when working together. I always feel like I'm intruding into their world'* (P7).

But there were also instances of effective communication outlined by the same participant, with co-operation on both sides making them feel more integrated into the team.

> *'… sometimes the communication is good and they like talk to you beforehand… so it works more together like a team'* (P7).

But, four students considered radiographers to be outsiders when working in acute areas such as a&e and theatre, where the rest of the team knew each other.

> *'I think because the radiographer is an outsider they don't know you'* (P7).

> *'as a radiographer who is only there for some cases I often feel like an outsider*' (P6).

> *'… lack of communication with the surgeon 'cause I don't know him as well as the other staff members'* (P8).

> *'And but also, because you not working with the same team day in and day out and tend to be moving around between the teams I think is its' much more difficult to build that rapport'* (P12).

This statement was with reference to the a&e department confirming the thinking within both vignettes.

Despite this, there was a sense of determination to collaborate plus expressions of attempts to communicate

> '…*but I think I would stick to my guns and raise my concerns'* (P5).

> *'if I was confronted with that situation I definitely… I mean you are there to do a job so to whimper away from it just because the way they talked to you? Is pretty bad that's where, I would definitely have said… can I have a word with you. I am a member of staff here as well doing my job, Urrm…'*

> *(Pause thinking)* (P1).

> '*whereas if you don't know anyone I think you have to stand your ground and rather than put yourself in a situation where you have made yourself liable and put the patient at risk.'* (P12).

'if it could have major repercussion for the patient as well then that would give me the drive. (Sigh) *… uh yeah the drive and the confidence to assert my opinion…even if they don't know me'* (P10).

Nevertheless, there were also the instances of thoughts in action with unanimous realisation that,

'*…it will be a lot more difficult in real life to act the way you think you will, when sitting here…'* (P11).

'I think I would struggle with these at first as you need to settle into a new department and may sometimes not feel fully confident and comfortable to talk' (P2).

This brought the interview back round to communication and comments regarding respect were linked to how people communicated with each other and mirror Kennedy *et al*., (2001), Reeves *et al.,* (2009), Thylefors (2012), McDonald, Jayasuriya and Harris (2012), Van, Driessen and Scheele (2016) and Ebert *et al.* (2014). These studies all found that interpersonal relationships were peppered with one directional communication between the dominant group and other HCPs. This was the opinion of five participants whose comments mirror these below

'… *someone barks at you..*.' (P6).

'they give you no chance to respond… just telling you what to do' (P4).

Furthermore, comments aligned with Kennedy (2011) who reported negative communication by difficult and powerful members of staff.

'… seen as big scary people, they shout they get their own way!' (P6).

agreeing with (P1), (P10) and (P12).

Expertise, status and authority are generally equated; however respect and authority of expertise is problematic according to Freidson (2006), and the attempt to persuade others that its 'orders' are appropriate is not always successful. The frustration of the participants trying to command respect was palpable by the following statements;

'…*I would have walked out if they spoke to me in a demeaning way'* (P11).

'…*even if he is angry… just let him know it's my job…'* (P8).

No! ... It's your job, your equipment, not the surgeon pressing the pedal it's you…and they should respect that' (P1).

While there was mention of respect they did not seem to describe instances of mutual respect and understanding of role, which according to Pullon (2008) is an essential ingredient of collaboration, demonstrating a dichotomy. As can be seen from this statement from a participant who was not aware of what the correct name for the ODP was, a key member of the operating department team.

'… the nurses or even the anaesthetist's assistant – what they called …OD…?' (P7).

The interview turned towards professional standards and rights of a diagnostic radiographer. All twelve participants were adamant that radiographers have exclusive authority and were protective of this perceived authority, reflecting Matilainen *et al.,* (2017). While the Health and Care Professions Council, (radiographers' statutory body), does not explicitly state that radiographers should enforce expertise it does declare that knowledge and expertise must be shared with other practitioners for the benefit of service users (HCPC, 2012a). It was clear they considered radiation protection to be the remit of the radiographer and that they should be free from external control from the rest of the team in this regard proclaiming that,

'radiation…it is the role of the radiographer' (P10).

'… we are the responsible people and we are the ones who are using this machine and the ionising radiation' (P4).

'end of the day we are the ones to operate the machine… it will boil down to the radiographer because you produce those x-rays…they should understand that' (P2).

'No! (definite) the radiographer it's your job, your equipment, so it's not the surgeon pressing the pedal it's you. You are administering the dose. (P1).

These statements reflect territorial behaviour know by Brown *et al*., (2005) and (2014) and psychological ownership.

Along with ownership of their responsibilities seven participants reported attempts to improve interpersonal relationships through knowledge sharing, a finding also identified in Abramson and Mizrahi (2003)

'… *try to explain the importance of what I do… the relevance of what I need to do legally'* (P5).

*'umm I think I would explain why I think it's not necessary and give them good valid reason*s' (P8).

'*… need to give them knowledge… this is the responsibility of the radiographer again to justify and nobody else, this is in IRMER 2000 umh to justify the examination before going ahead because Ct is very high radiation dose'* (P4).

However, it was also suggested in this study that not all radiographers take this approach.

'*Some old radiographers would respond in "ah just do it, it's ok" – they won't even bother…they don't explain to them'* (P2).

'seen some don't even question or explain… we should though, as we have the knowledge' (P9).

These reflections suggest that the students are of the opinion that knowledge sharing is an important p aspect of their role within the interprofessional team.

4.3 Factors influencing interprofessional collaboration

The above section is a description of the transcriptions i.e. how students perceive IP collaboration 'how it is to them*'.* Through deconstruction and critical analysis of the themes several common threads emerged that appear to influence interprofessional collaboration. These themes have been clustered together and presented as the factors that influence collaboration. The clusters are: follows: personal capabilities, skills mix, interpersonal relationships, radiography culture, organisation and environment with the pivotal influence of role-taking. Role-taking is explored within 4.3.6

4.3.1 Personal Capabilities

All participants stated felt that confidence and self-efficacy are key in influencing the team and for building relationships aligning with Smith *et al.*, (2008), Leigh *et al.*, (2012), DH (2008; 2010; 2012) and Francis (2013a). Some extracts from the participants are listed below;

> '*So, confidence… it kind of prepares you for the people but not the knowledge'* (P11).
>
> '*I think that he was intimidated … he may not have had the confidence to uhm raise this issue'* (P10).
>
> *Obviously, they don't have enough confidence in themselves…. to have the confidence to change everything … and say I am confident to do the job… that's what's needed… to get a better relationship with the surgeon'* (P7).
>
> *'I quite like theatre, and I actually, I think I was one of the only people, I had a great time, I did quite well and stuff… but um… I am quite a loud confident person. …I probably would say something… otherwise it makes it difficult for a*

person to speak… making the situation and working environment awkward' (P3).

While another participant thought that the radiographer in the a&e scenario was just being a '*pushover'* and stated

'*Oh yeah definitely… 'I have seen it …there was a band five who believed in her knowledge and had the confidence….and the doctors knew when to walk away when she said no'* (P1).

This demonstrates the role confidence and self-efficacy plays in influencing others. This aligns with Foucault (1980), Pearce and Conger (2002), Barr and Low (2011) Wang, Waldman and Zhang (2014) and the NHS Leadership Academy (2015) who consider these key capabilities for shared-leadership and collaboration with a strong correlation with improved trust.

Participants acknowledged however that starting work as a radiographer would be stressful and may dent their confidence, which in turn would influence the capability to collaborate, evidenced by these comments,

'*you think you will … but you not really going to be able to say anything to them. Especially if you quite new and then once you graduate and then you get a job'* (P8).

'*thinking about it now. Starting work as a band 5, I think it will be a lot more difficult in real life to act the way you think you will, when sitting here, when you confronted with that situation as a band 5 … Yeah'* (P11).

'Communication, confidence and leadership is another issue; newly qualified radiographers struggle with these at first…and will affect the way you act' (P2)

Eyal and Cohen (2006), Sergeant (2010) and Verrier and Harvey (2010) also confirm that this initial lack of confidence affects the competence of newly qualified radiographers. Competence is addressed as a separate entity later in this section.

Despite this, the students in this study considered emotional resilience an important factor stating that you need to be prepared to accept criticism to do what is expected of them the best interest of the patient.

> *'I think naw, I probably would say something. But! Initially I may be a bit hesitant. So rather than getting in trouble like later on when it is more detrimental to the patient it's better that to do it before and take the flack'* (P3).

> *'Yes, first this will be hard, but you need to be strong… anyway if I am doing my job I must do what I believe is right… I am going to care for this patient as my relative or myself … no matter who tells me whatever!'* (P4).

> *'From actual experiences there have been situations where I have sort of stand up for my argument … even if they yelled at me…it makes things easier in the long run'* (P12)

Participants highlighted lack of resilience in radiographers who

> '*…just do as they are told …they need to toughen up like otherwise how can you do the job properly?'* (P2).

There was even a suggestion that these radiographers were not acting morally.

> '*morally that is wrong…it's not the best for the patient'* (P6).

It could be argued however that these radiographers might be in agreement with the Kantian deontological philosophy, where duty is the moral act. But does doing your duty promote true collaboration? There is evidence in Kennedy (2011) where members of the interprofessional team accepted assurances about bad medical practices, despite their medical training indicating otherwise. Kennedy (2011) found that they did their duty without taking into consideration the effect on patient care outcomes, citing reasons such as the professional animosities, leadership styles and the hierarchical culture of the trust. Contributing factors that influenced resilience making it difficult for them to challenge and raise concerns. Emotional resilience has been shown to improve problem solving, stress management and teamwork according

to Sergeant and Laws-Chapmen (2012) and Thomas and Revell (2016). Moreover, Thomas and Revell (2016) identified self-efficacy as a crucial element for developing resilience endorsing the relationship between these factors. Incidentally, Kroner and Biermann (2007) and Price-Dowd (2017) also consider self-efficacy to improve competence.

Participants in this study also supported this by stating that if they were confident in their own abilities they would be able to credibly argue their point.

> *'as I feel more confident in myself to be able to justify examinations to be able to converse with other people… I would feel completely qualified and able to take that up with the relevant people … and solve it … rather than accepting what the person is saying'* (P5).

> *'Maybe I am not confident enough to go speak to him in a certain way … but I mean confidence in yourself or confidence in your work …If I know that I am competent I will surely be able to do it'* (P8).

All participants referred to integrity and moral responsibility in one form or another as a necessary quality for interprofessional collaboration, aligning with the NHS (2011) CLCF. Kennedy (2011) reported on the lack of collaboration which led to damaging consequences for patients, stating that if all parties involved had acted with integrity, poor medical practices would have been challenged and halted much sooner. Bines and Watson (1992) are of the opinion, that the dominant position of a professional in any relationship should be regulated by integrity and beneficence. These moral capabilities are considered essential by Van Mook *et al.,* (2009) for the provision of a professional service. Sergiovanni (1998) explains these moral qualities as social covenants as things we do because we feel that they are an essential part of our professional role (voluntary actions). These actions are chosen because they are noble (just) rather than because they are socially contracted to act in a specific manner. This suggests autonomy to use your initiative within collaboration yet preserving your professional identity as a moral professional, aligning with Hargreaves (2001).

The participants seemed aware of the moral consequences of their actions and demonstrated self-awareness of their lack of experience and limitations of knowledge.

> '*you should keep your morals in check … patient must come first … if we are not all doing our jobs then something is bound to go wrong'* (P2).

> *'uh my thinking right now is that a radiologist should be involved in this situation because they have knowledge of what scan should be done for what kind of like indications. Rather than the radiographer who knows the protocols but might not have a complete understanding of the best way to do'* (P7).

> *'… must work in your boundaries under IRMER and stuff*' (P4).

While there was also acknowledgement of the limitations and stress placed on one by knowledge and experience once again demonstrating self-awareness their own limitations, but also the effect stress might play in regulating their behaviour

> '*I think it's just to do with um experience. I mean if that was me I would probably be very nervous having to do everything that I have only done as a student, that would put a lot of pressure on me. That really would*' (P8).

> *'just that knowledge is that thing isn't it? If you go to hospital with high rate of rotation, only in CT for 2 weeks out of every 2/3 months you have not got knowledge to say yes or no really, have you?'* (P1).

> *'it is tough but when you in that situation, you are not thinking like I would now be thinking, like I am now. I would be under pressure … I think you should stand your ground but it's all down to experience…and knowledge…'* (P9).

The CLCF (2011), NHS (2011) and Rungapadiachy (2012) stress the importance of self-awareness and self- regulation as displayed by the students in this study and the role it plays in regulating cognition and behaviour. Within the second vignette all participants reinforced the need to be self-aware and the need to work within their scope of practice as defined by the HCPC (2012).

'It's very clear actually in the HCPC. It is our responsibility to justify … from our knowledge and skills and if not justified, then we shouldn't do it' (P4).

'you know exactly what you should and shouldn't do… and you stick by those' (P8).

Furthermore, suggesting that any matters out of their scope of practice should be referred to a senior member of staff, demonstrating self-regulating behaviour, evidence by comments such as;

'*That's where you should in this case … be referred to a radiologist that has got the knowledge cause if you don't do that you could do the wrong thing*' (P1).

'if the CT is not justified or you don't know … it should be between the radiologist and the doctor to decide if it is justified and whether they can do that actual CT scan' (P7).

Freidson (2006), Kennedy (2011) and the NHS (2011) claim that the value of these capabilities in collaboration is not in the knowledge of the professional but their ability to apply that knowledge and as can been seen in these statements above the students appear to know how to apply their knowledge and also their limitations. These capabilities are identified in the NHS leadership qualities framework as essential for effective performance of your professional role, while taking into account the needs of the patient, and conflicting priorities of other team members (2011).

4.3.2 Interpersonal relationships

As seen in 4.2.6 Participants were quite clear on what they considered to be their scope of practice and exhibited psychological ownership over their job role with several of them defensively stating that radiographers have exclusive authority over matters pertaining to radiography.

'*Because we also have to make sure we um are ok under IRMER under alara… you have to make sure, it's our job at the end of the day… say to them, you either do it like this because I need to….*' (P2).

'Now, we must check this is because ...this is recommended by the health PCP and 2000 regulations irmer regulations … we are the ones who are using this machine and the ionising radiation, so we have a responsibility for this issue, radiation, it is our responsibility to make sure that the patients are protected' (P4).

'I would just let him know it is my job!' (P8).

While one participant even proportioned ownership of the equipment to the radiographer in vignette one stating

'*they didn't not let him set up his own equipment …'* (P6).

Brown *et al*., (2005) and (2014) suggest that such sense of ownership over knowledge (territorial behaviour) may affect the person's willingness to share information, ultimately negatively affecting interpersonal relationships and the groups' perceptions of the individual as a team contributor. Although this did not appear to be the case in this study where there was also an awareness of the negative effect psychological ownership could have on collaboration and patient care suggesting they would be flexible where it was required.

'I think ideally his responsibility is to refuse to do the procedure… Obviously the fact that the patient is already anaesthetised that places a problem. There is a danger associated with going under anaesthetic and if he then refuses to do the procedure there could be ramifications from there… so it can't just be your way' (P12).

There was also a willingness by students to share information by explaining their position.

'*would say, well that's because someone put this (the equipment) in the wrong place ... and explain I need to do this ... then they might understand your side of things'* (P11)

'should… said look I am stuck with guidance as you are. I need to follow certain procedures before I can continue, and I can't continue till I have done this (P1).

But students revealed countervailing territorial responses with perceptions of authoritative, superior attitudes by doctors causing participants to perceived doctors to have poor interpersonal skills. Attitudes, acknowledged by doctors according to Larkin (1978), Abbott (1988), Allsop (2006), Freidson (2006), Nugus *et al.,* (2010), Kennedy (2011) and Johnson (2016).

'…*an authoritative attitude and are pushy…to get you to do what they want … but that's not great team work really'* (P1).

'*being yelled at*' (P6), (P8) and (P12) and suggesting that this was '*counterproductive'* to collaborative teamwork.

While some stated that their style of communication

'*was harsh and abrupt … not the best way to get things done to be honest …'* (P5).

Some participants suggested that it would make them feel intimidated and diminish their confidence.

'*I think obviously it would be quite disheartening I think, it would be, really kind of smash your confidence'* (P5).

'*Absolutely, absolutely I would feel intimidated …would crush my confidence'* (P10).

This participant had acknowledged in vignette one that feeling intimidated would affect confidence in raising issues.

Brown *et al.,* (2005) and Wang, Waldman and Zhang, (2014) stated that in high trust relationships there may be less perceived need to prove and defend ownership, with a resultant positive correlation to shared leadership and collaboration in a team.

> '*if you know that the team does generally a good thorough job then you are more likely to accept that information'* (P12).

This was in relation to the identification of the patient, suggesting they would trust the information given to them.

> *'… if they know you are capable of doing it (the job), ... then I think that initially that you're in a good position to comment and speak to the team…because they will trust you'* (P11).

Equally this student also considered trust in their ability would put them

> '*in a good position to start making demands on what others should or shouldn't be doing to help me position the equipment'* (P11).

> '*If they believed in me then I would be more comfy in getting involved'* (P3),

This suggests that if they were trusted they would be more confident in asking for assistance and engaging in the team. This is echoed by Reeves, Macmillan and Van Soeren (2010) where they referred to shared leadership as participative leadership. There was also a suggestion that if the team know each other, they are more likely to trust each other.

> *'where everyone kind of knew what each other what everyone was doing… you are like less kind of like judgmental … give them credit and give credit to all of them, yeah trust what they say, I guess'* (P7).

> *'… all seem to know each other and are generally very fluid when working together, there's no checking on each other'* (P6).

Pullon (2008), Lewicki and Wiethoff (2012) and Seaton *et al*., (2019) evidenced that a positive experience of previous reliable behaviour by team members is more likely to result in trust. Collaboration in teams that work together on a regular basis have been shown to be more effective by Pullon (2008) and Reeves *et al.,* (2009).
As radiographers are not a regular member of the IP team in theatre or a&e, they are thought of as a temporary member of the team hindering collaboration.

> *'They work as a team all day in theatre and as a radiographer who is only there for some cases… you the outsider…not part of the team… makes it difficult on you'* (P6).

> *'I think in situations such as theatre the radiographer always gets treated as the additional member who is in the room* (P8).

> *'… is not an integrated part of the team'* (P12).

As previously highlighted this confirms the opinions of Pullon (2008) and Strudwick and Day (2014) that this makes integration and relationship building more difficult.

Students with previous interprofessional team working experience from their previous job roles where they were not a permanent member of the team, stressed the importance of *'team meetings prior to commencement of a project'* (P1) suggesting it eased communication.

> *'We would have meetings, so everyone knew what everyone was doing, where they were… so it was a good team…'* (P7).

> ***'***We had meetings to talk over plans. Referring to the first scenario that's the way that should be, where you kind of met in advance ... and it gains that, that team sort of feel about it. You feel more part of it, that's … good communication*'* (P1).

with (P12) reporting that they had seen this '…*work really well…'* in an operating theatre team.

And the participant that had shadowed several different HCPs in a healthcare setting made the following comment

> '*there are different points of view… and you are like less kind of like, judgmental and narrow minded I guess and just be more open minded and acknowledge them and understand them and give them credit and give credit to all of them and not be arrogant and just have your point of view'* (P5).

Getting to know each other made students feel part of the team improving relationships correlating with Xyrichis and Lowton (2008). This is mirrored in Waggie and Arends (2021) where participants stated that understanding of reach others' roles came from 'chatting in the passages*…'* (p.676).

Three participants acknowledged the same sentiment saying that

> *'…um more of an understanding of the role comes from an educational background…we were both (them and a nurse) learning to do our specific roles….and because I definitely on my placement bumped into them… so it was much easier to start talking to each other and it wasn't particularly deep conversation, just social like…'* (P12).

The participant who had done some work experience in the clinical environment before joining the degree stated,

> *'I shadowed doctors, gp's, radiographers and physio's as well. I experienced the interprofessional works. The IP working relationships. Interprofessionally, you saw the way people communicated … kind of intertwined together, like physio's spend a lot of time with ot's, doctors spend a lot of time with the ITU lot and they get on well, communicate. We (radiographers I should say) don't spend a lot of time with doctor's* (P5).

'I think they should teach doctors more about requesting that will save a lot of hassle. I mean they don't even sit in any of the same lessons with us (pause) ... that would help' (P9).

'…I mean let's be honest they (doctors) don't really want to be there (IPE) … I think they think its beneath them' (P3).

This thinking is supported by Braithwaite *et al.,* (2013) and Collette *et al.,* (2017) who report that doctors are less inclined towards IPE.

This was elaborated on, verifying the disconnect between the education of doctors and other professions.

'I think allied health professional and nurses in general um there is a much more overlap in the way we have our training… medical students so very, very far removed. I mean on this course they don't join us for IPE and we only really spent the sort of first few mandatory training sessions with them, basic life support and such like, in the first term and you didn't really bump into them on placement whereas I definitely on my placement bumped into nurses etc, including in theatres.' (P12).

This is in agreement with Frenk *et al.,* (2010 and Van Diggele *et al.,* (2020) who are advocate both formal and informal interactions in IPE. MacAuthur, Daily and Villigran (2016) also advise that socialisation is an important aspect and that both formal and information socialisation are key and should be explored. This perhaps suggests socialisation as a solution to getting to the know the team.

Interpersonal relationships appear to be further influenced by respect**,** with participants citing instances where respect for a radiographer resulted in trust in a radiographer's decision with clear evidence of collaborative teamwork.

'I know one CT radiographer… and the doctors knew to walk away when she said no, so maybe respect as well' (P12).

Generally, however some participants did not feel respected by the team and appeared to do so by thoughts in action.

> *'Did the doctor respect her (radiographer's decision?) I don't think they do*' (P1).

> *'Radiographers…they are often put down and not given the credit for their roles and responsibilities…knowledge ... should be recognised far more superiorly… and be identified for the skill they bring'* (P3).

An opinion mirrored in the evidence base by Mangan, Miller and Ward (2015), van Driessen and Scheele (2016) and Matilainen *et al.*, (2017), with Atwal and Caldwell (2005) reporting that this made participants feel subordinate and reluctant to voice their opinions within an interprofessional team, thoughts echoed in this study.

> '*And I kind of felt that I had been completely rejected in that, it was an absolutely pointless me being there…. I think you just accept that there's no respect… it's a fact of life rather than trying to stand up and say something'* (P8).

> *'That is the kind of effect it would have on me… yeah. The way I would handle it. I think I would keep my head down … would be reluctant to voice my opinion'* (P10).

Lack of courtesy and respect were considered to affect relationships according to Foster (2010) and the NHS Leadership Academy (2015), while approachable team members eased communication.

The participant who acknowledged feeling rejected also stated that radiographers should

> *'take the initiative. You introduce yourself to the team and try integrate yourself in to the team…makes a massive difference'* (P12).

This reflects findings in Collette *et al.,* (2017) who agree that respectful communication is crucial in promoting positive collaborative relationships. There was unanimous

agreement that communication was key in collaboration and recommended as a solution for improving mutual understanding and improving relationships within a team.

> *'it differs sometimes if the communication is good and they like talk to you …'* (P9).

Some students even suggesting that this was happening within the clinical departments.

> '*It's not more of a quiet place now everyone's talking. It's good. Everyone is standing up for their opinion and their views. It's changed now.'* (P8).

> '*it's definitely getting better…everyone is much friendlier to each other…'* (P9).

The Kennedy report found that failures in IP communication suppresses open dialogue and is a key component in preventing staff from reporting issues affecting patient services (2011). Furthermore, poor communication was inferred as the reason for perceived domination resulting in an unwillingness to collaborate as confirmed below.

> **'…***have a person in a position of authority telling you off in front of a room full of people would make me panic…that's intimidation… they shout they get their own way… um I think it could deter me from, from talking'* (P6).

> *'… when they get angry and shout, tell you what to do…. humph (laugh). I think I would probably, if I was in that situation I would probably (pause) just not have said anything* (P8).

Where relationships within the team were poor, one participant reported being able to forge collaboration through communication Aligning with Hewitt, Sims and Harris (2015).

> *Take the initiative. You do the initial introduction and you try and integrate yourself into the team ... it made a massive difference. I found the majority of surgeons, when I said I would like to know more about the procedure then they would say ok … They were much more um sort of willing to accept, not mistakes*

but obviously… far more willing to accept those problems than if you appear to be just an uninterested observer… when you not showing any enthusiasm then they get quite snappy with you' (P12).

4.3.3 Skills mix

HEE (no date) reported that the skills mix project was designed to enhance effective sharing of skills across professional boundaries. The outcome of the skills mix project was the introduction of the career progression framework resulting in advanced radiography practitioners with enhanced expertise, knowledge and skills. This occurred alongside the introduction of IPC working (Price and Miller (2010), NHS (2018) and Nelson *et al*., 2018). The skills mix agenda results in the overlap of the domains and skills of that of the radiologist and radiographer. As evidence by Van den Biggelaar, Nelemans and Flobbe (2008), Coleman and Piper (2009), Piper and Paterson (2009), Moran and Warren-Forward (2010) and Kelly (2017) radiographers have risen to the challenge and developed expert knowledge and skills redistributing decision making to lower levels in the hierarchy. This is in direct opposition to the traditional autocratic hierarchical structure of IP teams and acknowledged by DH (2003) to cause challenges and concerns regarding scope of practice of the professions, questioning decision making powers, authority and accountability. Furthermore, Baxter and Brumfitt (2008), Kennedy (2001; 2011) and Littlechild and Smith (2015) heighted how competing perspectives and ways of working result in a failure to collaborate and inferior patient outcomes.

There are instances where participants report effectiveness of advanced practice in spanning professional boundaries.

'*Did the doctor respect her decision? I don't think they do. She is only a band 5 ... but now with advanced practice that is different'* (P1).

Interestingly this participant had also cited an instance where a band 5 radiographer with knowledge and self-efficacy had influenced decisions supporting the notion that with more specialised knowledge collaboration happens irrespective of grade.

However, there appeared to be an overlap of expertise in some areas which appeared to cause tension e.g. surgeons who have an operator licence and think they should direct radiographers' work.

> '*You do your job and I do my job!!'* (P2).

> *'It's like they feel like the can almost do it themselves. But they can't.'* (P11).

