

Nursing and Physiotherapy students' perceptions of participating in Practice Based Peer Learning as a vehicle for developing Interprofessional understanding.

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Abstract

Peer learning has been successfully introduced into professional education within the practice setting (Secomb 2008). This thesis provides a chronological narrative presentation of a qualitative case study that evaluated an interprofessional peer learning programme designed to consolidate communication skills and develop interprofessional understanding among physiotherapy and nursing students.

The peer learning programme was implemented with two different groups of students over two four week periods when nursing and physiotherapy students overlapped during routine placements. It enabled students placed within the same hospital but in different clinical environments to work together in both a tutorial setting and on patient centred tasks. This included verbal peer review of interpersonal communication skills in both tutorial and practice settings.

The theoretical framework for the research was provided by cooperative learning, with a conceptual framework provided by social interdependence theory.

Ethical approval for the study was obtained from the University and NHS Research Ethics Committees. The peer learning programmes were implemented and evaluated between May and December 2007. Data collection included validated UWE Interprofessional Questionnaires before and after the programme, concurrent reflective diaries and semi-structured interviews following completion of the peer learning programme by students. Semi-structured interviews with clinicians involved in facilitating the programme along with RIPLS questionnaires were also gathered.

The interviews and reflective diaries were analysed using an inductive thematic analysis (Coffey and Atkinson 1996), single case study sheets were used to summarise data and a cross case analysis matrix (Stake 2006) was adopted.

Data analysis identified the focus on interpersonal and interprofessional communication skills was relevant for students at all levels; it complemented placement learning and enabled students to cooperate in practice and develop greater insight into each other's role. Interprofessional peer observation and review within both tutorial and practice settings were found to be appropriate educational strategies. All agreed it was not threatening; it was valuable in gaining insight into another profession and for consolidating own professional knowledge. Students valued undertaking patient centred tasks together although an appropriate level of challenge and mentor support was required.

The case study also discusses the use of the cooperative learning framework adopted to minimise known challenges associated with peer learning (Secomb 2008, Ladyshewsky 2000). A case is made for principles associated with cooperative learning to be more widely applied to practice based interprofessional learning.

1.1 Introduction

Interprofessional learning (IPL) has become embedded in professional education. Despite an expanding research base there is no consensus as to how best facilitate interprofessional learning in the practice environment. However, the significance of combining academic and practice based interprofessional learning appears to be emerging (Morison and Jenkin 2007, Wilhelmsson et al 2009). Practice based peer learning strategies have an established evidence base within physiotherapy (CSP 2002) and have been successfully introduced into professional education (Secomb 2008).

This thesis presents a qualitative case study that evaluated an interprofessional peer learning programme designed to consolidate communication skills and develop interprofessional understanding among physiotherapy and nursing students.

The peer learning programme enabled students placed within the same hospital but in different clinical environments to work together and learn from each other in both a tutorial setting and on patient centred tasks.

Within this thesis the evidence base associated with the use of peer learning strategies within pre-registration physiotherapy practice education is reviewed and challenges associated with the use of these strategies highlighted. The origins of the principles associated with cooperative learning are considered and their relevance to the development of effective practice based interprofessional learning is explored. Consideration is given to the conceptual framework provided by social interdependence theory from which cooperative learning evolved.

This introductory chapter elucidates the policy background to the development of practice based interprofessional learning. The choice of communication skills as the focus of the peer learning programme is discussed and research aims identified. Key influences on the research design along with the initial development of the research proposal are considered and a timeline defined. Finally the structure of the remaining five chapters is provided.

1.2 Policy Background

Central government's drive over the last 10 years to develop the NHS into an organisation which is patient centred (DoH 2005) and to respond to high profile failures (DoH 2001a, DoH 2003) has led to interprofessional learning becoming a required element of pre-registration professional education, despite a lack of empirical evidence identifying a positive impact on healthcare outcomes (Reeves et al 2008). It was believed traditional uni-professional training led to the

reinforcement of professional boundaries, hierarchies and did not enable good understanding of professional roles to be acquired.

The development of IPL was driven by a commonly held belief that this would have a positive impact on the quality of patient care. Recommendations from the Laming Report (DoH 2003) and the Bristol Inquiry (DoH 2001a) identified the need for a greater emphasis on team work; which has been implemented within the Knowledge and Skills Framework, while the Bristol Inquiry specifically identified a lack of skills training in communication, leadership and teamwork (DoH 2001a). There has been great difficulty in identifying any direct relationship between interprofessional learning and the quality of patient care, however, there has been an overwhelming acceptance of the need to facilitate greater understanding and cooperation across disciplines at all levels.

The evaluation of IPL initiatives has been influenced by the foci developed by Barr et al (2006) who undertook a systematic review of interprofessional education. Barr et al identified three symbiotic elements: individual preparation, cultivating collaboration and improving services. This enables initiatives to be considered not just at the level of direct impact on patient care but in the various stages that lead to the ability of an individual and or an organisation to engage in collaborative practice.

Barr et al (2006) proposed the development of “collaborative competencies” enhanced through competency based models of interprofessional education. The ability to communicate effectively across and within professional groups is identified as a core skill associated with the Interprofessional Capability Framework developed by the Combined Universities Interprofessional Learning Unit (Walsh et al 2005)¹.

Darzi (2008) proposes to provide more integrated services for patients; the NHS Next Stage Review highlights the need for effective teamwork and embeds a requirement to effectively work inter-professionally in every clinician’s role. “Creating an Interprofessional Workforce” has reported that IPL should be embedded in practice learning (DoH 2007).

When asked to identify aspects of practice required for, and meaningful to, interprofessional learning, students have identified communication skills and interprofessional relationships as core (Robson and Kitchen 2007, Pollard 2008). Interpersonal communication is something of which all students have knowledge and skills are summatively assessed throughout the curriculum.

In this research communication skills were chosen as the focus of the peer learning programme due to their central role in interprofessional learning and professional practice.

¹ See page 41 for more details regarding this project and the HEIs involved.

The last decade has seen an exploration and expansion of roles and responsibilities across professions. The development of extended roles and professional boundary blurring has been encouraged (Carmel 2006, Baxter 2008). Due to these rapid changes considerable discourse has been generated as to the aims of IPL, some considering it to be a suitable cloak for the development of generic skills, while the majority agree a global aim is to develop real understanding of one another's role, mutual respect, the ability to communicate and enhance patient care through the development of a "seamless service" (Freeth and Nicol 1998, Freeth et al 2002, Morison et al 2003).

Interprofessional learning defined as occurring when "...two or more professions learn with, from and about each other to improve collaboration and the quality of care" (CAIPE 2002) is now embedded in all professional programmes. Multi-professional education occurs when "two or more professions learn side by side". These definitions identify fundamental differences in the learning behaviour being facilitated. Interprofessional learning calls for engagement between professional groups to occur while multi-professional education facilitates individual learning behaviours with individuals learning alongside each other. When facilitating IPL it is essential therefore to adopt educational strategies that facilitate the cooperation and engagement between students inherent in the definition.

1.3 Communication Skills

All professional programmes assess communication skills throughout clinical practice to ensure these essential skills are acquired; communication skills, therefore, form a common competence. A systematic review of communication skills teaching in health and social care (Chant et al 2002) identifies a wide range of teaching strategies and methodologies. The move to patient centred consultations, where the patient is seen as a partner, with their ideas, concerns and expectations being considered along side their condition (Thistlethwaite and Jordan 1999) has been in response to research suggesting this improves patient satisfaction (Savage and Armstrong 1990, May 2001), and the effectiveness of medical management (Parkin and Skinner 2003).

Yet the Healthcare Commission reported in 2009 that 12 per cent of all complaints from patients in primary care and acute services concerned issues related to the standard of communication they received from Trusts (Healthcare Commission 2009).

The Department of Health in their "Guiding Principles" relating to the commissioning and provision of pre-registration communication skills training for healthcare professionals calls for "the standards set out in the QAA Subject Benchmark Statements and the GMC's "Tomorrows Doctors" to be embedded within education provision...and delivered in the most effective way of meeting the students, employer and ultimately the patients needs" (DoH 2003b).

One significant multi-institutional interprofessional project has recently developed interprofessional competency maps associated with communication skills, team working and ethical practice to aid interprofessional practice assessment (Holt et al 2009).

Yet there are considerable challenges with engaging students in communication skills development. One study felt the need to “sugar the pill” by including communication skills within a course concurrently acquiring other clinical skills (Freeth and Nicol 1998). While students from different professions may hold different attitudes as to the relevance of communication courses on their professional development (Reynolds 1996); a study by Horsburgh et al (2001) identified that students felt communication skills should be learnt together, another found physiotherapy students identified communication skills as central to interprofessional teamwork (Robson and Kitchen 2007). It has also been proposed by the Department of Health (2001b) that communication skills be developed on a shared basis from the early stages of health care education and many shared and interprofessional education includes communication skill development as part of the curriculum. The majority of this is delivered in the academic setting.

Little research into IPL has been carried out which enables students to acquire core communication skills together in the clinical environment and through the consolidation of these skills explore each other's professional roles and responsibilities.

Following a review of the common requirements from the NHS Knowledge and Skills Framework, Health Profession Council's Standards of Professional Conduct, QAA benchmark statements and the GMC's Tomorrows Doctors, this research focuses on the cooperative consolidation of generic skills related to the NHS Knowledge and Skills Framework core dimension 1; Communication, and the Health Profession Council's Standards of Professional Conduct 6 and 7 which relate to acting within the limits of your knowledge, skills and experience and effective communication.

These skills are embedded in the Interprofessional Capability Framework (Walsh et al 2005) which requires that “the interprofessional team member consistently communicates sensitively in a responsive and responsible manner, demonstrating effective interpersonal skills in the context of patient/patient focused care” (p13, http://www.cuilu.group.shef.ac.uk/capability_framework.pdf accessed 07.01.09 10.30 a.m).

During professional programmes socialisation into the chosen profession occurs alongside developing clinical expertise. While individuals learn how to use a language specific to their profession, it has also been suggested profession specific cognitive maps may develop (p582 Clark 2006). If professionals are able to understand not just each other's roles but their perspectives, an awareness of the potential for differing interpretations of the same material may be helpful.

It has also been suggested that as students become more knowledgeable about their own profession, they may become less able to communicate with those without the similar knowledge base i.e. their patients (Billings-Gagliardi et al 2001).

By enabling the students to explore the application of these skills in practice and discuss the individuality of their interpretation of clinical situations, this common skills development aimed to promote a greater depth of understanding regarding professional roles.

1.4 Research Aims

The aim of this research was to evaluate the effects of a peer learning programme on communication skills development and role understanding of nursing and physiotherapy students.

The research aimed to explore how suitable and practical it is to enable students to consolidate common core communication skills together in the clinical environment and to see if this enabled students to learn about each other's professional roles.

The initial aims were focused into the following research questions:

1. Does the peer learning programme promote the development of an indepth understanding of other professional roles and responsibilities?
2. Does peer learning establish mutually beneficial relationships among peers which facilitate individual's skill acquisition and consolidation?
3. Does the peer learning programme facilitate the student's ability to collaborate effectively within a multi-professional team?
4. Can the peer learning programme increase the amount and type of pre-registration interprofessional learning within the current practice setting?

The tutorial content and clinical tasks integrated into the peer learning programme remained the same for all students. Students from years 1, 2 and 3 were involved.

1.4.1 Key Influences

My background is within physiotherapy education, having been involved in placement organisation and support for a number of years. Over those years I have developed an interest in facilitating and encouraging the adoption of peer learning strategies within the clinical environment. This initially occurred in response to a crisis in placement numbers when the commissioning of physiotherapy student places suddenly increased but later developed into an issue of quality as the effects of peer learning became apparent. For this research I wished to use my experience and understanding of peer learning strategies within the clinical environment to enable students from different professions placed within the same hospital but different clinical teams to learn together in practice.

For the influence of myself as researcher to be evident throughout this thesis, I will follow a chronological narrative approach (Yin 1994). By exploring my experiences of developing, facilitating, responding to and analysing the research I plan to be clearly positioned within the decision making process. Within qualitative methodologies reflexive methodological accounting is understood in many ways. Seale (2000) identifies a range of positions from “confessional accounts” to “polyvocal or collaborative texts which seek deliberately to place the author well away from centre stage” (p172). Researcher self-awareness and reflexivity has been seen as a way of balancing their influence on data collection, analysis and presentation (Hall, S. 1996). There is consensus that disclosing “any personal and professional information that may have affected data collection, analysis and interpretation..” (p566 Quinn Patton 2002) improves the credibility of the researcher. My aim in writing reflexively is to enable the reader of this account not just to assess the transparency, trustworthiness and credibility of the work but to gain insight into my theoretical perspectives.

I am white, Scottish from a middle class christian background. As a Physiotherapist I have specialised within the field of elderly rehabilitation and experienced working in many multiprofessional teams. My move into education was due to my enjoyment of clinical teaching and clinical education has always been a core interest.

This study explores using communication skills teaching within the practice environment as a vehicle for developing interprofessional understanding. It recognises individuals as the significant element of the social world. The attitudes these individuals hold, how they interact, their experiences and the behaviours they exhibit constitute the evidence. Exploring the evidence generates knowledge but there are many interpretations available. Individual experiences are of equal significance and multiple realities accepted. However, this will be scrutinised within the framework of a case study allowing the triangulation of data to explore those perspectives at depth and from differing angles. Low and Howkins (2006) proposed members of different professions have different styles of learning, patterns of thinking and attitudes to authority, therefore, different constructs of reality. They suggested different value systems form due to each profession’s individual skills, knowledge and concepts.

The development work undertaken for this study was triggered by an interprofessional study day on peer learning which I co-ordinated with colleagues in July 2006. The day identified and explored the use of models of peer learning within the clinical environment among Allied Health Professions within Devon and Cornwall. The definition used on that day for peer learning was “student(s) learning with and from each other” (p3 Falchikov 2001).

During one of the workshops the groups explored ways of further developing pre-registration interprofessional working in the clinical setting within the current curricular framework. By identifying obstacles to interprofessional education locally, the groups reflected the national and

international perspective which identifies curriculum structures, uni-professional learning styles, professional subcultures and hierarchies as significant barriers to effective interprofessional education (Cook, A. et al 2001, Barr et al 2006), no new limitations were found. They also raised concerns about the amount of time available within their clinical lives.

A challenge presented to the group was to identify how clinicians felt interprofessional education could develop within the clinical setting despite these acknowledged barriers. Participants identified their own clinical teams as sources of good practice. They proposed the development of student teams, so that students could become more aware of effective team working, the roles of team members and collaborative practice; core elements of interprofessional education. This was seen as a good way for the students to be exposed to team working and also be able to work together on patient centred activities by sharing a case load.

This model, popular on the day, has a positive evidence base. It has been shown to be effective, is highly regarded and can improve students' team working and interprofessional collaboration as the students work together over a period of weeks (Freeth et al 2001, Lumague et al 2006, Pearson et al not dated, Wilhelmsson et al 2009). However, one of the challenges associated with the curricular structure locally is that students in practice do not start placements at the same time, have varying lengths of placements and do not overlap for long periods of time.

This was addressed by one of the groups who proposed specific interprofessional days pre-arranged throughout the year. This model is also supported within the literature as an effective way of enabling students passing through Trusts to work together for a period of time (Anderson et al 2006).

Despite the challenges, there was overwhelming endorsement of the implicit proposal that clinical placements were a suitable environment to facilitate the acquisition of interprofessional skills (Jacobs 1987, Cook, A. et al 2001, Department of Health 2001b, Hilton and Morris 2001, Lloyd-Jones et al 2007).

The value of real patient work had been a strong theme in the Common Learning Programmes data analysis (p75 Pearson et al not dated). Students do not appear to automatically collaborate just by being placed in the same environment (Russell et al 2006), yet, once facilitated, patient centred workshops are valued and provide insight into complex fields which promote and require high levels of cooperative practice (Wee et al 2001). Evidence now suggests that to sustain positive attitudes towards shared learning a combination of team working in both the academic and placement environment is required (Morison and Jenkins 2007). However, varied experiences of interprofessional working within placements are acknowledged (Robson and Kitchen 2007, Pollard 2008) along with the recognition that students may express concerns that IPL should not dilute

their own uni-professional learning (Morison et al 2003) or detract from their clinical experience (p63 Pearson et al not dated).

I am particularly interested in how to promote more collaboration among students who are placed within the same hospital at the same time but within a diverse range of teams. Some professional programmes have overcome this by facilitating interprofessional learning in practice through variations on the "Sole Interprofessional Placement" (Pearson et al not dated) where students undertake clinically based tasks to observe and reflect on the interprofessional working being demonstrated in practice. However, I was keen to identify an aspect of education which had the potential to more directly influence the quality of patient care, while getting students to physically work together in practice.

1.4.2 Time Line

In January 2007 the first broad outline of the proposal was written. The proposal was based on a literature search and personal knowledge of facilitating clinical educators in pre-registration peer learning within a uni-professional (physiotherapy) clinical context.

During a course run by the Centre for the Advancement of Interprofessional Education (CAIPE) I was able to present a draft proposal for peer review within a supportive multi-professional environment. One of the comments led to considerable reflection and some adaptation of my original proposal. Originally, I had emphasised the development of the students' ability to facilitate each other's learning using peer review within the clinical setting. It was suggested that the students observing each other in practice would find this very threatening - specifically that the physiotherapy students would threaten the nursing students. NHS research ethics submission was made on 20th March 2007, and the submission was supported with attendance at the Cornwall and Plymouth Research ethics committee meeting on 10th April 2007. When presenting my proposal to the local ethics committee a member of the committee expressed a similar opinion, suggesting the physiotherapy students would dominate the tutorials and control the clinical encounters. Ultimately this has led to the inclusion of a focus within data analysis to consider if peer review is an appropriate strategy to use within an interprofessional context.

On reviewing the literature, within the Common Learning Programme one of the clinical educators on the Peer Interprofessional Placement expressed a similar view and was concerned that the "physio students might be a little more vocal" but had found "...I was pleasantly surprised to hear the nursing students, you know give their opinions and stuff" (p57 Pearson et al not dated), however, in the shadow team where a wider range of students were involved facilitators did report a difference in participation and confidence which they attributed to profession (p45 Pearson et al not dated).

In my experience students have often found feedback from their peers extremely useful and this has been one of the strengths associated with uni-professional peer learning in clinical models (Crouch et al not dated). Literature on uni-professional peer learning identifies that while concerns are often expressed that individual students may overshadow each other, this rarely occurs (Zavadak et al 1995, CSP 2002, Martin et al 2004).

Some of my initial reflection focused around the definition of “peer” – while this can broadly be defined by someone of equal status, within the context of professional education this often refers to someone on the same course. It was clear from these comments that colleagues did not necessarily see students from the two different professions as peers. Yet there is some evidence that pre-registration students early on in the professional socialisation process may view each other as being in similar less knowledgeable positions which could facilitate the ability to work as peers (Reeves and Pryce 1998). Within the interprofessional arena consideration clearly needed to be given to the power relationships among professional groups. Considering whether the students agreed with the perception expressed above or saw each other as peers is a focus for analysis (Pollard et al 2006).

Both occasions discussed above, demonstrate the inherent stereotypes held regarding different professional groups and reflected the culture within which the research would take place. They were, therefore, both an influence on design and significant factor to consider when analysing the data.

Within the Interprofessional Capability Framework (Walsh et al 2005) more complex skills associated with co-mentoring across professions are being proposed to promote interprofessional working. Peer review is becoming embedded within professional cultures through appraisal and continuing professional development, and within the healthcare environment through clinical governance (Gopee 2001). Ways to standardise the use of peer review are being developed (Archer et al 2005) and the value of informal conversations are beginning to be explored (Phelan et al 2006). While uni-professional peer review is becoming common place, cross professional peer review is less common. However, interprofessional mentoring relationships are developing rapidly with the expansion of roles that include advanced practice (Fraser 2005). Introducing placement based peer review as a pre-registration interprofessional skill could support the further development of co-mentoring across professions and introduce students to skills required for lifelong learning.

Ethical approval was gained on 16th April 2007 and the recruitment for the study started immediately.

1.5 Structure of the Thesis

The thesis follows a chronological narrative approach proposed by Yin (1994) as one of the appropriate methods of presenting a case study. There are a further five chapters.

Chapter Two presents the literature review associated with uni-professional peer learning in the practice environment, followed by an in-depth review of cooperative learning and the conceptual framework provided by social interdependence theory. The association between a cooperative learning framework and Contact Theory is explored before presenting an overview of practice based models of interprofessional learning.

Chapter Three explores the case study methodology chosen, including practical, ethical and ontological considerations. It then considers the data collection methods followed by the process and structure of data analysis.

Chapter Four provides a chronological presentation of the implementation of the research. This is presented to corroborate my account, expose the initial design and identify modifications that occurred.

Chapter Five presents the data analysis. Individual cases are presented followed by a cross case analysis of group one and two. The cross case analysis has been divided into the three categories identified within the thematic analysis: Interprofessional Learning, Individual Learning and Peer Learning.

Chapter Six considers the relevance and significance of the findings. Limitations of the study are detailed. A case is then made for the unique contribution this thesis provides and recommendations for IPL in practice.

1.6 Chapter Summary

This chapter has presented the background leading to the embedding of interprofessional learning in pre-registration professional healthcare programmes. It identifies the growing relevance of combining academic and practice based IPL to facilitate the acquisition of interprofessional skills and the current lack of consensus regarding how best to structure IPL based in practice environments. The choice of communication skills as a focus for the peer learning programme within this research has been discussed and key influences on the research development and design highlighted.

Chapter 2 Literature Review and Theoretical Framework

2.1 Introduction

The theoretical principles underpinning the development of the peer learning programme relate to principles of cooperative learning informed by a conceptual framework provided by Social Interdependence Theory (Johnson and Johnson 1998). The evidence base comes from a literature review focusing on the use of peer learning in physiotherapy practice education, specifically informed by the work of Richard Ladyshevsky (2002) who has written extensively on the use of peer learning in the clinical setting.

The power base associated with differing professions meant that it was essential for students participating in the research to attain equal status relationships; this is a principle of both cooperative learning, interprofessional facilitation and highlighted as significant by both Contact Theory (Pettigrew and Tropp 2006) and Social Identity Theory (Brown 2000).

This chapter starts by reviewing the evidence base associated with peer learning in physiotherapy including an overview of literature associated with facilitating professional development using peer learning among pre-registration healthcare students in the practice environment². The literature was searched using key terms and phrases, literature which focused on student productivity alone were excluded.

The second half of this chapter moves on to consider the theoretical framework associated with cooperative learning, first a discussion identifying the difference between collaborative and cooperative learning approaches is presented. Social Interdependence Theory; the conceptual framework underpinning cooperative learning (Johnson and Johnson 1998) is then considered before defining the principles of cooperative learning and relating this to the design of the peer learning programme. Finally an overview of practice based IPL is presented and the relevance of a cooperative learning framework discussed.

2.2 Literature Review

2.2.1 Peer Learning

Peer learning is a generic term for all situations where peers “learn with and from each other” (p3 Falchicov 2001); it includes many strategies such as peer coaching, peer tutoring, peer collaboration and cooperative learning which although similar have different pedagogic origins. The

² The search strategy employed can be found in Appendix C.

lack of standardisation of terms relating to peer learning within the healthcare setting has been well documented and causes considerable challenges when reviewing the literature (Lincoln and McAllister 1993, Ladyshevsky 2000). Often the peer learning models used do not acknowledge the pedagogic origins or theoretical principles underpinning the programmes implemented.