> '*They have some radiation knowledge … tend to uh not really have a true awareness to the radiation that's given off*' (P12).

There were also instances where there was confusion of who should be responsible for some tasks e.g. establishing and documenting the pregnancy status of a patient in theatre despite protestations by students that,

> *'radiation protection is my role'* (P2).

The problem arises when another professional in the team also considers that they have the authority to make or overrule the decision. This was directly link to the interview prompt around the authority to make decisions. Participants vehemently stated that radiographers have the expert knowledge and should therefore have decision-making powers in all matters related to radiation protection.

> *'… enforce radiation protection policy. Although the orthopaedic surgeon\and staff play a role in that, it is the radiographer's role to enforce that … but to be honest they don't seem to get that'* (P10).

This was particularly apparent in an acute situation like accident and emergency in vignette two but there also appeared to be some confusions as to who had the decision-making powers.

> '*Even as a band 5 I wouldn't ever go through with any imaging if it wasn't under the protocol and the clinical indications cause that's our decision …*' (P6).

'… it's really a difficult one (perplexed). Because (pause) they know what they think of the patient in their head … maybe I am under estimating how bad he (the patient) is … so yeah, we have to work together' (P11).

Price and Le Masurier (2007) and Nelson *et al*., (2018) highlight these challenges of blurring boundaries stating that scope of practice needs defining, duplication of work needs to be avoided and they warn of the potential for interprofessional tensions. Further challenges of the skills mix seen from this study where four participants were unsure who would be accountable if things were to go wrong despite previously stating that the radiographer was responsible for radiation.

Reflecting on the accountability for radiation protection, they articulated the confusion around scope and definition of each persons' role where the boundaries have been blurred.

'… so I suppose if it hasn't been done yeah, primarily it should have been radiographer but then it's down to the radiographer to tell them it has been done so… overall if the surgeon didn't check that's his fault' (P3).

'I think the surgeon and radiographer would be responsible, both' (P8

While there was also belief that the boundaries and accountability is clear, stating

' *you know exactly what you should and shouldn't do and you stick by those you cover your back and do things properly .There is a reason why there are rules in place …I believe if this were to go to court the radiographer would get in trouble and I would not want to get in trouble just because of what the surgeon thinks*' (P2).

'Because if there was a litigation it would be you, so he should let you do your job because he is not responsible for that.' (P12).

This is also eluded to in Nelson *et al.,* (2018) and Kroezen *et al.,* (2019) who state that in order for skills mix to be successful role expectations, professional boundaries and legal matters need to be clearly defined. Littlechild and Smith (2015) support this and

raise the question of whether collaborative practice is only sustainable in 'fair weather' (p.17). They believe that when difficult or pressured situations arise, professions revert to their individualised ways of working based on their own priorities, as would seem to be the case as articulated in this study, which is counterproductive to collaboration. Nelson *et al.,* (2018) are reporting from a primary care perspective indicating that the challenges are not limited to an acute arena. This is in direct opposition to Reeves *et al.,* (2011) who considered collaboration to be effective in a primary care setting.

The participants in this study were rightfully concerned with the radiation protection of patients and staff as this is their responsibility as outlined in (IRMER 2017). While medical or nursing professionals are more concerned with the operation/procedure being carried out successfully and do not consider the radiation protection aspects to be of primary importance. Baxter and Brumfitt (2008), Kennedy (2001; 2011) and Littlechild and Smith (2015) warned that these competing perspectives have substantial implications with several tragedies attributed to these lapses in collaboration.

Despite the apparent challenges posed by developing expertise all participants unanimously emphasised the importance of knowledge and skills in the development of their confidence and self-efficacy irrespective of the grade of the radiographer.

> *'it's all our responsibility from our knowledge and skills and if not justified then we shouldn't do it … having that knowledge would making it easier to say no'* (P4).

> *'…even some band fives that I have worked with … It's just that knowledge thing isn't it?' 'Yeah I think it just comes down to knowledge. The more you know the better you are'* (P1).

> *'as my knowledge base increases or I should say as my scope of practice develops and increases I feel more confident in myself to be able to justify examinations, to be able to converse with other people*' (P5).

Knowledge and skills also seemed to impact on decision making

'she had a very good knowledge base she knew why what steps to take' (P10).

'so, once I could apply my knowledge confidently… once you became more confident you became more assertive and can make those decisions' (P11).

Findings reflect Reeves *et al.*, (2008), Baker *et al.*, (2011), and Green and Johnson (2015) that collaborative practice is where each health professional apply their unique expert knowledge, skills and abilities to achieve the common goal of the team, which is to achieve the best outcome for the patient.

4.3.4 Radiography culture

Participants demonstrated knowledge and understanding of collaboration and shared leadership and an enthusiasm to change and challenge the hierarchy i.e. usurpation**.** But, the culture of radiography was described in 4.2.2 as apathetic and a culture of compliance. What also emerged was that there seemed to be pressure to accept the hierarchy and participants acknowledge that this made them feel compelled into doing the same, despite their protestations of resilience above. This describes the process of habituation as identified by Kvarnström (2008), Lewis *et al.*, (2008), Kennedy (2011), Ebert *et al.*, (2014) and Mangan, Miller and Ward (2015) or Foucault's normalisation (1975). During the interviews it was evident that their responses reflected what they had experienced within the hospital environment and they were not just responding to the scenario, which is the advantage of using the vignette as a means of prompting in-depth discussions. Hughes and Huby (2002) and Lapatin *et al.,* (2012)'s concerns regarding vignettes' inability to completely capture the reality of people's lives seems unfounded in this instance, as the participants readily shared their experiences.

It was clear that they looked up to their supervisors and in more than one instance acknowledged being influenced by them, and that they would emulate their behaviour. The students also attest to a variable quality of supervision as outlined by Karneilli-Miller, Steir and Pressach (2009) and Gaufberg *et al*., (2010).

'…some are so good at teaching and showing you the way'

'and then being in clinical blocks and learning from the radiographers … It's kind of um it's really helped to teach you how to prioritise your work and think about what's right and what's wrong. Um yeah, it does make a difference and being taught by tutors, radiographers, it's um good, it helps a lot' (P8).

'I mean you have your supervisor to turn to …you do what they do' (P11).

'*supervisor I once worked with actually confronted a few doctors, not in this context but about some of the abbreviations they put on request forms … then you can see that you are allowed to question'* (P1).

But not all reports were favourable.

'*… if you get that response from the supervisor '' ah just get used to it'… I would feel like I need to follow their lead*' (P9).

'If you went down and spoke to your supervising radiographer and she told you to just get used to it… I'd feel completely out of my depth … I would be reluctant to voice my opinion ... I mean they know best' (P10).

'yes, the supervising radiographer's comment is pretty bad really. 'oh, its nothing personal Mr blah, blah is always like that you need to just get used to it. I think that's pretty awful. That should not be the job of a supervising radiographer. Maybe he or she should have gone to the surgeon themselves and voiced their concerns about it. She is there as your leader isn't she? She is there to help guide you in a way' (P10).

This resonates strongly with Hafferty *et al*., (2015) who claim that ethical behaviour is moulded within the clinical environment and unfortunately does not always mirror the theory. There was even a suggestion that they would adapt their behaviour to mirror the behaviours of their supervisor even if they knew it was not the right thing to do.

'*if I have been advised by other radiographers that that is the best way to do it then I will probably take that on board… even if I don't think it's the correct way'* (P7).

'it depends how you take it sometimes certain comments can be tough and I don't know, I don't know … you might not agree but I think it is difficult for the radiographers and especially supervisors…. if you go up to them and they say do it their way…then I guess I would' (P9).

Participants did not always appear to be aware that their intentions were being swayed nor any evidence of intention on the part of the supervisor to pressure the student but rather an acceptance of the culture of the environment. This form of learning is through interpersonal exchanges, casual role-modelling and observation without formal teaching.

'*a&e is different they don't teach you formal like … you learn from watching and listening'* (P2).

'Some requests you just get on and do… because I have seen like few radiographers saying I shouldn't be doing it but I am going to do it because they will send it again with another request anyway, so will just do it for now' (P9).

'… the only difference is … in a clinical environment, has helped me to grow thicker skin, particularly in scenarios such as the ones in this study' (P11).

They show you how it is, how it is… so you know how to be in there (clinical environment)' (P10).

Gordon *et al.,* (2021) found the hidden curriculum strongly influence effective knowledge application, communication, collaboration and ethical behaviour in AHPs', both positively and negatively. There is evidence that the hidden curriculum influences the students both positively and in a negative way.

'yeah. but you follow their lead. If they keep their head down, then you keep your head down (sigh). But if there was any kind of other reaction, if they stood up and said we need to follow protocols …that would give me the drive uh yeah, the drive, and the confidence to assert my opinion' (P10).

This strongly suggests that they would mirror the actions of their supervising radiographer irrespective of what those actions are.

4.3.5 Organisation and Environment

The hierarchical management model of the NHS was perceived as detrimental to collaboration, an opinion that was corroborated by all participants across both vignettes and evidenced in Rushmer (2000), Hammick *et al.,* (2009), Roebuck (2011) and Francis (2013a). There is evidence in this study that the participants thought it was harmful to collaborative working.

> '*I think I would scrap the hierarchy bit because at the end of the day no matter what, everyone has to work together…it doesn't help us to work together'* (P2).

Kennedy (2011) and Francis (2103a) drew attention to the oppressive hierarchy that left inappropriate behaviour unchecked due to the fear of speaking out. The drawback of a traditional tall organisation where a single hierarchy exists with one clear 'boss' who everyone reports to, and is accountable to, is that any attempt to take on responsibility for your actions is perceived as stepping out of line. This exact phrase was mirrored by (P5). The students articulated the fear of reprisal and the effect it would have on them. One participant stating that if the doctor had shouted at them they would have,

> '*Panicked, panicked a lot* (nervous laugh) (P5).

While another acknowledged that,

> '*… it actually happened to me once … I was really scared ... So um.. I didn't say anything obviously… you just try stay out the way'* (P9).

And confirming this thinking in vignette 2

> *'yep. I think I would be scared to say anything to him to be honest I'd be nervous'* (P9).

'*…think the radiographers are scared ... I mean imagine you have to go back and work there every day … so yeah they do as they are told'* (P10).

'And losing your temper and being a bigot and derogatory towards the radiographer um is never going to be a situation where they get what they want. I mean they get to unload but it is not going to make the radiographer work any harder. Or make them work anymore competently. It just pretty much demoralises everyone else' (P12).

Statements that align with Rushmer (2000), Atwal and Caldwell (2005), Thylefors, (2012) and Nugus *et al.,* (2010) declaring that the 'lower echelons' execute their work, do not take responsibility and merely put into effect the decisions taken by others, making it easy for them to feel insignificant, unnoticed and disempowered.

The same participant relayed an instance when a surgeon had shouted at them and as a result the radiographer they were with took over the case in order to appease the surgeon.

And I kind of felt that I had been completely rejected in that, it was an absolutely pointless me being there… insignificant really' (12).

Feelings of being unnoticed by the IP teams in theatre is mentioned by several participants.

'… feel like an outsider … don't even know I am there' (P6).

'being the ONLY radiographer there as well, cause, there may be other doctors, there may be loads of nurses and porters they have each other for support. But as in individual radiographer going into that alien environment (theatre) it is very intimidating and lonely' (P10).

This was corroborated by Rose (2011) who believes this can lead to professional isolation and a professional identity crisis. While isolation was discernible, identity problems were not obvious within this study, quite the opposite; participants identified strongly with being a radiographer as can be seen in previous statements. What did

appear to be in jeopardy was their confidence to engage with the team, due to feeling anonymous and like an outsider.

It is perhaps little wonder then that students in this study were unsure of accountability within an IP team, even suggesting that doctors might be responsible for radiographers' responsibilities. But, one could also argue, that if doctors are expected to be accountable for the radiographers' actions, then it is unsurprising that doctors feel justified to direct those actions perpetuating the hierarchy.

I was surprised by the students' awareness of organisation around them and the effect it can have on collaboration, having made an assumption that they their reality was framed within the radiography department. They highlighted the impact of a doctor focussed organisation concurring with Thylefors (2012).

> **'***oh yeah of course um the clinical environment is a very stressful environment and doctors bear the brunt of the stress …so it's all on them. Because of that I have seen doctors demanded things outside the realm of protocol um certain views certain scans whether they are justified or not'* (P5).

> *'obviously they (doctors) are under pressure … have time directives. Ummm… at times potentially taking stress out on fellow workers… so you just let it slide and get on'* (P1).

There was talk about the unreasonable demands placed on doctors who then take charge and make decisions excluding other team members, discounting the collaborative approach of shared-leadership to deliver care as advised by Gibb, (1968), Freidson (2006) and Nugus *et al.*, (2010). There was also an appreciation of how time directives (particularly a&e), workload and lack of funding cause stress, with doctors bearing the brunt of the stress affecting collaboration.

Furthermore, they stated that when you are so short staffed, working alone under the time directives

> '*you just need to get the work done … and that can affect how you think'* (P10).

'I think the fear of wasting everybody's time um the fear that you as the small cog in quite a large machine which is the operating theatre um would be wasting everyone's time by saying I want to do this or that' (P5).

Kennedy (2011) highlighted all these competing demands on the organisation (amongst others), stating that it was a wonder the NHS trust was able to deliver any services, let alone do so with some success.

4.3.6 Role-taking

Further reference to the organisation also indicated a culture of compliance throughout the organisation with for example, junior doctors

'*trying to appease their seniors…'* (P5).

This finding is corroborated by Crowe, Clarke and Brugha (2017) with overwhelming evidence of conformity and compliance due to a hierarchy of anger, fear and bullying. All these compounding factors lead to disempowerment and isolation of junior doctors who are reluctant to ask for help and hide behind a cloak of control, trying to impress the seniors.

This was resonated by the participants in this study.

'*Mostly they (radiographers) just want to make the situation easy, keep things quiet … they try to look ok when actually they are not…*' (P1).

'difficult for a person to speak or against what they say as they feel this may jeopardise their position at work or what the surgeons think of them may not be so favourable…' (P3)'

'… I would be pretty angry. But I think ... if someone is really rude to you, the best thing to do is to say nothing to them. I think anyway … don't want them seeing me upset… they will just think I am silly' (P11).

'…don't want to make a fool of myself…' (P2).

This resonates with Goffman's notion of self-preservation, where individuals regulate the way they present themselves and their activities, to control the impression others form of them (1959), referred to by Goffman (1959), Zimbardo *et al.,* (1999) and Burr (2002) as role-taking.

Further comments demonstrated how participants perceive radiographers and they themselves, would adapt to their environment.

> *'The radiographer seemed to change how they act depending on where they are, umm who they with at the time, but that's just what I think's happening'* (P9).

> *'thinking about it now but (laughs) it all depends on the situation and the atmosphere and what's happening there and … the team … you act different with different teams' (P8).*

> *'So, it's kind of you know, you can suss people out pretty quickly. You know how they going to act … so you know how you got to act … so it depends really on who and where you are'* (P11).

> *'some (radiographers) do and will like go see the doctor or whoever and say you can't be talking to my members of staff like that … but I mean it's not kosher everywhere, I have been some places were… yeah (laughs) you do whatever to fit into that team'* (P12).

> *'The radiographer seemed to change how they act depending on where they are, umm who they with at the time, but that's just what I think's happening'*(P7).

So, despite protestations by participants that they would 'stick to their guns' or' 'act morally' and that they were 'tough' and resilient, they later acknowledge adapting their behaviour to suit the situation. Zimbardo (1999) and Burr (2002) confirms that attitude does not always direct behaviour, but that our behaviour is situation specific.

Figure 3: Representation of IPC and influencing factors: themes and clusters

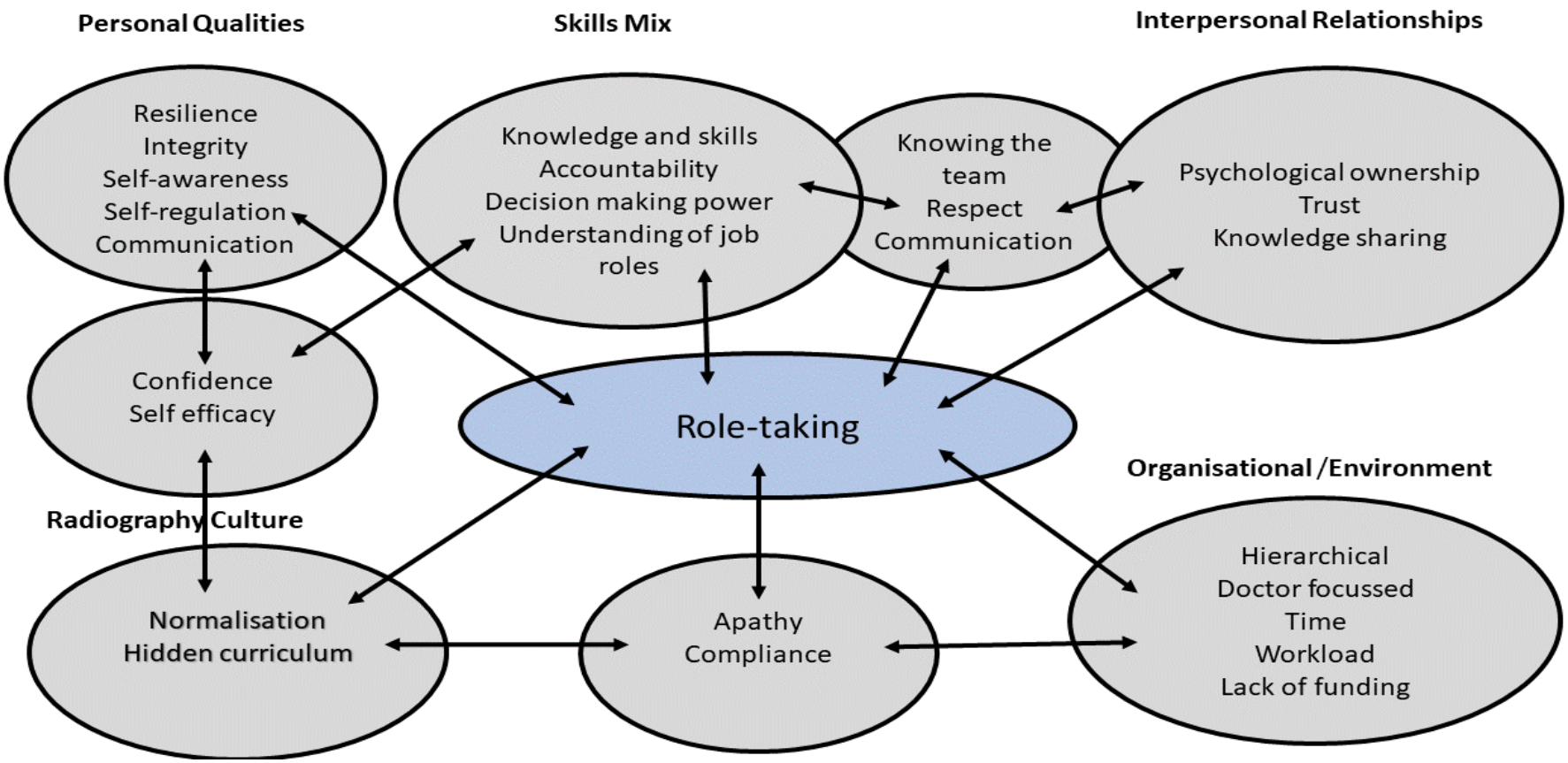


Figure 3 above, represents a summary of the findings of this study with the themes encapsulated within the shapes in grey. Each of the themes have been clustered together and labelled accordingly as personal capabilities, skills mix, interpersonal relationships, organisation/environment and the radiography culture. The themes that overlap the clusters are also identified. A central premise of role-taking emerged. The arrows in the diagram show the interconnectedness of the themes and clusters of information and how they feed into and out of each other and the central theme of role taking. This section provides an explanation of the interconnectedness.

The cluster of personal qualities in the top left oval are the attributes participants perceived as influential in collaboration. The capabilities of confidence and self-efficacy are believed to further enhance the capabilities above. However, a lack of these capabilities, have been shown by this study to result in an inability to collaborate, as a result conforming to the role that is expected of them. By role-taking the students are in effect demonstrating that they lack these personal capabilities required for collaboration suggesting they are ill equipped.

Skills mix (top centre) is an overview of the challenges encountered by the team when an interprofessional team works together which are; an overlap of knowledge and skills, confusion surrounding accountability and decision-making powers, and lack of understanding of job roles. This theme is also related to confidence and self- efficacy and these capabilities have shown to be necessary to overcome the challenges of skills mixing. Equally skills mixing can dent confidence and self-efficacy hence the two clusters being interconnected. Due to the challenges of the skills mix, participants acknowledge that there is role taking by both themselves and radiographers. Knowing the team, respect and positive communication are all thought to enhance collaboration, but the opposite appears to result in taking on the role expected of them rather than working collaboratively.

Interpersonal relationships (top left); psychological ownership of their responsibilities as a radiographer was found to be positive in one sense, enhancing respect and improving communication and knowledge sharing. While knowledge sharing was considered an essential ingredient for collaboration improving communication, gaining

respect, building trust and enhancing status. However fervent psychological ownership can result in territorial behaviour blocking communication preventing positive outcomes. A lack of ownership can result in less communication and knowledge sharing resulting in conformity, depending on the team and subsequent role-taking.

Role-taking is considered to be molded by the organisation and environment where collaboration in an interprofessional team varies from department to department and hospital to hospital. This seems to vary depending on the hierarchical structure and focus. The flatter the structure the less likely negative role-taking is to occur however an autocratic hierarchy is more likely to result in apathy compliance and normalisation to the team/organisation expectations and role-taking. This is compounded by workload, time directive and lack of funding for staffing resulting in a stress response. The reaction being that there is no time to collaborate effectively, so role-taking occurs as it is a quicker and less stressful solution.

The doctor focused hierarchy appears to emphasise apathy and compliance, factors underpinning role-taking. The opposite is also true where apathy and compliance reinforce the hierarchy and suppressing collaboration.

Apathy and compliance were reported as underling factors in the culture of radiography, the consequences of which is normalisation to the existing culture. The consequence of compliance is role-taking, adapting to the expectations of their role in radiography or a particular team. While, normalisation appears to be enhanced by the hidden curriculum.

Coming full circle back to personal capabilities which are believed to interrupt the process of normalisation, raise awareness of the hidden curriculum and reduce deleterious role-taking.

4.4 Enhancing Interprofessional collaboration

The issues that surfaced from reconstruction of the data were themed as: personal capabilities, interpersonal relationships, skills mix, the radiography culture and the environment and organisation, see Figure 3. These factors all result in, or contribute to, surreptitious role-taking by in-groups and out-groups. Ideologically we would want all professions to identify as one large healthcare team so that that there at no competing models of practice, with all team members adopting the same goals and norms.

There is a greater need for professionals who role-model moral courage, integrity and ethical decision-making to influence positive role-taking, as identified by Hunter and Cooke (2018). While there was evidence of a commitment to moral and ethical practice, ethical dedication cannot overcome closure strategies just because there is a sincere belief that it is the correct approach according to Freidson (2006). Instead educators should look to the enhancement of confidence, self-efficacy, resilience, integrity, self-awareness and self-regulation as the personal capabilities required for ethical behaviour and collaborative practise. Improving leadership capabilities of all healthcare professionals is considered the single most important factor in effecting change, consistent with Barr (2015). These capabilities align with the Clinical Leadership Qualities Framework (CLCF) (NHS, 2011) and strengthen collaboration within and between interprofessional groups. According to this study these capabilities provoke leadership role-taking behaviour. This mirrors the shared-leadership concept; where all professionals at all levels within the hierarchy are empowered to influence on matters within their sphere of expertise leading the group to the realisation of a single objective i.e. group norm (Gibb, 1968; Pearce and Congor, 2003; Owen and Cooke, 2016). As highlighted in the above discussion where individuals identify as a group they will take on the assumed role of the group, reducing tensions between professions within that group. The analysis implies that it is not only the students that would benefit from leadership training but radiographers too.

Normalisation to the culture of the group and/or organisation and its subsequent role-taking (identity) by the different professions and teams seems to be heavily influenced by the hidden curriculum, a fact reflected in Francis (2013a) and Hafferty *et al*., (2015).

Hunter and Cooke (2018) warn of the influence of the hidden curriculum on the theory-practice gap despite the educational institutions' best efforts to teach best practice. It is via the hidden curriculum that the students are socialised into practice, and it is via this hidden curriculum that the mentor might (positively or negatively) influence the students' learning, essentially acting as a gatekeeper to learning and therefore, integration of their theoretical knowledge to practical application. Maben *et al.,* (2006), Scully (2010), Allan, Smith and O'Driscoll (2011), and Greenway, Butt and Walthall (2019) found that mentors who assimilate practical application whilst challenging students' theoretical knowledge, are able to bridge that gap from the classroom to the clinical environment.

To modify the power of the hidden curriculum Holmes *et al.,* (2015) suggest there is a need for reflective competencies enabling new practitioners to select aspirational practice. Continuing professional development which includes reflective practice will require practising professionals to constantly revisit their own practice, drawing attention to behaviour, decisions and role-taking through habituation or normalisation. But, as highlighted, role-taking occurs even when the professional is aware of poor standards. Resilience featured as a means of maintaining a sense of one's own moral purpose in these situations, avoiding normalisation to role-taking irrespective of the organisational and environmental pressures aligning with Sergeant and Laws-Chapman (2012). Attaining emotional resilience is thought by Brown *et al.,* (2005) and McCray, Palmer and Chmiel (2016) be achieved by care and attention to 'self', with an emphasis on mindfulness as a tool for fostering resilience.

Of course, Lewis *et al.*, (2008), Kennedy (2011) and Mangan, Miller and Ward (2015) feel that maintaining a sense of one's own purpose or professional identity could be construed as a negative construct and is linked to tribalism Lewis *et al.*, (2008). On the other-hand Burford (2012) deems a preservation of a professional identity as fundamental to professionalism. Hammick (1998), Daly (2004), Hammick *et al.*, (2009), Frenk *et al.*, (2010) all suggest that this strong professional identity leads to further rigid demarcation between professional groups which then tend to act in isolation, competing against each other. This study however, purports that professionals with a strong identity felt empowered, perceived themselves to have a higher status and were more likely to share their knowledge and expertise within an

interprofessional group. A finding echoed by Hunter and Cooke (2018). This strong identity is cultivated by depth and breadth of knowledge and skills specific to their profession and specialised advanced practice. With greater knowledge and skills and advanced practice comes respect, the confidence to make decisions and accountability, improving professionalism (SoR, 2013). So, in agreement with Meads *et al.,* (2008) and Buring *et al.,* (2009) the IPE framework should be based on enhancing a professions' specific identity and expert knowledge and skills.

Participants considered understanding of roles and knowledge sharing crucial in improving collaboration within an IP team, opinions, that are in keeping with Braithwaite *et al.,* (2013) and Collette *et al.,* (2017). In addition, there is overwhelming evidence in my data that the empowerment of a strong professional identity is essential for overcoming these barriers. My findings advocate improved socialisation between groups rather than a reduction in professional identity. This was thought to be the key to professionals getting to 'know each other', understanding their role and, positive communication. As a result, there would be a reduction in labelling and a decline in undesirable role-taking, a belief back up by Ebert *et al.,* (2014).

One of the greatest influences in effecting positive collaborative change would be to change the behaviour of the radiography and organisational culture. The hidden curriculum which, perpetuates normalisation in the organisation and the culture of conformity and compliance, is more difficult to address as cultures are deep wide and stable and very difficult to change (Hafferty *et al.,* 2015). All twelve participants acknowledged the impact of clinical practice on their development as a professional, emphasising the importance of positive role-models, supporting the thinking of Hunter and Cooke (2018).

However, Walker, Clendon, & Walton (2015) found when negative behaviour is repeatedly executed by a role-model (supervisor in this instance) conduct will over time be accepted as normal resonating with the findings in this study.

This demonstrated the power of the hidden curriculum in promoting role-taking where there did not seem to be a clear distinction between positive role-modelling and normalisation to an accepted behaviour. Interestingly, the participants thought that

appearing stressed was a negative attribute suggesting that it was not an accepted norm to exhibit stress.

Time directives and an unrealistic workload compounded by being short staffed were significant factors impacting collaboration. The ensuing stress was believed to be an enormous influence on interpersonal communication and perceptions of respect, resulting in labelling and role-taking, reinforcing the perception of a doctor focussed hierarchy. In addition, as proposed by NHS (2011) and Densmore (2015), there was recognition that a shared-leadership approach would alleviate the burden of stress and act as a means of improving staff wellbeing.

This aligns with the prodigious evidence base of improved working environments (Smith *et al.*, 2008; Hammick *et al*., 2009; NHS, 2011; DH, 2008; 2010; 2012a; Leigh *et al.*, 2012; Francis, 2013a). Rushmer (2000) draw attention to the informal structure of the working environment which are the social ties and friendships which grow out of socialisation and exists to satisfy the social needs of the workforce, improving belonging. As previously debated a sense of belonging to a group will enhance collaboration.

The vignettes for this study are set in an acute environment where according to the Francis (2013b) 80% of adverse incidents are due to staff which are unfamiliar with each other, the team's skills mix and consequently communication problems. Alongside Spector and Meier (2014), participants in this study emphasised the importance of how to improve a sense of belonging and understanding of a transient team. Their suggestion is for team members to assemble (however briefly) to introduce themselves and their experience breaking down the barriers to communication.

Rushmer (2000) confirms that teamworking, as it is traditionally known, is not necessarily an ideal model for healthcare, especially those that work within an acute environment, where teams are transient.

Pearson (1994) offers the notion of temporary clinical groups as a preferred solution. Training would include the non-team' approach where small interprofessional groups work on time-limited tasks relevant to the practice of the team e.g. an operating theatre team, and then disband. Equally important according to Borril *et al.,* (2000), although not a theme that emerged in this study, was for teams to review and feedback to each other on whether objectives were achieved. They consider this to improve self-awareness and encourages more dominant members to listen and more subordinate members to contribute more freely. Additionally, Cant and Killoran (1993) advise that communication training sessions should also be provided to develop skill and the ability to challenge the dominate members of the team.

4.5 Professional closure: similarities and differences

The subsequent critical analysis explores students' perceptions of IPC and the factors perceived to influence collaboration in light of the model of professional closure, drawing parallels, with the purpose of illuminating divergence to uncover new knowledge.

The theoretical framework of this study, Witz's (1992) model of professional social closure, is founded in the original social closure theory by Freidson (1970) which was introduced to encapsulate the foundations of medical dominance and assumes that all domination is founded on processes that the entire group conform to. My study addresses the limitations of the group conformity principle by exploring the relationships between individuals and does not assume that all group action is homogenous.

In alignment with the theory, there is prodigious acknowledgement by the participants of the existence of a dominant profession who exercise power and identification of medicine as that dominant profession in agreement with Witz (1992), Larkin (1978) Abbott (1988) and Johnson (2016) amongst others. Students consider this to be pervasive and a strategy by medicine as a group to control all other healthcare professions aligning with Kvarnström (2008), Kennedy (2011) and Nugus *et al.*, (2010). The inference was that doctors exercise power through harsh and demeaning

communication and an authoritative attitude, using it as a means of controlling and regulating the behaviour of others.

This control, resulting in boundaries between medicine and the other healthcare professions signalling a demarcationary strategy, thus securing medicines' position of power in the hierarchy. This aligns with the one-sided exercise of power (demarcation) that is deemed a built-in attribute of Witz's social closure theory (1992). The participants in this study did not consider there to be any exercise of power by other healthcare professionals to control other professions. This point in my data analysis included a period of reflection during which I was guided by the ethos of phenomenology by being aware of my prejudices so that the data might portray the views of my participants as advised by Crotty (1998), Findlay (2002), Merleau-Ponty (2008), McConnel-Henry, Chapman and Francis (2009) and Findlay (2012).

The perceived authoritative attitude of doctors towards all professions appears on the surface to concur with the execution of intentional demarcation. Burr (2002) reports that attitude is generally thought of as something that is individual to a person, so I would suggest that it is not possible for the participants to know what the doctors' attitude towards other IP groups are, but rather what they were describing was overt behaviour. In keeping with a phenomenological perspective, Maltby (2010) state it is crucial to understand how the participants perceive this phenomenon, however Mead (1934) suggests we should also bear in mind that meaning is specific to a culture. So, we cannot simply explain doctors' methods of communication and behaviour through the cultural lens of radiography. The shared nature of meanings (i.e. shared assumptions about a situation) would give us a way of appreciating intentions and expectations. As acknowledged by the participants they do not feel part of the IP group but rather felt like an outsider, indicating that there is not a shared assumption, which may result in misinterpretation of communication cues as explained by Goffman (1961). Furthermore, it was stated that doctors' perceived behaviour was not an intentional demarcationary strategy but rather a response to stress of the environment, time directives and expectations of a doctor focussed organisation as reported by Thylefors (2010). This indicates that the behaviour is situation specific, upholding Mead's suggestion that it is not possible to examine behaviour of an individual without looking at their subjective phenomenal world (1934). Moreover, in keeping with social

constructionism, Crotty (1998) informs us that meaningful reality is constructed through interaction with the social context. Within their phenomenal world, the NHS, doctors are considered of a higher status than other professions by the participants and in their opinions by all the professional groups as well, resulting in medical dominance, which is supported by Lewis *et al.*, (2008), Yielder and Davis (2009), Hammick *et al.*, (2009), Roebuck, (2011), Thylefors (2012) and Collette *et al.*, (2017). There was also a proposition that this is the way in which the medical professional has traditionally been viewed in society and since childhood, echoing Freidson (1970). Lee and Hong (2012) confirms the view of one of the participants how prominent news coverage can influence perception and how perceptions of importance increase with more prominent and significant coverage. This perception of importance and social status is reinforced by the media and the organisation that they are immersed in, creating this phenomenal world where they, (doctors) are believed to be the dominant profession which concurs with the theoretical framework of my study. But, Linton (1945) warns that the status role concept where a group (like medicine) occupies a status position, in a social structure like the NHS, brings with it a set of prescriptive behaviours, norms and expectations for the role. This was mirrored in the responses by a few students. Status imposes social expectations and as a result we become 'the role' conforming to the expectations; this is branded by Linton (1945), Zimbardo (1975; 1999) and Burr (2002) as role-taking. Burr (2002) argues that role gives a much broader indication of potential conduct. This according to Witz (1992, p.131) resulted in nurses taking a 'handmaidens' role and corroborated in Freidson (2006) and Salhani and Coulter (2009). Verification of role-taking by radiographers was also substantiated by participants in this study. Students acknowledge that they would take on the role expected of them in a team and that the role would be different for different teams, concurring with Lewis e*t al.,* (2008) who write from a radiography perspective. I would reason therefore, that if role-taking is evidenced in professions who consider themselves to be of a lower status and conform to the expectations of that status, then it would seem logical that the higher status profession too conforms to the prescriptive norms of their phenomenal world. Furthermore, Zimbardo (1975) contends that we '*underestimate the power and pervasiveness of situational controls over behaviour, because they are often subtle and obscure'* (p. 269).

Three participants were of the opinion that doctors are socialised in education, at work and in the community to be decision makers, to take charge and assume leadership. Values, that Hall (2005) and Nugus *et al.,* (2010) suggest are subtly integrated into their worldview. Francis (2013a) refers to the unchecked hidden curriculum which shapes practice and moulds healthcare professionals. This suggests to me that doctors might not necessarily be aware that their actions are domineering or the cause of demarcationary closure strategies, but rather that they are taking on the role that they perceive as their own, an opinion that is corroborated by students in the findings. An opinion further reflected in Mangan, Miller and Ward (2015) and Collette *et al.,* (2017).

This role-taking is accentuated by the 'labelling' of other healthcare professionals by radiographers, which is a counterpart of stereotyping (Ashworth, 1979). Once an individual is labelled in some way, the identity they have been labelled with, exerts a powerful influence on social interactions with others, who are aware of/or created the label. This according to Becker (1963) and Burr (2002) puts pressure on the labelled person to accept that identity and to take on the role assigned to them. Participants explained how some surgeons where thought to be universally horrible, automatically labelling them and it seems the label is passed on to other radiographers and students perpetuating the labelling.

Role-taking is also moulded by the broader organisation in which one is embedded, as perceived by participants who stated that collaboration varies between interprofessional teams and hospitals**.** According to Heimer and Matsueda (1994) an organisation is configured of roles and statuses and people occupying similar situations in the social structure would display similarities in role-taking and behaviour. It is discernible in the findings of this study that the dominant profession is 'stepping up' and conforming to (taking) the role that they associate with being a doctor, rather than a co-ordinated action by the profession to dominate. Thus, conflicting with Witz's model of social closure (1992).

The worldview (culture) of radiography appears to be just as surreptitiously cultivated. Derogatory labelling of radiographers by other professions as 'button pushers' has clearly had a profound effect upon the participants of this study making them doubt

their professional standing within the IP team aligning with Lewis *et al.,* (2008). Despite all participants vehemently protesting that they would challenge demarcationary strategies through usurpation, there was also a general air of resignation by participants to the compliant attitude demonstrated by some of the radiographers. During the dialogue directly relating to the vignettes, students appeared confident and defiant in challenging the closure strategies through usurpation but interestingly when commenting on the reality of radiography and their own practice, they appeared more compliant. Participants admitted that they would respond in the way their supervisor expected them too and if they met with resistance would relent and conform. With a few stating that they would think the behaviour was normal and so would '*do it too'*, further evidence of surreptitious role-taking. This cultivated compliance is noted in the evidence base where conformity led to noticing but not addressing poor practice in Francis (2013a) and Traynor and Buus (2016).

Rather than this being a matter of role-modelling alone, I would argue that it is through the development of their identity as part of a group and the social influence of that group, that results in them taking on the associated behavioural norms. An opinion supported by Burr (2002). Lempp and Seale (2004) explain that in role-modelling, the student adopts a habitual professional identity mirroring the person they are modelling themselves on. To an extent, this was true in this study as the students suggested they would mirror their supervising radiographers, but most participants then went on to suggest that their professional identity would change dependent on the group that they were part of.

In addition, they also referred to the influence that the workload, time directives, being short staffed along with the pressure of the clinical environment and out of hours work would have on compliance and conformity to expectations i.e. what role they would take. Several students reflected on the influence working out of hours and lone working would have on their decisions and behaviour aligning with Zimbardo (1975) and Burr (2002) opinion we underestimate the power of persuasiveness of situational controls. because they are subtle and can lead to conformity.

Participants within this study also tend to take on a compliant role under the influence of others, particularly in relation to the fictitious doctor in vignette two, corresponding to the findings of the Francis report (2013b). While students in this study do not appear to change their perceptions of what should be done, they admitted that they would conform despite holding onto their viewpoint. Burr (2002) believes this confirms the fragility of our individual agency and morality, with behaviour determined by the group of which we are a member. Brown (1988) argues that emphasis on the persuasiveness of a group on an individual's behaviour, is misdirected and suggests that instead of becoming an anonymous member it provides a sense of identity. This intimates that rather than fragility, the individuals acquire a stronger sense of identity as a member of a group; whether the group be radiography, an IP team or the institution that they are working in. Thus, implying that individuals have multiple strands to their identity and their individual goals and purpose become indistinguishable from those of the group that they are part of. A notion evident in the comments of the participants. Thus, according to Burr (2002) they create a group norm; where the group norm (stance) for AHPs and nurses in an interprofessional team is proposed by this study to be one of compliance and conformity. Once that stance has been accepted, the group tend to conform and build all their responses on that line i.e. take the role expected of them as a member of that group (Goffman, 2013). Furthermore, because judgement and reason become weakened in a group situation, they act in a co-ordinated compliant way without questioning 'the way', which according to Asch (1956) and Francis (2013b) perpetuates the hierarchy. Conformity is directly related to obedience and a lack of questioning, which ultimately cultivates a 'natural attitude' of acceptance towards the hierarchy and subordination in general, resulting in habituation or normalisation as described by Foucault (1975), Gutting (2005), Merleau-Ponty (2008), Dowling and Cooney (2012) and Francis (2013a). This would emphasise the divide between the dominant and subordinate professions and accentuate the perception of a demarcationary closure strategy by the dominant group.

Not only is there a lack of questioning and obedience (subservience) by the subordinate groups but closure between the groups is further entrenched by the apparent confusion over accountability. As I have previously argued, if radiographers are expecting doctors to be accountable for the work of the radiographer then it is natural for doctors to direct the work of the radiographer, thus increasing the

perception of subordination of radiographers; a demarcationary strategy that is self-imposed by the subordinate group. Nugus *et al.,* (2010) and Thylefors (2012) contend that without accountability by all team members there can be no redistribution of power and reduction of social closure between the IP groups; i.e. an improvement in collaboration.

While there appears to be no direct upward exercise of power as a group to challenge medicines' perceived demarcationary strategy, the theoretical framework purports there is not only an exercise of power, but also a possession of power. Witz (1992) acknowledges that social closure theory neglects to consider the possession of power, a weakness that this study addresses. Although there was a perception by the students that doctors possess power, further in-depth analysis of the data did not support this perception. Rather, it revealed that the power imbalance between groups is created by the personal attributes of the professionals, rather than a single profession possessing power, concurring with Foucault (1980). Confident, resilient individuals who do not merely comply, were considered able to exert power, and influence others irrespective of their profession. Participants cited instances where radiographers irrespective of grade were able to challenge and influence decisions**.** Moreover, they suggested that professionals acting with integrity would be able to oppose the exercise of power, suggesting that the autonomous use of their initiative is at play and that no one group possesses power. This ability to influence and the resultant distribution of power within the team supports the concept of shared-leadership, with collaboration as the positive consequence consistent with Foucault (1980), Pearce and Congor (2002), NHS (2011) and Barr (2015). Collaboration between professions was further substantiated by all participants, with greater depth of knowledge, skills and experience considered to generate self-efficacy, ultimately dictating decision-making powers and ability to influence. Participants cite examples of experienced radiographers who are confident in their knowledge that were able to influence and improve collaboration between the dominant and subordinate groups.

Witz (1992) and Freidson (1970) both described the effect of knowledge and skills as reasons for domination and social closure, thus supporting the theoretical framework. But in this instance, knowledge and skills were thought to reduce social closure. Moreover, participants felt that this was a trend that was on the rise with more

advanced practice and a greater knowledge base of radiographers. An opinion supported by Lovegrove and Long (2012) and Littlechild and Smith (2015) who all write from a radiography perspective. This push by radiographers, is an example of an inclusionary strategy rather than usurpation; not a direct upwards challenge to the medical dominant demarcationary strategy but, rather a fight for inclusion into the ranks of the dominant profession using knowledge. So, in effect, usurpation has been replaced by inclusionary strategies in this study. Another significant difference portrayed by this study is that instead of reinforcing the closure between professions, the inclusion strategy using knowledge fosters collaboration.

Witz's theory states that power imbalances are multi-directional between the interprofessional groups (1992), with the subordinate group engaging in downward exercise of power attempting exclusion of others in addition to usurpation. This study however demonstrated no evidence of power imbalances between the subordinate healthcare professions, which contradicts the evidence base as reported by Nugus *et al.,* (2010) and Ebert (2014). Participants believed that nurses and AHPs were of equal status, a fact that is divergent with Witz's theory and demonstrated no compliance and conformity during their interactions with these professional groups (1992). An interesting finding; as compliance was found to be the role taken by radiography as a group or by the IP team (professions other than medicine) as a whole, so evidently the role taken is directly influenced by the group with whom they are interacting, verifying my ontological assumptions that radiography as a group is compliant.

Collaboration between the subordinate groups were reported in this study and by Blue and Fitzgerald (2002) to be positive with evidence of mutual power, shared decision-making and responsibility. What is more, these positive collaborative relationships appear to have been fostered through the interprofessional education programme supporting the thoughts of Barr (2002) and Reeves *et al.,* (2010) that interprofessional education has the capacity to promote collaboration. Students were of the opinion that the reason collaboration was not as successful between the 'other' professions and doctors is because medicine do not participate in IPE. Findings from studies by Brown (1988) and Tajfel and Turner (1979) show that even if there are no links, shared norms or culture between members of different groups, identification as a subordinate profession is enough to create an 'in-group' membership. A point verified by students

could therefore explain the ‘in-group’ mentality and collaboration. This in or out group membership is described as tribalism by Beattie (1995) and Nyatanga (1998) and considered a normal part of social identity with members adopting the identity, norms and stereotypes of their ‘faction’. This aligns with Tajfel and Turner (1979)’s social identity theory and Witz’s (1992) proposition that healthcare professionals identify with their professions and strive to maintain their collective identity by strengthening differentiation between them. There was pervasive evidence of this collective differentiation, but the collective identity was not static between professions but appeared flexible depending on which group they identified with. MacAuthur, Daily and Villigran (2016) support this, stating that identify is fluid over time.

Effectiveness of IPE was also contested in the apparent exclusion of radiographers from the subordinate professions in the theatre vignette; not due to a perceived power imbalance but due to marginalisation of the radiographer, which would ultimately lead to exclusion supporting the theoretical framework of this study (Witz, 1992). Exclusion by the rest of the theatre team did not seem to be purposive but due to a lack of socialisation ad getting to know each other. A finding also outlined by D'Amour and Oandasan (2005) and Baxter and Brumfitt (2008). It was reported that if the team (which includes doctors, AHPs and nurses) worked together on a regular basis and knew each other they collaborated well, identifying with Reeves *et al.,* (2009). But the radiographer being a transient team member in an acute environment (as presented in the vignettes) is treated as an outsider aligning with Brown (1988). Furthermore, it was obvious that radiographers exclude themselves from the team because they felt anonymous and like an outsider because they did not know the team and did not take the initiative to engage. A notion supported by Becker (1963), Mazur *et al.,* (1979) and Mandy, Milton and Mandy (2004) suggest that this is due to stereotyping, while Funnell (1995) argued that it is a lack of professional identity. But I would suggest, that it is another example, where identification as an ‘in-group’ by the theatre team results in collaboration but exclusion of the ‘out-group’ (radiographer), with members of each group taking on the assumed role of that group. This would insinuate that exclusion is not a static closure strategy, but that exclusion occurs at the interface between the ‘in-group’ and the ‘out-group’ and is not clearly delineated between professions. There is evidence in this study that where team members know each other and there are no

in/out-groups within the team, there is mutual respect, trust, less psychological ownership, communication is congenial, and collaboration is apparent.

Summary

All participants proposed that the NHS has a hierarchical structure, plagued by power imbalances negatively influencing collaboration. They perceived medicine to be the dominant profession who possess and exercises this power, controlling the other subordinate professional groups. Furthermore, they believed that it is a consensus amongst radiographers. Some participants did however state this was not an intentional strategy by doctors but related to a stressful environment and that doctors bear the brunt of that stress. The reflections of these participants provided a more realistic perspective and some reasoning behind the interactions, softening the unconditional perceptions of medical dominance. All AHPs and nurses were perceived to have equal authority and tended to treat each other as equals. But they were also of the opinion that AHPs and nurses tended to conform and comply to the wishes of the doctors as they were socialised to value obedience, securing medicine's position in the hierarchy.

All participants stated that radiographers were valuable members of the team and should be respected for their skills, but there was a tension in the way they view their own world of radiography. The technical aspect of the work made them feel inferior reflecting the literature. Comments suggested that radiographers should be more confident and assertive and that those with advanced knowledge and skills were able to influence team decisions. Moreover, those radiographers were respected and trusted, resulting in collaboration. Many participants did not feel they had the self-efficacy to contribute to interprofessional team discussions, even although they recognised it would contribute to improved IPC. Students suggested that knowledge and skills led to a strong professional identity and contrary to the evidence base, state this would give them the confidence to collaborate. So, it seems that radiographers performing advanced clinical tasks usually performed by doctors, are being successful in gaining status, trust and ability to influence.

Communication was overwhelmingly perceived as problematic but also the solution. They suggested that positive communication and active engagement in the team (getting to know the team) further successfully dilutes tensions.

Students believed doctors are educated to be leaders (while radiographers are not). Leadership training is verified in the evidence base. A lack of leadership capabilities by radiographers was perceived as the reason why there was a reluctance to collaborate. What also emerged was confusion surrounding accountability, with many students unsure who would be accountable should there be a breach of IRMER rules. This coupled with a compliant attitude means the work of radiographers are more likely to be directed than independent. This, places an even heavier burden upon the Medical profession which in turn compels them to direct the actions of others, reinforcing their leadership role.

Resilience was considered an essential attribute in maintaining integrity, resisting the perceived hierarchy, and dealing with the organisational pressures. Students considered themselves resilient, but deeper scrutiny divulged that they would buckle under the pressure. Students clearly recognised substandard behaviour and understood their responsibilities but divulged that they would relent and do what was expected of them. They affirmed they would remain quiet and comply with the requests made of them, taking the lead from their supervising radiographer on how to act. Where a supervising radiographer challenged situations then the student would follow suit and mimic this behaviour. This reflects the literature that warns that we should never underestimate the persuasiveness of the social world around us, laying bare the power of the hidden curriculum. This underlines the importance of the supervisor/mentor in preparing students for collaboration in the clinical environment. Participants pointed out that compliance would vary from team to team, department to department and hospital to hospital and that it was dependent on the cultural norms of the group. Furthermore, that their identity would be moulded to suit the group's culture and norms.

Chapter Five

Conclusions, recommendations and rigour

This final chapter draws together the strands of the study by:

(i) Providing a brief conclusion on the core research questions
(ii) Drawing a conclusion on
    (a) the emergence of new knowledge informing social closure theory
    (b) the emergence of new knowledge relating to IPE
(iii) Making recommendations
(iv) Evaluating the rigour of the study

5.1 Introduction

The main aim of this study was to explore diagnostic radiography students' perceptions of the phenomena of interprofessional collaboration. The main purpose was to assess how well the interprofessional education curriculum prepares them for their collaborative role within an IP team. The relative lack of tangible evidence of the effectiveness of IPE, which is mirrored in the feedback received on graduates at the institution where the study was carried out, necessitated the study.

This study set out to analyse collaboration in light of social closure theory and the constructs of power connected with the theoretical framework, addressing possession and exercise of power. The distinctive perspective this research offers, is by engaging with interprofessional relationships, an underexplored aspect of social closure theory. Moreover, to ascertain the success of these relationships and the factors that influence them. The purpose was to ascertain the capabilities required for collaboration and how the IPE curriculum might be designed to better prepare students.

5.2 Conclusion

5.2.1 Diagnostic radiography students' perceptions of interprofessional collaboration.

This section is structured to respond directly to the core research questions

- How do diagnostic radiography students perceive collaboration in interprofessional practice?

All participants unanimously perceived the existence of a hierarchy with doctors at the top of the hierarchy. They described the balance of power which lay with doctors creating a medically focussed organisation.

All other AHPs and nurses were considered to have equal authority and status in the hierarchy and tended to treat each other as equals. The students suggested that some radiographers were apathetic and accepted the hierarchy. Furthermore, they suggested that they the students, had integrity and were resilient and would use communication and knowledge sharing to break down barriers thus challenging the hierarchy.

They evidence knowledge of their responsibilities and the conduct required of a radiographer and in fact demonstrate strong psychological ownership over their job role, showing that they have a strong affinity and identity as a radiographer. However, some questioning around the technical aspect of the job gave them cause to question their position in the team. They reported challenges with the mix of skills relating to decision making and authority, with some students unsure who would be accountable for radiation protection of the patient.