Peer learning strategies have been used within the clinical field to facilitate peer support, skills development (Perkins et al 1999, Edgecombe and Bowden 2009, Welch and Dawson 2006) and improved clinical reasoning (Ladyshevsky 2002, Moore et al 2003). Within physiotherapy there is established evidence to support benefits such as a reduction in superficial questioning and peer support developing (Baldry Currens 2003). There is accruing evidence that peer learning promotes "deep learning" and improved clinical reasoning (Moore et al 2003, Ladyshevsky 2002). Within nursing peer learning strategies have been used to facilitate cooperative practice (Halse and Hage 2006) and in the academic setting, skills acquisition (Goldsmith et al 2006), within medicine among other aims the early development of interview skills within practice (Valkova 1997, Thistlethwaite and Cockayne 2004).

A systematic review of peer teaching and learning in clinical education concluded it was "an effective educational intervention for health science students on clinical placements" which could "increase students' confidence in clinical practice and improve learning in psychomotor and cognitive domains" (p703 Secomb 2008). However, the review also identified some challenges associated with these strategies – students may have learning styles or personalities that are not compatible and they spent less time in one to one supervision with their mentor.

Peer learning is also used by students to facilitate their own learning; this may differ across professional groups. A study by Salamonson et al (2009) used a comparative survey to explore the self – regulated learning strategies used by first year medical and nursing students. Peer learning was more commonly reported among the medical students, however, the medical students also followed a Problem Based Learning curriculum and it may be this facilitated the adoption of peer learning as a self – regulated strategy. An earlier small survey by Costello (1989) identified student nurses informally teaching each other practical skills while on placement.

2.2.2 Peer Tutoring

Peer Tutoring appears to have different pedagogic origins to peer learning strategies associated with collaboration and social learning theories. Early recordings of its use included an educational system of mass instruction developed by Andrew Bell in 1700s which involved children acting as surrogate teachers and was based on the premise that the best way to learn is to teach. Joseph Lancaster developed and disseminated Bell's work. However, some suggest peer tutoring has much earlier origins traceable to the ancient Greeks (Topping 1996).

In early models peer tutors had both the advantage of greater knowledge and different status. Both of these elements – knowledge base and status are still significant when determining the type of facilitation chosen today and there are clear examples of this form of peer learning being used within professional education (Lake 1999, Perkins et al 1999, Goldsmith et al 2006). The boundaries between peer tutoring and other forms of peer learning are becoming increasingly blurred with “an increasing interest in same-ability tutoring” (Topping 1996). Theoretical frameworks such as those associated with cognitive development and social learning underpin peer tutoring and a comprehensive guide to peer tutoring in higher education by Nancy Falchicov (2001) includes many cooperative learning strategies. Indeed Gillies and Ashman (2003) suggest it was interest in empirical research in peer tutoring which was partly responsible for the resurgence in research into group dynamics in the 1970s.

It is important to draw a distinction between this research and any form of peer tutoring where a difference in level of expertise enables one group to act as tutors for another, or where a reciprocal peer tutoring relationship occurs where one student takes turns in adopting a peer tutoring role with a partner. This was not the approach used within this research. This research based its peer learning programme on cooperative learning strategies (Johnson and Johnson 1998).

2.2.3 Peer Learning in the Practice Environment

Within physiotherapy, peer learning strategies first came to prominence in the practice environment in the mid 1980s and 1990s due to concerns regarding the impact of student education on productivity and cost along with a lack of clinical placements (Emery and Nalette 1986, Ladyshewsky et al 1998, Huddleston 1999). Much of this work was carried out in Canada and Australia, with UK interest developing slightly later but due to similar drivers (Holland and Hurst 2001). Prior to this within physiotherapy education, students had been allocated one clinical educator with whom they worked throughout their clinical placement. This was seen as the “traditional” model but limited the capacity of each placement (Huddleston 1999). The need to consider the impact of students on clinical output and to increase the number of placements forced institutions providing physiotherapy education across a number of countries to consider alternatives to the traditional model of one supervisor³ to one student. They aimed to increase placement capacity within existing establishments while maintaining the quality of patient care by applying educational principles to the practice environment (Ladyshewsky et al 1994, Ladyshewsky 1995, Zavadak et al 1995, Dupont et al 1997, Martin and Edwards 1998, Holland and Hurst 2001, Nadasan et al 2001). Clinical educators explored how to facilitate more than one student at the same time within the same practice area. The move to a “paired” model of peer learning where one clinical educator facilitated two students, was found to be most successful when cooperative rather

³ The person designated within the practice environment to facilitate physiotherapy students' placements and undertake the summative assessment is called a clinical educator.

than individualistic learning behaviours were facilitated (Zavadak et al 1995). This called for a fundamental change in the role of the clinical educator.

Considerable research activity occurred at this time with frequent reference to cooperative learning strategies. It is unclear which pedagogic origins most powerfully influenced the models. The references most often relate back to Ladyshevsky's own work, (DeClute and Ladyshevsky 1993, Ladyshevsky 1993, Zavadak et al 1995, Nemshick and Shepard 1996, Dupont et al 1997) and a study by Emery and Nalette (1986) that describes the development of a structured model of group supervision. While the study by Emery and Nalette (1986) identified students developing a "highly cooperative, peer like atmosphere" (p10), the paper presented guidance on the structure and organisation of this model rather than a discussion of the underlying theoretical principles.

When reviewing the literature it is clear Richard Ladyshevsky has had considerable influence both in initiating change and influencing the approach taken by others – a central theme of his approach has been to promote cooperative practice among student peers rather than individualistic or competitive learning behaviours (Ladyshevsky 1993). One of the challenges when reviewing this literature is the synonymous use of the terms "cooperative" and "collaborative", however, when the theoretical principles are referred to ensuring interdependent goals with individual accountability is promoted (Ladyshevsky 1993, Jung et al 1994, Ladyshevsky 2002).

With the development of similar research in the UK, Holland and Hurst (2001) evaluated what they termed the "Ladyshevsky Model" in the UK. Collaborative learning was defined as "a form of indirect teaching in which the instructor states the problem and organises the students to work it out independently" (p4 Holland and Hurst 2001). Key changes from the traditional model lay in the relationship of clinical educator to student. Students assumed the role for patient care monitored by the clinician, the students were responsible for their own caseload but encouraged to consult with each other, the clinical educator became a resource for the students and joint teaching occurred. This was not always seen as a positive change and one study identified clinical educators may have been uncomfortable delegating a substantial part of their caseload to the students (Ladyshevsky et al 1998).

During this period of change it was identified there was a reluctance of clinicians to allow student peers to collaborate independently with patients. This was seen as reluctance to move away from more traditional models of student facilitation (Holland and Hurst 2001) and highlighted the need for professional development to enable educators to become comfortable with facilitating cooperative learning (Ladyshevsky et al 1998, CSP 2002). Within a peer learning model the clinical educator's role became one of facilitating patient management via the students rather than directly delivering care (Emery and Nalette 1986) and required development of facilitator rather than traditional "teaching" skills. This change in role enables the development of similar skills to that required of an

interprofessional educator whose role is to facilitate learning and become a role model for students (Hammick 1998).

Peer learning incorporating independent patient assessment by student peers within physiotherapy has become established within the physiotherapy department of the Trust in which this research was based. This expertise was essential to ensure students would be able to use direct patient related activities safely and appropriately during the peer learning programme.

Considerable research within the UK followed the initial evaluation of Holland and Hurst (2001) due to a "crisis" in placement capacity (Currens and Bithell 2003, Moore et al 2003). The results endorsed the existing research which suggested peer learning approaches could be successfully integrated into the existing structure of pre-registration physiotherapy and occupational therapy programmes (Baldry Currens 2003). Professional guidelines were produced by the Chartered Society of Physiotherapy (2002) to support the implementation of models of supervision using collaborative learning approaches.

Over the years, a variety of peer learning strategies have been developed. Peer group supervision has been used within Speech and Language Therapy to provide a supportive forum for trainees to present patients to their peers using video clips for observation, analysis, evaluation and discussion (Williams 1995). A clinician facilitates the group which becomes progressively more independent as the trainees acquire the ability to self facilitate.

Within Occupational Therapy peer group supervision has been used as a model of clinical supervision (Martin and Edwards 1998, Mason 1999, Farrow et al 2000) and a form of cooperative enquiry (Mason 1999). Areas which emerged as being influential in ensuring effective group supervision included "a knowledge of group dynamics and learning styles, a focus on learning processes, particularly with regard to the development of generic skills and teamwork, comprehensive feedback and evaluation, and attention to organizational consideration such as orientation and the pacing of learning tasks" (Mason 1999). These are central to the facilitation of cooperative learning.

During the study by Mason (1999), challenges associated with individual behaviours impacting on group dynamics were identified. This was attributed to differing learning styles, where reflective learners were less vocal and more active learners were found to dominate discussion. In one group inequity of participation was also noted. The findings can be seen to reflect literature on group facilitation in general (Yazici 2005, Chapman 2006), and supports the requirement for exposing and applying explicit theoretical principles to the facilitation of collaboration among students in the practice setting.

Concerns that personality clashes, competition between students and differences in student competency would impact on the learning experience were often expressed, although rarely documented (Zavadak et al 1995, CSP 2002, Martin et al 2004).

A group model developed by Farrow et al (2000) was based on adult learning theory while using collaborative principles. No specific collaborative theoretical framework was identified, however, as part of the collaborative process students were expected to participate in self and peer evaluation (Farrow et al 2000). This study compared the group model with a traditional model of supervision and in their quantitative data found few statistical differences between the models. However, when the quantitative and qualitative data were combined, the group model was found to increase the breadth and diversity of clinical experiences. The ability to work collaboratively with peers was also seen as an advantage but the findings suggested “the group model may involve some feelings of competition between students” (p248 Farrow et al 2000).

Concerns competitive behaviour may inhibit peer learning have been an ongoing concern. A number of reasons for this have been suggested, a lack of resources or inequitable sharing of resources e.g. supervision time, may precipitate competition. If students are directly compared with each other, or one student is allowed to dominate, competitive behaviours may be promoted. In response to these findings specific strategies were developed to address this (Tiberius and Gaipman 1985, Martin and Edwards 1998).

Zavadak et al (1995) identified one episode where an inequity of participation occurred due to personality and communication skills, this was resolved during the placement by facilitating self-awareness in one student and increasing the confidence of another.

It is not clear from the early literature exactly what theoretical framework other than adult learning theory was used. However, as a greater evidence base was generated, cooperative learning was evaluated specifically (DeClute and Ladyshevsky 1993, Ladyshevsky et al 1998, Martin and Edwards 1998). The theoretical perspectives proposed to support cooperative learning were cognitive developmental and behavioural learning approaches (Ladyshevsky 2000). The goal structures associated with the group's tasks were explored and significance attributed to organising these cooperatively but the conceptual framework of Social Interdependence Theory was not identified (Ladyshevsky et al 1998).

I became influenced by this approach following participation in a masterclass run by Richard Ladyshevsky in London (2004) in which Social Interdependence Theory was explicitly applied to the field of physiotherapy education (Ladyshevsky 2004). Since then I have been using principles associated with Social Interdependence Theory when promoting the use of peer learning in practice.

2.3 Theoretical Framework

2.3.1 Collaborative vs Cooperative Learning

There is a similar lack of clarity in the literature when considering both collaborative and cooperative forms of learning. Collaborative learning could be described as an umbrella term for many educational approaches involving joint intellectual effort by students or students and teachers together (Smith and MacGregor 1992), however, this is not a consensus opinion. Ladyshevsky suggests cooperative learning is an umbrella term for a diverse range of team learning approaches and defined collaborative learning as “two learners working together to solve a task that neither could do previously” (Ladyshevsky 2000). The terms cooperative learning and collaborative learning often appear to be used synonymously (Cohn et al 2001, Copp 2002, Yazici 2005, Meseke et al 2007); within this research cooperative learning refers to a specific range of educational strategies based on the conceptual framework provided by Social Interdependence Theory (Johnson and Johnson 1998).

Although less commonly referred to in the UK, this framework has been widely applied to facilitate cooperative learning in the USA and Canada and has profoundly influenced educational practice at all levels (Cohen et al 1999, Slavin 1999, Copp 2002, Roseth et al 2008). It has been identified as being an appropriate strategy for interprofessional learning (D'Eon 2005), and is being advocated by some interprofessional education providers within the UK (www.faculty.londondeanery.ac.uk/e-learning/interprofessional-education accessed Oct 2009). However, while the five principles of cooperative learning are discussed⁴, the conceptual framework at its core is often not mentioned.

There is significant overlap between collaborative and cooperative approaches; both come from a constructivist perspective where to learn new information, students must be actively involved, integrating new information with what they already know and reorganizing it thereby constructing new meaning. Both acknowledge the influence of the context on the learning activity and promote the development of higher order reasoning and problem solving along with the development of social skills. Both are goal and process oriented with groups working towards achieving a defined learning outcome. A significant distinction comes from the structure of the intervention, with cooperative learning being highly structured and collaborative learning allowing students the responsibility and freedom to manage their group. It has been suggested both are at ends of a spectrum in which cooperative learning form a highly structured intervention and collaborative learning harnesses the natural learning which occurs when students work together to “create their own learning situation” (p28 Johnson et al 1998, Smith et al 2005). Historically collaborative learning developed an established research base within the UK, while concurrently cooperative learning developed in the USA and Canada. The majority of the cooperative learning research

⁴ See p30

occurred within primary and secondary education (Cohen et al 1999), but a considerable number of experimental studies have compared working cooperatively, competitively or individualistically within various groups of students in higher education (Johnson et al 1998) and there is considerable research within higher education using both approaches across a wide range of subjects (Cohn et al 2001, Smith et al 2005, Yazici 2005, Meseke et al 2007) including healthcare education (Copp 2002) and the field of conflict resolution (Tjosvold and Fang 2004).

It is clear from the interprofessional literature structuring collaboration between different professional groups can be challenging, yet Social Interdependence Theory provides a long history of research into how to effectively facilitate cooperative learning between diverse groups both culturally (Hertz-Lazarowitz 1999), socially and academically (Johnson et al 1998, Kirk 1999). The results are consistent and identify that cooperative learning promotes more positive relationships among “diverse and heterogeneous students” when compared with competitive or individualistic learning (p 8 Johnson and Johnson 1998, Kirk 1999). However, at times the quantitative results within the healthcare literature are less clear when assessing knowledge acquisition (Copp 2002).

Personally, I see placing the student at the centre of the educational experience a paradigm that evolved following the work of John Dewey and in which both collaborative and cooperative learning sit. The amount of student control of the situation varies considerably between both and is a tool to be used by an educator who is able to determine which strategy has most value for a given situation. In interprofessional education where there may be potential conflict between members of the group (Hammick 1998), where developing social and team-working skills are an inherent aim and the students are working within a pressured acute practice environment, I felt a highly structured approach was appropriate.

From now on I will use the term “cooperative” learning to specifically refer to strategies or research directly influenced by the conceptual framework of Social Interdependence Theory.

2.3.2 Social Interdependence Theory

The origins of Social Interdependence Theory are in the field of social psychology and relate to group based instructional methods. In an historical review Gillies and Ashman (2003) identify May and Doob (1937) as first noting that “individuals co-operate when they are in close contact and expected to work together to achieve a shared goal” but compete when “they have limited contact and are not expected to achieve a shared goal” (p2).

Social Interdependence Theory developed as an extension of Lewin’s field theory (Deutsch 1991) and was first formulated in 1949 by Morton Deutsch. Deutsch proposed a “theory of co-operation and competition” within small groups that suggested that learning behaviours of group participants

were directly influenced by the arrangement of group goals (Deutsch 1949a). His research was based on an experimental design that involved a systematic comparison of cooperative and competitive classroom grading systems.

While his original experiment did not identify a difference in the amount of learning between volunteers, there were more positive behaviours related to ⁵substitutability, cathexis and inducibility in the cooperative groups. These included attentiveness to fellow members, diversity in contribution, co-ordination of efforts, quality of product, discussions and friendliness during discussions (Deutsch 1949b).

In the group structured competitively “the inter-communication of ideas, the co-ordination of efforts, the friendliness and pride in one’s groupappear to be disrupted” (p230 Deutsch 1949b). Due to this Deutsch questioned the common usage of a competitive grading system – the challenge of this has since been well recognised and in professional healthcare education assessments are more commonly competence based rather than using a norm referenced approach.

These original findings still carry resonance when considering how to structure interprofessional encounters which involve participants from different subcultures with differing attitudes towards teamwork as the importance of developing social skills and the ability to communicate effectively between and across teams has been highlighted.

Deutsch’s theory of cooperation and competition was extended and applied to education by Johnson and Johnson in the early 1970s (Johnson and Johnson 1998) while Deutsch went on to study conflict as a way of exploring the conditions under which cooperative or competitive relationships would evolve (Deutsch 1991).

Deutsch concluded the constructive processes associated with conflict resolution are similar to cooperative processes of problem solving (Tjosvold and Fang 2004, Deutsch et al 2006). This is particularly interesting as constructive conflict resolution has been identified as an essential element in effective teamwork and proposed as an interprofessional competence (Hammick 1998).

Social Interdependence Theory has two aspects; one related to the structuring of goals, the other, the type of action taken by those involved, although the majority of papers refer primarily to the structure of goals. Johnson and Johnson explain “the basic premise of social interdependence theory is that the way in which interdependence is structured determines how individuals interact, and the interaction pattern determines the outcome of the situation” (p143 Johnson and Johnson

⁵ Substitutability refers to “the degree to which actions of one person substitute for the actions of another”, cathexis refers to the “investment of psychological energy in objects outside oneself” and inducibility the “openness to being influenced and to influencing others” (p144 Johnson and Johnson 2003).

2003). Social Interdependence Theory assumes that cooperative efforts are based on intrinsic motivation⁶ (Johnson et al 1998, Johnson and Johnson 2003).

Goal structure

Social interdependence exists when group members share common goals and the goal accomplishments of individuals are affected by the actions of each other. They fall into two broad categories: positive or negative. If goals are linked such that an individual can only attain their goal if the other group members attain the goal also, this is positive interdependence. If goals can only be attained when others do not gain their goal, this is negative interdependence – or as Deutsch puts it “if you are positively linked with another, then you sink or swim together; with negative linkage, if the other sinks, you swim, and if the other swims, you sink” (p 22 Deutsch et al 2006).

It is recognised situations are often a mixture of the two and so the relative strengths of the two types of interdependence will determine the outcome. Also interdependence may not be equally balanced between individuals and this would affect the power and influence of individuals within that scenario e.g. if a group had common learning outcomes but one member of the group was required to complete a summative assessment while other group members did not this would significantly affect the power and influence between group members.

Positive interdependence is suggested to produce promotive interaction which is when “individuals encourage and facilitate each other’s efforts to learn” (p29 Johnson et al 1998); it is this interaction which is said to produce the positive outcomes of this form of learning. In groups where cooperative relations are developed and promotive interaction occurs, among other things they are proposed to demonstrate: more effective communication, friendliness, helpfulness, less obstruction, coordination of effort, feeling of agreement with the ideas of others and define conflicting interests as a mutual problem to be solved by collaborative effort than in groups where cooperative behaviour does not occur (p26 Deutsch et al 2006).

Negative interdependence results in oppositional or obstructive competitive behaviour and no interdependence (social independence) results in the absence of interaction.

Along with the structure of goal accomplishment, Deutsch identifies effective action and “bungling” actions of individuals as influencing the predictable outcome of situations.

⁶A full discussion of “student motivation in cooperative groups” is found in chpt 9 of “Cooperative learning. The social and intellectual outcomes of learning in groups” (Gillies & Ashman 2003).

Group Dynamics

Not all groups work effectively, and while it is possible to structure a situation to facilitate cooperative learning, promotive interaction may not always occur. When considering group work in general considerable challenges have been identified due to social loafing, individuals dominating, free riding, group thinking (Scribner and Donaldson 2001, Elliot and Higgins 2005, Yazici 2005, Chapman 2006). Within a cooperative learning environment Johnson and Johnson (p146 2003) suggest, “the movement from self-interests to mutual interests begins with perceiving that there are common goals and a mutual fate”.

Principles of cooperative learning have evolved from the conceptual framework provided by Social Interdependence Theory. There are five principles deemed essential to cooperative learning (Johnson and Johnson 1998):

- **Positive Interdependence**
- **Individual accountability**
- **Face to face promotive activity**
- **Appropriate use of social skills**
- **Group processing**

2.3.3 Principles of Cooperative learning

Positive Interdependence

This relates to the structure of interdependence related to the goal accomplishment. It leads to individuals maximising their productivity and that of their fellow group members.

Individual accountability

Individual accountability is thought to be a significant variable, linked to interdependence. It relates to being personally responsible for completing your own share of the work and facilitating the efforts of others. If individual accountability is low, individuals are less motivated to contribute to the group as they see their efforts as non essential, reducing the feeling of personal responsibility in the attainment of the group’s goal.

Face to face promotive activity

This can be defined as individuals encouraging and facilitating each other. This can include explanations, connecting present with past learning, providing help, resources, feedback,

challenging each other's reasoning, and acting in a trustworthy way (Johnson and Johnson 1998, 1998).

Appropriate use of social skills

To work effectively in a group, students must get to know and trust each other, communicate effectively, accept and support each other and resolve conflicts constructively.

Group processing

This is a reflective process which enables the group to improve the effectiveness of the contributions of its members by discussing individual contributions and process.

2.3.4 Design of the peer learning programme.

This section will consider how the principles of cooperative learning have been applied to the peer learning programme. It has been placed here to allow for easy reference to the literature and to retain the chronological narrative approach that is being used to expose the synthesis between the theoretical framework and programme design.

The five principles of cooperative learning were central to the peer learning programme and underpinned the design. They were considered alongside principles of interprofessional learning which identified patient centred activities with participants attaining an equal status during the programme as key (Wee et al 2001, Bray and Howkins 2006).

While the peer learning programme was designed to facilitate the consolidation of interpersonal and interprofessional communication skills all participants knew they could achieve this through routine placement experiences and did not need to participate in the research. This meant there were no external assessment drivers as an additional motivating factor. This also meant there was no ultimate interdependent goal leading to a "sink or swim" outcome. However, due to this interdependence was balanced among all group members.

The choice of focus for the peer learning programme, however, was seen as enabling the students to jointly identify and focus on a common goal – personal development and effective patient management. It was hoped this shared goal would provide enough of an internal motivating force to maintain student engagement throughout the programme. Identifying if cooperative learning behaviours can be established without external drivers will contribute to the evidence base available for clinicians considering how to maximise the benefits of opportunistic interprofessional learning within practice.

It is recognised institutional support for the research from authority figures would influence attitudes towards participation (Dickinson 2009); support for the research was overtly present for physiotherapy students only as a number of clinical educators had agreed to facilitate the clinical component of the peer learning programme.