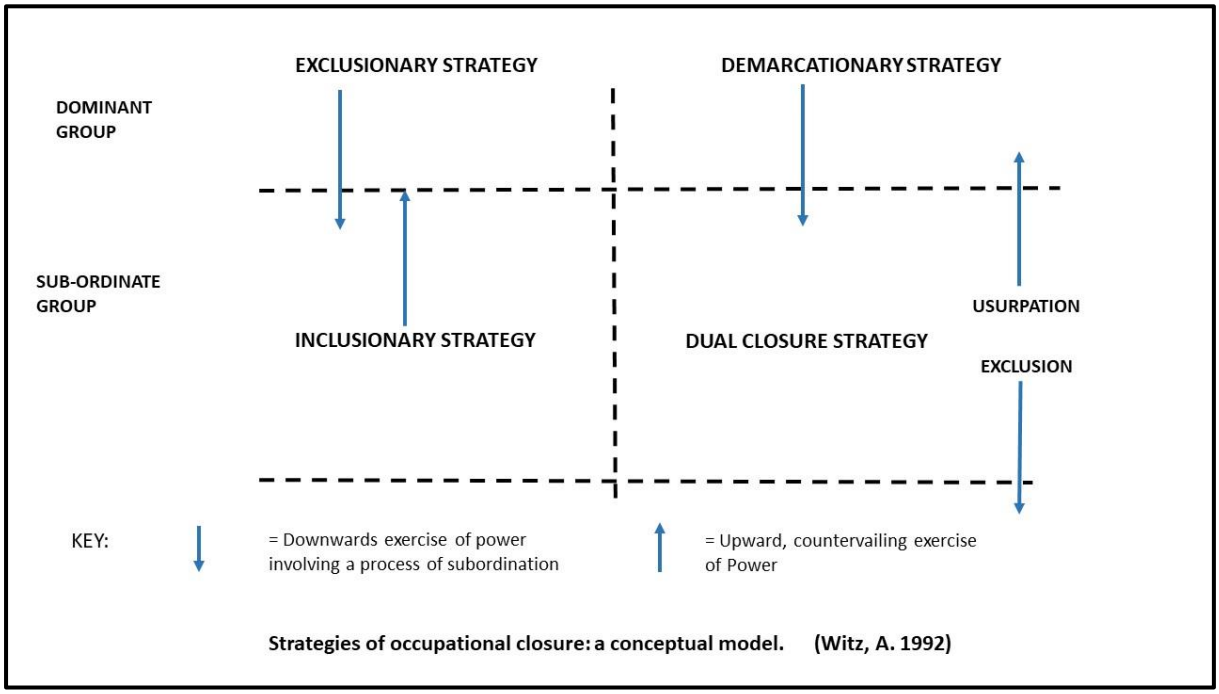
They reported perceptions of haughty and authoritative communication between doctors and other members of the IP team, although also provided instances where knowledge, skills along with confidence and self-efficacy and knowledge sharing that broke down communication barriers.

Despite affirming resilience, confidence and the capability to challenge the hierarchy they report compliance which unintentionally leads to normalisation through coercive behaviour, as well as a hidden curriculum which appears to lead towards role-taking. They voice the opinion that role-taking takes place where they (and also radiographers) took on the role that is expected of them and that this varied from team to team and organisation to organisation depending on its culture. They did not consider the coercive behaviour by doctors to be purposive but in response to stress, workload and time directives and staff shortages.

5.2.2 Emergence of new knowledge informing social closure theory

This study compared and contrasted to Witz's model of professional closure theory to the perceptions of a small cohort of diagnostic radiography students on IPC and the factors that they feel influences relationships and the exercise of power between professions and professionals. Portrayed below is the original model by Witz which was used as a lens for analysing the results. This section will guide you through the similarities and differences between Witz's (1992) model and provide a representation of a model of professional social closure based on the perceptions of a small group of diagnostic radiography students.

Figure 4: Witz's model of professional closure (for reference, identical to fig. 1)



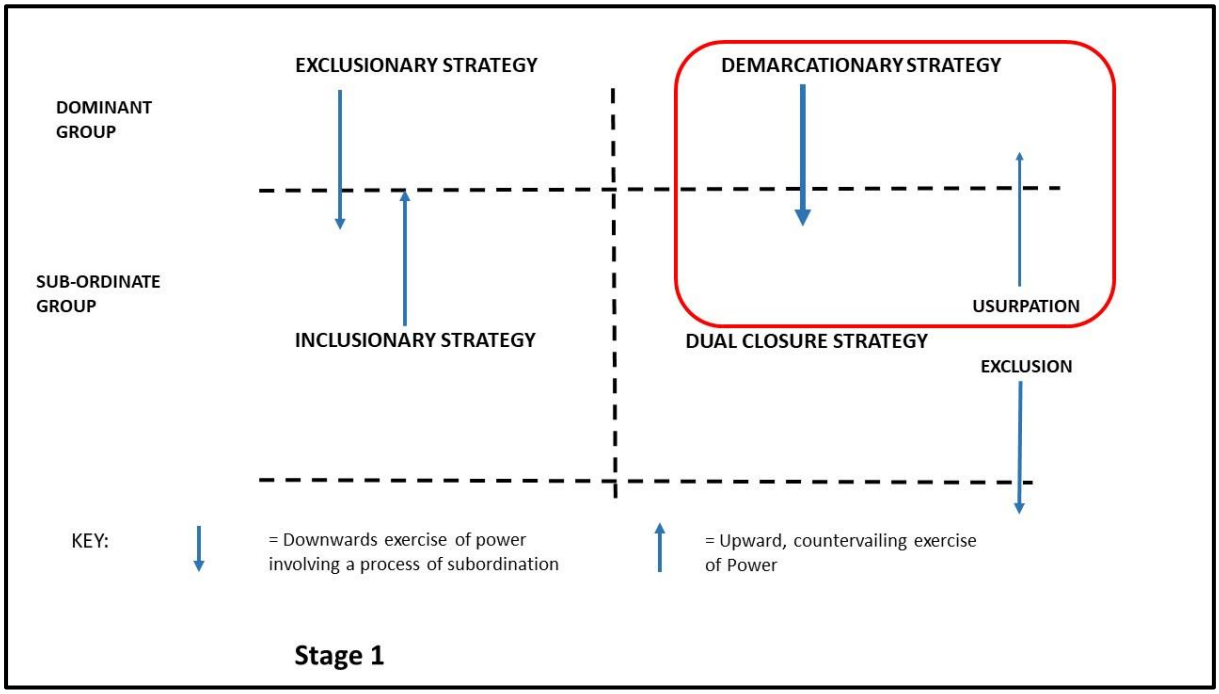
Stage 1

In the original model (figure 4 above), demarcationary strategies are considered a co-ordinated purposeful approach by the dominant profession to direct the work of the subordinate professions through a downward exercise of power. Participants in this study perceive that demarcationary strategies are still at play by the dominant profession, with a downward exercise of power through domination.

As in Witz's model there still seems to be evidence of an upward exertion of power by the subordinate profession (usurpation). Although visible, it is perceived to be less marked than proposed by Witz (1992). This is indicated by the weighting of the arrows in the revision, figure 5, below, creating a perceived power imbalance in favour of the dominant profession who exert more power.

So, although both demarcation and usurpation are both still perceived to be in play, the weightings have changed in favour of the dominant profession.

Figure 5: Stage 1 of a model of professional closure



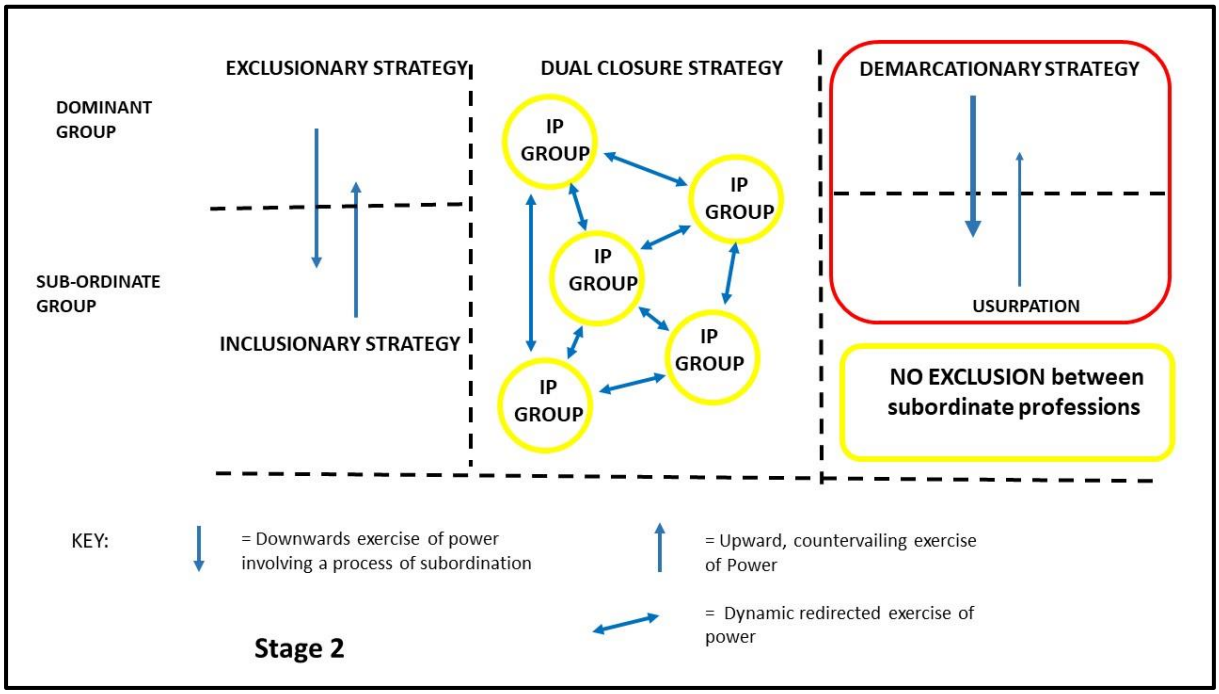
Stage 2

Dual closure strategies are the combined efforts of the subordinate profession to resist the demarcationary strategy, by a countervailing exercise of power against the dominant profession. While at the same time, applying downward power to control the work of other subordinate professions through exclusion. Of note, there was no indication of any perceived power imbalances and exclusion between the subordinate professions in the results. The participants considered all other professions to be of equal status so exclusion is no longer perceived to exist and is therefore not apparent in this representation (see figures 6 and 7 below).

A new altered perspective emerged: the formation of 'in and out' groups. Groups which are interprofessional teams composed of different profession e.g. the theatre IP team or the a&e IP team which are created by role-taking. Exclusion is noted and strengthened at the interface of these groups rather than between individual professions. Effectively, power is dynamic and constantly redirected between interprofessional groups and heavily influenced by the hidden curriculum. I would

suggest that this is the actual cause of closure between professionals hindering collaboration, rather than a co-ordinated professional group action of closure.

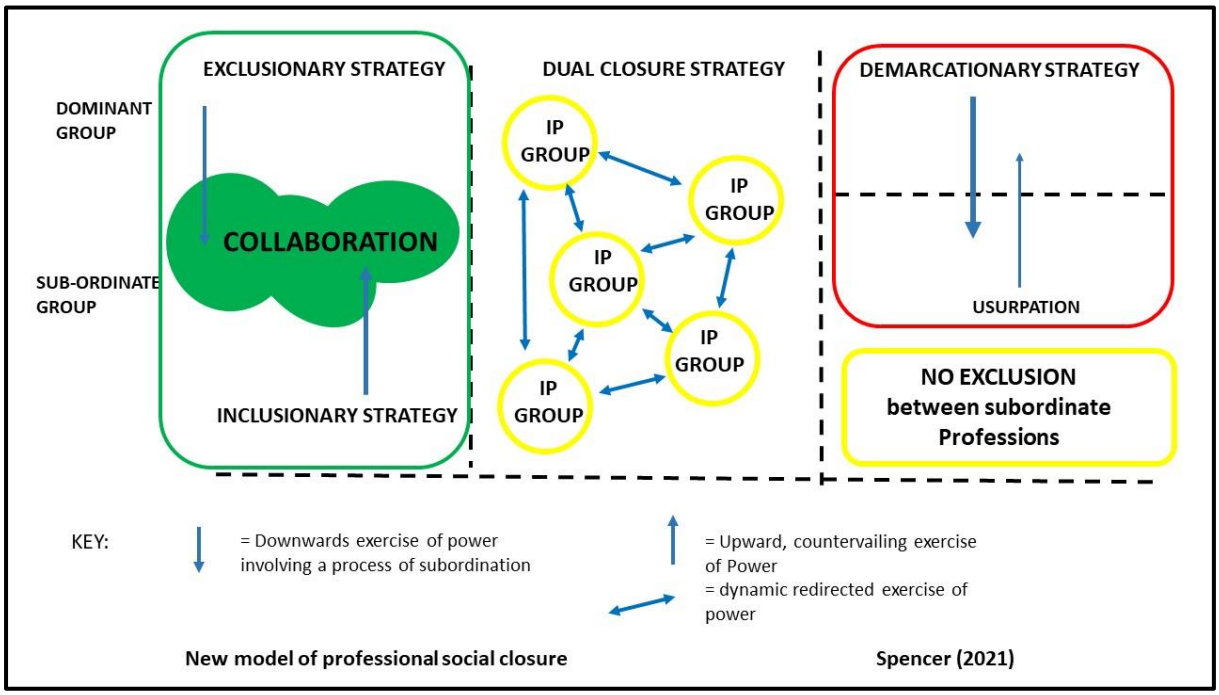
Figure 6: Stage 2 of a model of professional closure



Stage 3

No data emerged to support or refute exclusionary strategies by the dominant group to prevent entry to their domain or work through prescriptive entry requirements (left hand-side). So, this remains unchanged from Witz's model. Inclusionary strategies were however at the forefront of the results. Upward exercise of power by subordinate professions through advanced clinical practice was believed to result in positive interprofessional collaboration between professions and professionals, with a dissolution of power imbalances and a flattening of the hierarchical structure. From the evolution of these 3 stages a representation of a model of professional social closure as perceived the diagnostic radiography students in this small-scale study, is depicted in figure 7 below.

Figure 7: Stage 3 of a model of professional closure as suggested by the findings of this study



5.2.3 Emergence of new knowledge relating to IPE

This section presents the factors influence collaboration in interprofessional practice as perceived by diagnostic radiography students responding to the second core question in this study.

- What factors influence collaboration in interprofessional practice as perceived by diagnostic radiography students?

The literature review outlined the capabilities required for effective IP collaboration. Findings of this study suggest that students are inclined to take on a different role depending on the team or environment that they are in, finding it difficult to resist normalisation to the culture. This strongly suggest that students are unable to exercise the required capabilities for IPC despite their claims of possessing these traits. This implies that they are ill-equipped for interprofessional collaborative teamwork. More specifically, the radiography curriculum does not enable them to fully navigate the

bridge between the academic setting and the clinical environment, a crossing which is facilitated by their supervisors and mentors (role models).

While the apparent ineffectiveness of IPE is nothing new, a finding that is of particular interest is the hidden curriculum. It appears to be the most influential factor affecting students' adeptness at navigating the path from IPE to IPC. It seems to convey the expectations and ways of working of that team. Students then appear to normalise into that culture and take on the role expected of them. This was perceptible even in instances where students were aware it was not the right thing to do.

The data suggests that they become followers lacking the leadership capabilities to negotiate or resist normalisation into the culture of compliance of the team and/or organisation. It also insinuates that the quality of informal role modelling that occurs in the healthcare environment seems to fluctuate and may result in a student mimicking unreliable behaviour, especially if it is not detectable by the student.

This study unearthed that a strong professional identity is considered the foundation for confidence and resilience. Capabilities that not only enable communication but provide the skills to resist normalisation into a culture of compliance. This finding opposes opinions that professional identity causes turf protectionism and tribalism hindering collaboration.

Radiographers with specialised professional knowledge and skills were described as, able to influence the IP team, levelling out the power imbalances and flattening the hierarchy. Moreover, enhanced knowledge and skills were thought to beget greater respect, enhanced status and improved trust. Students reported that with a strong professional identity and advanced knowledge and skills they would be more confident, accept greater responsibility and be more inclined to act autonomously. They also suggested that they would be less likely to conform or become normalised to their 'expected' role, empowering them to navigate the hidden curriculum of the culture.

5.3 Recommendations

Firstly, recommendations for the wider organisation will be made before presenting specific recommendations for IPE. Following on with the changes I intend making in my own practice responding to the third research question: What recommendations could be made to enhance the preparation of students for interprofessional practice?

The results of this study will be shared through publication to reach not only the diagnostic radiography profession, but an interprofessional audience. The purpose would be to raise an awareness of the hidden curriculum and normalisation to the compliance and conformity of the hierarchical culture of the NHS. The culture of a clinical environment is complex and cannot be changed by amending the educational curriculum alone and will require a multiagency approach from the NHS, policy makers, professional body, educational institutions and the radiography community as a whole.

Recommendations would be, to address the staff shortages and time targets along with the dissolution of the doctor focussed organisation. This is a complex and challenging problem which I am not in the position to influence. However, through publication, the impact the environment of the organisation has on interprofessional collaboration can be highlighted.

I am able to foster relationships and initiate discussions at a national level e.g. I am a member of the NHS England improvement committee: London BSRP Workforce delivery group and national radiography working group which has education and training high on its agenda. The Society of Radiographers (professional body) are present at all these fora and would therefore, also be part of the discussions. All of these committees are in the position to take forward the recommendations for consideration and implement change nationally.

One of the key findings uncovered in this study was the hidden curriculum.

It is imperative that students are better prepared to recognise the hidden curriculum and navigate the transition from formal education to the realities of the clinical

environment and interprofessional collaboration. Admittedly it is not possible for me to change the culture of the clinical environment, however it is important to make clinical supervisors more aware of the hidden curriculum. This can only be achieved by collaborative working between the academic institutions and the clinical departments to explore the issues and formulate a strategy for resolution.

The findings of this study reinforce the need to revise the interprofessional curriculum to better prepare students for collaboration by embedding leadership capabilities. This is a sphere that I am able to influence in my capacity as a radiography educator. It is my intention to be more proactive in engaging in critical discussion about these concepts with other educators to develop and share best practice e.g. I am in the position to raise this item for discussion and address the underlying reasons during curriculum redesign.

Analysis of the results suggests that a feasible means of enhancing the radiography curriculum would be through application of the three successive levels of transformative learning. Transformative learning is about empowering students to see their world through a different lens, so that they are able to challenge and provoke changes. I have outlined below how these stages might apply to a radiography curriculum.

- *Informative learning* – At this level students are acquiring knowledge and skills required to produce expert knowledge. It could be argued that this is diluted through the inclusion of skills that enhance professionalism to purposively dissolve professional identity as a radiographer. My findings suggest that rather than attempting to dilute professional identity, it should be celebrated and strengthened. A strong professional identity supported by a depth of knowledge and skills improves collaboration.

- *Formative learning* involves the socialisation of students around professional values but also recognition of the value of IPC and IPC decision-making. Interprofessional socialisation during both formal education and within a clinical environment is thought to ease communication, generating trust and respect.

Moreover, if their contribution to decision-making is trusted and respected, it engenders psychological ownership and accountability.

- *Transformative learning* requires reflective practice to allow for recognition of poor practice and negative role modelling, making it overt. Reflection is a very discernible component in the curriculum. Vignettes used in this study were effective at revealing the 'they and thou' perspectives of IPC, so the use of vignettes which promote discussion, critical analysis and reflection to make the hidden curriculum more visible, could be utilised. Though once revealed, students will need leadership capabilities to challenge practice which they find problematic. These skills are not however a discernible component in radiography education. The development of a *leadership* framework for radiography would be a useful addition to the framework outlined by the Canadian interprofessional health collaborative and CAIPE. Embedding leadership skills into the curriculum would engender capabilities and better prepare students to navigate the hidden curriculum and engage in IP collaboration.

Adapting the curriculum is not something that can be done in isolation at a single educational institution. The curriculum is prescribed nationally by the College of radiographers with the purpose of preparing students for registration with the HCPC. So, reorganising the curriculum will be challenging and there will be a need to disseminate information to the College of Radiographers for consideration and broader discussion amongst both academic and clinical educators. I am however in the position to influence local design and delivery methods.

More in-depth research into the hidden curriculum and how and why normalisation into the culture of compliance and conformity occurs within the radiography profession, is essential. This would require an exploration of the relationships between the students and diagnostic radiography supervisors, looking for patterns of behaviour and how meaning is exchanged.

What is clear, is that research into the topic of IP collaboration between radiographers and other healthcare professionals is limited and further research in this area is urgently needed.

A tentative model of social closure which was based on the perceptions of a small group of diagnostic radiography students was represented in the conclusions. Being based on perceptions of students in a unique setting, this model is subject to change. The model would need to be ‘stress tested’ and would lend itself to further research within radiography and the wider healthcare setting.

5.4 Evaluating rigour

Below I have assessed the rigour of the research process as proposed in table 1 and acknowledged the limitations of the study.

Credibility

Considered the most important aspect of rigour it seeks to ensure that the study measures what was intended. This study demonstrates credibility by testing for a purpose which, in this instance, was to uncover the factors influencing IPC with a view to recommending appropriate pedagogic strategies. An aim which was achieved.

Furthermore, communicative validity is realised by taking precautions to ensure that the students’ reality of the phenomena have been accurately explored and documented. This was accomplished by audio recording the interviews so that they could be revisited during transcription and analysis. Accuracy was facilitated by verbatim transcriptions alongside member checking. This method also enabled reflection and reflexivity of my own perceptions. The use of established qualitative data collection methods such as vignettes and interviews boost credibility. Furthermore, the use of more than one vignette allowed for the same phenomena to be explored in difference clinical contexts, enabling comparisons and acting as a method of validating the data.

Of course, this study cannot suggest an uncontested reality. However, when considering pragmatic validity, the solution to problems in a multifaceted field of practice (such as IPC teamwork), is developed in a way that it is valid for a specific situation. Thus, the findings need to be adjusted according to the context in which they are to be applied.

Transferability

As identified above the findings cannot be directly applied in all contexts, calling into question its external validity. However, by providing a rich description of the phenomena and making explicit the confines, the limitation of the study is acknowledged. Admittedly the sample size of 12 participants is very small and does not represent the views of the radiography community and would therefore lack external validity. Nevertheless, transferability of the result should not be immediately rejected. While the findings of this study are unique to one cohort of diagnostic radiography students at a single institution, they may well be applicable to the broader community. Perhaps the term relatable would be more appropriate as it is the degree to which other radiography educators can associate these results to their own practice.

Producing truly transferrable results from a single qualitative study is an unrealistic aim and in so doing one is disregarding the importance of context. Context in a social constructionist study such as this is essential and cannot be disregarded.

Dependability

It is acknowledged that addressing reliability in a qualitative study such as this is problematic because the very purpose of the study was to gather the perceptions of each participant individually. As outlined, perception is linked to their social world and therefore their perceptions will change over time as their social world changes. So, repeating this study step by step with the same participants at another time will not necessarily garner the same results.

Dependability was however achieved through detailed reporting of the method of data collection, allowing the reader to assess the extent to which proper practices have

been followed. This also enables future researchers to repeat the study even if they do not gain the same results. Thus, the research design would be viewed as a prototype model.

Confirmability

Total objectivity requires the use of instruments not dependant on human skill, which is not achievable in qualitative research. However, actions should be taken to ensure that the results are indeed the ideas, opinions and experiences of the participants rather that of the researcher. A key criterion is the degree to which the researcher admits their biases. I have acknowledged my views and assumptions of Interprofessional collaboration as situated within diagnostic radiography in 1.5 of this study. The use of reflexive field notes served as a reminder of my own perceptions and thoughts. These acknowledgements were woven throughout the analysis differentiating the opinions of the participants from my own, thus confirming that the results belong to the students.

Chapter Six

Addendum

With the advent of COVID-19, services within the NHS were placed under immense pressure with different ways of working emerging. In considering these changes it seemed appropriate to revisit the evidence base to explore the impact this might have had on interprofessional collaboration. This addendum will therefore explore new literature that has been published since the onset of the pandemic, and critically evaluate the findings of this study in light of the new and emerging evidence base.

6.1 The impact of the COVID-19 pandemic

One important consequence of the COVID-19 response has been an urgent need for effective collaboration to address the intense, multiple and complex demands of this unprecedented crisis (Natale, 2020). The NHS was required to respond to the increase in demand for services especially in the acute setting such as accident and emergency. Staff from all disciplines and professions were redeployed to undertake tasks they had not performed for many years. Liu *et al.,* (2020) found that workers were challenged by working in a totally new context with exhaustion, fear of becoming infected and cross infection, feelings of powerlessness and stress, straining interprofessional relationships. The new way of working inevitably created a whole new team dynamic and influenced collaboration. The NHS people plan outlines how all professions have risen to the challenge to provide a more collaborative approach to care (2020), while Liu *et al.,* (2020) showed an increased sense of responsibility and the challenge of remaining resilient in the face of the crisis.

A short report by Natale *et al.,* (2020) outlined the intense demands on hospitals including surge planning which required interprofessional teams from all disciplines to work together. They chronicle the success of this collaborative effort which included institutions, disciplines and professions. In their opinion they were seeing better peer-led communication and importantly two-way communication, as team members moved through the units. Daily briefing and feedback provided an opportunity for any

team members to express concerns and they felt this facilitated trustful relationships and open communication, resonating with the perceptions of (P12) and (P7) in this study**.** Natale *et al.,* (2020) advise that their response to the pandemic has taught them that it is essential to apply an interprofessional lens, as the range of expertise provided a varied perspective not captured from a single profession. This resonates with the literature presented in chapter two. Goldman and Xyrichis (2020) too report seeing signs of positive teamworking with recognition that everyone is a critical member of the team. They also indicated seeing role changes occurring with senior doctors deployed and job titles considered irrelevant with modified attitudes to information sharing, insinuating significantly improved collaboration.

The setting up of the nightingale centre in the O2 arena galvanized IPE training. Bushell, Thomas and Combes, (2020) state that overcoming interprofessional hurdles were imperative for creating a supportive culture where everyone could flourish in a flattened interprofessional hierarchy. They reported that IPE was well received and promoted learning between professions and about each other's roles. They are of the opinion, that there was a strong sense of teamwork from the outset. This distinctive case study outlines training during the pandemic, in a time of crisis, but demonstrates great potential for IPE. Its success was attributed to the removal of role protectionism, organisational 'red tape' and institutional hierarchies.