Peer Learning Programme

The peer learning programme was four weeks long, however, the weekly time frame was limited due to concerns the programme may negatively impact on the placement. A one hour tutorial with 30 minutes clinical time per week was agreed. The combination of a group tutorial and paired clinical work was chosen to blend with the existing placement structure and maximise the opportunities for learning from each other's experience. The first tutorial started by refreshing and consolidation common basic interpersonal skills. This was specifically chosen so the level of skill was achievable by all, it aimed to be non-threatening but relevant to practice. Activities were designed to increase socialisation through discussion of personal histories and experiences of practice learning. During the first tutorial cross professional student pairs were established; these remained the same over the four week period.

Each pair was tasked with meeting before the next tutorial to undertake a patient centred clinical task aimed at consolidating the skills practised within the tutorial. From week two this included peer review of interpersonal communication skills following the clinical tasks. In weeks three and four the tutorial focus changed from interpersonal communication skills to interprofessional. The overall structure of the clinical tasks aimed to enable a cooperative relationship to be established before each student more formally represented their profession through observation. An overview of the programme can be found below.⁷

Overview of the Peer Learning Programme

Week One

Tutorial Topic: Effective Communication: The Impact on Patient Care

Clinical Task: Interview a patient regarding their experience of being in hospital.

Week Two

Tutorial Topic: Interview Skills

Clinical Task: Interview a patient about their hospital admission and management, including the patient's understanding of their management.

⁷ A summary of the teaching plan can be found in appendices A and B. The implementation of the programme is discussed in detail in chapter four.

Week Three

Tutorial Topic: Patient Centred Interview Skills.

The content of this tutorial was left to be developed by the group; this evolved into a discussion about professional stereotypes for both groups.

Clinical Task: A choice between task A or B

A. Shadow each other in practice undertaking a task which is central to your professional role.

B. Arrange to jointly observe two collaborative experiences which involve interprofessional team working e.g. multidisciplinary meeting.

Week Four

Tutorial Topic: Interprofessional Communication

The content of this tutorial was free to be developed by the group; this became a discussion on the patient's journey within an acute hospital environment and the role of both professions.

Clinical Task: As per week three.

Positive interdependence was structured into both the tutorial and practice elements. In the tutorial setting, the students were engaged in cooperative activities related to skills practice and discussion where they used each other as a resource and to provide feedback. Interdependence in the clinical environment related to the process of collaboration; pairs needed to arrange to meet and then work together to achieve their clinical tasks.

Interdependence related to content was dependent on promotive behaviours being established but was transparent in the aims. These aims were explicitly shared with the students at the first tutorial and in written information; the information sheet, the teaching plan and the information related to patient centred activities.

The aims of the Patient Centred Activities were to:

- Give [the students] the opportunity to learn together in practice.
- Facilitate an in depth understanding of the roles of each other's profession, including identifying generic skills and common areas of practice.
- Consolidate core communication skills through explanation and demonstration.
- Develop the ability to give and receive appropriate, effective feedback.

Individual accountability will be discussed within the data analysis, although this was also integral to the process described above. The overall structure of the peer learning programme provided the environment for promotive behaviours to develop. This was facilitated through the focus on interpersonal and interprofessional skills, inclusion of giving and receiving feedback on communication skills and the appropriate use of social skills. Group processing occurred during a reflective period within each tutorial although in retrospect the emphasis had been on discussing

the weekly clinical task rather than developing the group itself. This will also be further discussed during the data analysis.

2.4 Interprofessional Learning

2.4.1 Theoretical Frameworks for IPL in Practice

Collaborative learning theories are underpinned and strongly influenced by research associated with behavioural and cognitive – developmental theories and adult learning. The social and personal cognitive developmental approaches of Vygotsky (1978) and Piaget (1973) are well recognised within the professional healthcare environment. Collaborative student centred interactive approaches often combining theories associated with experiential learning (Kolb 1983), reflective practice (Schon 2004) and adult learning (Knowles 1990) are common. This is reflected within the interprofessional literature (Hammick et al 2007, Hean et al 2009). Cooperative learning as defined above is less well known.

A much greater depth of understanding has developed regarding the intricacies of effective interprofessional practice with some proposing the development of a new pedagogy. While the initial development in interprofessional learning was underpinned using educational theories from adult learning and problem based learning, there is a growing recognition that the pedagogy of initiatives must be elucidated, to aid in the evaluation and development of effective strategies (Hammick 1998, Payler et al 2007, Payler et al 2008).

Theories from social psychology, sociology and education have been identified as being significant, with Contact Theory (Pettigrew and Tropp 2006), Social Identity Theory (Brown 2000) and Situated Learning (Lave and Wenger 1991) among others being increasingly used to develop evaluative frameworks with which to understand interprofessional collaboration. While aiming to establish theoretical frameworks to inform the effective design and evaluation of IPL initiatives, this expansion in perspectives could also be seen to limit accessibility, comparison and cause confusion (Hean et al 2009). It is impossible to review such a wide range of theoretical perspectives and so I have chosen to focus on those which relate to the utility of cooperative learning; Intergroup Contact Theory and Problem Based Learning. It is essential to consider theories that give insight into how groups may be most effectively facilitated, as this is a common structure within the majority of interprofessional initiatives.

Common to all theoretical frameworks is the aim to facilitate cooperative learning among diverse professional groups. Exploring the benefits of established evidenced based educational strategies such as peer learning using a cooperative learning conceptual framework within the clinical environment has been proposed (D'Eon 2005) but does not appear to have been widely applied to interprofessional learning, yet “collaboration” is often referred to within the literature. There is some

evidence the principles of cooperative learning are being applied but this is difficult to investigate due to terminology and possibly geographic differences in facilitating group work. Brown et al used cooperative learning principles to design an elective course and applied “educational principles described in the literature as most effective for IPE” (p316 Brown et al 2008). This was based in Cincinnati, which is a centre promoting cooperative learning. However, this does not appear to reflect the position in the UK. Here, there appears an implicit understanding that principles associated with adult learning being student centred, self-directed and interactive (Knowles 1990) will be applied. This was demonstrated in a systematic review by Hammick et al (2007) which found “principles of adult learning for IPE are key mechanisms for well received IPE” (p748). Exploring cooperative learning will enable a greater understanding of how to effectively structure and facilitate the acquisition of interprofessional skills using a transparent model which has already established its value within the clinical arena (Ladyshewsky 2002) and contains the teamworking skills required for modern healthcare practice (D'Eon 2005). Two current models which encompass cooperative learning principles are discussed below.

2.4.2 Intergroup Contact Theory

Contact Theory was first formulated in 1954 by Gordon Allport. He proposed that under certain conditions maintaining contact between groups would reduce intergroup prejudice. This theory drew on research such as Morton Deutsch and Mary Collins' (1951) “Interracial Housing: A Psychological Evaluation of a Social Experiment” which explored the effect of intergroup contact on intergroup prejudice. This theory has been extensively applied with at times conflicting results; the inclusion of research which included both contact and proximity in meta analysis has been suggested to influence the variation in results (Pettigrew and Tropp 2006). Within the healthcare setting students from different professions are often in proximity, yet interprofessional collaboration does not spontaneously arise. Coster et al (2008) used student self assessment to measure formal teaching contact, informal educational contact on placements, general contact while working in clinical practice and social contact. Very low levels of contact across professions were identified. Due to the limited amount of reported contact they were unable to investigate the impact it might have had on attitude, but they did find “small but positive correlations between the amount of contact experienced with other professions and a positive change in attitudes” (p1675 Coster et al 2008). This was measured using a validated self administered questionnaire – the Readiness for Interprofessional Learning Scale (RIPLS).

A recent meta analysis of research specific to Intergroup Contact Theory (Pettigrew and Tropp 2006) considered 713 independent samples from 515 studies and shed new light on to the effects of this theory. It proposes that the results support Intergroup Contact Theory as a “general social psychological theory and not as a theory designed for the special case of racial and ethnic contact” (p768). If generally accepted, this establishes the significance and relevance of this theory within

the arena of interprofessional learning. It also supports the continuous exposure of students to collaborative interprofessional practice throughout the programme of study.

Allport's original optimal conditions for the reduction in intergroup prejudice were: equal status, common goals, intergroup cooperation and support from authority. The application of Contact Theory has since been expanded to a diverse range of target groups, this expansion has been supported by the meta analysis which found "intergroup contact typically reduces intergroup prejudice... these effects typically generalize to the entire outgroup, and they emerge across a broad range of outgroup targets and contact settings" (p751 Pettigrew and Tropp 2006). While Allport's conditions were seen to have a more significant effect on the reduction of prejudice than when the optimal conditions were not present, the "conditions are not essential for prejudice reduction" (p751 Pettigrew and Tropp 2006). Pettigrew and Tropp (2006) suggest therefore that they should be seen as facilitating conditions, not essential. The optimal conditions associated with Intergroup Contact Theory have evolved to include:

- Equal Status of participants
- Common Goals
- Institutional support
- Cooperation
- Positive expectations
- Successful joint working
- Exploration of similarities and differences
- Perception of participants as "typical" (Dickinson 2009)

Carpenter and Hewstone (1996) who applied Contact Theory to the interprofessional arena recognised these were also important foundations for adult learning. However, if the conditions above are considered alongside those proposed by Johnson and Johnson (1998) it is seen if these conditions are present cooperative learning behaviours should be facilitated potentially with the beneficial effects from positive promotive interactions. While Intergroup Contact Theory explores the relationship between two groups in conflict, Social Interdependence Theory considers how to structure and facilitate the group to facilitate the development of cooperative learning behaviours. These theoretical perspectives appear to be complementary. Intergroup Contact Theory has been explicitly applied to interprofessional education yet it appears the educational principles associated with facilitating cooperative learning behaviours within groups have had less consideration. However, we can see historically the origins of extensive research in both fields appear to be associated with early social psychological research which considered group functioning.

The reason for the reduction in prejudice associated with contact theory is unclear, new lines of research focusing on feelings of threat and anxiety in intergroup contexts is developing (Pettigrew and Tropp 2006). Research which identifies differing individual responses on exposure to

interprofessional learning (Coster et al 2008) and the potential for interprofessional attitudes to become less positive highlights the complexity of facilitating IPL to ensure positive benefits.

The Common Learning Programme (Pearson et al not dated) based on Contact Hypothesis demonstrates specific cooperative learning behaviours being facilitated during the case studies of shadow teams, the behaviours involved students discussing patient care, their own roles and contributing to each others' development (p52). Reference to the work of Johnson was made in the literature review and it is clear the aim of facilitating cooperative learning was at the heart of this successful project.

Cooperative learning has been successfully used to promote socialization and learning among diverse groups of students (Gillies and Ashman 2003), this has more commonly occurred in the classroom setting within primary, secondary and higher education. Evidence cooperative learning can be successfully transferred to the practice setting is found within the peer learning literature (Ladyshevsky et al 1998, Ladyshevsky 2002) and strategies which have cooperative learning at their core have been seen to be successful within the interprofessional literature (Pearson et al not dated, Freeth et al 2001).

2.4.3 Problem Based Learning

Problem Based Learning (PBL) is probably the most well established cooperative learning strategy within healthcare education and is being used extensively within interprofessional learning (Freeth et al 2001, Wakefield et al 2003, Furber et al 2004, Anderson et al 2006). It has also been introduced into the practice environment to reduce the theory practice gap (Aari et al 2008). Described by Boud and Feletti (p1 1998) as "the most significant innovation in education for the professions for many years", this is a highly structured approach which facilitates the acquisition of social and group working skills alongside cognitive learning outcomes through identifying and resolving problems. One of the core characteristics is "having students work cooperatively as a group" (p2 Boud and Feletti 1998).

The training ward developed in London, where student teams worked together in a real ward environment followed a PBL philosophy (Freeth et al 2001). There were found to be challenges in implementing PBL in the practice environment due to the time required for the cycle of planning, evaluation and replanning, however, the outcome of the pilot project was successful with the ward re-opening on a continuous basis. Varying levels of preparation among facilitators and experience of PBL among students was also a challenge but one which was proposed would decrease with experience (Freeth et al 2001). Interestingly the evaluation identified different facilitation styles impacting on team functioning and student satisfaction. "The degree to which nurse facilitators stressed individual accountability to the team" (p369 Freeth et al 2001) was identified as a factor. As previously discussed, individual accountability is thought to be a significant variable in

cooperative learning and is proposed to directly impact on the quality of teamwork; this appears to be supported by the findings presented by Freeth et al (2001).

Another PBL approach which was also successfully implemented within the practice environment involved an interprofessional clinical teaching workshop. Although based in the practice setting, the students collaborated in a small group tutorial setting, an environment which is more easily controlled. They worked through a “real” case with interprofessional learning outcomes related to teamwork (Anderson et al 2006). The value of time within the clinical environment to reflect, discuss and learn from each other cannot be underestimated. The time pressures associated with an acute clinical environment and the structure of each professional programme promotes an individual focus on personal professional goal acquisition. This study suggests students related their experiences within the group to the practice environment. However, enabling students to undertake face to face patient centred cooperative learning within the practice setting should be an ultimate goal as once qualified this is where future collaboration will occur.

2.4.4 Pre-registration Interprofessional Learning

Pre-registration interprofessional learning has the overall aim of preparing students with the skills to engage in effective collaborative practice once qualified. Interprofessional practice is dependent on the context of the service, environment, patient encounter and team members; it is experienced every day by students placed within the health care environment as part of their pre-registration training, yet the majority of organised interprofessional education is undertaken within the academic environment. Currently there is no consensus as to how best engage pre-registration students in IPL within the practice environment.

While evidence exists that the curricula have changed, the impact of that within practice is not easily measured. All professional programmes validated in the UK must now demonstrate interprofessional and shared learning opportunities within the curriculum, yet the effects of that learning are only now beginning to be more fully understood. The first quantitative longitudinal study comparing students following an interprofessional curriculum with a uni-professional curriculum in the UK indicated that “pre-qualifying IPE (interprofessional education) has a positive effect on individuals’ attitudes towards, and perceptions of, the complex phenomenon that is interprofessional working” (p411 Pollard and Miers 2008). The same study identified students who had followed the interprofessional curriculum were more positive about their own professional relationships compared with the uni-professional group. Demographic influences such as gender, profession, previous experience within a healthcare setting, previous educational experience, stage of learning and age which had been considered potentially significant influences at earlier stages of the research (Pollard et al 2004, Pollard et al 2005) were able to be further scrutinised; age and previous educational background significantly influenced attitude to interprofessional education.

While recognising the considerable challenges associated with evaluating the effects of IPL, pre-registration shared learning which includes the perspective of different professions within discussion and feedback has been shown to be effective in developing an awareness of different professional's attitudes to other healthcare professionals (Parsell et al 1998, Morison et al 2003). Post registration IPL has been shown to develop a shared understanding of roles and expertise (Pearson and Pandya 2006).

“Cross” registration models have begun to emerge with one innovative model enabling medical students to facilitate a discussion group with qualified nurses about to undertake a clinical surgical assessment. This was found to be mutually beneficial and facilitated a greater understanding of professional roles among the medical students (Nestel et al 2004). An earlier project positively evaluated scenario based clinical skills study days between newly qualified nurses and medical students (Freeth and Nicol 1998). However there is limited evidence as to the long term benefits of interprofessional learning.

In a one year follow up study of pre-registration medical and nursing students, Morison and Jenkins (2007) found only those who had experienced shared learning in both classroom and clinical practice environments had developed a sustained benefit in understanding shared learning and the relevance to their future practice. In a related pilot study Morison and Jenkins had found medical students with no experience of shared learning “were resistant to the idea of it”, considering it “irrelevant to much of their undergraduate learning ...and future clinical practice” (p454 Morison and Jenkins 2007). This was felt to constitute an exclusive attitude to their professional education and a considerable barrier to shared learning.

Morison and Jenkins (2007) use the term “shared learning” to describe the classroom based programme implemented in the research. There could be concern the academic programme did not facilitate student collaboration, however, the teaching strategies included “lectures, problem-based learning (PBL) and small group teaching (SGT) for all participating students” (p94 Morison et al 2003) which were designed to promote interprofessional learning.

Timing of Interprofessional Learning

There is still discussion over when IPL should occur. Some suggest IPL is most appropriate at a post registration level when some professional identity has been established, others at the earliest possible stage so that individual professional identities can be influenced. D'Eon (2005) supports introducing IPL as early as possible, so long as the student is able to contribute.

The research base which elucidates the development of professional identities and the concurrent influence on the ability of students to engage in IPL is ongoing (Coster et al 2008). Originally it was thought that the development of professional identities occurred throughout the professional

programme, with students early in their programme having “weak” professional identities. This influenced attitudes towards the timing of IPL interventions.

However, Horsburgh et al (2006) now question this basic premise as their research into the professional subcultures of students demonstrated a significant difference in attitudes towards the management of healthcare among nursing, pharmacy and medical students before embarking upon their course. Coster et al (2008) identified strong professional identities among healthcare students at the start of their professional courses which declined with time for some disciplines. They also identified the readiness of students for IPL was highest at the start of their course.

Barriers to Interprofessional Learning

Considerable barriers to interprofessional learning have been identified. Alongside the inevitable curricular challenges, professional, experiential and academic hierarchies have all been identified as potentially developing barriers, while developing a culture of trust appears significant (Howell 2009). It is essential to acknowledge and understand the potential impact of these influences when developing new interventions designed to promote individual professional development alongside interprofessional collaboration.

Recently research has highlighted the significance of combining academic with practice based interprofessional learning (Morison and Jenkins 2007, Wilhelmsson et al 2009). In Sweden, an annual independent evaluation by the Swedish Medical Association has demonstrated newly qualified doctors following a PBL approach with an interprofessional curriculum at Linkoping report significantly more confidence in having obtained interprofessional skills and abilities to cooperate with other professions than students from other medical faculties in Sweden (Wilhelmsson et al 2009). This curriculum combined interprofessional learning in the academic setting throughout the programme with a two week period in a training ward when the student is nearing the end of their course.

Linkoping has twenty years of experience and development of an internationally recognised curriculum (Wilhelmsson et al 2009). Within this timeframe alongside the training ward they have undertaken other practice based initiatives; these were not sustained due to “the work overload in primary health care”, organisational issues related to synchronising placements and local organisation based on “enthusiasts” (Wilhelmsson et al 2009). The sustainability of models facilitating interprofessional learning in the practice setting is emerging as a key challenge (Lloyd-Jones et al 2007, Armitage et al 2009).

In 2001 the Department of Health along with Workforce Confederations funded four cutting edge schemes which through the development and implementation of widespread IPL, have provided an evidence base and range of practice based models within the NHS to inform future development.

The four schemes were:

The New Generation Project involving the Universities of Southampton and Portsmouth along with the Hampshire and Isle of Wight NHS Workforce Development Confederation.

www.commonlearning.net

The Common Learning Programme which involved the Universities of Northumbria, Teeside and Newcastle along with the Northumbria, Tyne and Wear and County Durham and Tees Valleys SHAs. <http://commonlearning.ncl.ac.uk/clp/index.html>

The South East London IPE Programme involving the Universities of Greenwich, London South Bank, King's College London and the Trusts within the South East London Workforce Development Confederation. www.kcl.ac.uk/ipe

The Combined Universities Interprofessional Learning Unit (CUILU) which involved the Universities of Sheffield and Sheffield Hallam along with South Yorkshire Workforce development Confederation. www.shef.ac.uk

The development of the Interprofessional Capability Framework (Walsh et al 2005) has enabled skills required for interprofessional working to be explicitly identified and used to frame new research aimed at identifying sustainable models of interprofessional practice (Armitage et al 2008). The framework has also been evaluated with additional categories being proposed by Pollard (2008).

Identifying a range of strategies to increase interprofessional learning within current curricular and placement structures is important. The "Multi-Track Model" (Pearson et al not dated) and Leicester Models (Lennox and Anderson 2007) do just this.

The "Multi-Track Model" identified three different ways of structuring interprofessional education in the Practice setting; the Peer Interprofessional Placement, the Shadow Team and the Sole Interprofessional Placement – this range was developed in response to the range of professions and resources available in different settings.

The original Peer Interprofessional Placement described by Pearson et al (not dated) occurred in an acute setting and involved a group of nursing and physiotherapy students meeting for facilitated tutorials over a four week period. The model was found to help students learn about the role of each profession and team working while also improving support networks. The students valued the model being based in practice but "felt that a real patient focus would have added further value" (p64). Peer "opportunities" where students are paired for community based case studies have

started to become interprofessional (Street et al 2007). The evidence is encouraging and suggests all participants found the experience valuable.

Where shadow teams were formed contact with real patients was included within the model. However, enabling contact with real patients was at times challenging with one fifth of teams not being able to deliver this contact. When achieved it was valued as students were able to see the results of collaborative work rather than theorise about them (p37 Pearson et al not dated). Paper-cases enabled an overview of interprofessional working and allowed students to work out how everyone worked together. Interestingly the students within the shadow teams often arranged to observe colleagues to understand more about their roles, this was not part of the design but developed spontaneously due to interest and a perceived need to understand professional roles more deeply (p42 Pearson et al not dated).

The third model associated with the Common Learning Programme was the Sole Interprofessional Placement. It aims to maximise opportunities available in practice when students are placed individually. Learning logs or reflective writing associated with portfolios are commonly used to facilitate, evidence, and consolidate learning within the clinical environment. This is now being transferred in to the IPL curricula to guide and facilitate learning. However, research by Kelly and Murray (1999) suggests a log on its own does not improve learning; active participation from a clinician is one of the essential elements in promoting learning. This highlights the need for interaction when using reflective portfolios to guide learning and is supported by the cognitive learning theories of Piaget (1973). To elucidate, expand on and consolidate learning, tutorials before and after a placement are often associated with models which facilitated interprofessional learning using this approach.

Many valuable strategies are being adopted to encourage interprofessional understanding and collaborative practice. However, the models most highly regarded within clinical practice, those of shadow teams (Lumague et al 2006, Pearson et al not dated) and training wards (Freeth et al 2001, Ponzer et al 2004, Wilhelmsson et al 2009), require considerable organisation and resources. Their capacity may also be limited.

Cook, A. et al (p190 2001) suggests while local small scale projects demonstrate benefits these “will remain peripheral as long as they are not incorporated into the mainstream of professional education and training.” However, there is considerable evidence to suggest models must be flexible and able to adapt to the local context. The value of small scale projects partly lies in the variety of approaches demonstrated which expose the challenges and strengths of applying different models within practice and enable clinicians to identify and relate to similar situations. Concern that ineffective programmes may “further ingrain negative stereotypes” (BMA 2006) serves as a cautionary note.

2.4.5 Post-registration Interprofessional Learning

A considerable number of post registration initiatives have been evaluated. The underlying assumption of this activity is that the quality of team working would improve thereby improving patient care; yet evidence that this has occurred is fragmented. There is some evidence collaborative practice and interprofessional education enhances patient care (Arevain 2005, Hammick et al 2007) but direct links are exceptionally difficult to evaluate.

A link between shared learning and enhanced team work was established during a review by Freeth et al (2002), further evidence supports the theory that shared learning can facilitate the development of team skills in the practitioner (Hammick 1998, Parsell et al 1998). Research by Bleakley et al (2006) demonstrated an educational intervention could effectively improve team function. However, Reeves et al (2006) identified how the effectiveness of one interprofessional education initiative aimed at enhancing teamwork was constrained by “poor participation of medical staff and a lack of senior management support” (p252 Reeves et al 2006). The long term impact of these initiatives has not been established.

Pearson and Pandya (2006) evaluated a period of shared learning aimed at improving the management of chronic disease locally among primary care practitioners. While a greater understanding in professional roles, shared expertise across practices and improved clinical understanding was developed, the direct impact on patient care was not determined.

Due to the considerable volume of research within the field of post-registration IPL it is not possible to include an in depth literature review, however, the following discussion reflects some of the relevant literature related to the heterogeneity of teamwork and the importance of establishing an understanding of professional roles.

The way in which teams themselves work within a healthcare setting has come under scrutiny (Cook, G. et al 2001) with the identification of a difference in behaviours between multidisciplinary and interprofessional teams (Sheenan et al 2007). Teams focused by commonly held patient centred goals appear to facilitate the acquisition of a team identity, further enhancing collaborative practice. The facilitation of both a uni-professional identity and that linking the professional to a clinical team may be an aspect requiring further consideration when facilitating effective pre-registration IPL.

Variation in interprofessional practice across similar speciality teams working in different contexts has also been reported (Baxter and Brumfitt 2008). Staff perceptions indicated interprofessional working was different between an acute ward, specialist stroke unit and community stroke teams within a single region; this was attributed to the differing dominance of the medical model as the doctor's role changed according to the medical stability of the patient. The findings from this series

of practice based case studies identified “the significant elements of professional groupings in interprofessional practice are: knowledge and skills; professional role and identity; and power and status” (p249 Baxter and Brumfitt 2008).

A literature review (Xyrichis and Lowton 2008) aimed at identifying factors which foster or inhibit interprofessional team working within primary and community care further elucidates this subject. Team structure and team processes emerged as two themes synthesised from six categories: team premises, team size and composition, organisational support, team meetings, clear goals and objectives and audit. Factors such as team meetings which enhanced communication and facilitated an understanding of professional roles and responsibilities were seen to improve the effectiveness of team working.

Watts et al (2007) demonstrated “team climate” could be improved following a post-registration interprofessional learning programme for healthcare teams. The change was sustained four months later and while no direct patient care improvement was evaluated, all of the teams’ goals were clinically determined and focused.

Overall the literature suggests an improved understanding of the role of team members is linked to an improvement in the function of a team.

2.5 Peer Review

The use and evidence base associated with “peer review” within practice based learning is challenging to specifically identify as this strategy is closely associated with peer assessment and formative feedback. While peer assessment is now widely established, initially, this became more popular with the move to student centred practice which aimed to increase the participation of students in their learning processes. The Assessment Strategies in Scottish Higher Education (ASSHE) project aimed to identify, document and analyse evolving assessment practices between 1995-mid 1996. Students were found to be involved in self and peer assessment of educational products, processes and professional skills. Although less frequent at that time, within the medical and “para-medical” disciplines professional skills including those of interview skills were being peer assessed. Peer assessment was also being used among trainees within the teaching profession.

Since then peer assessment has been widely applied within educational situations. It is a process which requires a judgement of performance to be made against specific criteria. Several factors such as friendship marking and sceptical attitudes have been identified to impact on the accuracy of marking (Papinczak et al 2007) and while considerable benefits have been identified, the process can elicit feelings of discomfort (Hanrahan and Isaacs 2001). Peer assessment has also been used within group situations to moderate participation of group members. One study found “students reported having no problem down-grading individuals who they perceived to be free-

riders, but were reluctant to down-grade individuals who they knew had personal problems which reduced their contribution to group work” (p45 Elliott and Higgins 2005).

The peer review within this research was more informal, the term assessment was not used and the process was based on and linked to the principles associated with the provision of effective formative feedback (Juwah et al 2004). Peer review has been suggested to be appropriate for the clinical environment to enable the fulfilment of clinical governance and self regulatory requirements (Gopee 2001). The difference between peer assessment and peer review is discussed in an article by Gopee (2001) who offers the following definition: “Peer review relates to the identification of appropriate and willing peers for obtaining feedback on performance on a particular activity” (p118 Gopee 2001). The distinction is important as assessment may be seen as judgemental while formative feedback is developmental in both the aim and process. Giving feedback has been identified as an integral element in the process of interprofessional collaborative learning among Occupational Therapy students (Howell 2009).

In this research skill development in the process of giving and receiving feedback had been included in the peer learning programme as a way of ensuring all students were appropriately prepared. The peer review process was included to embed an element of interdependence in all clinical encounters, ensuring whatever the activity both parties had a role which related to the development of the other.

2.6 Chapter Summary

This chapter provides a literature review that illuminates the development of uni-professional peer learning strategies in the practice environment with a specific focus on physiotherapy. It identifies peer learning as appropriate to develop learning in both psychomotor and cognitive domains (Secomb 2008). Challenges associated with peer learning include the potential for competition between students along with different learning styles and level of ability that may impact on the learning experience (Zavadak et al 1995, Martin et al 2004). The promotion of cooperative learning behaviour has been proposed as a way of minimising and moderating these challenges (Ladyshewsky 2000).

The difference between collaborative and cooperative learning has been explored. Cooperative learning is defined and Social Interdependence Theory, the conceptual framework at its heart, discussed. Theoretical frameworks associated with interprofessional learning have been considered with a focus on considering Contact Theory alongside the principles of cooperative learning. The application of cooperative learning principles to the peer learning programme is then explained. Finally, the use of peer review as a method of establishing interdependence between participants has been explored.

Chapter 3

Methodology

3.1 Introduction

This chapter will consider the choice of methodology and methods associated with the research. When considering which research methodology to adopt, four influences became significant: context, practical considerations, ethical considerations and my personal ontological perspective. Although inherently linked these will each be considered in turn.

The debate associated with the use of Case Study Research will then be presented, followed by the data collection methods and approach to data analysis.

Undertaking a case study enables the reality of implementation to be explored as part of the research process and allows influences which may not have been anticipated to be exposed. In this case, general theoretical principles are being applied to generate context dependent knowledge. The decision to apply a theoretical perspective and pedagogic approach from physiotherapy to interprofessional education was made for a number of reasons.

While the principles of cooperative learning have been proposed as appropriate for IPE (D'Eon 2005), little explicit research applying these principles appears within the interprofessional evidence base. Physiotherapy is one professional group that has applied these principles to practice based education, developing an extensive evidence base (Ladyshevsky 1993, Holland and Hurst 2001, Currens and Bithell 2003, Moore 2003) and professional guidelines (CSP 2002). The use of cooperative learning principles within practice education is less apparent within nursing; possibly because the drivers influencing the development in physiotherapy were not the same.

Within the physiotherapy literature practical guidance on issues such as avoiding competitive behaviour, managing different learning styles and appropriate strategies for the effective facilitation of patient encounters have been developed. All of these issues are relevant when facilitating interprofessional learning and could be argued to be of greater significance in an interprofessional setting due to the potential for negative learning experiences influencing future attitudes towards interprofessional collaboration. I chose, therefore, to apply the principles of cooperative learning informed by the conceptual framework provided by Social Interdependence Theory to the interprofessional forum.

3.2 Influences on the choice of research design.

3.2.1 Context

Exploring the context within which the research sits is where this chapter starts.

The research project ran between April and July 2007 with data collection continuing until December 2007. The sample population was recruited from Diploma in Higher Education Adult Nursing students and BSc(Hons) Physiotherapy students from the University of Plymouth.

3.2.1a Environment

The research was situated within an acute NHS Trust providing clinical placements for a number of professional programmes. The Hospital is an acute District General Hospital with an established history of professional education.

Research within this healthcare setting occurs within an organisation moulded by government targets. There has been considerable restructuring within the hospital over the last few years, including two changes in Chief Executive, however, the structure and organisation of nursing and physiotherapy at ward level remained constant throughout the period of research.

While the students were all placed within an acute hospital environment this does not have a “standardising” effect (Hilton and Morris 2001). Although the overall culture of the organisation is similar, the students were placed in a wide variety of placements. These varied in the clinical speciality, the multi-professional team, the level and length of placement, support available both from their individual mentor/clinical educator and wider clinical team and the day to day staffing on the ward all of which can impact directly on the quality of the learning environment. This highlights the complexity of the situation; it is not possible to explore each element of influence within such a setting as they vary for both professions from organisational through ward/departmental to individual levels. However, the central aim of the research was to bring together students from these different settings to collaborate together in clinical practice. This means the local contextual issues influencing each student’s immediate learning environment are significant and will be considered in greater detail within the case study analysis.

Along with contextual influences it is impossible to separate the influences of the student’s routine placement from those of the research. However, it is possible to adopt a method designed to enable an exploration of the impact of introducing the peer learning programme into the existing placement structure. This called for a research method that can explore situations within the real life context of the health service, values the experiences of participants and acknowledges there are too many variables to “control”.

To understand the context of the research in more detail, I will briefly explain the organisation of placement learning and support for both professional groups.

3.2.1b Nursing

The hospital had over forty separate nursing placements. Each placement is located within a nursing team delivering a service, this may be ward based or department based such as outpatients. Each ward or unit has a Sister or Manager, for ease I will refer to all placement bases as “wards” and all managers as “Sister”. The culture and learning environment between wards can vary considerably. Among some of the influences are the hierarchical structure, speciality, size and multi-professional team associated with each ward. Placement liaison with the University occurs via the Sister who is sent placement information by University based placement administrators.

The Sister on each ward is responsible for the allocation of a named mentor to each student. This responsibility may be delegated to another member of the team, most commonly the deputy ward manager or Education Link. Many of the wards have a designated Education Link whose primary role is the support of post registration training. In some units this clinician is also responsible for the co-ordination of pre-registration placements; however, this is not consistent across the Trust.

Ultimately the Sister remains responsible for the learning environment within each ward. At the time of the study nursing students on placement were also supported by Practice Educators, who were clinicians employed part-time by the University for mentor and nursing student support.

Mentors are identified once the nursing student arrives on the ward. The Nursing and Midwifery council recommends students work with their named mentor a minimum of 40% of the time (NMC 2008). This means they are not always working with their named mentor. The student’s working hours follow the shift patterns of the ward within which he or she is placed.

Interprofessional learning opportunities are often identified in a ward specific student pack, which provides information on the ward, staffing, patient group and opportunities for learning. In some student packs, a specific learning pathway is identified to ensure the best use of the opportunities available. Each student will then develop a learning contract with their mentor at which time they can discuss their needs and tailor the placement to these. The use of the student pack and learning pathway varies across wards.

3.2.1c Physiotherapy

The physiotherapy service is based within the physiotherapy department and organised into specialist teams, each led by a team leader. Each team provides the physiotherapy service to wards requiring their designated speciality. At the time of the research, liaison with the university occurred via the physiotherapy manager who then passed placement information on to the various team leaders. The team leaders are responsible for allocating clinical educators to the students although they often support the students themselves.

Depending on the team, the student may be working on one main ward or across a number of wards. The clinical educators are identified well in advance of the student placement. The students work alongside their designated clinical educator throughout the placement. The working hours are spread over a Monday to Friday five day week. The student will also develop a learning contract at which point interprofessional learning opportunities will be discussed and facilitated. They will involve working alongside or observing qualified members of the multiprofessional team.

At the time of the study the students were also supported by a named physiotherapy link lecturer who would phone to check progress at the end of week one and then visit the students and their clinical educator half way through the placement.

Due to my current and previous posts I have a longstanding links with the physiotherapy department. One of the senior clinicians had participated in the interprofessional study day mentioned in chapter one and most of the senior clinicians were currently incorporating peer learning strategies within the physiotherapy student placements. During the development of the ethics submission I had discussed the research with a number of clinical educators who agreed to co-ordinate the clinical components of the peer learning programme. This was essential to establish the viability of the project.

3.2.1d Professional Programmes

The academic base along with the structure, organisation and support of placements within the nursing and physiotherapy courses differ in some significant elements. The Diploma in Higher Education in Adult Nursing and the BSc(Hons) Physiotherapy course were based in different localities.

All students are supported throughout their course by a personal tutor with whom they have regular contact and who they are told to contact if they have any challenges or concerns. When on placement, along with their specified mentor / clinical educator the students have additional support. For nursing students alongside the Practice Educator, the personal tutor is the primary support. For the physiotherapy students a link lecturer is the first point of contact.

3.2.1e Shared learning within the academic setting

The nursing students participate in shared learning with students following the mental health branch and social work students. Students routinely have “consolidation days”, or clinical skills training while they are on placement and so they are used to coming out of practice for a day at a time. Patient centred peer learning strategies are not routinely used within clinical practice. Students are involved in small group work throughout their programme.

The physiotherapy students are involved in shared learning with a wide range of professions, especially within the Common Foundation Programme in the first year. They do not have any academic teaching while on placement, however, there is an established use of peer learning strategies within clinical placements. It may be cooperating with students in practice was a more natural extension of the placement for physiotherapy students as those in pairs were using similar strategies within practice on a daily basis. The BSc(Hons) Physiotherapy programme follows a PBL approach.

3.2.2 Practical Considerations

When developing research within a real life context, practical considerations often significantly impact upon the research design. Curricular structure, ethical approval and the timeframe associated with the doctoral programme all strongly influenced the decisions made.

Once the broad research aim had been established, a period of time where students from both programmes were in practice at the same time needed to be identified. The ethical approval process associated with research based within the NHS requires considerable pre-planning. This time frame was considered alongside the requirements of the doctoral programme. These elements together defined the time frame of the case study.

The implementation of the research is considered in detail in chapter four.

3.2.3 Ethical Considerations

NHS Research Ethics submission occurred on 20th March 2007. It was supported by attendance at the Ethics Committee on 10th April with full approval being gained on the 16th April 2007. The research and development directorate granted Trust approval on 14th May 2007⁸ when an honorary contract was issued.

Ensuring ethical practice is important in all research, this includes identifying any anticipated adverse effects minimising these and ensuring there are strategies in place if adverse effects are realised. Specific consideration was given to any potential negative effect on the student during the placement and arrangements were in place for identifying this and enabling students to withdraw if necessary.

During the timeframe associated with the research one of my roles was that of clinical co-ordinator for the BSc(Hons) Physiotherapy course. Normally I would have been involved in the organisation of the physiotherapy placements along with student visits, however, this role was covered by

⁸ Appendix C

colleagues to ensure there was no conflict of roles, bias introduced into the placement allocation process or alteration in support for the placement.

Research within the healthcare environment

The research did not involve any change to patient management. Patients are routinely involved in the education of both the nursing and physiotherapy students. Mentors and clinical educators are professionally responsible for the actions of their students (NMC, 2008). This includes ensuring students routinely gain consent from patients for all procedures. In this study, the clinical educators also ensured consent was gained from patients before they were approached by the students for any clinical activity.

Informed consent

Gaining informed consent from the research participants is an essential step in developing the researcher / participant relationship. While differing methodologies identify varying levels of collaboration with participants, there are a number of significant issues associated with this process which require exposing to ensure the influence of the researcher can be determined.

While I have identified the process undertaken to obtain informed and then process consent, in chapter four⁹, I will now consider the underlying principles and how they have been applied within the case study. It is very likely the students' understanding of informed consent will be strongly influenced by that routinely obtained within the healthcare environment. Delaney (2005) suggests the philosophical principles that underpin informed consent are "the idea of autonomy, defined as self-governance or self-rule, a capacity of people to reflect and choose and freedom to express individual aspirations and preferences" (p197). While these are certainly the principles followed here, the influence of my position and interpersonal relationships with participants called for continued sensitivity and self-awareness as my position was one of authority.

Right to withdraw

Ford and Reutter (1990) suggest participants may find it difficult to withdraw from research if an authority figure consented to their participation. My role included both facilitator of the peer learning programme and researcher. Some of the students had their own clinical educator facilitating the clinically based elements of the research.

The right to withdraw was discussed at the start of the project and included in the information sheet. It was agreed with all students that if there was any conflict between the tutorials and clinical

⁹ Chapter Four p71 details the recruitment and consent of participants

practice learning opportunities the latter took precedence – on occasion this did occur with some tutorial time being missed due to a home visit or other opportunistic learning which was considered significant. This, however, did not significantly impact on participation in the study and hopefully led to a mutually supportive relationship.

Ensuring the project did not detract from the routine placement experiences was important and a reflective group discussion at the beginning of each tutorial gave participants an opportunity to identify how things were going as the research progressed. The students were also able to access their routine support mechanisms. The link lecturer, clinical educators and mentors were in the best position to be aware of the student's progress. If they had any concerns they would have facilitated withdrawal of the student from the research.

Based on the response below it is also likely the physiotherapy students viewed me as a trustworthy person, which meant I had to ensure I maintained an open and honest relationship throughout.

"This is your first placement experience and you have chosen to participate in this study at the same time. Why did you choose to take part?"

DB interview line 62

"Two reasons. First off I felt like it would be a good experience and it would give me an insight into other people's professions because obviously I have only done physio so far...I knew some of my friends were and I felt comfortable in that we would all participate together, which was quite nice. And also I know you quite well from our PBL sessions so I was quite happy to help you out as you needed people to come in."

DB interview line 65 – 70

Ongoing process consent enabled the students to be assured that the collaborative relationship I established within the first tutorial was genuine. I was keen to ensure participants did not feel guilty or upset if they had been unable to participate in an element of the collaborative clinical tasks, as the practicalities of undertaking these needed to be honestly evaluated. On the occasion students appeared concerned they had not managed to meet during the week I explained this was part of the research and the challenges of getting together would be part of the research findings.

"(the group) appeared uncomfortable they had not achieved everything but once reassured happy to talk through what they had done"

research diary group 1 tutorial 4

However, it may be that inadvertently this had the effect of reducing each individual's accountability to the group and may have suggested individual participation was non essential, thereby reducing individual motivation to cooperate on the clinical tasks (Johnson and Johnson 1998).

One of the recognised challenges of case study research within the clinical context is that it is not possible to predict exactly what will happen (McDonnell et al 2000). I made an active choice not to individually facilitate the clinical activities, so that a clear picture regarding the amount of organisational support required could be established. If participants identified they had not collaborated during the week, I assured them that the challenges associated with working together were all part of the research.

Confidentiality

Each participant was asked to provide a pseudonym when they volunteered for the project. This was used throughout the research to ensure confidentiality was maintained. All pseudonyms were allocated an individual code as some were identifiable due to cultural connotations.

Anonymity

Participants were assured of confidentiality and anonymity throughout. This is challenging in small scale studies as an individual could be identified if the placement context was identified along with a profession. Individual quotes will, therefore, not be attributed to a professional group if this leads to the participant becoming identifiable. Maintaining the assured anonymity has significantly impacted on the ability to provide detailed presentations of individual cases; however, despite the challenges I feel this has been achieved with the individuality of cases being maintained.

3.2.4 Personal Ontological Position

Due to the often submerged influence of ontological and epistemological beliefs with research design and analysis I will define my personal perspective to position myself more clearly. I have already stated that I believe *“Individual experiences are of equal significance and multiple realities accepted”*. I would suggest my beliefs are closely aligned to those held by fourth generation evaluators who do not perceive interaction as “threats to validity” but “take the interactions as opportunities to observe and understand how individuals and groups of stakeholders make meaning of their lived existence” (p229 Lincoln and Guba in Alkin 2004).

My focus has always been to gain rich data through which to explore the individual’s experience of participating in the peer learning programme. While I designed and implemented the programme, I aimed to be receptive to feedback from the participants throughout, encouraging reflection and suggestions on what they were being asked to do. However, this does not allude to a collaborative approach such as that proposed by Heron (1996). There was no consultation with students at the design phase and while peer review of the research proposal was influential, this was not a collaborative process with participants.

Position of self

One other significant aspect to consider is how the clinicians and students perceived me. Although I was the researcher and educational facilitator instigating the peer learning programme I do not work in the clinical environment. I am strongly associated with the University and the academic side of the programme. I was not an employee of the Trust and would not be recognised by the students or staff as part of their clinical team. Although I would prefer to see myself as an “insider” through organising the clinical component of the programme and supporting the clinicians and students when they are in practice, I know that I am perceived as an academic “outsider”.

However as researcher, I was inextricably part of the phenomenon and as such an active participant. I was involved in the facilitation of the peer learning programme and ongoing collaboration with the participants. Maintaining my visibility is essential to ensure my influence can be identified. However, qualitative methods that call for an “embedded actor”, such as Action Research, are not appropriate. I was not developing practice within my own sphere. This research was based on evaluating the appropriateness of applying educational principles from one context to another, not a “bottom-up and collaborative approach to enquiry that enables people to take action to resolve identified problems” (p411 Bowling 2006), nor did it enable participants to review or interpret data.

3.3 Case Study Research.

After careful consideration, due to my ontological position, working outside my routine work environment and being responsible for applying an educational model into a new setting I chose an exploratory case study design; using mixed methods which allows for an in depth analysis of a complex situation. Data were collected before, during and after the intervention.

The design of the case study was influenced by the writings within social science of Robert Yin (1994) and Robert Stake (1995) whose work focuses on educational evaluation. The central focus of this method is “the collection and study of multiple forms of evidence, in sufficient detail to achieve understanding” (p19 Gillham 1995). Considering the question “what is a case study?” appears simple yet poses considerable challenges¹⁰. There is no universally accepted interpretation of this term as case studies are closely linked with professional practice across a wide range of fields. This has led to case studies evolving with connotations specific to those disciplines (p1 Gomm et al 2008). This case study is based on models from social science and educational evaluation, not from case studies used within the physical scientific community or those used

¹⁰ Roger Gomm et al’s Introductory chapter to Case Study Method (2008) provides one overview to this debate. John Creswell’s (1998) book provides a comprehensive example of how research design is influenced by the “tradition” adopted by the researcher.

primarily for teaching. Yet case study research evolved from its early use to understand complex interactions through both evaluation and teaching.

3.3.1 Historical Perspective

Within American social science, Jennifer Platt (1992 in Yin 2009) connected use of case studies back to the conduct of life histories in sociology and casework in social work. During this time participant – observation grew as a data collection technique and has since been strongly associated with case study research. The publication of Yin’s “Case study Design” in 1984 moved on to develop a “logic of design.... rather than an ideological commitment” (p46 Platt 1992 in Yin 2009) leading to a methodology that defined both the scope of study, data collection and analysis strategies (p18 Yin 2009).

Yin (1993) identifies case study as having origins in quantitative scientific research, aiming to emulate the “scientific method”. He proposed the quality of the case study was related to the rigour with which certain principles are applied yet also explains that this is not the same as “doing science”. The case study as discussed by Yin is a method developed and evolving within the sphere of social not natural science with the ontological perspective of a realist (Yin 1993 p64). However, while he accepts methods are not mutually exclusive, he identifies case study research as providing a specific methodology. This position is not without debate.

According to Gomm (2008) Stenhouse’s promotion of the use of case study within education to develop and evaluate curricula and pedagogic practises precipitated the development of teacher as researcher “stimulating a flourishing classroom action research tradition” (p2). There is, therefore now a long history of the use of case study research to understand and develop practice associated with both education and social science.

According to Stake (2000) “Case study is not a methodological choice but a choice of what is to be studied” (p435 Stake 2000 in Denzin and Lincoln). He positions his form of case study distinct to that of Yin who he describes as taking a more quantitative approach (pxii Stake1995).

Christie and Alkin (2008) suggest “It was Stake’s inclusion of and emphasis on case study methods and program context that prompted a shift from realist to relativist inquiry models in evaluation” (p134 2008). This identifies a range of ontological positions at play within the field of case study research.