Research into military IP healthcare teams is scarce in IPE literature. Considering the NHS management structure was based on the military model with a top-down hierarchy as outlined by Hammick *et al.*, (2009) and the fact that they collaborate with low resources and contexts of humanitarian crisis (akin to COVID-19), it seems appropriate to include information from this sector. Varpio *et al.,* (2021) emphasise a concept called 'fellowship' as essential for successful collaboration. Fellowship is a term describing how team members are expected to support colleagues irrespective of rank or profession and is not seen as an attempt to usurp leadership. They believe collaboration is reliant on the acknowledgement of weaknesses, and humility on the part of the leader to recognise their own weakness. But, also to rely on the strengths of others to make up for their own weaknesses. Varpio *et al.,* (2021) suggest learners are rotated and assigned a new position, so that they can gain an understanding of that role, garnering respect for the knowledge, skills and responsibilities of other team

members. Participants commented on how living the reality of another role, not only made them aware of what they do, but why they are essential to the team. This is an interesting perspective and not one that is visible in the NHS and humility has not been raised in the literature as a capability required for collaboration.

Bushell, Thomas and Combes (2021) state that a key consideration for the future is how these collaborative, interprofessional environments can be fostered in education centres and health care settings after the COVID-19 pandemic has ended. Goldman and Xyrichis (2020) are positive that the capacity to learn from the improved IPC teamwork and new processes, will emerge as we move beyond the pandemic.

6.2 Conclusion

Rather than being put aside, the call for interprofessional collaboration appears to have been ramped up. The NHS people plan (2020-2021) emphasises that now more than ever, we need to focus on upskilling professionals, so they can provide expert care within their field and contribute to the IP team. This aligns with my recommendations to strengthen expert knowledge and skills. Moreover, that where implemented this has resulted in improving relationships across multidisciplinary teams and an increased appreciation of each other's skills. At the heart of the NHS plan is the ethos that the NHS is an inclusive team and that each and every person has a voice that counts. Furthermore, the plan sets out actions that support the transformation to foster an inclusive culture and ways of working collaboratively. It emphasises the need to make effective use of the full range of peoples' skills and experience to deliver the best possible patient care.

Noteworthy new knowledge emerging:

- The suggestion that IPC is being normalised into the culture of healthcare – a finding not mentioned elsewhere in the evidence base. I would however suggestion caution as this is based on a very small number of studies in an environment that does not reflect normal everyday practice within the NHS.

- ❖ The concept of fellowship, which features humility as a capability required for collaborative teamwork. A new concept that is worthy of further research and exploration.

Prior to the COVID-19 there was minimal evidence of improvement of IPC seen in the literature, but progress is evident within the limited resources since the onset of the pandemic. It seems that as the crisis emerged issues of domination, usurpation and exclusionary strategies were set aside and allowed for natural collaborative teamwork to surface based on patient need.

We must of course be cautious in our speculations of this success. The pandemic was an unusual response to unusual circumstances. With the limited evidence base available on the topic and service returning to 'normal' practices as per pre COVID-19 we cannot be sure that collaboration will once again return to 'normal' and be set aside.

I would envisage repeating my own study in a post COVID-19 period to reassess any real effect of the changes seen during the pandemic.

Reflection on personal and professional development

My personal journey

I look back to where I started and cannot quite believe how far I have come and how much I have grown both in knowledge, research skills and emotional intelligence.

I had not done any research prior to starting my career as a senior lecturer in radiography and gradually learnt the basics of research from many gracious colleagues who patiently guided me. I also completed an MSc in clinical reporting which was instrumental in understanding the basic of research and in particular quantitative research.

I was fortunate enough to be given the opportunity to commence the EdD and was immediately thrown into a world that challenged my every assumption and perception about research, teaching and learning and even my profession! It was the start of a very long and arduous journey.

Personal learning and effectiveness:

I realise now I was quite biased towards positivism and resisting ‘conversion’ and acceptance of the value of qualitative research. Once I settled on a topic and started to read around interprofessional working, I became fully entrenched in my subject matter and looked forward to reading each new article like chapters in a book. I learned a huge amount about interprofessional working but importantly the struggle of the other professions, which I had previously perceived as being unique to radiography. I grew immensely during this period, as I had previously been so passionate about radiography that I had not given the struggles of the other professions a thought. It made me realise how important the phenomena of perception is, and the impact it can have on mis/understanding, communication and even actions. I truly believe this lesson has helped me not just in my career, but in everyday life. Equally, it made me appreciate the value of opinions and perceptions in research and how it contributes to professional practice.

I have negotiated many hurdles during my doctoral journey, but I believe that I have I have demonstrated tenacity, perseverance, commitment and time management skills during the last few years in continuing my doctoral studies despite the difficulties.

My journey as a researcher

Governance:

There were so many unknown areas of research that I had not previously negotiated. I had little knowledge and understanding of research governance. Attendance at study days broadened and developed my knowledge of the standards, professionalism and ethical principles in conducting research. Navigating the process of gaining ethical approval further cemented my knowledge and understanding preparing me of the process of submission, viva preparation and future research.

Areas that needed further development:

My previous experience includes a PgC in teaching and learning, a senior fellowship from the HEA and as an associate professor in radiography education. However, CPD in vignette writing and interviewing were skills that required further development. Attendance at workshops and with assistance from more experienced colleagues (to whom I am ever indebted) I was able to acquire these skills. Listening to the transcriptions over and over was the most informative aspect of the research as it provided in-depth information for the analysis. Transcribing the data, really helped me to separate and understand what the participants were saying and equally, challenged my biased assumptions on many levels. A valuable lesson I will take forward to future research.

Engagement, influence and impact:

I have published articles and presented at both national and international conferences (see some examples below). While not all are directly related to my current topic of IPE it has made me aware of the influence and impact that engaging an audience can

have. Furthermore, it has prepared me for future dissemination of my study findings Spencer (2014), Spencer (2016), Spencer (2018) and Zwelenyanski *et al*., (2020).

I currently have the opportunity to contribute to both audit and research within the healthcare environment developing my leadership, communication and team working skills and provide further prospects for publication

While I have only navigated one small pathway in research, I have learnt so much about research in general and the important contribution it makes to professional practice. Furthermore, it has enhanced my knowledge and skills making me a more informed educator.

Looking ahead I feel I have many important findings that can contribute to the evidence base and to radiography and interprofessional education in general.

Reference List

Abbott, A. D. (1988) *The system of professions: an essay on the division of expert labour.* London: University of Chicago Press.

Abramson, J. S. and Mizrahi, T. (2003) 'Understanding collaboration between social workers and physicians: application of a typology'*, Social Work in Health Care*, 3 (2) pp.71-98

Agosta, L. (2010) *Empathy in the context of philosophy (Renewing Philosophy).* Basingstoke: Palgrave MacMillan.

Ahonen, S-M. and Liikanen, E. (2010) 'Radiographers' preconditions for evidence-based radiography', *Radiography,* 16 (3), pp. 217-222

Allan, H.T., Smith, P. and O'Discoll, M. (2011) 'Experiences of supernumerary status and the hidden curriculum in nursing: a new twist in the theory-practice gap?', *Journal of Clinical Nursing,* 20 (5) pp.847-855

Alimo-Metcalfe, B. and Alban-Metcalfe, J. (2003) 'Leadership in Public Sector Organisations', in Storey, J. (ed.) *Current Issues in Leadership and Management Development.* London: Routledge., pp. 225-248.

Allsop, J. (2006) 'Medical dominance in a changing world: the UK case', *Health Sociology Review,* 15 (5) pp. 444-457.

Anderson, C. A., Kimmel, J. C. (2005) 'Fostering transformative learning through faculty development'. In Vlosak, S., Kielbaso, G., Radford, J. (Eds.), *Appreciating the best of what is: Envisioning what could be. Proceedings of the Sixth International Conference on Transformative Learning* (pp. 9-13). East Lansing: Michigan State University and Grand Rapids Community College.

Arain, B., Suter, E., Mallinson, S., Hepp, S.L., Deutchlander, S., Nanayakarra, S.D., Harrison, E.L., Michelson, G., Bainbridge, L. and Grymonpre, R.E. (2017)

‘Interprofessional education for internationally educated healthcare professionals: An environmental scan’, *Journal of Multidisciplinary Healthcare*. 10 pp.87-93 10.2147/JMDH.S126270

Asch, S.E. (1956) ‘Studies of independence and conformity: a minority of one against a unanimous majority’, *Psychological monographs*. 70 (9)

Ashcroft, R. E. (2007) *Principles of Health Care Ethics*. 2nd edn. GB: John Wiley & Sons Ltd.

Ashworth, P.D. (1979) *Social interaction and consciousness*. Chichester: Wiley.

Atkinson, P. and Coffey, A. (2002) ‘Revisiting the relationship between participant observation and interviewing’, in Gubrium, J. F. and Holstein, J. A. (eds.) *Handbook of Interview Research.* CA: Thousand oaks. Sage. pp. 801-814

Atwal, A. and Caldwell, K. (2005) ‘Do all health and social care professionals interact equally: a study of interactions in multidisciplinary teams in the United Kingdom’, *Scandinavian Journal of Caring Sciences,* 19 (3) pp. 268-273

Australian Council for Safety and Quality in Health Care. (2005) ‘*National Patient Safety Framework’*. Australia: Centre for Innovation in Professional Health Education. University of Sydney.

Aveyard, H. and Sharp, P. (2013) *A Beginner's Guide to Evidence-Based Practice in Health and Social Care.* 2nd edn. Maidenhead: McGraw-Hill Education.

Baker, L., Egan-Lee, E., Martimianakis, M. A. and Reeves, S. (2011*)* ‘Relationships of power: implications for interprofessional education’, *Journal of Interprofessional Care,* 25 (2) pp. 98-104

Barber, B. (1967) ‘Some Problems in the Sociology of Professions’ in Abrahamson, M. (ed.) *The Professional in the Organisation*. Chicago: Rand McNally. p. 671.

Barr, H. (1996) ‘Ends and Means in Interprofessional Education: Towards a typology’, *Education for Health*, 9 pp. 341-352

Barr, H. (2007) ‘Interprofessional education: The fourth focus’, *Journal of Interprofessional Care,* 21 (2) pp. 40-50

Barr, H. (2010) ‘Rising to the challenge’, *Journal of Interprofessional Care*, 24 (2) p. 129

Barr, H., Gray, R., Helme, M., Low, H. and Reeves, S. (2016) ‘Steering the development of interprofessional education’, *Journal of Interprofessional Care,* 30 (5) p. 549

Barr, H., Koppel, I., Reeves, S., Hammick, M. and Freeth D. (2005) *Effective interprofessional education: assumption, argument and evidence*. London: Blackwell.

Barr. H. and Low, H. (2011) ‘Principles of Interprofessional Education’, *CAIPE*. Available at: https://www.caipe.org/resources/publications/caipe-publications/caipe-2011-principles-interprofessional-education-barr-h-low-h (Accessed: 14/01/2018).

Barr, H., Low, H. and Howkins, E. (2012) ‘IPE in preregistration courses: CAIPE guide for commissioners and regulators of education’, *CAIPE*. Available at: https://www.caipe.org/resources/publications/caipe-publications/caipe-2012-ipe-pre-registration-courses-caipe-guide-commissioners-regulators-eduction-barrh-low-h-howkins-e (Accessed: 14/01/2018).

Barr, H. and Waterton, S. (1996) ‘Summary of a CAIPE survey: Interprofessional education in health and social care in the United Kingdom’, *Journal of Interprofessional Care*, 10 (3) pp. 297-303

Barr, J. (2015) *Leadership in health care,* 3rd edn. Los Angeles: SAGE.

Bassey, M. (1998) ‘Fuzzy Generalisation: An approach to building educational theory’, Conference Paper. Belfast: BERA Annual Conference.

Baxter, S. K. and Brumfitt, S. M. (2008) 'Professional differences in interprofessional working', *Journal of Interprofessional Care*, 22 (3) pp. 239-251

Beattie, A. (1995) 'War and peace amongst the health tribes', in Soothill, K., Mackay, L. and Webb, C. (eds.) *Interprofessional relations in healthcare.* London: Edward Arnold

British Educational Research Association (BERA) (2011) *Ethical guidelines for educational research.* Available at: https://www.bera.ac.uk/resources/all-publications/resources-for-researchers (Accessed 02/10/2013)

Brough, J.B. (2003*) Phenomenology.* Oxford Art Online. Available at: https://doi.org/10.1093/gao/9781884446054.article.T066922

Becker, H.S. (1963) *Outsiders*. New York: Free Press.

Berlant, J.L. (1975) *Profession and Monopoly: A Study of Medicine in the United States and Great Britain.* Berkeley: University of California Press, 13

Bernard, H. (2011) *Research methods in anthropology; Qualitative and quantitative approaches*. 5th edn. Altimira: Lanham, MD

Bernstein, B. (1996) *Pedagogy, symbolic control and identity: theory, research, critique.* London: Taylor and Francis.

Bernstein, B. and Solomon, J. (1999) 'Pedagogy, Identity and the Construction of a Theory of Symbolic Control: Basil Bernstein Questioned by Joseph Solomon', *British Journal of Sociology of Education*, 20 (2) pp. 265-279

Bines, H. and Watson, D. (1992) 'Developing Professional Education', *Society for Research into Higher Education,* London: Open University Press

Birt, L., Scott, S., Cavers, D., Campbell, C. and Walter, F. (2016) 'Member checking: a tool to enhance trustworthiness or merely a nod to validation?', *Qualitative Health Research*, 26 (13), 1802-1811. https://doi.org/10.1177/1049732316654870

Bligh, M. C., Pearce, C. L. and Kohles, J. C. (2006) 'The importance of self- and shared-leadership in team-based knowledge work; A meso-level model of leadership dynamics', *Journal of Managerial Psychology,* 21 (4) pp. 296-318

Bloor, M. (2006) *Keywords in qualitative method: a vocabulary of research concepts.* London: London: SAGE.

Blue, I. and Fitzgerald, M. (2002) 'Interprofessional relations: case studies of working relationships between registered nurses and general practitioners in rural Australia', *Journal of Clinical Nursing*, 11 (3) pp. 314-321

Bluff, R. and Holloway, I. (2008) 'The efficacy of midwifery role models', *Midwifery*, 24 (3) pp. 301-309

Bolton, G. (2014) *Reflection and Reflexivity.* Available at: www.sagepub.com/upm-data/32441_01_Bolton_3e_Ch_01.pdf (Accessed: 16/01/2021).

Bourdieu, P. (1987) *In other words: Essay towards a reflective sociology*. Translated by Adamson, M. (1990). Stanford: Stanford University Press.

Borril, C., West, M., Shapiro, D. and Rees (2000). 'Team working and effectiveness in health care', *British journal of health care management*, 6 (8) pp.364-371

Bowling, A. (2009) *Research Methods in Health.* 3rd edn. United Kingdom: Open University Press.

Bowling, A. (2014) *Research Methods in Health: Investigating Health and Health services.* United Kingdom: Open University Press.

Brace, I. (2013) *Questionnaire Design. How to Plan, Structure and Write Survey Material for Effective Market Research*. 3rd edn. London: Kogan Page.

Braithwaite, J., Westbrook, M., Nugus, P., Greenfield, D., Travaglia, J., Runciman, W., Foxwell, A. R., Boyce, R. A., Devinney, T. and Westbrook, J. (2013) 'Continuing differences between health professions' attitudes: the saga of accomplishing systems-

wide interprofessionalism', *International Journal for Quality in Health Care*, 25 (1) pp. 8-15

Brauer, P. M., Hanning, R. M., Arocha, J. F., Royall, D., Goy, R., Grant, A., Dietrich, L., Martino, R. and Horrocks, J. (2009) 'Creating case scenarios or vignettes using factorial study design methods', *Journal of Advanced Nursing*, 65 (9) pp. 1937-1945.

Brealey, S., Scally, A., Hahn, S., Thomas, N., Godfrey, C. and Coomarasamy, A. (2005) 'Accuracy of radiographer plain radiograph reporting in clinical practice: a meta-analysis', *Clinical Radiology*, 60 (2) p. 232

Brown, G., Lawrence, T.B. and Robinson, S.L. (2005) 'Territoriality in organisations. *Academy of Management Review*.' 3 pp. 577-594

Brown, G., Crossley, C. and Robinson, S.L. (2014) 'Psychological ownership, territorial behaviour and being perceived as a team contributor: the critical role of trust in the work environment', *Personal Psychology,* 67 (2)

Brown, R. (1988) 'Intergroup Relations' in Hewstone, M., Stroebe, W. and Stephenson, G.M. (eds) *Introduction to social psychology: a European perspective*. 2nd edn. Oxford: Blackwell.

Bryman, A. (2008) *Social research methods*. 3rd edn. Oxford University Press.

Burford, B. (2012) 'Group processes in medical education: learning from social identity theory', *Medical Education* 46 (2) pp.143-157

Buring, S. M., Bhushan, A., Broeseker, S., Conway, S., Duncan-Hewitt, W., Hansen, L. and Westberg, S. (2009) 'Interprofessional Education: Definitions, Student Competencies and guidelines for Implementation', Interprofessional Education Supplement, *American Journal of Pharmaceutical Education*, 73 (4) pp. 1-8.

Burr, V. (2002) The *Person in Social Psychology: Psychology Focus*. London: Taylor and Francis Group.

Burr, V and Dick, P Social Constructionism. In Gough, B (2017) *The Palgrave Handbook of Critical Social Psychology*. London: Palgrave Macmillan

Burnham, D. and Papandreopoulos, G. (No Date) 'Existentialism', *Internet Encyclopaedia of Philosophy.* Available at: http://www.iep.utm.edu/existent/ (Accessed: 26/07/2017).

Burns, N., Gray, J. and Grove, S.K., (2013) *The Practice of Nursing Research: Appraisal, Synthesis, and Generation of Evidence*. London: Saunders.

Bushell, V., Thomas, L. and Combes, J. (2020) 'Inside The O2: the NHS Nightingale Hospital London education centre', *Journal of Interprofessional Care*, 34 (5) pp. 698-701, doi: 10.1080/13561820.2020.182394

Carpenter, J. (1995) 'Interprofessional education for medical and nursing students: evaluation of a programme', *Medical Education*. 29 (4) pp.145-147,https://doi.org/10.1111/j.1365-2923.1995.tb02847.x

Carpenter, J. and Hewstone, M. (1996) 'Shared learning for doctors and social workers: Evaluation of a programme', *The British Journal of Social Work*. 26 (2) pp. 239–257, https://doi.org/10.1093/oxfordjournals.bjsw.a011082

Cant, S. and Killoran, A. (1993) 'Team tactics: a study of nurse collaboration in general practice', *Health Education Journal*. 52 (4) https://doi.org/10.1177/001789699305200403

CAIPE (2017) *Interprofessional guidelines.* Available at: https://www.caipe.org/resources/publications/caipe-publications/caipe-2017-interprofessional-education-guidelines-barr-h-ford-j-gray-r-helme-m-hutchings-m-low-h-machin-reeves-s (Accessed 17/02/2018).

CAIPE (2002) *About CAIPE.* Available at: https://www.caipe.org/about (updated 2022). (Accessed 16/07/2014; 13/04/2022).

Canadian Interprofessional Health collaborative. (2010) *A national interprofessional competency framework*. Vancouver. University of British Columbia. 34

Chan, A and Wood, V. (2012) 'Preparing tomorrow's healthcare providers for interprofessional collaborative patient-centred practice today', *UBS Medical Journal*, 1 (2) pp.22-24.

Chen, A.K., Rivera, J., Rotter, N., Green, E and Kools, S. (2016) 'Interprofessional education in the clinical setting: A qualitative look at the perceptor's perspective in training advanced practice nursing students', *Nurse Education in practice,* 21 pp.29-36

Cleary, M., Horsfall, J. and Hayter, M. (2014) 'Data collection and sampling in qualitative research: does size matter?', *Journal of Advanced Nursing*, 70 (3) pp. 473-475.

Colaizzi, P. (1978) 'Psychological research as the phenomenologist views it.', in Valle, R. and King, M. (eds.) *Existential phenomenological alternatives for psychology*. New York: Oxford University Press, pp. 59-65.

Coleman, L. and Piper, K. (2009) 'Radiographic interpretation of the appendicular skeleton: A comparison between casualty officers, Nurse practitioners and radiographers', *Radiography*, 15 (3) pp. 196-202.

Collette, A. E., Wann, K., Nevin, M. L., Rique, K., Tarrant, G., Hickey, L. and Stichler, J. F. (2017) 'An exploration of Nurse-physician perceptions of collaborative behaviour', *Journal of Interprofessional Care*, 31 pp.1-9.

Coltart, C. E. M., Cheung, R., Ardolino, A., Bray, B., Rocos, B., Bailey, A., Bethune, R., Butler, J., Docherty, M., Drysdale, K., Fayaz, A., Greaves, F., Hafferty, J., Malik, A. N. J., Moolla, A., Morganstein, L., Pathiraja, F., Shah, A., Sleat, G., Tang, V., Yardley, I. and Donaldson, L. (2012) 'Leadership development for early career doctors', *The Lancet*, 379 (9828) pp. 1847-1849.

Cottrell, S. (2005) *Critical thinking skills*. Basingstoke, Hampshire: Palgrave Macmillan

Cowling, C. (2008) 'A global overview of the changing roles of radiographers', *Radiography,* 14 pp. e28-e32.

Cowling, C and Lawson, C (2020) 'Assessing the impact of country culture on the socio-cultural practice of radiography', *Radiography,* 26 e223-e226.

Cox, M., Cuff, C., Brandt, B., Reeves, S. and Zierler, B. (2016) 'Measuring the impact of interprofessional on collaborative practice and patient outcomes' (editorial) *Journal of Interprofessional Care,* 30 (1) pp.1-3 https://doi.org/10.3109/13561820.2015.1111052

Crotty, M. (1996) *Phenomenology and nursing research*. Edinburgh: Churchill Livingstone.

Crotty, M. (1998) *The foundations of social research: meaning and perspective in the research process*. London: SAGE.

Crowe, S., Clarke, N. and Brugha, R. (2017) 'You do not cross them: Hierarchy and emotion: narratives of power relations in specialist training', *Social Science and Medicine,* 86, pp. 70-77

Daly, G. (2004) 'Understanding barriers to multiprofessional collaboration', *Nursing Times*, 100 (9) p. 78

D'Amour, D. and Oandasan, I. (2005) 'Interprofessionality as the field of interprofessional practice and interprofessional education: An emerging concept', *Journal of Interprofessional Care,* 19 (1) pp. 8-20

Davidson, P. M., Elliott, D. and Daly, J. (2006) 'Clinical leadership in contemporary clinical practice: Implications for nursing in Australia', *Journal of Nursing Management,* 14 (3)

De Hoogh, A.H.B., Greer, L.L. and Den Hartog, D.N. (2015) 'Diabolical dictators or capable commanders?' An investigation of the differential effects of autocratic

leadership on team performance.' *The Leadership Quarterly* 26 (5) pp. 687-701 https://doi.org/10.1016/j.leaqua.2015.01.001

Den Hartog, D. N. and Belschak, F. D. (2012) 'When Does Transformational Leadership Enhance Employee Proactive Behaviour? The Role of Autonomy and Role Breadth Self-Efficacy', *Journal of Applied Psychology,* 97 (1) pp. 194-202

Denscombe, M. (2010) *Good Research Guide: For Small- Scale Social Research* Projects. UK: Open University Press.

Densmore, J. (2015). 'Shared-Leadership: Leadership and shared governance. Working together to improve staffing', *Nurse Leader*. Available at: http://dx.doi.org/10.1016/j.mnl.2015.09.006. (Accessed: 20/10/2018).

Department of Health (DH). (2001a) *Meeting the Challenge: A strategy for Allied Health Professions.* Available at: http://webarchive.nationalarchives.gov.uk/20100408023218/http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4055180.pdf (Accessed: 06/10/2012).

Department of Health (DH). (2001b*) Working together, learning together: a framework for lifelong learning in the NHS*. Available at: http://webarchive.nationalarchives.gov.uk/+/www.dh.gov.uk/en/publicationsandstatistics/publications/publicationspolicyandguidance/dh_4009558 (Accessed: 10/12/2013).

Department of Health (DH). (2003) (2012) *Ionising Radiation (Medical exposure) Regulations* (IRMER). Available at: https://www.gov.uk/government/publications/the-ionising-radiation-medical-exposure-regulations-2000 (Accessed: 09/02/2016).

Department of Health (DH). (2008) *High quality care for all: NHS next stage review final report.* Norwich: Norwich: TSO. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/228836/7432.pdf (Accessed 12/07/2017).

Department of Health (DH). (2010) *Equity and Excellence: Liberating the NHS*. London.: Crown Copyright

Department of Health (DH). (2012a) *Publications, Policy and Guidance: Developing Leadership and Management Skills.* Available at: http://www.dh.gov.uk/en/publicationandstatistics/publications/publicationspolicyandguidance (Accessed: 26/03/2012).

Department of Health (DH). (2012b) Radiography Skills Mix: A report on the four-tier delivery model. Available at: http://webarchive.nationalarchives.gov.uk/+/www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4007123 (Accessed: 05/12/2014).

Department of Health (DH) (2017) Ionising Radiation (Medical exposure) Regulations 2017 No. 1322 (IRMER).Available at: https://www.legislation.gov.uk/uksi/2017/1322/pdfs/uksi_20171322_en.pdf (Accessed: 03/12/2020).

Dowling, M. and Cooney, A. (2012) 'Research approaches related to phenomenology: negotiating a complex landscape. (Report)', *Nurse Researcher*, 20 (2) p. 21

Dumont, C., Meisinger, S., Whitacre, M. and Cobin, G. (2012) 'Horizontal Violence Survey Report', *Nursing,* 42 (1) pp. 44-49

Ebert, L., Hoffman, K., Levett-Jones, T. and Gilligan, C. (2014) 'They have no idea of what we do or what we know: Australian Graduates' Perceptions of Working in a Health Care Team', *Nurse Education in Practice,* 14 (5) doi:10.1016/j.nepr.2014.06.005

Elster, J. (2017) 'The temporal dimensions of reflexivity: linking reflexive orientations to the stock of knowledge', *Journal of social theory,* 0 (0) pp.1-20

Eyal, L. and Cohen, R. (2006) 'Preparation for clinical practice: a survey of medical students and graduates' perceptions of the effectiveness of their medical school curriculum', *Medical Teacher,* 28 (6) pp. e162-e170

Farina, G. (2014) 'Some reflections on the phenomenological method. Dialogues in philosophy.' *Mental and neurosciences.*7 (2) pp.50-62

Fernandopulle, N. (2021) 'to what extent does hierarchical leadership affect health outcomes?' *Medical Journal of the Islamic Republic of Iran.* 35 (117) pp. 1-4 doi: 10.47176/mjiri.35.117

Finch, J. (2000) 'Interprofessional education and teamworking: a view from the education providers', *British Medical Journal*, 321 (7269) p. 1138

Findlay, L. (2002) 'The Problem and Hope of Phenomenology', *BPS social Psychology conference.* Huddersfield. www.lindafinday.co.uk/phenomenology.htm

Findlay, L. (2012) *Introducing Phenomenological Research*. Available at: http://www.lindafinlay.co.uk/phenomenology.htm (Accessed: 06/09/2013).