Methodology can be defined as “the system of methods and principles used in a particular discipline” (p 808 Hanks 1990). There is clearly debate over whether case study constitutes a methodology or whether case study is a method. However, as it is being used in both ways (Gomm

et al 2008) it is essential to ensure transparency in the researcher's approach rather than presuming prior knowledge of inherent assumptions associated with the method.

Gomm et al (p2 2000) suggests in one sense "all research is case study" as there is always a unit about which data are collected. This identifies one unifying aspect within a debate that considers whether case study is a method or a distinct research paradigm; the identification of a specific unit of interest which is the focus of the enquiry. Stake (p2 1995) identifies this as a "bounded system" while Gillham (p1 2004) offers a definition of a case which appears to provide a consensus opinion. He defines a case as

*"a unit of human activity embedded in the real world;
which can only be studied or understood in context;
which exists in the here and now;
that merges in with its context so that precise boundaries are difficult to draw."*

Exposing the context is essential in case study design as it is "hypothesized to contain important explanatory variables about the phenomenon" (p31 Yin 1993).

Within this research the boundaries between what would happen in a routine placement and the influence of the peer learning programme are not clear. The peer learning programme was partly designed to enhance the development of interpersonal skills associated with patient centred communication. All students had already covered this component within their professional course and so the skills practised within the tutorials were not new; the skills were being used on a daily basis within practice. The choice of skill had not been based on a need to improve student support in this area, programme evaluation had not identified any deficit; it was based on a need to identify a generic skill which would enable peers to establish equal status relationships to collaborate in their own and each other's development.

The elements of the tutorials which explored interprofessional communication, roles, responsibilities and stereotypes were also not conceptually new to the students. However, this form of interprofessional group discussion and skills practice linking directly with their clinical practice is new. Whether this enhanced the awareness for students of these issues, or influenced their learning, is a matter for analysis, yet the complexity of evaluating the impact of this peer learning programme is considerable.

Developing theoretical propositions is a significant stage in case study designs (McDonnell et al 2000). Key influences considered when determining the research questions have been discussed in the introductory chapter. Establishing "what is a case" is an essential step in this process.

3.3.2 Research Design

Stake (2006) suggests the choice of case is an epistemological issue. “Qualitative understanding of cases requires experiencing the activity of the case as it occurs in its context and in its particular situation” (p 2).

Within this research the case being studied was the peer learning programme. The “unit” of study or individual case was defined as a student pair, with associated clinical educator / mentor data being used to strengthen the completeness of the case. The rationale for this was to ensure the unit of study closely relates to the central aim of the programme. The whole essence of the research is whether or not it is possible to enable meaningful patient centred activity to occur among a group of diversely placed students. The context of each student’s placement was different; by containing the unit of study to each pair, a more critical understanding of what was happening at the ward level can be developed.

I have, therefore, adopted a methodological design influenced by Yin (2009) to ensure a strong internal consistency of design through the triangulation of multiple data types and sources where possible and a multiple case study analysis framework (Stake 2006) to guide the analysis. This approach will ensure the full range of data are considered at depth. The two groups formed by the students were seen as bounded units in their own right. This enables cross case analysis between groups as well as between individual cases.

Study Size

The target population was between three to five pairs for each group, the first group contains six cases and the second three. The small size of the study is due to the considerable amount of data to be collected from each case. The aim was to gain data saturation; whether or not this was achieved will be considered in the chapter five¹¹.

Completeness of Data collection

A literature review was used to identify known significant influences within peer learning and interprofessional learning in practice to ensure data collection was comprehensive. Influences were separated into those which were “internal” and those which were “external”. Internal influences included; age, gender, previous experience within the healthcare setting, previous educational experience and individual attitudes towards IPL. External influences identified included; the type of

¹¹ A discussion regarding the ability to generalise from case study findings can be found on page 61.

learning environment the students were experiencing, the attitudes of the mentors towards interprofessional learning and organisation and structure of the placements. Careful consideration was also given to how best evaluate the development of the students' communication skills and interprofessional understanding.

Table 1 summarises the methods of data collection.

Data Source	Data Type	Timing
Students	University of the West of England Interprofessional Questionnaire (UWE IPQ) Reflective Diary Semi structured Interview	Pre and post programme Concurrent Post programme
Clinical Educator / Mentor	RIPLS Questionnaire Semi structured Interview	Pre programme Post programme
Researcher	Research diary	Concurrent

Table 1: Data Sources, Types and Timing.

3.3.3 Choice of Data Collection Methods

The research methods chosen were the most appropriate to explore the research questions. Direct observation is often a method of choice within case study research. It was not chosen as a primary source of data within the clinical setting as I wanted to ensure I did not influence the clinical encounter. I needed to gain insight into the ability of the students to coordinate this aspect of the programme independently and ensure the students were able to collaborate with each other without being observed. Part of the research was to explore how the students felt about working independently with each other within the clinical setting. This meant giving them the freedom and responsibility to arrange a mutually convenient time to work together. Attempting to observe this, I felt, would significantly complicate the process, and fundamentally change the encounter to one in which an authority figure was present - albeit to observe rather than participate. The activities undertaken by the students would generally require the students to be with a patient – often at the bedside with curtains drawn. This is a physically small and intimate space; observation would require me to place myself within this area and I was concerned my presence would be reminiscent of clinical supervision for the students, patient and staff present on the ward.

The collaborative activities undertaken by the students were clearly defined to ensure at no time did they work outside their scope of practice or level of ability. The clinical educators responsible for identifying patients for the interviews were encouraged not to observe where possible. For the other collaborative clinical activities, this was completely up to the clinician's judgement, and varied according to the level of the student. It is routine for a student to be able to carry out tasks they have become competent in without direct observation. This, therefore, constituted no change in supervision from a routine placement where students develop greater levels of autonomy within

each placement as they progress. The difference was associated with the organisation and time management of the clinical activities across wards and professions.

Participant observation (Yin 2009 p112) in the clinical environment was also a method I chose not to include. I could have become involved in the selection of patients through discussion with the participating clinical educators. This may have enabled a greater understanding to develop regarding this aspect of the study. However, it could also have been perceived as providing an additional member of staff within the clinical environment, which would have reduced the ability to assess if the model could be absorbed into routine practice; it may also have influenced clinical team dynamics and blurred lines of responsibility.

Within the tutorial setting I had originally thought I might be able to obtain some observational data for my research diary. I was aware this would be challenging and had not included this as a data source within the research design. However, I was used to providing feedback to students regarding their participation and involvement within a problem based learning setting, and thought I may be able to produce some observational data regarding individual participation levels and response rates. This proved impossible. The tutorials involved a number of teaching strategies which involved the students moving around and working within different groups. Reliable quantitative observational data were not possible; however, comments were made in my reflective research diary after each tutorial. As primary observation was not being used, ensuring the methods chosen would give insight into the clinical experiences was essential. This was achieved through the triangulation of reflective diary, interview and cross data corroboration from the participating student peer.

Internal Consistency

One of the significant challenges of case study is demonstrating an internal consistency of design which validates the findings while exposing the individual position and influence of the researcher. This is essential to counter the criticism that case studies have the tendency to confirm the researcher's preconceived ideas (Flyvbjerg 2006). While considering this as a general criticism of social science research, ensuring the internal consistency of design is rigorous, the form of analysis transparent and the whole range of data considered, will ensure any selection bias or preference imposed by me should become apparent.

The research design proposed by Yin (2008) addresses issues of construct validity by using data triangulation from multiple sources of evidence, as this provides "multiple measures of the same phenomenon" (p117). During the design phase each research question was refined into a subset of questions and multi-method evaluation was chosen to ensure a depth of understanding could be achieved.

A summary of the research questions and methods of evaluation can be found in Table Two.

1. Does the peer learning programme promote the development of an in depth understanding of other professional roles and responsibilities?
1.1 Does this learning experience increase understanding by the student of professional roles and responsibilities? 1.2 Does this learning experience increase understanding by students of their own professions' roles and how this relates to other professional groups?
Data Types and Source
UWE questionnaire Reflective diary Individual Student Interview
2. Does peer learning establish mutually beneficial relationships among peers which facilitate individual skill acquisition and consolidation?
2.1 Are the students able to put aside professional differences and work with each other to develop their common learning needs? 2.2 Do they provide each other with peer support? 2.3 Do they develop the ability to give and receive appropriate feedback? 2.4 Do they consolidate their own knowledge by sharing patient centred activities?
Data Types and source
UWE questionnaire. Reflective diary Individual Student Interview
3. Does the peer learning programme facilitate the student's ability to collaborate effectively within a multi-professional team?
3.1 Does this model affect IP collaboration within the existing clinical teams? – If so how?
Data Types and source
UWE Questionnaire Pre and post Reflective Diary Individual Student Interview Clinical Educator / Mentor Interview
4. Can the peer learning programme increase the amount and type of pre-registration Interprofessional Learning within the current practice setting?
4.1 Can this model be introduced into existing curricula frameworks and practice settings? 4.2 Is it possible to enable students to collaborate with each other during current placement arrangements?
Data Types and source
The evaluation of the peer learning programme will enable initial recommendations to be made.

Table 2: Research Questions and Method of Evaluation

Consideration was given to identify the most appropriate methods to evaluate each research question. The data were of more than one type, where possible available from more than one source and contained elements which considered the same issue. This allows the exploration of each research question from a number of different angles – thereby developing a depth of insight which may be difficult to achieve using one method.

This process is called “triangulation”. Depending on the ontological position of the researcher this technique may be used in a number of ways. It has been criticised for carrying a too positivist bias, by being used to counter bias, improve validity and so strengthen the “confidence” in the research (p22 Arksey and Knight 1999). However, I do not see this as a process of refining to one

conclusion, but one which highlights where both convergence, divergence and multiple opinion occurs.

By embedding a number of common issues within the different data types, the persistence of an expressed view can be considered. By considering the full range of data available it is possible to build an indepth picture of the individual, their attitudes and experiences.

Intrapersonal consistency of espoused views was able to be considered from questionnaire and interview data. Considering if espoused views were consistent with expressed behaviour was at times possible through the record of collaborative activities and participation.

While a considerable amount of the evidence gathered within the case study is expressed opinion, often these relate to a sequence of events. Exploring the accuracy of reporting is important when looking at the reliability of data. Interview data were used to enable cross interview corroboration of events within the clinical setting enabling the credibility of participants' accounts to be scrutinised.

Aggregated whole group opinions were considered and cross group comparison was also explored. I see this as enabling greater access to the complexity of the research.

3.3.4 Generalisation of research findings

The debate surrounding the extrapolation or generalisation of research findings to other settings is considerable. Schofield (1993) in an overview of this debate proposed, "generalizability is best thought of as a matter of the "fit" between the situation studied and others to which one might be interested in applying the concepts and conclusions of that study" (p109).

The relationship within case study of context to findings is one of symbiosis, constantly influencing and informing actions. I believe this exposes an existential commitment within case study that past and futures only have meaning in the here and now and agree with Gillham's (2004) definition that a case "can only be studied or understood in context" (p1).

As generalisations are required to be context free it is not appropriate to seek the same generalisation attributable to external validity associated with quantitative research. Flyvbjerg (2006) suggests "formal generalization is overvalued as a source of scientific development, whereas "the force of example" is underestimated" (p228). A more appropriate question to answer is how can this case study inform others interested in the same area of practice? This has generated much debate and been addressed in various ways, however, all call for context rich data to be included in case studies to ensure replicability or applicability to other settings may be assessed.

This research aims to inform the expanding repertoire of knowledge related to interprofessional learning with the understanding that this knowledge is context dependent. To allow the applicability of this work to be assessed, considerable emphasis is placed on exposing the relevant contexts throughout the thesis.

Understanding there is no easy generalisation from case study should be a recognised strength of this form of research. Rather than proposing findings from one setting can be easily transferred to another, acknowledging this is not appropriate ensures any application of findings will be grounded in and sensitive to the complexities of the new situation.

3.4 Data Collection Methods

Here I will discuss each method used within the research.

3.4.1 Questionnaires

The aim of incorporating two validated questionnaires were to identify base line data from participating students for comparison after the study and to identify the attitudes towards interprofessional learning of key figures in the immediate learning environment within which the students were working.

Readiness for Interprofessional Learning Scale (RIPLS) Questionnaire¹²

The RIPLS questionnaire was first developed for use with pre-registration students. This has since been validated for postgraduate use (Reid et al 2006). Permission was gained to use the postgraduate form of the RIPLS questionnaire to assess the attitudes towards interprofessional learning of the clinical educators and mentors.

University of the West of England Interprofessional Questionnaire (UWE IPQ).

The UWE Questionnaire is a validated self administered questionnaire comprising four attitude scales. It produces a self assessment relating to: communication and teamwork, interprofessional learning, interprofessional interaction and interprofessional relationships. While originally developed as part of a longitudinal research project, both the stability of the individual scales and concurrent validity of the first two scales have been established (Pollard et al 2004).

The effect of the peer learning programme and the routine placement experience was not possible to separate as the aim was that they were symbiotic. Evaluating the influence of the study on the students' communication skills is, therefore, complex as these are practised and consolidated

¹² A copy of both questionnaires can be found in appendix C.

throughout all placements. The students' self assessment of their communication and team working skills identified a base line measure and post placement self assessment allowed comparison with the original rating. By considering these data alongside the rest of the data set, a more detailed picture is formed.

Considerable debate ensues over the use of mixed methods in case study, as there is perceived to be conflict using methods which are designed to assess more concrete "facts" in a study which values multiple perspectives (p24 Arksey and Knight 1999). Here it is the use of the tool and reason for inclusion which is important. No statistical measures are to be applied to the questionnaire data; it has not been included to identify any statistical significance. Following triangulation with interview and reflective diary data, the aim is to gain a greater depth of understanding of each case.

3.4.2 Reflective Diary

To identify any emerging issues, introduce an element of collaboration and reflexivity into the research process and counter hindsight bias a concurrent reflective diary¹³ was included in the data collection. At the same time as producing concurrent data the aim was to enable students to reflect on the relevance of the tutorial topics, identify appropriate tutorial topics for inclusion and identify any ongoing issues.

Reflective diaries are a well established tool within health and education research. One of the basic assumptions is that "by limiting recall and capturing experience close to the time of its occurrence, diaries are thought to produce more accurate and less biased data" (Stone et al 2003). The use of a reflective diary within this setting was primarily a data collection tool. It provided a loosely structured format for data to be documented which might not be passed on in a face to face interview. Due to my position as lecturer and clinical co-ordinator I felt this was important. Within the healthcare setting, both backfilling of diary entries and forward filling diary cards has called in to question the reliability and validity of the paper diary (Stone et al 2003).

Printed as an A5 booklet, the reflective diary followed a format familiar to professional students. It asked the student to briefly describe the event and then consider what they had learnt. The structure aimed to capture what the individual had perceived as being important but ease completion and analysis (Johns 2004). The time and effort required for diaries is recognised as negatively affecting compliance (Richardson 1994).

Recognising reflective diaries can be off putting the reason for including the diary was explained to all students. Participants at all times were free to comply with what they felt able to and a number of students volunteered to participate but felt unable to complete a diary. At the time it was clear

¹³ Appendix B

this was due to concerns related to workload and students were not excluded from the study on this basis. Although not ideal, I felt by identifying they were unable to do this at the start of the research the students demonstrated an open relationship and a clear commitment to participating with the research while uncertain how it may impact on their placement. Although diaries can be a valuable data collection tool, they are best completed by “committed samples of people” (Bowling 2006).

The research protocol stated the initial plan had been to photocopy the reflective sheets at the end of each tutorial session. This would make them available to be considered before the next tutorial and encourage completion. This process was followed after the second tutorial. However, the most local photocopier was two floors away and by the time the photocopying had been done and diaries returned to the students this had delayed their return to practice. It also felt as if the photocopying of material changed my position from being a facilitator collaborating with volunteers to one of tutor with the submission of “course work”.

On the second week, the students appeared reluctant to share their diaries while I was keen to encourage their use to enable insight into their experiences from the data. The group appeared to be comfortable in discussing what they had done the week before and whether there were any suggestions for topics to be included in the next tutorial. This obfuscated the need for photocopying from the perspective of collaboration. There was a sense that photocopying the diary was intrusive. Although keen to encourage concurrent completion of the diary, I was not prepared to “police” the tool as I felt it may influence the compliance and completion. The process of individual reflection is a personal one. I made it clear from the start the diary was “owned” by the student and would be treated with complete confidentiality both in storage and analysis. We agreed the diaries would be completed and photocopied at the end of the programme instead. This system was retained for the second group.

It may be that completion by students was not as concurrent as reported, but when considering the diaries together, the descriptive material is consistent with the tutorial content and there is considerable consensus regarding events. The range of opinions expressed when referring to the learning which has occurred makes me feel the data collected are reliable and valid although they vary greatly in depth from one individual to another. This may reflect the individual’s reflective abilities or the time spent on completing the tool.

The reflective diaries were analysed for emerging themes and interestingly produced evidence of some of the peer review processes not provided by other tools. One participant provided a reflective diary which complemented an interview which was delayed due to access difficulties post study and so the inclusion of the diary as a tool has been invaluable.

3.4.3 Interviews

Individual semi-structured interviews of between 30 minutes to one hour occurred with students and clinical educators. The reflective diaries where available were used as a stimulus to facilitate the students' interviews and aid recall of events. Although the aim was to complete all student interviews within one week of the programme ending, due to the summer break a small number of interviews occurred during autumn term.

The interviews were semi structured to allow an in depth exploration of topics. While an interview schedule¹⁴ was used to ensure internal consistency the schedule was not followed in order and participants were encouraged to discuss what they felt was important. Interviews were taped, transcribed and returned to the interviewee for verification with an opportunity to clarify any points or to add any further comments. No comments identifying new data were added. There were a small number of comments on the overall "sound" of the text.

Participants were able to identify venues for the interview to take place although the majority were arranged by the researcher in library tutorial rooms. On two occasions public places were chosen for the interview and due to background noise tape recording was not possible. Written notes were taken instead and returned to the participant. On one occasion a telephone interview occurred with a third year student who had left the area following graduation.

3.5 Summary of Data collected.

In total there were 19 participants, 18 were placed in pairs. A total of seven students volunteered in the second set of students. One student in group two was keen to participate but unable to attend the first tutorial. This student participated in the remaining three tutorials and was interviewed after the experience but was not asked to complete questionnaires or a reflective diary as she was unable to undertake any of the clinical tasks. The information from her interview is valuable as it is likely uneven groups of students may occur if this model was repeated and so this is an opportunity to see if there was any added value from running the clinical tasks.

¹⁴ Interview schedules can be found in appendix A and B

Case	Pre study Questionnaire	Post Study Questionnaire	Reflective Diary	Interview
Group 1				
A	2	2	1	2
B	2	2	1	2
C	1	2	2	2
D	2	1	2	2
E	2	1	0	1
F	2	1	1	2
Group 2				
G	2	2	2	2
H	2	2	2	2
I	1	1	0	2
J			N/A	1

Table 3: Student data collection by case.

In addition, 3 physiotherapy clinical educator interviews and 2 RIPLS questionnaires have occurred along with one nurse mentor interview and 2 RIPLS questionnaires. One clinical educator who agreed to participate was away for the majority of the study and so was not able to be interviewed or complete a questionnaire within the time frame of the study.

	Group 1	Group 2	Combined Groups
Questionnaires	8/12	4/6	12/18
Reflective diaries	7/12	4/6	11/18
Interviews	11/12	7/7	18/19

Table 4: Summary of student data collected

3.6 Data Analysis Approach

A case study includes the process of inquiry, the data collected and the product of that inquiry. A multiple case study analysis framework (Stake 2006) was used to structure the data analysis and ensure the complexity of each case was retained. Stake (2006) uses the term “quintain” to refer to the overall case which is being studied when using a multi-case study approach. In this case the “quintain” is the peer learning programme; to understand it better we consider the individual cases. A cross case analysis within each group and finally a cross case analysis across groups enables identified patterns to be considered both close to each context and by comparing and contrasting with the other cases.

There are a range of qualitative approaches available to interpret and analyse the data collected. Kushner when discussing program evaluation advocates a focus on the individual as a way of identifying “fine grain detail” rather than relying on the aggregate level of analysis (p9 Kushner 2000). He states

“... the further away we are from individuals the easier it is to be decisive and to assert precision. The finer the grain of the methodological capture - that is, the closer to the individual – the closer we draw to the impossibility of closure” (p10 Kushner 2000).

He also challenges the presentation of an individual's data as representing and retaining their "voice".

"to seek our own "voice" in enquiry blows us in the direction of personal advocacy; while to seek merely to "give voice to others" risks abandoning responsibility for the discourses we help to create, and threatens to dislocate our actions from our values" (p15 Kushner 2000).

This raises significant issues. Qualitative data can be analysed in a number of ways and while this research seeks to explore the students' perceptions of the peer learning programme, I have not adopted a collaborative approach to data analysis but have chosen to analyse the data by scrutinising it alongside the theoretical framework provided by cooperative learning and evidence base associated with peer and interprofessional learning in practice environments.

Coffey and Atkinson (1996) remind us:

"There is no single right way to analyze qualitative data; equally, it is essential to find ways of using the data to think with" (p2).

Personal ontological position has a significant influence on the analysis and presentation of data. Is an item more significant because it has been stated a number of occasions by a number of different people or is this just an aspect which is more accessible to data capture? If an item is mentioned only once does that carry less significance than one which is recurrent or is that even more interesting because it is adding a different dimension to the overall picture?

Originally I planned to select cases according to their context, prioritising those from diverse placement settings, the level of participation with the activities and the completeness of the data set. However, I have revised this view. I have adopted a constructivist position where I value each individual's opinion and experiences and use these to consider how this informs us about the Peer Learning Programme.

Stake (p13 2006) states:

"Too much emphasis on original research questions and contexts can distract researchers from recognizing new issues when they emerge. But too little emphasis on research questions can leave researchers unprepared for subtle evidence supporting the most important relationships".

The original research questions have provided a deductive framework with which to structure the data analysis, however, to ensure no new data were lost, I initially undertook an inductive thematic analysis of the student interview data and reflective diaries. Independent analysis of a sample of interviews by one of my supervisors was used to improve reliability and ensure the identified themes were embedded in the data. This ensured no new information was lost by focusing solely

on the original research questions; it also facilitated the interaction with data proposed by Coffey & Atkinson (1996).

The inductive thematic analysis followed a process proposed by Coffey and Atkinson (1996). They advocate the use of coding to facilitate the reductive processes associated with pattern recognition and exploring themes but then propose reconstruction and interaction with data to ask questions and develop theory; thereby avoiding superficial descriptions and developing considerable depth of analysis. This is distinct from a quantitative method of content analysis where categories are established and the number of instances of occurrence within a text is identified (p122 Silverman 2002). Each theme was formed by a number of sub themes. It is recognised, however, that these are symbiotic functional groupings used to provide structure to the analysis and discussion.

Following the thematic analysis, each case was individually analysed; significant influences were identified, learning behaviours considered, pre and post questionnaire results presented. To enable each case to be considered holistically, all data were summarised using a single case summary sheet¹⁵ adapted from a worksheet designed by Stake (p5 2006). A cross case analysis then occurred, enabling emergent themes to be considered alongside other cases and for commonalities and differences to be considered¹⁶. A strength associated with this approach is that it enables the individuality of experiences and responses to the same peer learning programme to become clear.

Anderson (2007) advocates the use of conceptual frameworks with which to gain understanding; “understanding is not derived from facts; rather, understanding is derived from examining the facts through the lens provided by our conceptual frameworks” (p9). Social Interdependence Theory is the conceptual framework used to consider if cooperative learning behaviours have been displayed within each case. Exploring the type of interactions reported by the students enabled the learning behaviour in each case to be considered. Cooperative learning behaviour was considered to occur when there was evidence of promotive activities within the clinical practice setting. This was defined as “individuals encouraging and facilitating each other’s efforts to learn” (Johnson et al 1998). Evidence of skill sharing, giving and receiving feedback, discussion of roles and how to improve patient centred care are all examples of cooperative learning.

Data were scrutinised to explore the way the student pair worked together, in particular looking for any aspects of promotive activities leading to cathexis, substitutability and inducibility.

Table 3 identifies the elements of cooperative learning behaviours and identifies how these could be manifest in each case.

¹⁵ Appendix C

¹⁶ The cross case analysis is summarised in a table on page 152 and allows the recurrence of themes to be presented.

Elements of Cooperative Learning behaviour	Description
Cathexis	Cathexis was considered present if the students put effort into meeting and working together for the clinical tasks as these were not pre-arranged activities. The students needed to co-ordinate meeting on a unit at a mutually convenient time and arrange with a clinical educator to have an appropriate patient. If cathexis occurred, the equity associated with the effort put in to the relationship was considered i.e. did each student take turns in meeting on each other's unit, did both students participate equally in the clinical task?
Substitutability	Substitutability was felt to happen when students were collaborating in practice for example when interviewing patients if an agreed strategy was apparent with students taking turns, supporting each other, sharing the questioning and discussing the interview afterwards.
Inducibility	Inducibility occurs when one person becomes open to the influence of the other. Here I was looking for evidence of one student influencing the other's understanding and attitudes towards interprofessional working both within the student pairs and within the group.

Table 5: Elements of cooperative learning behaviour

3.7 Chapter Summary

This chapter has provided a detailed contextual description within which the case study lies. The debate regarding the use of case study has been considered and justification given for the case study design adopted. The approach to data analysis has been detailed along with an explanation of how the conceptual framework of Social Interdependence Theory has been interpreted within the research. The structure of data analysis associated with each case has been explained; this enabled strong internal consistency to be gained through the application of triangulation techniques aimed at highlighting converging, diverging and multiple opinions.

Chapter 4 Implementation of the Peer Learning Programme

4.1 Introduction

Starting with a time line, this chapter will provide a chronological description of events to explore the complexity and challenges associated with implementing the peer learning programme, highlight key decision making and provide an auditable trail (Yin 1994). The recruitment and consent of participants will be considered, followed by a section identifying how the original case study design was modified. This will lead on to the implementation of the peer learning programme itself; this section contains concurrent descriptive data generated by participants to enable access to individual experiences and corroborate my account of the peer learning programme.

4.2 Time Line

The first Peer Learning Programme ran between May and June 2007. The physiotherapy student interviews were pre-arranged as the students would be leaving the area after the placement. The nursing students rotated on to a second placement, and were still based locally so interview arrangements were made with individual nursing students after the programme.

Facilitation of the second programme occurred between June and July 2007. Both student groups then left the university as this was the end of their final academic year. The initial plan was to undertake the peer learning programme during the first four weeks of the physiotherapy placement. The placement was five weeks long and this would ensure access for interviews post programme. However, a new research protocol was implemented within the School of Adult Nursing which led to access to the nursing students being temporarily withdrawn. I had been unaware that a new protocol aimed at protecting students from excessive requests of research participation was being developed in the School of Adult Nursing as I was based in a different School. The protocol was developed and then implemented part way through my research and led to access to the third year students being withdrawn. The decision withdrawing access to the students was appealed¹⁷ and access to the students was permitted, however, the start of the second peer learning programme was delayed by one week.

This led to the peer learning programme finishing in the same week as the placement and caused some concern over accessing students for interview. At this point there were two options, shorten the peer learning programme and ensure access for interviews as planned or maintain the same peer learning programme and negotiate access for interviews at a later date. I felt it was essential

¹⁷ Appendix C

to repeat the same peer learning programme with the second group to maintain the integrity of the case study design and chose to continue with the programme as planned.

4.3 Recruitment and consent

The recruitment process required for the two professional groups was slightly different.

Physiotherapy Students

Eight first year physiotherapy students were placed at the hospital. After placement organisation had occurred but before the placement started I emailed each student a letter of invitation, student information sheet, teaching plan summary and a brief questionnaire for non-participants¹⁸. I then arranged to meet interested students as a group on day one of the placement so that I could answer any questions. In group one, seven students attended the group discussion and volunteered to participate. Written consent was gained at the meeting but ongoing process consent was gained throughout the project.

It was clear at the meeting that the students' clinical educators supported the project and this had influenced the students' attitude towards participating. Also for some of the first year physiotherapy students I had been their Problem Based Learning tutor within the academic setting and they identified this as a reason for being very open and willing to participate.

In group two the same process was followed. Four out of five third year BSc(Hons) physiotherapy students volunteered.

No further contact was made with the physiotherapy students who did not volunteer. In the email to the students I had asked any who did not volunteer to return a brief questionnaire which identified their main reason for not participating— either via email or anonymously via the post. Neither of the two students returned the form. As only one student did not volunteer from each group it was clear which ever way the questionnaire was returned their views would not have been anonymous. This may have influenced the response. Due to my position as clinical co-coordinator and physiotherapy lecturer I did not feel it was appropriate to pursue this further as I did not want the students to feel pressured into a response which may not reflect their genuine opinions.

Clinical Educators

In total there were five physiotherapy clinical educators involved with the first year physiotherapy students who had volunteered. All were provided with an information sheet, consent form and non-participant questionnaire¹⁹. Four agreed to actively participate in the research which included co-

¹⁸ Appendix B

¹⁹ Appendix A

ordinating the clinical component of the study. One felt unable to participate in the research but was happy for her students to participate. The returned questionnaire identified

"pressures within the department, I do not have the time"

Clinical educator non participation questionnaire

as the main reason for not participating. The clinical educators who volunteered to participate in the study continued to participate throughout the facilitation of both groups.

Nursing Students

Access to the second year nursing students was gained by liaising with their pathway lead. I had no previous contact with the nursing students and was keen to meet the cohort to introduce myself, explain the project and distribute information. At the end of a lecture I introduced myself and informed the students of the proposed study. The whole cohort was not present but the aim was to establish potential participation and viability of the project. Face to face recruitment of volunteers is known to achieve a higher response rate than recruitment by letter (Badger and Werrett 2005). I was keen to establish some contact with the cohort so that when they were contacted by email with the research information they would have some prior knowledge. At that time seven students stated they may be interested in participating with the research. The sample size required for the case study design was between three-five pairs and so I chose to progress with the ethics submission.

Once ethical approval was gained all seven who had expressed interest were contacted with a letter of invitation, student information sheet, teaching plan summary and a brief questionnaire for non-participants. However, only four of these students were placed in the hospital for their first placement. Two students from this group volunteered, two responded returning the non-participant questionnaire. I aimed to have similar number of students participating from both professional groups and so the thirty six students placed in the hospital were contacted by email with the relevant information.

This resulted in two email responses, one returning the non-participant questionnaire and one with an email declining to participate. At the same time as contacting the students by email, three student nurses volunteered when they heard about the study in practice. This established an optimum size for the first group. Group one was formed by five nursing and seven physiotherapy students organised into five interprofessional and one uni-professional pairs.

4.3.1 Influences on Recruitment of Participants

Research has shown that students may be concerned interprofessional learning does not detract from their own uni-professional learning (Morison et al 2003). It is clear much of the existing

understanding of interprofessional working developed by health care students occurs through observation or modelling (Russell et al 2006).

While the participant profile was opportunistic, students who may have been less inclined to participate due to negative attitudes towards interprofessional collaboration were able to opt out. This could have led to a participant selection bias. It has been demonstrated within research looking at Inter group contact that “prejudiced people may avoid, and tolerant people may seek, contact with outgroups” (Pettigrew and Tropp 2006). The use of the UWE Interprofessional Questionnaire enables this case study to look at the attitudes towards interprofessional collaboration of individuals before and after the placement. This point is considered at depth throughout chapter five.

4.3.2 Non Participant Responses

The total number of non-participant questionnaires returned by students was small – four responses in total. However, they were significant in identifying reasons for non-participation which may not have otherwise been documented.

What is your main reason for not participating?
<i>"I am sorry but I feel unable to commit myself to anymore at the moment"</i>
<i>"I am very sorry that I feel unable to participate in this study at the present time due to my commitment to my assignment and forthcoming exam."</i>
<i>"Lack of time. I have a lot of work on i.e. exam and essay to write."</i>
<i>"I have to decline your offer about helping in the Peer learning with the physiotherapy students, as with most other students at the moment I am quite overwhelmed with coping with my studies...."</i>
Would you be interested in this sort of collaboration in the future?
<i>"I do think that I would benefit from this sort of collaboration and if I am able to help in the future I would be grateful for the opportunity"</i>
<i>"If I am not so pressured with other commitments I may be interested in supporting this study in the future."</i>
<i>"No not really."</i>

Table 6: Responses to the non-participant questionnaire.

The returned forms identify the students feeling quite overwhelmed by the amount of work they had. The pathway lead did identify the nursing students had concurrent work while on placement, however, felt individually the students could decide whether or not to participate. As the project

time was completely within the clinical hours and called for no assessed work, it was not felt to constitute a burden. However, it is possible many of the students saw it as added pressure at a challenging time.

The inclusion of a reflective diary as part of the data was mentioned by a number of students as causing concern and may have been seen as onerous. Some of the students volunteered to participate on the understanding they would not to complete a reflective diary because they were concerned about work load.

"When I first got the paperwork and saw what you wanted us to do I thought, "OK. I don't know what my workload is going to be like on placement and my only one real concern was - reflective diary"..... I was a bit daunted and I thought, "I really don't want to be doing diary and things". However as I have put in here, it wasn't as bad as I thought it was going to be, it was easier than I thought.

C interview line 119-125.

It is likely the structure of the diary facilitated completion but still enabled the capture of rich data. The responses to the second question – “would you be interested in this form of collaboration in the future” was also insightful, although only three responses were elicited they reflected a range of opinion. This varied from no interest to possibly being prepared to help. As this was a doctoral project it was clear the students saw themselves as helping with “my” research.

Mentors

Once the project had gained ethical approval, I contacted the nursing pathway lead as agreed and asked for the contact details of the nursing mentors who had students with them at the time of the study. Unfortunately a list identifying the mentors supporting students during each placement is not generated for the University. Accessing the nurse mentors became one of the considerable challenges associated with the project and meant a fundamental change in the breadth of the study.

The pathway lead felt it inappropriate to circulate information regarding the research to all mentors as it would only have been relevant to a small proportion. At the time of the research there was not a system in place to identify the mentors currently working with students, only a total register of mentors. I was, therefore, unable to contact the nurse mentors before the study started to explain the research and elicit cooperation.

Effort, therefore, was directed at recruiting student volunteers and contacting the students' mentors after the students had volunteered. The mentors were provided with a letter of invitation, information sheet, consent form and non-participation questionnaire. While all the mentors agreed to release the students from practice, there were no volunteers to participate with the project.

Verbal feedback suggests the primary reason was lack of time due to the pressures of clinical work. This meant the student nurses did not have active involvement from their mentors with the study and some of the nursing students felt they had challenges to contend with because of this.

"Getting together was difficult as something always happened - staff on the ward didn't value the experience..."

M interview notes lines 99-100.

4.3.3 Participant Profile

The final profile of groups one and two are summarised below. This clearly shows students who have been placed within the same hospital but from a variety of units coming together through the research. The necessity of a generic focus for student collaboration is now clear as the patient and speciality groups the students were placed in varied considerably.

Case	Profession	Year of study	Clinical setting	Comments
A	Mixed Pair	First year Physiotherapy Second year Nursing	Acute Elderly Care Orthopaedics	Different wards and different speciality.
B	Mixed Pair	First year Physiotherapy Second year Nursing	ITU/respiratory Orthopaedics	Different wards and different speciality.
C	Mixed Pair	First year Physiotherapy Second year Nursing	Both Acute Elderly Care	Different wards, different clinical teams but similar speciality.
D	Mixed Pair	First year Physiotherapy Second year Nursing	ITU/respiratory Medical admissions	Nursing student based on one unit which the physiotherapy student covered, but physiotherapy student also worked on a number of other wards. Within similar speciality.
E	Mixed Pair	First year physiotherapy Third year Nursing	Orthopaedics Orthopaedics	Same ward and speciality.
F	Same profession Pair	Both first year physiotherapy	Outpatients	Students were on placement together and were facilitated using peer learning strategies.

Table 7: Participant Profile of Group One.

Case	Profession	Year of study	Clinical setting	Comments
G	Mixed Pair	Year Three	ITU/respiratory Medical admissions	Nursing student based on one unit which the physiotherapy student covered, but physiotherapy student also worked on a number of other wards. Within similar speciality.
H	Mixed Pair	Year Three	Orthopaedics Haematology / Oncology	Different wards and different speciality.
I	Mixed Pair	Year Three	Acute Elderly care Haematology / Oncology	Different wards and different speciality.
	Single physiotherapy student	Year Three	ITU/respiratory	lack of nursing volunteers meant there was no pair but joined tutorials and was working with a second year nursing student on ITU when possible.

Table 8: Participant Profile of Group Two.

4.4 Modification of the Case study Design

Restructuring of the “case”

The initial design identified a student pair and their mentors forming a “case”. It was hoped contact details of mentors would be exchanged with the clinical educators, precipitating some liaison over the clinical components and possibly an increase in interprofessional collaboration among qualified staff. This did not happen. There was no liaison between clinical educators and mentors.

This has been disappointing as other studies have demonstrated considerable benefits to professional collaboration occurring through facilitating interprofessional pre-registration education in practice (Pearson et al not dated, Lumague et al 2006). It has also reduced the completeness of my data collection and ability to consider the views of the nursing mentors. However, all mentors allowed their students to participate in the study, so although the study would have benefited from more involvement, it has not affected the ability to explore the students’ experience from their own perspective.

4.5 Individual Case Context

A longitudinal study for the teaching and learning research programme identified within nursing the learning culture was mainly determined at ward level (Eraut 2007). Exploring individual experiences will occur within each case study analysis; however, providing some insight into the context of each speciality is important.

Routine Peer Learning on Placement

Peer learning strategies were routinely being used within paired physiotherapy placements. Four of the physiotherapy students participating in the research were working in paired placements, two students in outpatients and two on the acute elderly care wards.

Acute Elderly Wards: Cases A and C

The acute elderly care service is delivered across a number of wards. Two physiotherapy students were placed here with one clinical educator and facilitated using established peer learning strategies which included joint patient assessment, peer review and discussion.

These two students were each paired with a nursing student. One of the nursing students was placed on an orthopaedic ward, this pair formed Case A. The other nursing student was on placement on an elderly care ward, one the physiotherapy partner did not often work on. The students therefore would not have routinely met. This pair formed Case C.

Respiratory: Cases B, D and G

Two physiotherapy students in group one were placed within the respiratory team with separate clinical educators. One student was working within the Intensive Care Unit. This student was paired with a nursing student from an orthopaedic ward and formed Case B.

The other physiotherapy student placed in the respiratory team worked on a number of wards including the medical admissions unit (MAU). The clinical educator here was active throughout the research and identified patients for the collaborative elements of the research for both respiratory student pairs. One nursing student volunteered from MAU in both peer learning programmes. Case D was formed by the respiratory physiotherapy student and student nurse on MAU.

In group two Case G was formed by a physiotherapy student placed in the respiratory team who worked across ITU and the medical wards and a nursing student based on MAU.

Orthopaedics: Case E

The orthopaedic service is provided across three wards with the physiotherapy student being predominantly placed on one of the wards. Three of the nursing students volunteered for the project from this unit. One of the clinical educators facilitating the clinical component of the research was based here with one of the physiotherapy students. It is likely her support for the research and liaison with the nurse mentors influenced the students. She identified and supervised

the clinical component for her own student “pair”. Case E was formed by a physiotherapy and nursing student both working on the same orthopaedic ward.

Outpatients: Uni-professional Case F

The Physiotherapy Outpatient setting is predominately uni-professional. The students are physically situated within the physiotherapy department where there is a specific waiting and treatment area. It is common for students on this placement to have limited interprofessional collaboration. Both students volunteered to participate in the research, as their placement did not involve ward work; they participated as a uni-professional pair. Peer learning strategies were routinely used by their clinical educator and this continued in parallel with the research.

Haematology / Oncology: Cases H and I

Two nursing students in group two volunteered while being placed in the Haematology / Oncology environment. The students were linked with two physiotherapy students – one based in orthopaedics and one on the acute elderly care wards. This formed cases H and I. No physiotherapy students in group two were working in uni-professional peer learning pairs.

4.6 Peer Learning Programme One

Once the group of volunteers was established, the peer learning programme started²⁰. The following table summarises the participation of the students with each element.

Student Involvement in Tutorials and Collaborative Clinical Experiences

Case	Profession	Tutorials	Interview 1	Interview 2	Observed practice
A	Nursing	4	√	√	Observed physiotherapy
	PT	4	√	√	Observed nurse
B	Nursing	4	√	–	–
	PT	4	√	–	–
C	Nursing	4	√	Chose not to	Observed physiotherapy
	PT	3	√	Chose not to	Observed nurse
D	Nursing	4	√	√	Unable to observe P.T.
	PT	4	√	√	Observed nurse
E	Nursing	3	-	√ Combined objectives into one. Partner away week 1.	Observed physiotherapy
	PT	2	-	√ Combined objectives into one. Student away week 1.	Observed nurse
F	PT	4	√	Undertaken within existing placement structure	Met with qualified nurse
	PT	4	√	Undertaken within existing placement structure	Met with qualified nurse

Table 9: Individual Participation in PLP activities - Group 1.

Due to shift patterns it was not possible for all of the volunteers to get together on the same first day. Keen not to lose any volunteers I facilitated tutorial one twice on successive days with eight students in the first group and four in the second.

Week One Tutorial 1 Effective Communication: The Impact on Patient Care

Both tutorials followed the same format, initial introductions along with an icebreaker exercise. This was followed by the formation of group rules where previous experience of group work was discussed. While all groups generated their group rules independently, they all chose the same rules. These were referred to when the groups met: Respect for all opinions, equal input from each member, no one person dominating, content of group discussions were confidential and time keeping agreed– arriving and leaving on time.

²⁰ Teaching Plan summary in Appendices A and B.

Student pairs were confirmed and we moved into a short discussion of interpersonal communication skills and relevance to patient compliance and satisfaction. Participants immediately related to the relevance of effective communication on both an interpersonal and interprofessional level, one student shared with the group how miscommunication had recently occurred within their clinical team.

*"Introductory Ice Breaker tutorial: It was an insightful meeting with the ** students. *s teaching on listening to the patient during assessment etc seemed useful. I hope to integrate what I have learnt into my practice"*

K reflective diary tutorial one

Two exercises in active listening and paraphrasing were included. To facilitate socialisation during these activities participants were asked to explain how they came to choose their profession and what their experiences of clinical practice were.

"The tutorial was more important + relevant than I expected. The activities we did all had an interesting outcome, which has made me think more about communication with others (staff + pt's). It was good to meet + actually talk to people of a different profession, and find out how their MDT experiences differ or are similar to mine."

J reflective diary tutorial one

The clinical task for that week was explained, the clinical educator responsible for identifying appropriate patients and ensuring appropriate supervision and consent was identified – the students also had written guidance²¹. They were encouraged to exchange contact details so they could arrange the interview, but the responsibility for enabling this to happen was left with the students.

Week Two Tutorial 2 Interview Skills

The whole group came together for the first time. There was a fresh round of introductions, group rules were combined and agreed.

"Met with whole group this time - more people made for a better tutorial."

C reflective diary tutorial two

One student pair had not been able to undertake the task as one of the students had been away from placement. All others had completed the collaborative clinical task.

*"Interview with ** patient. The patient was elderly and had a duodenal ulcer removed. She was very chatty and willing to talk of her experiences."*

S.P. reflective diary clinical experience one

²¹ Appendix B

The group discussed what they had found via their interviews relating this to the previous discussion regarding patient compliance and satisfaction.

"We had a discussion with feedback about interviews. We discussed factors that might influence how and what patients might communicate to staff."

J reflective diary tutorial two

In allocated pairs students reflected on how they had worked together during the clinical task and discussed their interview skills. We went on to look at how to give and receive specific, constructive feedback.

"Discussed how important feedback is and that it should be constructive and also concise. Broke into groups with scenarios - interesting to role play - I find it more realistic."

C reflective diary tutorial two

Students then worked in triads while role playing a scenario with peer feedback on the interpersonal communication skills they had demonstrated. An exercise on interview questioning technique, structures and strategies was included. The clinical task for that week was discussed; again the students were left to organise this.

Interestingly while this group appeared to go well, one pair did not get together to review their clinical interview. This particular pair did not undertake any further clinical collaboration. I will discuss this case in depth during the chapter on analysis.

At the end of the tutorial a photocopy of the available reflective diaries were made²².

Week Three Tutorial 3

The topic for this tutorial was flexible – allowing for the students to identify a particular focus, however, when asked they did not have any specific suggestions and so I developed the tutorial to include an exploration of stereotypes.

The structure of the tutorial remained consistent starting with feedback and reflection on the clinical task of the previous week. Six students had undertaken interviews. For two pairs of students this was their second interview.

*" * and I interviewed a patient about their hospital experiences. Involved in the interview was the use of different forms of questioning"*

K reflective diary clinical experience two

²² The original plan was to photocopy reflective diaries weekly. This happened once and then took place at the end of the placement.

The students in general felt that they had been unclear about the difference between the two interviews, one pair deciding not to undertake a second interview because they felt they were busy and had already fulfilled the aims.

"We didn't do this as we weren't sure of the difference between this & last week's task; we feel that we included these tasks last week."

M reflective diary clinical experience two

It was clear from the feedback the majority of the students had been very comfortable when interviewing a patient together. I had identified the main aim of the first clinical interview was to establish a collaborative relationship but this had probably happened in the first tutorial and the students wanted a specific developmental challenge.

During the tutorial the students worked in triads undertaking an assessment using a standardised tool, including peer review. I noted in my diary how by this point they were good at giving focused constructive feedback and needed little facilitation.

"Split into 3's + practised interview techniques with feedback."

M2 reflective diary tutorial three

We then formed profession specific groups and undertook an exercise exploring professional stereotypes. This generated good discussion.

"Also looked at perceptions of nurses & physios - was VERY interesting....."

M reflective diary tutorial three

The tutorial ended after a discussion regarding the clinical shadowing planned for the week. The aim was for both students to undertake this before the last tutorial.

Week Four Final Tutorial: Interprofessional Communication

Two students were missing from the final tutorial, one due to ill health. I noted it took a while to relax the atmosphere once the group was together.