Findlay, L. and Gough, B. (2003*) Reflexivity: A practical guide for researchers in Health and social sciences.* John Wiley and sons incorporated. eBook.

Florio-Ruane, S. (1991) 'Designing qualitative research', in Witherell, C. and Noddings, N. (eds.) *Stories lives tell: narrative and dialogue in education*. New York: Teachers College press, pp. 234-256

Fook, J. (2002) *Social work: critical theory and practice*. London: SAGE

Ford, J and Gray, R. (2021) Interprofessional education handbook. *CAIPE*. Available at: https://www.caipe.org/resources/publications/caipe-publications/caipe-2021-a-new-caipe-interprofessional-education-handbook-2021-ipe-incorporating-values-based-practice-ford-j-gray-r Accessed (13/02/ 2021)

Foster, R. (2010) 'Are We Preparing DNPs for Collaborative Roles?', *Journal for Specialists in Paediatric Nursing,* 15 (4) pp. 259-260

Foucault, M. (1975) translated by Sheridan, A. (1977) *Discipline and punish. The birth of the prison*. London: Penguin Books

Foucault, M. (1980) Gordon, C. (ed.) *Power/Knowledge. Selected interviews and other writings 1972-1975.* United Kingdom: The Harvester Press.

Foucault, M. (1994) Rabinow, P. (ed.) *Michael Foucault Ethics: Essential works of Foucault 1954 -1984*. 1. London: Penguin Books

Fox, E. (2000) 'An audit of interprofessional communication within a trauma and orthopaedic directorate', *Journal of Orthopaedic Nursing* 4, pp. 169-170

Francis, R. QC. (2013a) Mid Staffordshire NHS foundation trust Public Inquiry. *Public Inquiry.* London, UK: Available at: http://www.midstaffspublicinquiry.com (Accessed 07/02/2016)

Francis, R. QC. (2013b) *Lessons from Stafford.* Available at: https://www.kingsfund.org.uk/audio-video/robert-francis-lessons-stafford-presentation-slides (Accessed: 07/02/2016)

Freeman, C. (2013) Codes of Professional Conduct. London: *Society of Radiographers.* p. 10

Freeth, D., Hammick, M., Koppel, I., Reeves, S. and Barr, H. (2002) 'A critical review of evaluations of interprofessional education,' *LTSN Health Sciences and Practice*

Freidson, E (1970) *Professional Dominance: The social structure of medical care.* Chicago: Aldine publishing company

Freidson, E. (1977) 'The Future of Professionalism', in Stacey, M. and Reid, M. (eds.) *Health and the Division of labour*. London: Croom Helm

Freidson, E. (2006) '*Professional Dominance: Social Structure of Medical care',* USA: AldineTransaction

Frenk, J., Chen, L., Bhutta, Z. A., Cohen, J., Crisp, N., Evans, T., Fineberg, H., Garcia, P., Ke, Y., Kelley, P., Kistnasamy, B., Meleis, A., Naylor, D., Pablos-Mendez, A., Reddy, S., Scrimshaw, S., Sepulveda, J., Serwadda, D. and Zurayk, H. (2010) 'Health professionals for a new century: transforming education to strengthen health systems in an interdependent world', *The Lancet,* 376 (9756) pp. 1923-1958

Friedenberg, R. M. (2000) 'The role of the supertechnologist', *Radiology*, 215 (3) p. 630

Fulton, J., Kuit, J., Sanders, G. and Smith, P. (2012) 'The role of the Professional Doctorate in developing professional practice', *Journal of Nursing Management*, 20 (1), pp. 130-139

Fung, L., Boet, S., Bould, M. D., Haytham, Q., Perrier, L., Tricco, A., Travares, W. and Reeves, S. (2015) 'Impact of crisis resource management simulation-based training for interprofessional and interdisciplinary teams: A systematic review', *Journal of Interprofessional Care,* 29, 433–444

Funnell, E. (1995). 'A case of forgotten knowledge' in Campbel, Rl and Conway, M.A. (eds.) *Broken memories: Case studies in memory impairment*. Oxford: Blackwell Publishing. pp.225–236

Gay, L.R., Mills, G.E. and Airasian, W. (2014) *Educational Research: Competencies for analysis and applications.* USA: Pearson Education Ltd.

Gaufberg, E., Batalden, M; Sands, R and Bell, S.K. (2010) 'The Hidden Curriculum: What can we learn from third-year medical student narrative reflections?', *Academic Medicine,* 85 (11) pp.1709-1716

Gibb, C. A. (1968) 'Leadership: Psychological Aspects', in Sills, D. L. (ed.) *International encyclopaedia of the social sciences.* New York: The Macmillan Company and The Free Press.

Gilbert, J. H. (2005) 'Interprofessional learning and higher education structural barriers', *Journal of Interprofessional Care,* 19 (1) pp. 87-106.

Goffman, E. (1959) *Preservation of self in everyday life*. New York: Doubleday

Goffman. E (1961) *Encounters: two studies in the sociology of Interaction*. Indianapolis: Bobbs-Merrill

Goffman, E. (2013) 'On Facework: An analysis of ritual elements in social interaction, Reflections', *The SOL Journal* 4 (3) pp. 7-13

Gofton, W. and Regehr, G. (2006) 'What we don't know we are teaching: Unveiling the hidden curriculum', *Clinical Orthopaedics and Related Research*, 449, pp. 20–27. doi: 10.1097/01.blo.0000224024.96034.b2

Goldman, J. and Xyrichis, A. (2020) 'Interprofessional working during the COVID-19 pandemic: sociological insights', *Journal of Interprofessional Care*, 34 (5) pp. 580-582, doi: 10.1080/13561820.2020.1806220

Gordon, S., Lind, C., Hall, K. and Baker, N. (2021) 'Attaining and assessing the Australian interprofessional learning competencies', *Journal of Interprofessional Care*, 35 (2) pp. 301-309, doi: 10.1080/13561820.2020.1712335

Grace, S., Innes, E., Joffe, B., East, L., Coutts, R. and Nancarrow, S. (2017) 'Identifying common values among seven health professions: An interprofessional analysis', *Journal of Interprofessional Care,* 31 (3) pp. 325-334

Green, B.N. and Johnson, C.D. (2015) 'Interprofessional collaboration in research, education and clinical practice: working together for a better future', *Journal of chiropractic evidence*, 29 (1) pp.1-10

Green, C. (2013) 'Relative distancing: A grounded theory of how learners negotiate the interprofessional', *Journal of Interprofessional Care*, 27(1) pp. 34-42

Greenway, K., Butt, G. and Walthall, H. (2019) 'What is a theory-practice gap: exploring the concept, *Nurse Education in Practice,* 34 pp.1-6

Greenwood, E. (1957) 'Attributes of a Profession', *Social Work*, 2 pp. 45–55

Gunn, V., Bell, S. and Kafmann, M.K (2010) *Thinking strategically about employability and graduate attributes: Universities and enhancing learning for beyond university*. Available at: https://www.qaa.ac.uk/docs/qaas/focus-on/thinking-strategically-about-employability-and-graduate-attributes.pdf?sfvrsn=2b11c081_6 (accessed on 10/02/2016)

Gutting, G. (ed.) (2005) *Foucault: A very short introduction.* Oxford, UK: Oxford University Press

Habermas, J. (1987) *The theory of communicative action*. Cambridge: Polity

Hafferty, F.W., O'Donnell, J.F., De Witt, C. and Balwin Jr.MD. (2015) *Hidden Curriculum in Health Professional Education.* New England: Dartmouth College Press

Hall, P. (2005) 'Interprofessional Teamwork: professional cultures as barriers', *Journal of Interprofessional Care*, 19 (1), pp. 188-196

Hall, P. and Weaver, L. (2001) 'Interdisciplinary education and teamwork: a long and winding road', *Medical Education*, 35 (9), pp. 867-875

Hammick, M. (1998) 'Interprofessional Education: Concept, Theory and Application', *Journal of Interprofessional Care*, 12 (3) pp. 323-332

Hammick, M., Freeth, D., Copperman, J. and Goodsman, D. (2009) *Being Interprofessional.* Cambridge: UK: Polity Press

Harris, A (2013) 'Distributed Leadership: Friend or Foe', *Educational Management Administration and Leadership,* 41 (5) pp. 545-554

Hargreaves, A. (2001) 'Emotional geographies of teaching', *Teachers College Record, 103* (6), 1056–1080. https://doi.org/10.1111/0161-4681.00142

Haynes, A. B., Edmondson, L., Lipsitz, S. R., Molina, G., Neville, B. A., Singer, S. J., Moonan, A., Childers, A.K., Foster, R. Gibbons, L.R., Gawande, A.A. and Berry, W.R. (2017) 'Mortality trends after a voluntary checklist-based surgical safety collaborative', *Annals of Surgery*, 266 pp.923–929

HCPC The Health and Care Professions Council (2012) *Standards of conduct performance and ethics*. London: United Kingdom: Health & Care Professions Council

HCPC. The Health and Care Professions Council (2013a) *Standards of conduct, ethics and performance- accessibility and understanding*. Consultation Document. London, UK. (Accessed: 09/02/2013)

HCPC. The Health and Care Professions Council (2013b) *Standards of Proficiency*. Available at: https://www.hpc-uk.org/assets/documents/10000DBDStandards_of_Proficiency_Radiographers.pdF (Accessed: 09/02/2013)

HCPC. The Health and Care Professions Council (2016) *Standards of conduct, performance and ethics*. London: HCPC Available at: http://www.hcpc-uk.org/registrants/standards

Health and Social Care Act, (2012). Available at: https://www.legislation.gov.uk/ukpga/2012/7/pdfs/ukpga_20120007_en.pdf (Accessed: 25/07/2020)

Health Education England (HEE) (2017) *Multiprofessional framework for advanced clinical practice in England.* Available at: https://www.hee.nhs.uk/sites/default/files/documents/Multi-professional%20framework%20for%20advanced%20clinical%20practice%20in%20England.pdf

Health Education England (HEE) (no date) *What is advanced clinical practice?* Available at: https://www.hee.nhs.uk/our-work/advanced-clinical-practice/what-advanced-clinical-practice (Accessed:19/09/2021)

Heidegger, M. (1967) *Being and time.* Oxford: Oxford: Blackwell

Heimer, K and Matsueda, R.L (1994) 'Role-Taking, Role Commitment, and Delinquency: A Theory of Differential Social Control', *American Sociological Review* 59 (3) pp. 365- 390. Available at: https://www.jstor.org/stable/2095939

Herbert, C. P. (2005) 'Changing the culture: Interprofessional education for collaborative patient-centred practice in Canada', *Journal of Interprofessional Care,* 19 (1) pp.1-4

Hewitt, G., Sims, S. and Harris, R. (2015) 'Evidence of communication, influence and behavioural norms in interprofessional teams: a realist synthesis', *Journal of Interprofessional Care,* 29 (2) pp.100-105

Holland, R. (1999) 'Reflexivity', Human Relations, 52 (4), pp. 463-484

Holmes, C.L., Harris, I.B., Schwartz, A.J., and Regehr, G. (2015) 'Harnessing the hidden curriculum: a four-step approach to developing and reinforcing reflective competencies in medical clinical clerkship', *Advances in Health Sciences Education* 20 pp.1355-137

Homeyer, S., Hoffmann, W., Hingst, P., Oppenheim, R. F. and Wolfgramm, A.D. (2018) 'Effects of interprofessional education for medical and nursing students: enablers, barriers and expectations for optimizing future interprofessional collaboration- a qualitative study.' *BMC Nursing* 17 (13)

Hopkinson, J. B. (1999) 'A study of the perceptions of hospice day care patients: my phenomenological methodology', *International Journal of Nursing Studies*, 36 (3), pp. 203-207.

Houghton, J. D, Neck, C.P. and Manz, C. (2012) 'Self-leadership and Super leadership: The Heart and Art of Creating Shared-leadership in Teams', in Pearce, C. L. and Congor, J. A. (eds.) *Shared-leadership: Reframing the Hows and Whys of Leadership*. London: Sage Publications, pp. 123-135.

Houghton, J. D. and Yoho, S. K. (2005) 'Toward a contingency model of leadership and psychological empowerment: when should self- leadership be encouraged?', *Journal of Leadership and Organizational Studies*, 11 (4) p. 65.

Howkins, E. and Bray, J (2007) P*reparing for Interprofessional Teaching: theory and practice.* London: Routledge.

Hughes, R. and Huby, M. (2002) 'The application of vignettes in social and nursing research', *Journal of Advanced Nursing,* 37 (4), pp. 382-386.

Hughes, R. and Huby, M. (2004) 'The construction and interpretation of vignettes in social research', *Social Work and Social Sciences Review*, 11 (1), pp. 36-51.

Hunter, K. and Cook, C. (2018) ‘Role modelling and the hidden curriculum: New graduate nurses’ professional socialisation’, *Journal of Clinical Nursing,* 27, pp. 3157-3170.

Illich, I. (1971) *Celebration of awareness: a call for institutional revolution*. London: London: Calder and Boyars.

Institute of Medicine (1999) *To Err is Human: Building a Safer Health System*. Washington, DC: National Academy Press.

Institute of Medicine (2001) *Crossing the Quality Chasm. A New Health System for the 21st Century.* Washington, DC: National Academy Press.

Institute of Medicine (2015) ‘Measuring the impact of interprofessional education on collaborative practice and patient outcomes’, *Board on global health.* Washington, DC: National Academies Press.

Interprofessional education collaborative expert panel (2011) 'Core competencies for interprofessional collaborative practice. Report of an Expert Panel', Washington. D.C: *Interprofessional Education Collaborative*. Available at: https://www.aacp.org/sites/default/files/2017-10/10-242IPECFullReportfinal.pdf (accessed 27/06/2019)

Interprofessional Education Collaborative (2016) Core Competencies for Interprofessional Collaborative Practice: Update. Washington, DC: *Interprofessional Education Collaborative*. Available at: https://ipec.memberclicks.net/assets/2016-Update.pdf (accessed 20/06/2020)

Jenkins, N., Bloor, M., Fischer, J., Berney, L. and Neale, J. (2010) 'Putting it in context: the use of vignettes in qualitative interviewing', *Qualitative Research,* 10 (2) 175-198

Johnson, J.M., Hermosura, B.J., Price, S.L. and Gougeon,L. (2021) 'Factors influencing interprofessional team collaboration when delivering care to community-dwelling seniors: A metasynthesis of Canadian interventions', *Journal of Interprofessional Care*, 3 (3) pp. 376-382, doi: 10.1080/13561820.2020.1758641

Johnson, T.J. (1972) 1st edn. *Professions and Power*. London: Routledge doi: 10.4324/9781315471372

Johnson, T. J. (2016) *Professions and Power (Routledge Revivals).* Essex, GB: Routledge.

Jowsey, T., Petersen, L., Mysko, C., Cooper-Loelu, P., Herbst, P., Webster, C.S., Wearn, A., Marshall, D., Torrie, J., Lin, M.J.P., Beaver, P., Egan, J., Bacal, K., O'Callahan, A. and Weller, J. (2020) 'Performativity, identity formation and professionalism: ethnographic research to explore student experiences of clinical simulation training', *PLOS ONE* (open access) Available at: https://doi.org/10.1371/journal.pone.0236085 (accessed 12th July 2021)

Karnielli-Miller, O., Stier, R. and Pressach. (2009) 'Pearls, Piths and Provocation: Power relations in Qualitative research', *Qualitative Health Research* 19 (2), pp. 279-289

Keegan, G.M., Cooke, R. and Hillis, S.L. (1998) 'Norms and nurse management of conflict: keys to understanding nurse physician collaboration', *Research in Nursing and Health,* 21, pp. 59-72

Kelly, S. (2017) *Reporting*. Available at: https://www.sor.org/practice/reporting Society of Radiographers.

Kennedy, I., Howard, R., Jarman, B. and Maclean, M. (2001) *Learning from Bristol: The report of the public enquiry into childrens' Heart Surgery at the British Royal Infirmary 1984-1995. Command Paper.* CM 5207. edn. Available at: www.bristol-inquiry.org.uk/index.htm

Kennedy, I. (2011) *Sollihul Hospital Breast Care Review*. Available at: http://www.heartofengland.nhs.uk/wp-content/uploads/Kennedy-Report-Final.pdf (Accessed: 29/06/2015).

Kennedy, I., Howard, R., Jarman, B. and Maclean, M. (2001) *Learning from Bristol: The report of the public enquiry into childrens' heart surgery at the British Royal Infirmary 1984-1995. Command Paper.* CM 5207. Available at: www.bristol-inquiry.org.uk/index.htm (accessed 04/06/2013)

Keogh, B. (2014) *Understanding the new NHS: A guide for working and training in the NHS*. London, UK: BMJ and NHS England. Available at: https://www.england.nhs.uk/2014/06/understanding-nhs/ (Accessed 17/05/2016)

Kertcherside, M., Rhodes, D., Powelson, S., Cox, C. and Parker, J. (2017) 'Translating interprofessional theory to interprofessional practice', *Journal of Professional Nursing*. 33 pp.370-377.

Keshmiri, F. and Moradi, K. (2020) ‘Perceptions of Iranian emergency department directors of interprofessional leadership: an interview study’, *Journal of Interprofessional Care*, 34 (6) pp. 747-755, doi: 10.1080/13561820.2019.1672632

Kirkpatrick, D. L. (1976) ‘Evaluation of training’ in R. L. Craig (ed.), T*raining and development handbook: A guide to human resource development* 2nd edn., pp. 301–319. New York: McGraw-Hill.

Koch, T. (2006) 'Establishing rigour in qualitative research: the decision trail', *Journal of Advanced Nursing*, 53 (1) pp. 91-100.

Koch, T. and Harrington, A. (1998) 'Reconceptualising rigour: the case for reflexivity', *Journal of Advanced Nursing*, 28 (4) pp. 882-890.

Kingston University (KU) Research, business and innovation directorate (2014) *A good guide to research practice*. Available at: https://www.kingston.ac.uk/research/policies-and-guides/ (Accessed: 02/01/2015).

Kingston University *Research data management policy* (2019) Available at: research-data-management-policy-2019.pdf (rackcdn.com) (Accessed 05/08/2022)

Kroner, S. and Biermann, A. (2007) ‘The relationship between confidence and self-concept — Towards a model of response confidence’, *Intelligence,* 35 (6) pp.580- 590

Kroezen, M., Dussault, G., Gericke, C and Kuhlmann, E. (2019) ‘An international perspective on organisational skills mix changes in healthcare’ *European Journal of Public Health,* 29 (4) https://doi.org/10.1093/eurpub/ckz185.314

Kvarnstrom, S. (2008) ‘Difficulties in collaboration: A critical incident study of interprofessional healthcare teamwork’, Journal of Interprofessional Care, 22 (2) pp.191-203.

Lapatin, S., Gonçalves, M., Nillni, A., Chavez, L., Quinn, R. L., Green, A. and Alegría, M. (2012) 'Lessons from the Use of Vignettes in the Study of Mental Health Service Disparities', *Health Services Research*, 47 (3) pp. 1345-1362.

Lapkin, S., Levett-Jones, T. and Gilligan, C. (2011) 'A systematic review of the effectiveness of interprofessional education in health professional programs', *Nurse Education Today,*

Larkin, C. and Callaghan, P. (2005) 'Professionals' perceptions of interprofessional working in community mental health teams', *Journal of Interprofessional Care*,19 (4) pp. 338-346.

Larkin, G. (1978) 'Medical Dominance and control: Radiographers in the division of labour', *The Sociological Review,* 26 (4) pp. 843-858.

Larkin, G. (1983) *Occupational monopoly and modern medicine*. London: Tavistock.

Lee, S. and Hong, H. (2012) 'International public relations influence on media coverage and publics' perceptions of foreign countries', *Public Relations Review*, 38 (3) pp. 491-493.

Lee, J.J and Yang, S.C (2019) 'Professional socialisation of nursing students in a collectivist culture: A qualitative study', *BMC medical education*, 19 (1) pp. 254-258

Leigh, J. A., Rutherford, J., Wild, J., Cappleman, J. and Hynes, C. (2012) 'Using the patchwork text assessment as a vehicle for evaluating students' perceptions of their clinical leadership development', *Nurse Education in Practice*, 12 (1) pp. 46-51.

Leipzig, R. M., Hyer, K., E. K., Wallenstein, S., Vezina, M. L., Fairchild, S., Cassel, C. K. and Howe, J. L. (2002) 'Attitudes Toward Working on Interdisciplinary Healthcare Teams: A Comparison by Discipline', *Journal of the American Geriatrics Society*, 50 (6) pp. 1141-1148.

Lempp, H. and Seale, C. (2004) 'The Hidden curriculum in undergraduate medical education. Qualitative study of medical students' perception of teaching', *British Medical Journal,* 329 (7469) pp. 770-773

Levett-Jones, T. and Lathlean, J. (2009) 'Don't rock the boat: Nursing students' experiences of conformity and compliance, (Report)', *Nurse Education Today*, 29 (3) p. 342.

Lewicki. R. and Wiethoff. C. (2012) 'Trust, trust development and trust repair.', in Deutsch. M., Coleman. P and Colton. M. E (ed.) *Handbook of conflict Resolution*: *Theory and Practice*. 3rd Edition. San Francisco: Jossey-Bass, pp. 86-107.

Lewis, S., Heard, R., Robinson, J., White, K. and Poulos, A. (2008) 'The ethical commitment of Australian radiographers: Does medical dominance create an influence?', *Radiography,* 14 (2) pp. 90-97.

Lincoln and Guba, Y. S. (1985) *Naturalistic inquiry*. London: Sage.

Linton, R. (1945) *The cultural background of personality*. London: Appleton-Century Co.

Littlechild, B. and Smith, R. (2015) *A handbook for interprofessional practice in the human services: Learning to work together.* Harlow, England: Pearson Education.

Liu,G., Luo,D., Haase,J., Guo,Q., Wang,Q., Lui,S., Xia, L., Liu, Z., Yang,Z. and Yan,B.X.(2020) 'The experiences of health-care providers during the COVID-19 crisis in China: a qualitative study', *Lancet Global Health,* 8:pp. e790–98

Loughran, C. F. (1994) 'Reporting of fracture radiographs by radiographers: the impact of a training programme', *The British Journal of Radiology*, 67 (802) p. 945

Lovedeep, K. and Eman, T (2018) Benefits of interprofessional for a pharmacist and family therapist' *American Journal of family therapy,* 46 (5) 470-485

Lovegrove, M. and Long, P. (2012) 'Are radiographers prepared for the clinical leadership challenge?', *Radiography,* 18 (4)

Lukes, S. (1986) *Power*. New York: New York University Press.

Luszczynska, A. and Schwarzer, S.R. (2005) 'Social cognitive theory.', in Conner, M. and Norman, P. (eds.) *Predicting health behaviour.* 2nd edn. Buckingham, England: Open University Press. pp. 127-169.

Maben, J., Latter, S. and Macleod Clark, J. (2006) The theory-practice gap: impact of professional-bureaucratic work conflict on newly qualified nurses', *Journal of Advanced Nursing,* 55 (4)

MacAuthur, B.L. (2016); Daily, S.L and Villigran, M, M (2016) 'Understanding healthcare providers' professional identification: The role of interprofessional communication in vocational socialization of physicians', *Journal of interprofessional Practice and Education*, 5 pp.11-17

Maltby, J. (2010) *Research methods for nursing and healthcare*. Harlow, England: Pearson Education.

Mandy, A., Milton, C. and Mandy, P. (2004) 'Professional stereotyping and interprofessional education', *Learning in Health and Social Care*, 3 (3) pp. 154-170

Mangan, C., Miller, R., and Ward, C. (2015) 'Knowing me, knowing you. Interprofessional working between general practice and social care', *Journal of Integrated Care,* 23 (2) pp. 62-74

Mann, K. V., Ruedy, J., Millar, N. and Andreou, P. (2005) 'Achievement of non-cognitive goals of undergraduate medical education: perceptions of medical students, residents, faculty and other health professionals', *Medical Education*, 39 (1) p. 40

Marshall, G. (2005) 'Critiquing a research article', *Radiography,* 11(1) pp. 55-59

Matilainen, K., Ahonen, S., Kankkunen, P. and Kangasniemi, M. (2017) 'Radiographers' perceptions of their professional rights in diagnostic radiography: a qualitative interview study (Report)', *Scandinavian Journal of Caring Sciences*, 31 (1) p.139.

Mazur, J. E. (1979) 'The value-averaging model: An alternative to Conservation in behavior', *Journal of Experimental Psychology: General, 108* (1) pp.43–47. https://doi.org/10.1037/0096-3445.108.1.43

Mezirow, J. (1981) 'A critical theory of adult learning and education', *Adult Education* 32 pp.3-24

Mezirow, J. (1991) *Transformative dimensions of adult learning',* San Francisco, CA: Jossey-Bass

McConnel-Henry, T., Chapman, Y. and Francis, K. (2009) 'Husserl and Heiddeger: exploring the disparity', *International Journal of Nursing Practice*, 15 (1) pp. 7-15

McCray, J., Palmer, A. and Chmiel, N. (2016). Building resilience in health and social care teams', *Personnel Review,* 45 (6) pp. 1132-1155

McDonald, J., Jayasuriya, R. and Harris, M. F. (2012) 'The influence of power dynamics and trust on multidisciplinary collaboration: a qualitative case study of type 2 diabetes mellitus', *BMC Health Services Research*, 12 pp. 63-63

Meads, G., Ashcroft, J., Barr, H., Scott, R. and Wild, A. (2008) *The case for interprofessional collaboration: In health and social care*. United Kingdom: Blackwell Publishing and CAIPE.