"RB finishing placement today - looks tired. Found commuting tough.....Has enjoyed his placement but ward v. busy at present. He looks relieved to be out for an hour..."

research diary final tutorial.

We identified who had managed to get together and talk through what they had done. All participating students had found the observation relevant and useful.

"Discussed as whole group how our observation of each others jobs had been. Split into teams to present flipchart tables on what physio/nursing staff do with patients on admission - 1st 4 days. Rehab - On discharge. Presented our findings back to main group in turn."

C reflective diary tutorial four

We discussed if they had given each other feedback on communication skills after the period of observation and while one student gave feedback to their partner during the group, the rest had included this in the exercise. The group consensus was that peer observation was not stressful.

We then undertook an activity to explore roles and responsibilities via a "typical" patient pathway. Despite having worked together over the last three weeks there was a lot of discussion regarding new insights into each other's roles.

"We reflected on what it was like to watch our pair at work on their own ward. We went through the roles of a physio + a nurse at different stages of treatment We discussed these roles, looking at similarities + differences between the two professions. We reflected on how we felt about taking part in this research project + how to improve it."

J reflective diary tutorial four

At the end of the tutorial we discussed organising the interviews and the project in general. I asked for any comments regarding changes which needed to be made. All felt the focus on communication skills was appropriate and should remain the central theme. Greater clarity between interview one and two was suggested.

4.7 Peer Learning Programme Two

Refinement of the Peer Learning Programme

Following group one, more detailed information along with a greater distinction between clinical interviews one and two was developed. However, the overall learning outcomes and teaching plan remained the same.

Student Involvement in Tutorials and Clinical Tasks

Case	Profession	Tutorials	Interview 1	Interview 2	Observed practice
G	Nursing	4	√	√	Observed partner
	PT	4	√	√	Observed partner
H	Nursing	3	√	√	Observed partner
	PT	4	√	√	Observed partner
I	Nursing	4	√	√	Observed partner
	PT	4	√	√	Observed partner
J	PT	3	N/A	N/A	No partner due to lack of volunteers participated with tutorials.

Table 10: Individual Participation in PLP activities - Group 2.

The compliance with clinical interview two was poor in group one, whereas group two completed all aspects of the collaborative activities.

In group two that the nursing students wanted their mentors to be involved in identifying patients for the students to interview. Two of the nursing students were placed on the same ward and after discussion with the ward Sister; she suggested that rather than asking the student's mentors to arrange patients, the nurse in charge on the day would choose suitable patients for involvement with the students. This was suggested as nurse mentors do not always work the same shifts as their students and so organising patients would be challenging. For two of the interviews this was the system used and it worked extremely well.

Due to the delay in starting Peer Learning Programme Two it was not possible to interview the students in the final week, as this was the same week as the summative assessment. However, all agreed they were willing to participate in an interview.

Week One to Four

The tutorials were repeated with this smaller group of students. In week one six of the students were present as one physiotherapy student was unable to attend. This student was keen to participate; however, there was not a "partner" due to the response rate among nursing students.

He joined the group from week two onwards. The students took on the responsibility of organising the clinical tasks well. All student pairs completed all four clinical tasks.

Tutorial 1

"The tutorial began with introduction to the research project, as well as introductions of individual students. Other areas covered in the tutorial included: Communication tools of physiotherapy + nursing students Active listening exercises including a peer review."

B reflective diary tutorial one

Tutorial 2

As in the previous peer learning programme, each tutorial started with a discussion and review of the collaborative clinical experiences. All pairs had participated and a range of patient interviews undertaken.

"[We] undertook an interview with a patient. We discussed issues including:

- *his understanding of his condition.*
- *his feelings about his condition.*
- *the worst part about his hospital stays.*
- *what he has found positive about his time in hospital"*

S reflective diary clinical experience one

We followed the discussion with an exercise on questioning strategies and giving and receiving feedback.

"Looking at questioning techniques open + closed questions, and the responses you would expect"

J reflective diary tutorial two

As this group was smaller in size and consisted of third year students there was more time available within the tutorial to fully explore the topics. The exercise on peer review developed into the students developing their own communication skills peer review form. It was circulated to all participants via email and identified as an option to use in practice in addition to the verbal feedback they were asked to provide. Most of the students did not check their email but one student completed this form²³ during a period of observation and demonstrates structuring feedback within the clinical setting may well be a useful strategy for providing constructive feedback among appropriately prepared students.

The second patient interview was discussed with students being asked to undertake a specific aspect of assessment; to share assessment documentation and identify any overlaps in information gathered from the patient by both professional groups.

²³ This can be found on page 139

Tutorial 3

"Reflected on last week's practical experience."

B reflective diary tutorial three

*"I think the strongest learning outcome (of the second collaborative interview) was the "lap over" of ** and mine's questions. As professionals we were interested in the same aspects of the patient's treatment and care but for slightly different reasons i.e. wound care"*

S reflective diary clinical experience two

We went on to discuss stereotypes and perceptions of the two professional groups completed the tutorial, both groups appeared happy to express their opinions. The tutorials followed an informal structure with a relaxed atmosphere.

Tutorial 4

The collaborative clinical experiences for week three and four remained the same as for group one. All students had the option to either observe their peer or undertake a multidisciplinary activity together e.g. observe a multidisciplinary team meeting. All participants chose to observe their peer. Each student was asked to identify aspects of practice central to their professional role and arrange to observe each other in practice.

A range of clinical experience was observed which included the nursing students demonstrating wound care, emergency admissions procedures and ECG along with the physiotherapy students demonstrating among other things a respiratory assessment, a balance assessment and post operative treatment.

Following the reflective discussion the tutorial moved on to an exercise where students explored the role of both professions during a patient pathway.

"Look at a patient pathway what is involved for both physio + Nurses from beginning to end, for assessment and referrals"

J reflective diary tutorial four

This final tutorial still generated considerable discussion regarding overlapping roles which were new to the students.

4.8 Chapter Summary

This chapter has provided a chronological overview of the case study. Implementing the research led to some modification and adaptation of the research design and peer learning programme. This demonstrates the need for small scale practice based research to evaluate the implementation of new models. On reflection, while I discussed the research design with the Diploma in Adult Nursing pathway lead, I made some assumptions regarding the liaison that occurs between the nurse lecturers and mentors. Misunderstandings due to a difference in professional background were overcome by the second group. The strategy identified by the Sister for identifying appropriate patients led to a more equitable relationship between the nursing and physiotherapy teams. The individual nature of the culture within each ward, channels of communication when staff work shift patterns and the impact of a very busy clinical environment are significant.

5.1 Introduction

This chapter will present the data analysis associated with the case study. As previously discussed in chapter three a multiple case study analysis framework (Stake 2006) was used to structure the data analysis. An inductive thematic analysis (Coffey and Atkinson 1996) of the reflective diaries and interviews preceded individual case analysis. In this chapter individual cases will be presented first, followed by a cross case analysis of group one and two.

Data from each case were scrutinised to identify the learning behaviours which had developed between each student pair ensuring the application of the conceptual framework provided by Social Interdependence Theory (Johnson and Johnson 2003). Individual case summaries²⁴, adapted from “Worksheet one. Graphic Design of a Case Study” (p5 Stake 2006), were produced which enabled relevant contextual issues to be considered alongside individual data.

The cross case analysis has been divided into the three categories identified within the thematic analysis²⁵:

1. Interprofessional Learning
2. Individual Learning
3. Peer Learning

The original research questions have been incorporated to ensure that the situated findings for each case are considered alongside the research questions (p47 Stake 2006) and to avoid the dislocation of data from context. Finally a cross group analysis is presented which enables any differences associated with the stage of student to be considered.

While the data capture associated with this research allows considerable depth to be achieved, the consent attained from each individual has significantly limited the way in which data associated with individual cases can be presented. A student pair is central to each case and there is a considerable risk that if individual data are presented within a case, one participant might recognise their own opinion and then be able to identify their partner, leading to the loss of a participant's anonymity. It is not possible to detail the mentor support or biographical detail available alongside each case as this is something that could also lead to the identification of individuals.

To ensure individual anonymity, the presentation of data associated with each case will be limited to a summary of the learning behaviours, key points and UWE IPQ data. All participants will be

²⁴ An example of a single case summary sheet can be found in Appendix C.

²⁵ A summary of the thematic analysis can be found on page 103.

referred to as “he” thereby removing gender identification, no speciality area will be identified and all cases have been relabelled.

When considering how to focus the data analysis, consideration was initially given to three elements; the target population i.e. students undertaking different placements within the same hospital, the amount of participation with the research tasks and the comprehensiveness of the data captured from each individual and each case. I had initially planned to present a small number of representative cases. However, the participation rates associated with the tutorials and clinical tasks were influenced by factors integral to learning about the programme. All participants had agreed to participate with an understanding their experiences would be valued and included within the research findings. Also by selecting representative cases in the manner proposed above, it could be considered an example of how triangulation can be used to produce a positivist realist bias, a position I had previously rejected.

I have included all cases. Where there is a lack of data this has been identified. I feel this ensures I have fulfilled my ethical responsibilities to the participants and propose triangulation can be used to strengthen internal consistency of design while retaining the ability to explore and represent multiple perspectives.

Learning Behaviour

The peer learning programme was structured to facilitate cooperative learning. The benefits associated with cooperative learning are proposed to occur when promotive interaction develops²⁶. However, it is possible to structure a situation to facilitate cooperative learning, but where for various reasons promotive interaction does not occur.

Exploring the type of interaction pattern produced by each pair and whether this produced behaviour promotive of interprofessional cooperation is possible using the students’ accounts of their experiences. By considering both reflective diary and interview data, individual accounts of the clinical activities undertaken in pairs have been compared to consider the reliability of the data and credibility of the accounts. There was no indication peers compared or contributed to each other’s reflective diaries. All patient centred clinical experiences were corroborated and recorded events were consistently reported between pairs. In the majority of cases data evidenced similar views being expressed between partners. However, the data associated with one case exposed a divergence in views and in one other case a lack of participant data meant it was not possible to corroborate the accuracy or reliability of the account from the student’s partner. When the individual cases are presented these issues are identified.

²⁶ An introduction to this can be found on page 29 with further discussion starting on page 68.

University of the West of England Interprofessional Questionnaire²⁷.

The UWE IPQ is self administered and comprised four scales:

- Communication and Team working skills
- Attitudes towards Interprofessional Learning
- Attitudes towards Interprofessional Interaction
- Attitudes towards Professional Roles and Relationships.

The students did not keep a copy of the questionnaire and have no knowledge of the scoring system. They will not be able to identify their scores.

The UWE scoring range is presented below, the lower the score the more positive the rating. Greater insight into these results will be gained in the cross case analysis.

Scale	Positive	Neutral	Negative
Communication and Teamwork	9 - 20	21 - 25	26 - 36
Interprofessional Learning	9 - 22	23 - 31	32 - 45
Interprofessional Interaction	9 - 22	23 - 31	32 - 45
Interprofessional Relationships	8 - 20	21 - 27	28 - 40

Table 11: Scoring range of UWE Interprofessional Questionnaire

I expected a range of scores regarding communication skills and teamworking as each student has different life experience and is at a different stage of the programme. All students volunteered to participate in the programme so I expected a positive baseline regarding Interprofessional Learning.

5.2 Individual Case Presentation

5.2.1 Group One

The individual case presentations will present the learning behaviours identified within the data, peer learning activities, key points and UWE IPQ scores. This enables an overview of each case while exposing the individuality of responses to a common programme.

Case A

Learning Behaviour

Case A displayed cooperative learning behaviours within the clinical environment and both students reported feeling comfortable to fully participate within the group tutorial setting. Equal

²⁷ See page 62 for more details.

effort appeared to be expended by both participants; this was manifest weekly by each student taking turns in meeting within the other student's environment. The students supported each other within the practice environment. They appeared to support each other during the patient interviews; both reported working together to ensure the patient was at ease while taking turns to ask questions during the interview.

Patient Centred Activities

Patient centred activities were led by the student whose working environment the pair was in, following a joint discussion of how they would organise their task. Both students identified challenges in meeting due to different working hours and clinical workload, however, both participants successfully arranged to meet and co-ordinate the clinical tasks. It was clear this had required both organisation and effort.

Peer Observation

The students chose to observe each other in practice; both reported feeling comfortable being observed and with the verbal feedback exchanged. One period of observation developed into a cooperative exchange where the students considered a patient's management from both professional perspectives. Skill sharing across professions was also reported.

Key Points

A significant aspect of this case was the development of a greater level of insight into the roles of both professions that challenged the existing understanding of both students. The peer learning programme also provided additional supportive non judgemental communication skills practice relevant to the practice environment. Working together within the practice environment was valued and both students were seen by the other as representing their profession, an important facilitatory condition associated with Intergroup Contact Theory (Dickinson 2009).

UWE IPQ Results.

Scale	Pre PLP		Post PLP	
Communication and Team work	11	positive	9	positive
	21	neutral	17	positive
Interprofessional Learning	9	positive	9	positive
	18	positive	14	positive
Interprofessional Interaction	39	negative	43	negative
	28	neutral	36	negative
Interprofessional Relationship	20	positive	12	positive
	20	positive	18	positive

Table 12: UWE IPQ Self Rating Scores: Case A

Both students indicated a positive attitude towards interprofessional learning and interprofessional relationships before and after the peer learning programme. One student moved from a neutral to a positive self-assessment of their communication and teamworking skills indicating an improvement in this scale.

Interestingly the Interprofessional Interaction scale identified neutral and negative attitudes before the peer learning programme, this position appeared strengthened after the programme with one student moving from a neutral to a negative position. It may be students became more aware of interprofessional issues through participating in the programme.

Case B

Learning Behaviour

Case B displayed little evidence of cooperative learning behaviours in the clinical environment but fully participated in all tutorials. This case was particularly interesting as it did not follow the pattern of the majority of the cases and while both participants expressed support for the programme this was for different reasons.

Both participants identified considerable challenges associated with working patterns and workload pressure limiting the ability to work together in the clinical environment. It is not possible to consider individual contributions regarding the amount of effort put into organising this aspect of the programme although there was a perception of inequity expressed by one participant.

When discussing the tutorial setting both participants expressed positive outcomes regarding this element of the programme, however, they also felt they had not got to know the students from the other profession very well. Although they contributed within the tutorials both felt they could have

interacted more. One participant related this to the lack of social relationships rather than any concern over the interprofessional nature of the group.

Patient Centred Activities

Both participants identified finding the first clinical interview challenging, partly due to patient selection and partly due to inexperience.

Peer Observation: This did not occur.

Key Points

A key aspect of this case was the absence of social relationships forming during the programme and the individual learning behaviours displayed despite participating in activities designed to produce cooperative learning. However, despite a lack of promotive interaction occurring in the clinical environment, one participant reported developing insight into the other profession that challenged his existing understanding. The other participant valued interpersonal communication skills practice which was relevant and useful in their placement.

UWE IPQ Results.

Scale	Pre PLP		Post PLP	
Communication and Team work	22	neutral	22/23	neutral
	20	positive	22	neutral
Interprofessional Learning	13	positive	11	positive
	10	positive	10	positive
Interprofessional Interaction	35	negative	34	negative
	27	neutral	29	neutral
Interprofessional Relationship	15	positive	24	neutral
	17	positive	16	positive

Table 13: UWE IPQ Self Rating Scores: Case B

Both students indicated a positive attitude towards interprofessional learning before and after the peer learning programme. The Interprofessional Interaction scores remain within the same range before and after the programme. However, this is the only case where one student's Communication and Teamwork scores have moved from a positive to neutral score and one student's Interprofessional Relationship Score has become less positive following the programme and moved from a positive to a neutral score.

It is possible to gain significant insight into these changes due to the rich data collected. This will be considered within the cross case analysis - to do so now would identify the individuals.

Case C

Learning Behaviour

Case C displayed cooperative learning behaviours demonstrated by students collaborating with each other within the clinical environment. Students took turns to visit each other's ward environment and lead clinical activities.

Patient Centred Activities

Both students identified challenges in meeting due to different working hours and clinical workload, however, both participants successfully arranged to meet and co-ordinate the clinical tasks. It was clear this had required both organisation and effort. The clinical tasks were valued and one period of peer observation became cooperative when profession specific skills were contributed from both students.

Peer Observation

The students chose to participate in a period of peer observation, both reported feeling comfortable being observed. They gave and received feedback on communication skills which both reported being helpful and positive.

Key Points

A key aspect of this case was the development of a greater depth of understanding of the roles of both professions that at times exposed a lack of knowledge. Both participants would have valued more time to socialise with each other as there was time only for the clinical tasks. The focus on developing active listening skills to support practice was identified by both as being valuable.

UWE IPQ Results

Scale	Pre PLP		Post PLP	
Communication and Team work	22	neutral	14	positive
Interprofessional Learning	26	neutral	20	positive
Interprofessional Interaction	33	negative	34	negative
Interprofessional Relationship	21	neutral	16	positive

Table 14: UWE IPQ Self Rating Scores: Case C

The pre programme IPQ identified a neutral self assessment for Communication and Teamwork, Interprofessional Learning and Interprofessional Relationships. These all scored within the positive range post programme indicating an overall improvement in these scales. The Interprofessional Interaction score remained within the original negative range.

Case D

Learning Behaviour

Case D displayed cooperative learning behaviours within the clinical environment. Both students stated they were comfortable to participate within the tutorials and felt they worked well. Students took turns in meeting within each placement environment; this progressively became autonomously arranged as the pair established a working relationship. Peer support appeared to be demonstrated during patient interviews as data identified students taking turns to ask questions to enable both students to fully participate.

Patient Centred Activities

The data associated with this case did not explicitly identify challenges in collaborating in practice due to different working patterns or time. While this was indirectly referred to in the data, this case reported an improvement in time management skills in response to the demands associated with coordinating activities. There was evidence the patient centred activities were planned with discussion on how to structure the encounters and a reflective discussion on how things had gone. Both students felt their patients were happy with the interviews and reported working well together.

Peer Observation

The students chose to observe their peer in practice; they reported this was non threatening and useful. Both reported being happy to give and receive feedback during their clinical tasks.

Key Points

Key aspects within this case were an increase in understanding regarding the roles of both professions. In this case the students reported linking this to an increase in awareness of multidisciplinary team working, improving interprofessional communication and improving patient centred care. Interpersonal communication skills practice was valued and both students reported this being directly applicable to their practice experience, particularly active listening skills.

UWE IPQ Results

Scale	Pre PLP		Post PLP	
Communication and Team work	19	positive	15	positive
Interprofessional Learning	12	positive	14	positive
Interprofessional Interaction	28	neutral	29	neutral
Interprofessional Relationship	20	positive	18	positive

Table 15: UWE IPQ Self Rating Scores: Case D

All scores remained within the original ranges.

Case E

This case analysis was based on data from one student and so internal verification of cooperative activities from the other student was not possible.

Learning Behaviour.

Cooperative learning behaviour was evident in the data. The link between tutorials and clinical activities was valued.

Clinical Collaboration

The students coordinated meeting and collaborated with the full range of activities in the practice setting.

Peer observation

Students chose to observe each other and were involved in giving and receiving feedback.

Peer observation was reported as not being stressful; being observed was described as being enjoyable and useful.

Key Points

The key theme evident in the data from this case related to the consolidation of profession specific skills and knowledge base through peer observation and discussion. Developing a greater insight into the other profession and communication skills consolidation were also evident.

UWE IPQ Results

It is not possible to present this data alone as the individual's data would be identified by their partner.

Case F

Learning Behaviour

Cooperative learning behaviours were displayed within this uni-professional case. However, they were facilitated as part of the routine organisation of the placement. They also occurred during the tutorial setting.

Patient Centred Activities

This pair did not undertake any cross professional clinical practice with students. They undertook a patient interview together and then spent time with a qualified member of staff.

Peer Observation

Peer observation was a routine part of their placement, not organised as part of the research programme.

Key Points

Key items associated with this case related to developing insight into the roles of the other profession and practice of relevant communication skills which complemented their placement. Evidence of peer learning facilitating clinical reasoning, student support and personal development was noted although mainly related to the activities within the uni-professional setting.

UWE IPQ Results

Scale	Pre PLP		Post PLP	
Communication and Team work	16	positive	16	positive
	24	neutral	17	positive
Interprofessional Learning	18	positive	16	positive
	18	positive	15	positive
Interprofessional Interaction	33	negative	33	negative
	29	neutral	28	neutral
Interprofessional Relationship	16	positive	14	positive
	21	neutral	16	positive

Table 16: UWE IPQ Self Rating Scores: Case E and F

5.2.2 Group Two

In all cases participant interviews and reflective diaries corroborated accounts of activities undertaken and of the overall success of each activity. Within each case there appeared no divergence of opinions regarding the activities, but there were individual differences associated with which aspects were most valued.

Case G

Learning Behaviour

Case G displayed cooperative learning behaviours in both tutorial and practice settings. Students successfully coordinated all activities and reported feeling comfortable working together.

Patient Centred Activities

All patient centred activities were completed with data identifying the activities were discussed before and after. Both parties contributed to the interviews; sharing generic questions and asking questions specific to their own profession.

Peer Observation

The participants chose to observe each other in practice which included a peer review of communication skills. Both reported feeling comfortable being observed, one participant felt this improved their confidence by explaining what they were doing to their peer and was easier than being observed by a qualified member of staff. Skill sharing across professions was apparent.

Key Points

Both parties felt they had good and accurate understanding of the roles associated with both professions prior to the peer learning programme. However, one reported how it was beneficial to understand what that role entailed so more informed teamwork could occur.

Both participants valued the focus of communication skills and combination of tutorial and patient centred activities. One participant felt this had further developed their interpersonal communication skills, while the other participant identified an increased self awareness and greater reflection on the use of their communication skills in practice.

One participant valued the patient interview as they felt time pressures associated with clinical workload meant there was little time available to listen to patients discuss their life history and the impact on that of their condition.

UWE IPQ Results.

Scale	Pre PLP		Post PLP	
Communication and Team work	19	positive	14	positive
Interprofessional Learning	9	positive	9	positive
	21	positive	20	positive
Interprofessional Interaction	26	neutral	25	neutral
	22	positive	24/25	neutral
Interprofessional Relationship	16	positive	12	positive
	17	positive	16	positive

Table 17: UWE IPQ Self Rating Scores: Case G

One participant missed out page one of the questionnaire. The participant who did complete the communication and teamwork self-assessment recorded more confidence in expressing opinions and leading groups after the programme.

The interprofessional learning and interprofessional relationship scores started and remained stable in the positive range. Where the scores improved this was a self reported increase in confidence in working with peers from their own profession as well as other professionals and may have been influenced by routine placement experiences.

One participant moved from a positive to a neutral score on the Interprofessional interaction scale. This is interesting due to the qualitative data that suggest the peer learning experience was valued

and cooperative learning behaviours were established. However, when reviewing the specific changes within the questionnaire, no clear picture emerges. There may be an awareness of the complexity of interprofessional relationships emerging but this appeared balanced with the view that it is easy to communicate openly with other professional groups and that healthcare professionals have equal respect for each other.

Case H

Learning Behaviour

Case H displayed cooperative learning behaviours within the clinical and tutorial environment. All clinical tasks were completed. The students were comfortable working together, both stated they felt they had similar approaches to their work and used communication skills in similar ways. They reported feeling supported by each other when undertaking clinical tasks and happy to contribute to the group.