Mead, G.H. (1934) *Mind, self and society.* Chicago: Chicago University Press.

Medical Schools Council (2017) 'Entry Requirements for UK medical schools'. *http://www.medschools.ac.uk/SiteCollectionDocuments/MSC-Entry-requirements-for-UK-medical-schools.pdf*:

Menon, S., Anindya, S.and Svreekantan. B.V. (2014) '*Interdisciplinary perspectives on consciousness and the self'* London: Springer. ISBN 978-81-322-1586-8

Merleau-Ponty, M. (2002) *Phenomenology of perception*. 2nd edn. Hoboken: Taylor and Francis.

Merleau-Ponty, M. (2008) *The world of perception*. New ed. Translated by Oliver Davis. London: Routledge.

Merriam, S. B (1995) 'What can you tell from an N of 1? Issues of validity and reliability in qualitative research', *PAACE Journal of Lifelong Learning*, 4 pp. 50-60

Merriam, S. B. (2014) *Qualitative Research: A Guide to Design and Implementation*. 3rd edn. Hoboken: Hoboken Wiley.

Miles, M. B. (1994) *Qualitative data analysis: an expanded sourcebook*. 2nd edn. London: Sage.

Mills, C. W. (1940) 'Situated Actions and Vocabularies of Motive', *American Sociological Review*, 5 (6) pp. 557-563

Molden, D. C. and Dweck, C. S. (2.006) 'Finding meaning in Psychology', *American Psychologist*, 61 (3), pp. 192-203

Molyneux, J, (2001) 'Interprofessional teamworking: what makes teams work well', *Journal of Interprofessional Care,* 15 (1) pp.29-35

Modern medicine network (2010) 'Dispute breaks out over radiographer reporting in the U.K.', Available at: http://www.diagnosticimaging.com/articles/dispute-breaks-out-over-radiographer-reporting-uk

Moran, S. and Warren-Forward, H. (2010) 'A retrospective pilot study of mammographers in interpreting screening mammograms', *Journal of Medical Radiation Sciences*, 57 (1) pp.12-19

Morris, D. and Matthews, J. (2014) 'Communication, Respect, and Leadership: Interprofessional Collaboration in Hospitals of Rural Ontario', *Canadian Journal of Dietetic Practice and Research,* 75 (4) pp. 173-179

Moskowitz, G. B. (2004) *Social Cognition: understanding self and others*. New York: The Guildford Press.

Mossop, L., Dennick, R., Hammond, R and Robbe', I. (2013) 'Analysing the hidden curriculum: use of a cultural web', *Medical Education*, Available at: https://doi.org/10.1111/medu.12072

Mulhall, S. (1996) *Routledge philosophy guidebook to Heidegger and "Being and time".* London: Routledge.

Murphy, F. J. and Yielder, J. (2010) 'Establishing rigour in qualitative radiography research', *Radiography*, 16 (1) pp. 62-67

Murphy, R. (1984) 'The structure of closure: a critique and development of the theories of Collins, Weber and Parkin', *British Journal of Sociology*, 35 (4) pp. 547-567

Murphy, R. (1988) *Social closure: the theory of monopolization and exclusion.* Oxford: Clarendon.

Natale, J.E., Boehmer, J., Blumberg, D.A., Dimitriades, C., Hirose, S., Kair, L.R., Kirk, J.D., Mateev, S.N., McKnight, H., Plant, J., Tzimenatos, L.S., Wiedeman, J.T., Witkowski, J., Underwood, M.A. and Lakshminrusimha, S. (2020) 'Interprofessional/interdisciplinary teamwork during the early COVID-19 pandemic: experience from a childrens' hospital within an academic health centre', *Journal of Interprofessional Care,* 34 (5) pp. 682-686

National Health Service (NHS) (2011) *NHS Leadership Qualities Framework*. Available at: www.NHSLeadershipQualities.nhs.uk (Accessed: 10/02/2012).

National Health Service (NHS) (2012) *Clinical Leadership Competency Framework*. Available at: http://www.institute.nhs.uk/building_capability/building_leadership_capability/clinical_leadership_competency_framework_project.html (Accessed: 07/09/2012).

National Health Service (NHS) (2014) 'Integrated care and support pioneers programme: building collaborative teams', *NHS Improving Quality*, Available at: https://www.england.nhs.uk/improvement-hub/wp-

content/uploads/sites/44/2019/01/Building-Collaborative-Teams-workshop-guide-2014-1.pdf (Accessed: 13/02/2021).

National Health Service Leadership Academy (2015) *Healthcare leadership Model: The nine dimensions of leadership behaviours*. Available at: https://www.leadershipacademy.nhs.uk/wp-content/uploads/2014/10/NHSLeadership-LeadershipModel-colour.pdf (Accessed 28/02/2018).

National Careers Service (2016) *Operating department practitioner*. Available at: https://nationalcareersservice.direct.gov.uk/job-profiles/operating-department-practitioner (Accessed: 26/07/2017).

National Health Service (NHS) (2018) *Career progression framework*. Available at: https://www.healthcareers.nhs.uk/career-planning/resources/nhs-career-framework (Accessed 10/2020).

National Health Service Leadership Academy (2018) *The importance of personal qualities: Healthcare Leadership Model*. Available at: https://www.leadershipacademy.nhs.uk/resources/healthcare-leadership-model/importance-personal-qualities (Accessed: 14/07/2017).

National Health Service (NHS) *Interim people plan* (2019). Available at: https://www.longtermplan.nhs.uk/publication/interim-nhs-people-plan/ (accessed 13/July 2020)

National Health Service (NHS) (2020) 'Multidisciplinary team', *NHS Data Model and Dictionary*. Available at: https://datadictionary.nhs.uk/nhs_business_definitions/multidisciplinary_team.html#:~:text=A%20Multidisciplinary%20Team%20is%20a%20CARE%20PROFESSIONAL%20TEAM.,certain%20conditions%2C%20such%20as%20Cancer (16/01/2021).

National Health Service (NHS) (2020) *We are the NHS: People plan 20/21-Action for all of us.* Available at: https://www.england.nhs.uk/wp-

content/uploads/2020/07/We_Are_The_NHS_Action_For_All_Of_Us_FINAL_24_08_20.pdf (Accessed 10/2020).

Naylor, S., Ferris, C. and Burton, M. (2015) 'Exploring the transition from student to practitioner in diagnostic radiography', *Radiography,* 22 (2) pp.1-6

Newman, M. (2010). 'Calling transformative learning into question: some mutinous thoughts', Adult Education Quarterly, 62 (1)

Ng, S., Baker L. and Friesen, F. (2018) *Teaching for Transformation.* An Online Supplement. Available at: https://www.teachingfortransformation.com/transformative-education (Accessed 02/12/2021).

Nielsen, B. (2004) 'The Role of Trust in Collaborative Relationships: A Multi-Dimensional Approach', *Management*, 7 (3) pp. 239-256

Nightingale, J. and McNulty, J (2016) 'Advanced practice: maximising the potential of the modern radiography workforce', *HealthManagement,* 16 (3) Available at: http://shura.shu.ac.uk/22045/ (Accessed 23/09/2018).

Nixon, J. (2001a) 'Not without Dust and Heat: The Moral Bases of the 'New' Academic Professionalism', *British Journal of Educational Studies*, 49 (2) pp. 173-186

Nugus, P., Greenfield, D., Travaglia, J., Westbrook, J. and Braithwaite, J. (2010) 'How and where clinicians exercise power: Interprofessional relations in health care', *Social Science & Medicine,* 71 (5) pp. 898-909

Nyatanga, L. (1998) 'Professional ethnocentrism and shared learning', *Nurse Education Today*, 18 (3) pp.175-177

Oandasan, I. and Reeves, S. (2005a) 'Key elements for interprofessional education. Part 1: The learner, the educator and the learning context', *Journal of Interprofessional Care*, 19 (1) pp. 21-38

Oandasan, I. and Reeves, S. (2005b) 'Key elements of interprofessional education. Part 2: factors, processes and outcomes', *Journal of Interprofessional Care*, 19 p.39

O'Carroll, V., McSwiggan, L., and Campbell, M., (2016) 'Health and social care professionals' attitudes to interprofessional working and interprofessional education: A literature review', *Journal of Interprofessional Care,* 30 (1) p.30

O'Donnell, J. F. (2014) 'The hidden curriculum – A focus on learning and closing the gap' in Hafferty, F.W. and O'Donnell, J.F. (eds.) *The hidden curriculum in health professional education,* pp. 1–20. Hanover, New Hampshire: Dartmouth College Press

O'Keefe, M. and Ward, H. (2018)' Implementing interprofessional learning curriculum: How problems might also be answered', *BMC Medical Education,* 8 (132) Available at: https://doi.org/10.1186/s12909-018-1231-1

Olson, R. G. (1962) *An introduction to existentialism*. 1st edn. New York: Dover publications Inc.

Owen, J. and Cooke, J. (2016) 'Developing Research capacity and collaboration in primary care and social care', *Qualitative Social Work*, 3 (4)

Parkin, F. (1981) *Marxism and class theory: a bourgeois critique*. London: Tavistock Publications.

Parsons, T. (1954) *The professions and social structure.* New York: Free Press.

Pascal, J. (2010) 'Phenomenology as a research method in social work contexts: Understanding the lived experience of cancer survival', *New Scholarship in Human Sciences,* 9 (2)

Patton, M. Q. (2002) *Qualitative research and evaluation methods*. 3 edn. Thousand Oaks, California: Sage Publications.

Payne, M. (2000) *Teamwork in multiprofessional care*. Basingstoke: United Kingdom: Macmillan.

Pearce, C. L., Conger, J. A. and Locke, E. A. (2007) 'Shared-leadership theory', *The Leadership Quarterly,* 18 (3) pp. 281-288

Pearce, C. L., Conger, J. A. and Locke, E. A. (2008) 'Shared-leadership theory', *The Leadership Quarterly,* 19 (5) pp. 622-628

Pearce, C. L. and Congor, J. A. (eds.) (2012) *Shared-leadership: Reframing the hows and whys of leadership.* London: Sage Publications.

Pearce, C. L. and Sims, H. P. (2002) 'Vertical versus shared-leadership as predictors of the effectiveness of change management teams: An examination of aversive, directive, transactional, transformational, and empowering leader behaviours, Group Dynamics', *Theory Research and Practice,* 6 (2) pp. 172-197

Pearce, C. L., Manz, C. C. and Sims, H. P. (2009) 'Where Do We Go from Here? Is shared-leadership the key to team success?', *Organizational Dynamics*, 38 (3) pp. 234-238

Peltonen, J., Leino-Kilpi, H., Heikkila, H., Rautava, P., Tuomela, K., Siekkinen, M., Sulosaari, V. and Stolt, M. (2020). 'Instruments measuring interprofessional collaboration in healthcare – a scoping review', *Journal of Interprofessional Care*. 34 (2) pp. 147-161 doi: 10.1080/13561820.2019.1637336

Pennington, D. C. (2012) *Social Cognition*. 1st edn. Hoboken: Taylor and Francis.

Piper, K. J. and Paterson, A. (2009) 'Initial image interpretation of appendicular skeletal radiographs: A comparison between nurses and radiographers', *Radiography,* 15 (1) pp. 40-48

Pippett, K., Moloney-Johns, A., Jalilibahabadi, S. and Gren, L. (2015) 'Collaboration versus competition: An interprofessional education experience', *Family Medicine*, 47 (4) pp. 298-301

Pirrie, A., Wilson, V., Harden, R. M. and Elsegood, J. (1998) 'AMEE Guide No. 12. Multiprofessional Education: Part 2 Promoting Cohesive Practice in Health Care', *Medical Teacher*, 20 (5) pp. 409-16

Polgar, S. and Thomas, S. (2013) *Introduction to research in the Health Sciences.* 6th edn. United Kingdom: Churchill Livingstone, Elsevier.

Pratt, M.G., Rockmann, K.W and Kaufmann, J.B. (2006) 'Constructing professional identity: the role of work and identity learning cycles in the customisation of identity among medical residents', *Academy of Management Journal,* 49 (2)

Prentice, D., Engel, J., Taplay, K. and Stobbe, K. (2015) 'Interprofessional Collaboration', *Global Qualitative Nursing Research*, 2. https://doi.org/10.1177/2333393614560566

Price, R, Miller, L. (2010) 'An evaluation of the impact of the implementation of the consultant', *Employment Studies,* London: Society and College of Radiographers.

Price, R. C. and Le Masurier, S. B. (2007) 'Longitudinal changes in extended roles in Radiography: A new perspective', *Radiography,* 13 (1) pp. 18-29

Price, R. C. and Paterson, A. M. (2002) 'Consultant practitioners in Radiography—a discussion paper', *Radiography*, 8 (2) pp. 97-106

Price, R. (2009) 'Diploma to degree 1976 to 1993', *Radiography*, 15 pp. e67-e71.

Price, R. (2010) 'The past is a foreign country', Editorial. *Radiography*, 16 pp. 169-170.

Price-Dowd, C. (2017) 'Confidence and competence is what makes the difference on the frontline', *British Journal of Nursing,* 26 (15) pp. 900-901.

Public Health England (PHE) (2019) *More reporting radiographers in breast screening*. Available at: https://phescreening.blog.gov.uk/2019/05/02/more-reporting-radiographers-in-breast-screening (Accessed 10/2020).

Pullon, S. (2008) 'Competence, respect and trust: Key features of successful interprofessional Nurse-Doctor relationships', *Journal of Interprofessional Care*, 22 (2) pp.133-147.

Rees, Z. (2013) 'Consultant breast radiographers: where are we now?', *Radiography,* 20 (2) pp.121-125.

Reeves, S., Macmillan, K. and van Soeren, M. R. N. (2010) 'Leadership of interprofessional health and social care teams: A socio-historical analysis', *Journal of Nursing Management*, 18 (3) pp. 258–264. doi:10.1111/ jnm.2010.18-3

Reeves, S., Perrier, L., Goldman, J., Freeth, D. and Zwarenstein, M. (2013) 'Interprofessional Education: effects on professional practice and healthcare outcomes (update) (Review)', *The Cochrane Collaboration*, John Wiley & Sons, Ltd., (3)

Reeves, S. and Pryce, A. (1998) 'Emerging themes: an exploratory research project of an interprofessional education module for medical, dental and nursing students', *Nurse Education Today*, 18 (7) p. 534

Reeves, S., Rice, K., Conn, L. G., Miller, K., Kenaszchuk, C. and Zwarenstein, M. (2009) 'Interprofessional interaction, negotiation and non- negotiation on general internal medicine wards', *Journal of Interprofessional Care*, 23 (6) pp. 633-645

Reeves, S., Zwarenstein, M., Goldman, J., Barr, H., Freeth, D., Hammick, M. and Koppel, I. (2008) 'Interprofessional education: effects on professional practice and health care outcomes', *The Cochrane Database of Systematic Reviews*, (1):CD002213. doi (1) pp. CD002213.

Reeves, S., Zwarenstein, M., Goldman, J., Barr, H., Freeth, D., Koppel, I. and Hammick, M. (2010) *The effectiveness of interprofessional education: key findings from a new systematic review*. Taylor & Francis.

Reeves, S., McMillan, S.E., Kachan, N. and Kitto, S.C. (2014) 'Interprofessional collaboration and family member involvement in intensive care units: Emerging

themes from a multi-sited ethnography', *Journal of Interprofessional Care,* 29 (3) pp.230-23

Remenyi, D. (2011) 'Case study Research. The quick guide series.' *Academic conferences publishing international.* ebook ISBN 9781908272515

Remington, T. Foulk, M.A. and Williams, B.C (2006) 'Evaluation of evidence for interprofessional Education', *Journal of Pharmaceutical Education*, 70 (3) p.66

Robson, M. K. S. S. (2007) 'Exploring Physiotherapy students' experiences of interprofessional collaboration in the clinical setting: a critical incident study.', *Journal of Interprofessional Care,* (21) pp. 95-109

Roebuck, C. (2011) *Developing effective leadership in the NHS to maximise the quality of patient care. The need for urgent action*. Commission on Leadership and Management in the NHS. United Kingdom: The Kings Fund.

Rogerson, M. and Ermes, C. (2008) 'Fostering resilience within an adult day support program activities', *Adaption and Aging*, 32 (1) pp.1-18

Rotz, M. E. and Duenas, G. G. (2016) 'Collaborative -ready students: Exploring factors that influence collaboration during a longitudinal interprofessional education practice experience', *Journal of Interprofessional Care*, 30 (2) pp.238-241. (Accessed: 20/02/2016). http://dx.doi.org/10.3109/13561820.2015.1086731.

Royal College of Nursing (2018) *Advanced practice standards*. Available at: https://www.rcn.org.uk/professional-development/advanced-practice-standards (Accessed: 19/09/2021).

Royal College of Radiologists (RCR) (1996) *Advice on delegation of tasks in departments of Clinical Radiology.* Available at: https://www.rcr.ac.uk/publication/advice-delegation-tasks-departments-clinical-radiology

Royal College of Radiologists (2012) Advice on delegation of tasks in department of clinical radiology. *Clinical Radiology training board minutes* (27/02/2012) Available at: https://www.rcr.ac.uk/system/files/publication/field_publication_files/delegation_of_tasks.pdf (Accessed 30/05/2015)

Rose, J (2011) 'Dilemmas of inter-professional collaboration: Can they be resolved?', *Children and Society,* 25 (2) https://doi.org/10.1111/j.1099-0860.2009.00268.x

Rubin, H. J. and Rubin, I.S. (2012) *Qualitative interviewing: the art of hearing data*. 3rd edn. London: Sage Publications.

Sabato, E.H., Kim, E.F., Parrott, J.S. and Rico, V. (2020) 'Development, Implementation and early years results of a 4-year interprofessional education programme'. *ADEA The voice of dental education.* Available at: Development, implementation, and early results of a 4-year interprofessional education curriculum (kingston.ac.uk) (Accessed 07/09/2022)

Rungapadiachy, D.M. (1999) *Interpersonal Communication and Psychology: Theory and Practice.* London: Butterworth and Heineman

Rushmer, R. (2000) 'What will it mean to have a flatter team-based NHS structure?', *British Journal of Nursing,* 9 (21) pp.242-248

Saldana, J. (2012) *The coding manual for qualitative researchers.* 2nd edn. London: Sage

Salas, E., Sims, D.E. and Burke, S (2005) 'Is there a 'Big Five' in teamwork?', *Small Group Research,* 36 pp.555-559

Salhani, D. and Coulter, I. (2009) 'The politics of interprofessional working and the struggle for professional autonomy in nursing', *Social Science & Medicine*, 68 (7) pp. 1221-1228.

Schein, E.H and Schein, P. (2017) *Organizational Culture and Leadership* 5th edn. Hoboken. John Wiley and Sons.

Schneider, Z. (2012) Nursing and Midwifery Research: *Methods and Critical Appraisal for Evidence-Based Practice.* 4th edn. Chatswood: Elsevier Health Sciences APAC.

Schutz, A. (1967) *The Phenomenology of the Social World.* Evanston. North-western University Press.

Schutz, A. (1970) *Reflections on the problem of relevance*. USA: Yale University Press.

Schwab, K. (2017) *The fourth industrial revolution*. UK: Portfolio Penguin

Schwartz, S. H. (1999) 'A theory of cultural values and some implications for work', *Applied Psychology*, 48 (1) pp. 23-47

Scully, N.J (2010) 'The theory-practice gap and skill acquisition: an issue for nursing education, *Collegian,* 18 pp.93-98

Seaton, J. J., Johnston, C. and Francis, K. (2021) 'Allied health professionals' perceptions of interprofessional collaboration in primary health care: an integrative review', *Journal of Interprofessional Care,* 35 (2) pp. 217-228, doi: 10.1080/13561820.2020.1732311

Sedgwick, P. and Greenwood, N. (2015) Understanding the Hawthorne effect. *British Medical Journal,* 351, doi:10.1136/bmj.h4672

Sergeant, J. and Laws-Chapman, C. (2012) 'Creating a positive workplace culture', *Nursing Management UK*, 18 (9) pp.14-19

Sergiovanni, T.J. (1998) 'Leadership as pedagogy, capital development and school effectiveness', *International journal of leadership in education*, 1 (1) pp.37-46.doi.org/10.1080/1360312980010104

Sfantou, D.F., Laliotis, A., Patelarou, S.E., Sifaki-Pistolla, D., Matalliotakis, M. and Patelarou, E. (2017) 'Importance of leadership style towards quality of care measures in healthcare settings: A Systematic review' *Healthcare,* 5 (4)

Shanahan, M., Herrington, A. and Herrington, J. (2010) 'Professional reading and the medical radiation science practitioner', *Radiography,* 16 (4), pp. 268-278

Shaw, E.K., Howard, J., Etz, R.S., Hudson, S.V and Crabtree, B.F. (2012) 'How Team-Based Reflection Affects Quality Improvement Implementation: A Qualitative Study', *Quality Management in Healthcare,* 21 (2) pp.104-113. doi: 10.1097/QMH.0b013e31824d4984

Shenton, A. K. (2004) 'Strategies for Ensuring Trustworthiness in Qualitative Research Projects', *Education for Information*, 22 (2) pp. 63-75

Sidanus, J. and Pratto, F. (2008) S*ocial Dominance: An intergroup theory of Social Hierarchy and Oppression.* London: Cambridge University Press.

Silverman, D. (2009) *Doing qualitative research*. 3rd edn. London: London: SAGE.

Sim, J. and Radloff, A. (2009) 'Profession and professionalisation in medical radiation science as an emergent profession', *Radiography,* 15 (3) pp. 203-208

Sirota, T. (2007) 'Nurse/physician relationships: Improving or not?', *Nursing*., 37 (1) pp. 52-56

Smith, T. and Jones, P. (2007) 'Remote x- ray operator Radiography: A case study in interprofessional rural clinical practice', *Journal of Interprofessional Care*, 21 (3) pp. 289-303

Smith, J.A. (2015) and Osborn, M. (2015) 'Interpretative phenomenological analysis as a useful methodology for research on lived experience of pain', *British Journal of pain,* 9 (1) pp.41-42

Smith, T., Yielder, J., Ajibulu, O. and Caruana, E. (2008) 'Progress towards advanced practice roles in Australia, New Zealand and the Western Pacific', *Radiography*, 14 (1) pp. e20-e23

Society of Radiographers (SoR) (2010) Medical image interpretation by radiographers. *Definitive Guidance.* Available at: https://www.sor.org/system/files/documentlibrary/public/sor/Definitive_guidance_May2010.pdf (Accessed: 10/01/2017).

Society of Radiographers (SoR) (2013) *Code of Professional conduct*. London: Society of Radiographers.

Society of Radiographers (SoR) (2017) *Diagnostic UK workforce Report.* Available at: https://www.sor.org/sites/default/files/document-versions/scor_census_of_uk_diagnostic_radiographic_workforce_2017_report_-_final_version.pdf

Society of Radiographers (SoR) (2018). *About Radiography.* Available at: https://www.sor.org/about-Radiography/patient-information (Accessed 17/12/2020).

Spector, P.E and Meier, L.L (2014) 'Methodologies for the study of organizational behaviour processes: How to find your keys in keys in the dark', *Journal of Organizational behaviour,* 35 (8) pp.1109-1119

Spencer, S. (2014) *Model of qualitative rigour.* Unpublished.

Spencer, S. (2021) *Representation of a model of social closure*. Unpublished.

Spillane, J.P. (2006) *Distributed Leadership.* San Francisco, CA: Jossey-Bass.

Squibb, K., Smith, A., Dalton, L. and Bull. R.M. (2016) The 'radiographer-referrer game: Image interpretation dynamics in a rural practice', *Journal of Radiation Medical sciences,* 16 (1) pp.17-22

Stake, R. E. (1994) 'Case Studies.', in Denzin, N. K. and Lincoln, Y.S. (eds.) (2011) *Handbook of Qualitative Research*. thousand Oaks: Sage, pp. 236-247

Stake, R. E. (1995) *The art of case study research.* Thousand Oaks, California: *SAGE*

Storey, J. and Holti, R. (2013) 'Service redesign. Clinical leaders need to break down boundaries', *The Health Service Journal*, 123 (6342) pp. 32-34

Strudwick, R. M. and Day, J. (2014) 'Interprofessional working in diagnostic radiography', *Radiography*, 20 (3) pp. 235-240

Sunguya, B.F, Hinthong, W., Jimba, M. and Yasouka, J (2014) 'Interprofessional education for who? Challenges and lessons learnt from its implementation in developed countries and their application to developing countries: A systematic review', PLos ONE 9 (5) e96724

Taguiri, R. (958) *Person perception and interpersonal behaviour*. United States of America: Stanford University Press.

Tajfel, H. and Turner, H. C. (1979) 'An integrative theory of intergroup conflict', in Austin, W. G. and Worchel, S. (eds.) *The social psychology of intergroup relations*. Monterey CA: Brookes/Cole, pp. 33-47

Tajfel, H. (2010) (ed) '*Social identity and intergroup relations. European Studies in Social psychology 7*. Reissue Edition. United Kingdom: Cambridge University Press.

Tekian, A. (2009). 'Must the hidden curriculum be the 'black box' for unspoken truth?', *Medical Education,* 43 (9) pp.822-823

Thomas, L.J. and Revell, S.H (2016) 'Resilience in nursing students: An integrative review', *Nurse education today,* 36 (1) pp.457-462

Thylefors, I., Price, E., Persson, O. and Wendt, L. V. (2000) 'Teamwork in Swedish neuropediatric habilitation', *Child: Care, Health and Development*, 26 (6) pp. 515-532.

Thylefors, I. (2012) 'All professionals are equal, but some professionals are more equal than others? Dominance, status and efficiency in Swedish interprofessional teams', *Scandinavian Journal of Caring Sciences*, 26 (3) pp. 505-512

Tope, A., and Thomas, E. (2011) *Health and Social Care Policy and the Interprofessional Agenda.* Available at: www.cipw.org.uk (Accessed: 12/04/2014).

Traynor, M. and Buus, N. (2016) 'Professional identity in nursing.UK students' explanations of poor care', *Social Science and Medicine,* 166 pp.186-194

Trowler, P. (2012) *Doctoral Research into Higher Education*. Kindle edn. UK: CreateSpace Independent publishing platform.

Turner, B.S., Samson, C. (1995) *Medical Power and Social Knowledge*. 6th edn. London: Sage Publications.

Upshur, R.E.G. (2001) 'The status of qualitative research as evidence. Chapter One' in Morse, J. M., Swanson, J. M. and Kuzel, A. J. (eds.) *The nature of qualitative evidence.* USA: SAGE Publications.

Van, D. L., Driessen, E. W. and Scheele, F. (2016) 'How the past influences interprofessional collaboration between obstetricians and midwives in the Netherlands: Findings from a secondary analysis', *Journal of Interprofessional Care,* 30 (1) p. 71

Van den Biggelaar, F.J., Nelemans, P.J. and Flobbe, K. (2008) 'Performance of radiographers in mammogram interpretation: A systematic review', *The Breast*, 17, pp. 87-92

Van Digelle, C., Roberts, C., Burgess, A. and Mellis, C. (2020) 'Interprofessional education: tips for design and implementation', *BMC Medical Education,* 20 (supp 2) (455).

Van Manen, M. (1990) *Researching lived experience: Human science for an action sensitive pedagogy*. Ontario, Canada: The Althouse Press.

Van Mook, W.N.K.A., Van Luijk, S.J., Wass, V. Zwaveling, J.H., Schuwirth, L.W., Van der Vleuten, C.P.M (2009) 'The concepts of professionalism and professional

behaviour: Conflicts in both definition and learning outcomes', *European Journal of internal medicine,* 20 (4) pp. e85-89 https//doi.org/10.1016/j.ejim.2008.10.006

Vaismoradi, M., Turunen, H., Bondas, T. (2013) 'Content analysis and thematic analysis: Implications for conducting a qualitative descriptive study', *Nursing and Health Science,* 15 (3) pp. 398- 405

Varpio, L., Bader Larsen, K., Hamwey, M., Semelrath, K. and Paradis, E. (2021) 'Interprofessional education in the U.S. military: harnessing simulation for team readiness', *Journal of Interprofessional Care*, 35 (1) 55-63, doi:10.1080/13561820.2020.1711718

Verrier, and Harvey (2010) 'An investigation into work related stressors on diagnostic radiographers in a local district hospital', *Radiography,* 16 (2) pp.115-124

Waggie, F. and Arends, N.E. (2021) 'Exploring interprofessional teamwork at a tertiary public hospital in South Africa', *Journal of Interprofessional Care*, 35 (5) pp. 672-681. doi: 10.1080/13561820.2020.1803225

Walia, S. and Marks-Maran, D. (2014) 'Leadership development through action learning sets: An evaluation study', *Nurse Education in Practice*, 14 (6) pp.612-619

Walker, Clendon, and Walton (2015) 'What nurses think about professionalism', *Kai Tiaki Nursing New Zealand*, 12 (1) pp.12-13.

Walmsley, G., Prakash, V., Higham, S., Barraclough, F. and Pit, S. (2021) 'Identifying practical approaches to the normalisation of interprofessional collaboration in rural hospitals: A qualitative study among health professionals', *Journal of Interprofessional Care,* 35 (5) pp. 662-671. doi: 10.1080/13561820.2020.1806216

Walters, A. (1995) 'The phenomenological movement: Implications for nursing research', *Journal of Advanced Nursing*, 22 pp. 791-799

Wang, D., Waldman, D. A. and Zhang, Z. (2014) 'A Meta- Analysis of Shared-leadership and Team Effectiveness', *Journal of Applied Psychology*, 99 (2) pp. 181-198

Weber, M. (1909). *Economy and society: An outline of interpretive sociology*, Fischoff, E. (translator), Roth, G. and Wittich, C. (eds) Berkeley: University of California Press.

Weeden, K. (2002) 'Why Do Some Occupations Pay More than Others? Social Closure and Earnings Inequality in the United States', *American Journal of Sociology*, 108 (1) pp. 55-101

West, M.A. (2012) *Effective teamwork: practical lessons from organizational research.* 3rd ed. United Kingdom: Wiley-Blackwell.

Williams, M. (2000) 'Interpretivism and generalisation' *Sociology.* 34 pp.209-224

Woodside, A.G. and Wilson, E.J. (2003) 'Case study research for theory building.' *The journal of business and industrial marketing.* 18 (6) pp.493-508. doi:10.1108/08858620310492374

World Economic Forum, Global Future Council (GFC) on the future of health and healthcare (2016-2018). *Health and Healthcare in the fourth industrial revolution. Insight report.* Available at: http://www3.weforum.org/docs/WEF__Shaping_the_Future_of_Health_Council_Report.pdf (Accessed: 19/09/2021).

World Health Organisation (WHO) (1987) *Learning together to work together for health.* Geneva: WHO. Available at: https://apps.who.int/iris/handle/10665/37411 (Accessed 04/06/2013)

World Health Organisation (WHO) (2010) *Framework for action on interprofessional education and collaborative practice.* WHO/HRH/HPN/10.3. Available at: http://whqlibdoc.who.int/hq/2010/WHO_HRH_HPN_10.3_eng.pdf?ua=1 (Accessed: 02/10/13).

Williams, B., Beovich, B., Ross, L., Wright, C. and Ilic, D. (2017) 'Self-efficacy perceptions of interprofessional education and practice in undergraduate healthcare students', *Journal of Interprofessional Care,* 31 (3) pp. 335-341

Williams, H., Widdowfield, M. and Cosson, P. (2014) 'The radiographer's multidisciplinary team role in theatre scenarios', *Radiography,* 21 (2) pp. 165-17

Witz, A. (1992) *Professions and patriarchy*. London: Routledge.

Wylie, D.A. and Gallagher, H.L. (2009) 'Transformational Leadership Behaviours in Allied Health Professionals', *Journal of Allied Health*, 38 (2) pp.65 -73

Xyrichis, A. and Lowton, K. (2008) 'What fosters or prevents interprofessional teamworking in primary and community care? A literature review', *International Journal of Nursing Studies,* 45 (1) pp. 140-153

Yielder, J. (2006) 'Leadership and power in medical imaging', *Radiography,* 12 (4) pp. 305-313

Yielder, J. and Davis, M. (2009) 'Where radiographers fear to tread: resistance and apathy in radiography practice', *Radiography,* 15 (4) pp. 345-350

Yielder, J., Young, A., Park, S. and Coleman, K. (2014) 'Establishing advanced practice for medical imaging in New Zealand', *Journal of Medical Radiation Sciences,* 61 (1) pp.14-21

Zimbardo, P (1975) *Stanford prison experiment.* Available at:https://www.psywww.com/intropsych/ch15-social/stanford-prison-experiment.html

Zimbardo, P. G., Maslach C. and Haney C. (1999). 'Reflections on the Stanford Prison Experiment: Genesis, transformations, consequences' in Blass T. (ed.) *Obedience to Authority: Current Perspectives on the Milgram Paradigm*. pp. 193-237. Mahwah, NJ: Lawrence Erlbaum

Zwarenstein, M., Reeves, S., Barr, H., Hammick, M., Koppel, I. and Atkins, J. (2000) 'Interprofessional Education: effects on professional practice and healthcare outcomes', *Cochrane Database of Systematic Reviews. 3.* https://doi.org/10.1002/14651858.CD002213

Zwarenstein, M., Goldman, J. and Reeves, S. (2009) 'Interprofessional collaboration: effects of practice-based interventions on professional practice and healthcare outcomes', *Cochrane Database of Systematic Reviews*, (3). doi: 10.1002/14651858.CD000072.pub2.

Appendices

Appendix 1 - Interview schedule

Interview Schedule

Radiography students - level 6 (1Hour)

Re-iterate the purpose and method of study, re- emphasis confidentiality and anonymity of the participant's responses. Confirm that the participant is happy to proceed and that they may withdraw from the interview at any time.

NB: Reassure the participant that the research is in no way connected to their assessment or progress on the radiography programme

Ice breaker:

The participant's educational and professional background

Opening Question: I wonder if you could tell me a little about your educational and professional background.

Prompts or areas to explore

- Education and other work experience before becoming a radiography student
- Any prior knowledge or experience which will relate to the aims of the study

Vignette 1

Allow participant a few minutes to read the theatre vignette.

Q1. What do you think that the radiographer Joe should have done in this situation and why?

Prompts and areas to explore in order to illicit understanding of the professions' conduct and requirements

- Explain question if necessary
- Irmer regulations regarding lead shielding
- Radiations safety rules regarding females of childbearing age
- Responsibility regarding above issues
- Accountability regarding above issues

Q2. What would you have done in this situation?

Prompts and areas as for Q1if different from above

If response in Q2 differs to response for Q1

Q3 Why do you think Joe responded in the way that he did?

If responses to Q1 and Q2 are the same then.

Q4 Are there any factors which would prevent you from responding the way you feel you should?

Appendix 2 - Vignettes

Vignette 1 - Theatre

Joe, a grade 5 radiographer arrives in orthopaedic theatre to perform the imaging for a femoral nailing. He is an efficient, hardworking radiographer with excellent technical abilities. On entering he realises that the patient is on the table and has already been scrubbed and draped. The orthopaedic surgeon enters the room, scrubbed and ready to start. Joe realises with dismay that the theatre team had not called him in time to prepare the equipment prior to the case. As the patient is a 17yr old female he feels anxious as he had not checked the patient's pregnancy status or had the opportunity to place lead shielding on her abdomen. He approaches the surgeon and asks if pregnancy had been checked and if the drapes could be lifted so that he can place lead shielding on her abdomen. The surgeon shouts angrily that they do not have the time and how dare Joe questions about the patient's pregnancy status- *of course someone checked it*! Then the surgeon continues grumbling about radiographers.

Reluctantly Joe steps back allowing the surgeon to commence the procedure. As the equipment had been put in place by the theatre staff prior to him arriving, the image intensifier is not really suitably placed. He is unsure whether to raise this but does not once again wish to anger the surgeon so decides to 'get by'.

It soon becomes apparent that he is unable to position the Image intensifier for the projections. This really angers the surgeon who then calls him a monkey asking if he is even qualified. Although he is very upset Joe merely continues with the case doing the best he can under the circumstances.

When he speaks to his supervising radiographer they say '*oh, it's nothing personal, they are always like that, so you just need to get used to it'*

Vignette 2 - Accident and emergency

Elsa, a grade 5 radiographer is working in a&e on a Saturday night. There are two of them on duty, but Peter has gone to image a patient in the resus bays. She is scheduled to perform any CT examinations that are requested.

Her first request comes through for a CT brain. The clinical indications do not conform to the protocol for CT head scans. She calls the referring doctor to tell them that she will put the request into the system so that a decision could be made by a radiologist the next day. If a CT is indicated, then an appointment would be arranged for the patient for the next day. She is unable to speak to the referrer, so she leaves a message with the nurse who answered the phone.

A few minutes later the referrer comes around to the x-ray department demanding to know why she is not willing to do the CT scan immediately because she is just sitting there doing nothing. She tries to explain that the request form does not indicate that the patient requires a CT head scan. They are not willing to leave until Elsa has agreement to do the CT scan. Elsa again explains that the clinical indications do not support an urgent CT head. The referrer asks her to tell them what details are required on the request in order for it to comply to the protocol. Eventually Elsa reluctantly complies and does the CT scan even although she does not believe it to be necessary or appropriate

Appendix 3 - Email invitation and participant information sheet

Invitation email to potential participants

Sent on behalf of Sherril Spencer

Subject: **3rd Year diagnostic students only** - Invitation to participate in research.

The research study aims to explore diagnostic radiography students' perceptions of shared-leadership within an interprofessional team.

As part fulfilment of my Doctorate in education I am required to complete a research study. The study aims to explore how 3rd year diagnostic students perceive the shared-leadership when working within an interprofessional team.

I email to ask if you would be willing to take part in this study. You have been selected as you have experience of interprofessional team working and are about to embark on your career as a radiographer.

Please read the attached participant information sheet which contains more details regarding the study. Participation is voluntary.

If you are willing to participate, please contact me at your earliest convenience.

Regards

Sherril Spencer

Participant information sheet

You are being invited to take part in this study exploring diagnostic radiography students' perceptions of interprofessional collaboration. Please take time to read the following information and discuss with others if you wish. Also, please ask me any questions: details below. I am a student on the Doctor of Education programme and this study is done in part fulfilment of my degree.

What is the purpose of the study?

This study aims to identify how students perceive interprofessional collaboration, its challenges and barriers. Ultimately the purpose would be to develop strategies that would enhance the preparation of students for the interprofessional collaboration.

Why have I been invited?

You have been invited to take part because you are 3rd year diagnostic radiography student who has experience of working as part of an interprofessional team within the practice placement environment. My research supervisor accessed your details via the university's study space portal and contacted you via study space on my behalf. I am looking to recruit as many participants as possible irrespective of gender, age, ethnicity and previous life experience.

Do I have to take part?

It is entirely up to you to decide whether or not to take part. If you decide not to take part this will not affect the relationship you have with the university or your grades in any way. If you do take part you are free to withdraw at any time, without giving any reason and without any detriment to you or your progress on the degree.

What will happen if I do take part?

You will be given a copy of this information sheet to keep and be asked to sign a consent form. You will then be invited to attend an informal interview at a time convenient to you which will last approximately 30- 40 minutes You will be invited to

comment on 2 fictitious scenarios set in an interprofessional practice environment. The interview will be audio recorded. All recorded information will be anonymised.

What are the possible benefits of taking part?

There are no immediate benefits. However, it is hoped that information from this study will help to enhance the diagnostic radiography curriculum and better prepare students for interprofessional collaboration and teamwork within the practice placement environment.

What are the risks of taking part?

There are no risks in taking part. However, some people may find talking about their experiences emotional. If this happens you can stop the interview or take a break at any time.

Will my taking part in the evaluation be kept confidential?

Yes. We will follow ethical and legal practice and all information will be handled in confidence. Only the researcher and her supervisor will have access to the original data (interview). All the information gathered will be securely stored on a password protected computer and no names or contact details will be attached to the data files.

What will happen to the results of the evaluation?

I will write up my findings in a dissertation in part fulfilment of the Doctor of Education. If possible, I will submit the findings to a suitable journal. You will not be identified in any way.

Who has reviewed this evaluation study?

The evaluation has been looked at by an independent group of people called the Faculty Research Ethics Committee to protect your safety, rights, and dignity. They have given a favourable opinion.

Contact Details:

Researcher

Research Supervisor

Research Supervisor

Appendix 4 - Ethical approval

Faculty of Health, Social Care and Education
Kingston University and St George's, University of London
Penrhyn Road Campus
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Surrey KT1 2EE

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Nigel Rogers
MSc TDCR FHEA
Undergraduate Course Director (Diagnostic)
TELEPHONE:
FACSIMILE:
EMAIL: [Redacted]

Sherril Spencer
Senior Lecturer
School of Radiography

10th March 2014

Dear Sherril

Ethical Approval of Proposed Study

I am writing to confirm that the Faculty ethics committee considered your proposed study "Diagnostic radiography student's perceptions of shared leadership roles of inter-professional practice" at one of its meetings. Resulting from this meeting, several points of clarification and amendment required your attention; these were satisfactorily addressed in your subsequent emails. Consequently, your proposal was approved by chairs action on 10th March 2014 and this outcome will be reported to the committee at its next meeting and recorded in the minutes.

I trust that you will enjoy undertaking this work and I wish you every success with this proposed research.

Yours sincerely

[Redacted]

NIGEL ROGERS
Chair Faculty Research Ethics Committee

Appendix 5 - Consent form

CONSENT TO PARTICIPATE A RESEARCH STUDY

Title of Project: *Diagnostic radiography students' perceptions of interprofessional collaboration.*

Name of Researcher: Sherril Spencer

Please read the statements below and initial each box provided to indicate that you have read and understood the information.

I can confirm that I have read and understand the study's invitation email and information provided. ☐

I have been informed of the purpose, risks and benefits of the study.

I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason and without my relationship with the university or my assignment grades being affected. ☐

I fully understand that my involvement will entail that all my questions have been answered to my satisfaction. ☐

I understand that all interviews will be recorded for the purposes of transcription and analysis. I also understand that I will be shown a transcription of my interview with the option to amend or delete any comments before this is included in the study. ☐

I understand that I will not be identified on the transcriptions and that these transcriptions along with the researcher's notes will be securely stored. ☐

I understand that all discussions will remain confidential. ☐

I agree that the research data gathered will be published provided that I cannot be identified as a participant. ☐

Contact details have been provided should I wish to contact the researcher during or after the completion of the study. ☐

I agree to take part in the above study. ☐

_____ ----------

Participants Signature Date

---------- ----------

Researcher's Signature
Date

Appendix 6 - Diary reflection

An example of my reflections on an interview with P3:

'*The interview went well, and the conversation flowed. The participant was eager to respond and at times I felt that they were trying too hard to demonstrate knowledge rather than opinion. I wondered if I inadvertently placed too much emphasis on the knowledge aspects. I made a conscious effort to improve my signposting to the aspects of opinion and reiterated that the interviews were not a test of their knowledge but a conversation of their perception on collaboration. The participant relaxed after that and was more willing to proffer their perceptions*.'

Appendix 7 - Table of coding

Significant Statement	**Formulated Meaning**	**Themes** **(Closure strategy)**	**Cluster**
I should not have continued until I have checked certain details	Demonstrates acceptance of responsibility for tasks and how it fits into teamwork	Responsibility, psychological ownership	Interpersonal relationship
Maybe he should have confronted surgeon ..and said I' look I am stuck with guidance as you are	Suggests explaining their viewpoint communication as a means of dealing with the situation	Communication Knowledge sharing usurpation	Interpersonal relationship Skills mix Personal capability
'I don't want to be treated like that, I don't want to work in that environment'	Sees environment as a barrier. Exerting upward power Self-awareness	Power – barrier and exerts upward power usurpation	Environment

Radiation protection is the radiographer's job	Accepts responsibility	Responsibility Psychological ownership	
No! .. Its your job, your equipment so it's not the surgeon pressing the pedal it's you.	Suggests radiographers are accountable for radiation administration. Protective of exclusive authority	Accountability Decision making usurpation	Skills mix
Should have got up there spoken to surgeon	Suggests they would communicate to make their viewpoint understood. Demonstrates confidence and self-efficacy	Communication Leadership skills usurpation	Interpersonal relationships/ skills mix Personal capabilities

'... there seems to be a massive hierarchy...'	Hierarchy in organisation	Hierarchy	organisation
Lots of surgeons have this authoritative complex,	Suggests surgeons have the attitude that they are leaders of the team – act with authority. Ego?	Leadership Domination Demarcationary strategy	Organisation Personal capability
they are in charge in a way. You do as the surgeon says - apathetic	Accepts surgeon is in charge. Lacks confidence self-efficacy to challenge	Compliance Doctor focussed Demarctionary	Personal capabilities Culture Hierarchy normalisation

You are your own boss in there .. *but also part of a team – no one takes charge. I am kind of contradicting myself ?* perplexed	Suggest rad has exclusive authority Describes ideal collaboration in IP team but does not understand concept?	Exclusive authority Power distribution	Self-perception /inteprofessional
You need a leader to direct…	Team needs a leader to co-ordinate.	Decision makin	Skills mix
… but he is acting more like a dictator.	Top down hierarchy, doctor focussed, poor communication skills	Power Decision making powers Demarcationary	organisation culture interpersonal relationships
He is not getting what he wants by asking … but by insulting	Suggests he abuse of power though poor communication method	power communication	Personal capabilities Skills mix

		Demarctionary	culture
I mean I have been in theatres where they do this situation… I don't even know what the patient is in for … no one talks to me… don't know who I am!	Acknowledges Vignette mirrors real life. Does not feel part of the team	Knowing the team exclusion	Skills mix Culture/environment
I ideally …. A meeting.. and talk about what they want… and it gains that … team sort of feel. You feel more part of it.	Suggests team meeting briefing prior to procedure would reduce barrier and promotes collaboration	Communication Knowledge sharing inclusionary	Interpersonal relationships, Personal capability
Well these guys have an attitude	Suggests attitude towards radiographers – lacks respect	Respect	Interpersonal relationships Skills mix

Obviously they under pressure.. they have time directives	Demonstrates understanding of 'others' role and the stress they are under	Knowing the team Understanding the pressures of the organisation	Skills mix environment
..*supervising radiographers' comment is pretty bad.. its always like that, you need to get used to it…* *She is your leader … to help and guide you… not pressure you to do as they say!*	Describes being pressured to compliance despite not agreeing with the request Sees supervising radiographers as their leaders	Compliance demonstrates self - awareness and self-regulation	Personal capability radiography culture Culture of compliance
In practice do supervising rads stand up for radiographers?– some do and some just shrug their shoulders sighs, yeah you know.	Suggests that there is a mix of responses by supervising radiographers. Suggesting some apathy and lack of self-efficacy	Compliance,	Culture of radiography/organisation Normalisation

		Self -efficacy	
And but also because you not working with the same team day in and day out and tend to be moving around between the teams I think is its' much more difficult to build that rapport	Transient member of the team	Knowing the team	Skills mix Interpersonal relationships
A lot would depend on your rapport with the team and if you know that the team does generally a good thorough job then you are more likely accept that the information that you have been given is correct	Suggest that if they now the team members then they would be more likely to trust them	trust	Interpersonal relationships

Significant statements	Formulated Meaning	Themes	Clusters
To sum it up she should have referred to a radiologist	Should work within knowledge and defer demonstrating resilience and scope of practice Refusing to comply	Knowledge and skills. Self -regulation Decision making powers Self-efficacy	Skills mix Interpersonal relationships Resists normalisation
If she felt it wasn't right, then no she shouldn't do the examination	Understands code of conduct And responsibility	Self-awareness Self-regulation Self-efficacy integrity	Personal capabilities
Maybe they assumed doctor knows best and for a few seconds that goes out of your	Seems to forget that she can decide as	Decision making powers Self-regulation	Skills mix Personal capabilities

mind- your actual role as a radiographer.	Assumes doctor is right Automatic initial reaction is to comply and do what they told	Doctor focussed	Normalisation Culture
It's kind of manipulation	Suggests influence of power over radiographer	Ability to influence Hidden curriculum Demarcationary	Leadership Culture
I mean you go by clinical indications	Knowledge and skills guide decisions	Decision making Self awareness inclusionary	Working in the IP team Personal capability
I have had some pushy doctors in my time	Suggests they try to use their power of influence	Power, hierarchy self-regulation Hidden curriculum	Interpersonal capabilities Skills mix

		communication usurpation	Culture organisation
Knowledge – the more you know the better you are at being pushy back	Knowledge and skills gives confidence and self-efficacy to exert influence	Usurpation & inclusionary	Collaboration
I know one radiographer who has been doing Ct for last 20 years - she knew when to say yes/no and the doctors knew to walk away when she said no	Suggests that if you have knowledge and self-efficacy then you will be respected and listened to. Also trust your decisions	Respect Trust Ability to influence Inclusionary & usurpation	Personal capabilities Interpersonal relationships Skills mix

Difference in respect for band 5 to superintendent rads? No because there are some band 5… and they are really good. ‘ its just that knowledge thing isn’t it?	Suggests respect is through knowledge and skills rate than experience	Respect, knowledge and skills	Personal capabilites

Everyone has to do their part to come together as a team’	Understanding of teamwork and collaboration	Collaboration Knowing the team	Skills mix
….To be extra cautious I will just make a fool out of myself to do the right thing	Suggests that by doing the right thing in the face of adversity they would be looked upon by others as a fool. But also suggests that they are prepared to accept that criticism in order to do what is expected of them	Confidence Resilience *usurpation*	Personal capabilities

he is indirectly stating that 'you shouldn't be questioning me I know it all'	Reasoning why they would feel a fool is because surgeon's attitude that they should be obeyed at all times - persuasion	Culture hidden curriculm Doctor focussed	Interpersonal, IP teamwork culture of radiography and organisation
..work as a team and to communicate to everyone else	Realisation that radiographers need to communicate with rest of the team in order to facilitate collaboration.	Communication accountability	Interpersonal relationships Skills mix
…Intimidated by the surgeon	Feels inferior and subordinate lacking in confidence	demarcationary	subordination
Felt.. that the surgeon was looking down on him. .. it's a hierarchy	Perception that surgeon thinks they are superior and lacks respect Accepts that there is a hierarchy	Status/respect Hierarchy demarcationary	Culture

Who would be accountable? .. 'I am not sure..thoughts in action.. it will boil down to the radiographer	Radiographers accountable for actions related to their responsibility but uncertainty who would be accountable for issues relating to IRMER	Accountability Confidence Self-efficacy	Personal capabilities Skills mix
.. *think I would scrap the hierarchy bit.. ..everyone has to work together.. everyone has a job to do*	Suggests all members of the team should be considered equal and everyone contributes their specific skill set. Ownership of own responsibilities	Collaboration, power sharing Hierarchy Culture Respect Psychological ownership	Organisation Culture IP teamworking Interpersonal capabilites Interpersonal relationships
'.. Look I need to do this …explain myself'	Confident in knowledge of what is need and what role of radiographer is and is prepared to insistent in order to do the right thing, able to make decision	Confidence Self-efficacy	Personal capabilities Interpersonal relationships

		Communication Decision making Knowledge sharing collaboration Usurpation & inclusionary	Skills mix
Explain myself	Will use communication as a means of mediating	Communication, demand respect	
Superintendent should know better or ‘ is always like that so you just need to get used to it	In regards to the superintendent - persuasion	Hidden curriculum Compliance Self -regulation	Culture of compliance radiography culture

'.. they probably got used to it.. and thought you know what I tried to go down this line and it didn't work, just go with the flow..	An explanation of why they think the superintendent just accepted the rude behaviour, apathy and acceptance	Compliance and conformity Hidden curriculum	Radiography culture Culture of compliance
'.. but its never ok'	does not accept the compliant attitude of the superintendent	Usurpation Resilience Self-efficacy Self-regulation Hidden curriculum	Personal capabilities