Patient Centred Activities

One student reported their partner had challenges associated with shift patterns and coordinating the clinical activities. This student chose to flex working hours to enable the pair to meet for clinical activities.

Peer Observation

Participants chose to observe each other in practice and data suggested the patient centred activity was influenced by partners discussing what they would like to achieve rather than opportunistic learning. This was valued by both parties; one expressed the opinion that it was easier to be observed by a peer from another profession than students or qualified staff from their own profession.

Key Points

Both parties felt they had a good understanding of the roles of both professions before starting the peer learning programme; however, gaining a greater depth of understanding was identified as a key aspect. This related specifically to areas of overlap and insight into how the other party thinks. Both students reported the patient interviews had reminded them of the significance of active listening and treating patients as individuals, they reported time pressures due to workload within the clinical environment made maintaining a patient centred approach challenging.

UWE IPQ Results.

Scale	Pre PLP		Post PLP	
Communication and Team work	17	positive	17	positive
	17	positive	15	positive
Interprofessional Learning	11	positive	10	positive
	18	positive	12	positive
Interprofessional Interaction	32	negative	28	neutral
	29	neutral	28	neutral
Interprofessional Relationship	15	positive	15	positive
	18	positive	13	positive

Table 18: UWE IPQ Self Rating Scores: Case H

The questionnaire results suggest an overall stable picture. One participant moved from a negative to neutral scoring in the Interprofessional interaction scale.

Case I

Learning Behaviour

Case I displayed cooperative learning behaviours within the clinical environment. Both students reported taking turns in working in each other's clinical environment, discussing the activity before and after and sharing knowledge and skills. They reported feeling comfortable working together clinically and also felt the group was open, fairly relaxed and enabled them to get to know each other.

Patient Centred Activities

The students did not report challenges associated with meeting to undertake the clinical tasks, the organisation of this appeared well coordinated. All of the clinical activities appeared fully cooperative with patient management being discussed from both perspectives for each encounter.

Peer Observation

Both students participated in peer observation and reported feeling comfortable with this process. They stated they had both provided feedback on communication skills but felt that due to their level of confidence and skill they had little to say.

Key Points

The students both felt cooperating in patient centred tasks enabled greater insight into each other's profession to be gained. They both reported observing activities they had no previous knowledge of and also identified areas of overlap between roles which they had not previously been aware of. Neither student reported an improvement in interpersonal communication skills but had felt this was an appropriate and useful way of facilitating interprofessional working.

UWE IPQ Results.

Scale	Pre PLP	Post PLP
Communication and Team work	16 positive	
		17 positive
Interprofessional Learning	17 positive	
		13 positive
Interprofessional Interaction	26 neutral	
		34 negative
Interprofessional Relationship	13 positive	
		17 positive

Table 19: UWE IPQ Self Rating Scores: Case I

The questionnaire data of this case are incomplete. It has been included to give an overall indication of the participants' attitudes towards interprofessional collaboration and self assessment of their communication skills.

The communication and teamwork scores appear to support the participants' qualitative views of their skills. Interprofessional learning and relationship scales indicate a positive position. However, the post PLP interprofessional interaction scale of one participant reflects a negative position which does not appear similar to the rest of the group. It is not possible to say how this has been influenced by the programme.

5.3 Thematic Analysis

Following the inductive thematic analysis of interview and reflective diary data, three categories were established: Interprofessional learning, Peer Learning and Individual Learning.

<p>1. Interprofessional Learning</p> <ul style="list-style-type: none">1.1 Increased understanding of professional roles<ul style="list-style-type: none">1.1.1 other1.1.2 own1.1.3 overlap1.2 Challenge individual perceptions<ul style="list-style-type: none">1.2.1 Stereotypes1.3 Factors influencing students' motivation to become involved in IPL<ul style="list-style-type: none">1.3.1. Interest1.3.2 Low prioritisation of IPL1.3.3 Previous experience1.4 Team Working<ul style="list-style-type: none">1.4.1 Skills practice1.4.2 Quality
<p>2. Individual Learning</p> <ul style="list-style-type: none">2.1 Communication Skills<ul style="list-style-type: none">2.1.1 Interpersonal communication skills2.1.2 Interprofessional communication skills2.2 Practice learning<ul style="list-style-type: none">2.2.1 Consolidate own practice2.2.2 Share skills2.2.3 Facilitate higher cognitive skills
<p>3. Peer Learning</p> <ul style="list-style-type: none">3.1 Peer Support3.2 Peer Observation3.3 Peer Feedback3.4 Peer Learning Programme<ul style="list-style-type: none">3.4.1 Facilitatory Factors<ul style="list-style-type: none">3.4.1a. Equal effort / Cathexis / Individual accountability3.4.1b. Mentor support / learning environment3.4.1c. Socialisation3.4.2 Content<ul style="list-style-type: none">3.4.2a Level of challenge associated with clinical interviews3.4.3 Organisation<ul style="list-style-type: none">3.4.3a Time3.4.3b Shift Patterns

Table 20: Overview of Thematic Analysis

The following data analysis will be organised into the three categories identified within the thematic analysis. Within each category the related research questions are highlighted to ensure the original aims of the research are fulfilled. Where the inductive analysis identified additional relevant themes, these have been identified. For ease, original research questions will be found in boxes.

5.3.1 Interprofessional Learning

Research question:

DID THE PEER LEARNING PROGRAMME PROMOTE THE DEVELOPMENT OF AN IN DEPTH UNDERSTANDING OF OTHER PROFESSIONAL ROLES AND RESPONSIBILITIES?

Group One

5.3.1.1 Understanding professional roles

Ten out of the eleven participants felt they had developed a greater understanding of the other profession with four describing this as an “eye opener” or “enlightening”.

"It was great to see the different approach, the different communication skills, um... you know a real eye opener."

RB interview lines 110-113

*"I think I know things about * now that I certainly wouldn't have known before."*

K interview lines 302-303

One statement within the UWE IPQ specifically relates to understanding the roles of colleagues from other professions. By considering the student responses to this statement alongside some of their qualitative statements greater insight to this topic can be gained. The table below identifies some qualitative statements alongside participants pre and post study self assessments. All identifying details have been removed.

UWE IPQ Statement 30:

I have a good understanding of the roles of different health and social care professionals.

SA	A	N	D	SD	Quotes
	Pre & Post				<i>"It has broadened my knowledge of what both professions do" "I think from my questionnaire my opinions & views would have changed quite a bit"</i>
	Pre & Post				<i>"I realised we do have quite similar roles ..., so we do work quite closely together"</i>
	Pre & Post				<i>"I did learn a bit more about what they do. I suppose I had an idea because I had been out with the * on different placements"</i>
	Pre & Post				<i>"It was fresh really because all I have seen so far is from the * point of view, but now you have got * coming in , giving their bit. It was good to know the things they do...and it was enlightening I think "</i>
		Post	Pre		<i>"I think I have certainly learnt more about * and that the two jobs actually do meet a lot more and cross over a heck of a lot more than I thought.. So it has been a real eye opener"</i>
	Post	Pre			<i>"It was good to work with [the other profession] ..because it gave you a different insight into what they were actually doing"</i>
Pre & post					<i>"Just at the beginning I can remember you saying you knew what * did, has that changed? "Yes, I was under the illusion that... but it's not like that at all."</i>
Pre			Post Apart from *		<i>" I knew the kind of basics but not as much as they sort of taught us"</i>

Table 21: Summary of UWE IPQ statement 30 with associated qualitative comments– Group One.

The questionnaire results above demonstrate little recorded change among a group of students who verbally report having developed greater insight into the role of their colleagues.

There are two particularly interesting self assessments. One student's perception of their understanding of other profession's roles appear to have been challenged by the peer learning programme. The initial self assessment identified a good understanding of the roles of other healthcare professionals (strongly agree). The post assessment questionnaire identifies a general lack of understanding regarding the roles of other team members (disagree). The student included an exception to this which was the profession of the peer they had collaborated with during the programme. This change in self assessment was reflected in a move from an overall positive to neutral score for the individual's Interprofessional Relationship Scale and is accompanied by the student explaining the experience had exposed a lack of knowledge which initially they were unaware of.

This combination of qualitative with quantitative data enables insight to be gained into a response which appears negative but exposes positive elements i.e. the development of a more accurate self assessment of knowledge base.

The other self assessment which I found particularly interesting was one which identified a rating of “strongly agree” both pre and post programme. This suggests no change in understanding has occurred. However, the associated qualitative data within that case identified considerable insight was gained into the other profession which challenged preconceived ideas. The lack of change appears due to a very similar situation to the previous case - the student clearly felt they had good understanding of the other profession before the programme.

This pattern where one data source identifies minimal change in the understanding of other’s roles but a more qualitative form identifies considerable self reporting of learning has been documented elsewhere (Carpenter and Hewstone 1996).

The majority of cases identified an increased understanding regarding the role of the other profession. One participant, however, felt she had not learnt a lot about the role of her colleagues:

*"Not massively actually. I suppose a bit when we looked at the ...physios and the nurses [roles], but a lot of that I knew anyway because I was working in * and see what kind of roles, they do. A lot of it I've seen but it was interesting."*

M interview lines 127-129

This student’s placement involved closely liaising with qualified colleagues from the other profession on a daily basis giving considerable insight into their role and identifies how developing an in depth understanding of professional roles can develop within certain circumstances.

This, however, was not the experience of the majority of students. It was interesting that some of the situated learning (Lave and Wenger 1991) which occurs on placement can appear to lead to misapprehensions regarding professional roles.

*"Without experience my views of what * do was all that I have seen on the ward, just by observation rather than being told we do this and this."*

J interview lines 313 – 314

"I think if you don't go with them you just see them [on the ward], you don't see the other [things they do]."

P interview lines 186 - 187

This may be one of the reasons students believe they understand the roles of their colleagues when what they have been doing is developing an understanding based primarily on observable repetitive tasks.

This opportunistic peripheral observation of another professional group occurs constantly within the practice environment but does not include “legitimate” access to that profession which may be temporarily facilitated by more formal arrangements such as those within this peer learning programme. It may be that when students cooperate together in practice they temporarily facilitate access by their peer to their own professional culture, thereby enabling a more insightful interpretation of actions and increasing the understanding of professional roles.

Group Two

“I think I knew what their roles were really and if I wasn’t too sure I would ask.”

S interview line154

This reflected the initial comments of the third year students involved; they all felt they understood the role of both professions. One student described feeling “sceptical” as to whether the PLP would be worthwhile because he felt he knew the role of the other profession and that by the third year students were often more effective communicators. As this group of students were on their final placement they would be expected to have developed appropriate communication skills and a good understanding of each other’s role.

However, following the PLP, data from all cases identified they had developed a greater understanding of what was involved in each other’s roles. They also reported greater insight into the overlap of roles and identified aspects of professional roles they had not previously been aware of.

UWE IPQ Statement 30:

I have a good understanding of the roles of different health and social care professionals.

SA	A	N	D	SD	Quotes
Pre			Post		<i>“My perceptions [] changed. I’ve a lot more respect for them now as it is very skilled.”</i>
	Pre Post				<i>“[now] having perhaps a better understanding particularly for [their] role and the demands on them are very high...”</i>
	Pre Post				<i>“I found this interesting as it gave additional insight into [the other] profession.”</i>
	Pre Post				<i>“I’m thinking more about other peoples’ roles so my perceptions changed.”</i>

Table 22: Summary of UWE IPQ statement 30 with associated qualitative comments– Group Two

The UWE IPQ results to statement thirty corroborate the initial position of the students and no change in self assessment occurred in three of the participants. The self assessment of one student changed significantly and moved from “strongly agree” to “disagree”. The student identified the programme had challenged their understanding of professional roles and exposed a lack of

depth of knowledge. This appears very similar to the experience of one of the students in group one and suggests individual understanding of professional roles may be related more to each individual's experiences rather than the level of the course.

Research Question:

DOES THIS LEARNING EXPERIENCE INCREASE UNDERSTANDING BY THE STUDENT OF THEIR OWN PROFESSIONS' ROLES AND HOW THIS RELATES TO OTHER PROFESSIONAL GROUPS?

It is important to recognise the structure given to a thematic analysis is to facilitate understanding and that all themes are symbiotically related. The distinctions made between themes are functional. Here it could be argued that by increasing an understanding of another profession, this will influence the understanding of your own profession and the relationship between the two.

5.3.1.1.3 Understand the similarities and overlap between professions.

Group One

Only one student stated the PLP had increased their understanding of their own profession, however, gaining insight into the overlap of roles between professions was mentioned by six.

"It got me to think how I have learnt what to do since I have been on the placement and a lot of what I have learnt to do as a physio on the ward, the nurses didn't know or hadn't been told or shown what we do, so it was explaining to the nurses as well how our role is different to theirs. It was good to learn more about what the nurses do as well."

First year physiotherapy student

The discussion of similarities and differences is another condition proposed to reduce prejudice by Intergroup Contact Theory (Pettigrew and Tropp 2006), it may help to reduce professional boundaries (Hammick 1998) and is associated with understanding how at times roles may overlap within interprofessional teams (Baxter and Brumfitt 2008). The students identified how this continued throughout their final tutorial when they were continuing to learn more about overlap and at times repetition of tasks.

When students are able to identify how their profession interacts with another it is likely they are able to consolidate an understanding of their own profession. The students in the uni-professional pair felt they had gained insight into the nursing profession which they would not have routinely developed due to the primarily uni-professional nature of their placement. Both valued collaborating with the nurses in the tutorials. It is not possible to identify to what extent their insight had improved and whether or not they gained as much as the cases which collaborated in practice. However, it is likely the improvement in understanding reported was gained from the peer learning programme as

there is little routine contact between the nursing profession and physiotherapy students placed in an outpatient setting.

Group Two

"...that was quite interesting we went over our perceptions of our roles ... And I think if I remember correctly we were both quite spot on really, I think we knew our roles ...so it was quite interesting to see some of the areas that they took an interest in.."

Third year student

While this student identified their understanding of professional roles were accurate, there were aspects they did not realise the other profession were involved in.

"useful knowing we do the same tasks. [It] seemed ridiculous that we are doing the same, I didn't realise others were doing the same, [it] just shows communication is essential across disciplines."

Third year student

In all cases in group two the clinical activities precipitated detailed discussion on what was undertaken as part of their roles which often led to identifying professional skills and discussing patient management from both perspectives.

"...he knew nothing about the nursing needs or what was included in that and I knew nothing about [the assessment of balance] either so that was quite useful."

Third year student

On one occasion this was facilitated by the actual process of interviewing. One pair chose to walk with a patient to a quiet area for an interview – after the interview the walk itself had promoted a discussion on the effects of bed rest.

5.3.1.2 Challenging individual perceptions

Group One

As well as developing insight into the other profession, a number of students from both professions felt this had involved challenging their existing understanding of the role of the other profession.

*"So these preconceived ideas I had of a *, I now know they were untrue and I've seen a different side to it."*

RB interview line 362-363

*"I felt that I didn't realise that I didn't know as much about *. I think I have learnt more about * doing this."*

C interview line 90-91

"I suppose until you actually know what someone does you are going to have your own perceptions of what they do."
P interview line 179

*"..it has been a really interesting, having a chats with him and actually seeing what he does because actually what * do is totally different to what most people's perception is."*
SP interview 208-214

If related to Social Interdependence Theory and the key behaviours of substitutability, inducibility and cathexis this could be seen as an example of "Inducibility" where participants were influencing and being open to influences of their peers.

The ability to challenge individual preconceptions and beliefs has been identified as a benefit of other interprofessional practice based peer learning opportunities (p59 Pearson et al not dated) which have enabled students to relate group discussions to their ongoing clinical practice experiences.

This may have exposed a factor influencing student attitudes towards interprofessional learning in practice settings. If students feel they already understand the roles of other professionals they are not going to perceive a learning need. This is significant. Each programme requires students to develop a learning contract with their mentor to focus individual development. If students do not perceive a learning need, they are unlikely to identify it as part of their learning contract or prioritise it during a busy placement.

Equally, if a student does identify this as a need and prioritises this activity, the fulfilment of this will be strongly influenced by the attitude of the student's mentor. It is likely that understanding the different roles of colleagues may be seen as "additional" rather than core skills and may be considered appropriate once the student had completed all of their profession specific skills.

The use of generic communication skills as a focus for IPL may enable this activity to be prioritised by mentors and clinical educators within a busy clinical setting as it directly relates to a common aspect of learning and is a core dimension of the Knowledge and Skills Framework required by band five staff.

Group Two

While data identified one student reporting their understanding of other professional roles was challenged considerably, the majority of the qualitative data suggested there was a widening and increase in depth of understanding between professional groups rather than specific challenges to individual perceptions. One student explained:

"When you are on the ward you do not have the time to go along and see the assessments the other professionals do and actually interact with them. You'll talk about the patient and what their needs are without finding out what the assessments are that they are doing. It is brought together at the end but I mean its shown me through the past four weeks that if you find out more about their roles and the assessments they're doing and why they're doing it and how they're doing it then it makes it easier for you 'cause you're understanding more about their role and the patient."

Third Year student

5.3.1.2.1 Stereotypes

A tutorial discussing stereotypes of both professional groups was included in the peer learning programme and enabled students to discuss how they were perceived by and how they perceived the other group.

Group One

Four of the cases identified how it was useful being open and discussing this topic as they were all aware of stereotypes but possibly not how they were actually perceived.

"It was good to know how people perceive you."

R interview line126

"I think it maybe brings it out into the open and actually talking about it together, how we feel people see us or see other people and it was a good thing to actually talk, discuss that together and maybe get it off our shoulders as well, what we might think people feel about us."

J interview lines 295-301

Evidence of students being exposed to negative stereotypes within the clinical environment was apparent within the data.

"when you work on a ward these people are put into categories you know they're stigmatised and I didn't like that at all..."

RB interview line 352

On occasion this was exposed within the clinical tasks.

"he gave me feedback that week on how I approached and rather than, as a lot of people might think ...bullying patients into doing things he said that my encouragement was good...encouraging, trying to persuade her..."

J interview lines 248-251

While the feedback was appreciated, the term “bullying” appears to have been introduced as part of the feedback process. Challenging erroneous perceptions was seen as important and peer observation was seen to be an opportunity to correct this.

*"I think because a lot of people have perceptions of * and what [we] do... He got to see [the real role]."*
J interview lines 271-272

There is evidence the students identify each other as representatives from their profession; a facilitatory condition associated with Intergroup Contact Theory (Pettigrew and Tropp 2006). Interestingly in this research even from the earliest of stages of clinical practice the students saw themselves as being representatives of their own profession, which corroborates the strong professional identity found by Coster et al (2008).

"I think it was good for him to see a physiotherapist in practice, rather than just hearing things about what they do."
First year physiotherapy student.

Howell (2009) identified learning to represent your own profession as an essential element of interprofessional learning.

Group Two

An awareness of the challenges and sensitivities associated with interprofessional communication within routine practice is apparent across two of the cases in group two.

"so I did think there was good communication even with the doctors as well, they seemed quite approachable , which sometimes they're not"
Third year physiotherapy student

Below a student physiotherapist is talking about the quality of communication occurring during the placement with the nursing staff on the ward. This appears to expose some anxiety about how the questions may be interpreted when discussing a patient's pain control management.

"I think I had good communication with them, I felt quite confident you know asking them - "I'm not too sure on this patient, is their pain control right should it be reviewed - or something like that and they seemed to take that quite well as well. They didn't seem to think "who does he think he is.."
Third year physiotherapy student

Throughout the data it was apparent there were different attitudes towards different professional groups. This is difficult to interpret as this was not a specific aspect of data capture, however, it is worthy of note.

One student suggested

"Having insight before qualifying with AHPs would be great. I think there is too much of a gap with medical students."

B interview line 135

"they [medical students] think nurses are beneath them that is the sort of attitude they give"

M interview line 124

The statement above appeared associated with experiences of seeing groups of medical students on campus but having no contact with them, thereby linking that with disinterest from the students and associating the students with their profession as a whole. The medical students mentioned on this campus are from a different university and the students have no contact within the curriculum. However, here their presence appears to have influenced the student's attitude towards the profession as a whole.

If related to Intergroup contact theory this could be seen as an example where a group is influenced by another group's proximity and highlights the significance of distinguishing between research relating to "contact" and "proximity" (Pettigrew and Tropp 2006).

5.3.1.3 Factors influencing students' motivation to become involved in practice based IPL

The inductive analysis identified additional relevant information regarding factors which could influence an individual's motivation to become involved in IPL. This would have been lost in a deductive analysis directed by the research questions only.

5.3.1.3.1 Interest in other professions

Placements within an acute hospital occur within a busy, challenging clinical environment. A lack of time can be one of the most significant barriers to facilitating cooperative practice. It can also mean while students focus on the acquisition of profession specific skills they give little priority to learning about the roles of others.

Group One

In group one the peer learning programme appears to have highlighted the value of understanding the role of other professions with some students verbalising an increased awareness of other professional groups while one was advocating more collaboration within the professional programme.

*"It has just made me think about all of the different professions that are around us and not to become too introspective on [my profession] and not to become too defensive about your profession and just be open to it and not necessarily think of yourself as a * but think of yourself as part of the multidisciplinary team. I think that's quite useful."*

K interview lines 304 – 307

"We brought up in lectures, now that, you know, we've done that and it should be done more so with other professions because we're supposed.. at the end of our course be in a multidisciplinary team and we don't know what our other colleagues do. So yeah, we brought that up, you know, to say why don't we do things with other students."

R interview lines 83-87

Group Two

Within group two the data suggest the students were participating because they had been invited rather than responding to an identified learning need. The data suggest routine experiences of multiprofessional collaboration were patient centred and undertaken as part of daily duties. Within this research it was not possible to measure any modification of behaviour following the PLP; however, there is evidence in one case to suggest a more active interest in other professional roles developed.

"previously.... I would have made a referral, left them to it and read the notes after. Because that is what you notice people doing.... Whereas now ... I make a point of speaking to them about a patient when they come."

M3 line 273 - 278

However, this increase in interest was not apparent across cases.

5.3.1.3.2 Low prioritisation of IPL

When discussing pre programme interest in interprofessional collaboration, one student described how contact was made with other professional groups only if patient care demanded this, commenting that observing another professional would be *"bottom of my list of things to achieve."*

M interview Notes line 52.

"particularly after doing this it's made me think more about different groups, whereas before I may not have taken such an active interest."

K interview lines 87-88

Despite multidisciplinary practice being modelled within the practice environment, it does not appear to automatically stimulate an interest in other professions and lead to collaboration among students. One student identified opportunities for student collaboration due to others being present within the same environment but explained they did not work together because they were always *"busy doing their own thing."*

P interview line 161

5.3.1.3.3 Previous Experience of Collaboration and Interprofessional Understanding

It is clear there are many interprofessional learning opportunities throughout every placement. While some of the students had been encouraged to utilise these, others were missed opportunities.

" we [students from two professions] stayed in the hospital never really crossed. This, doing what I did for you, is the first time I've ever worked closely with somebody from another profession."

RB interview lines 92-95

This appears to reflect this student's experience of interprofessional working within the healthcare environment

"In my own personal experience I don't think that the professions meet a lot and I think they're (pause) very separate identities where they shouldn't be really. ..if there is a patient in hospital who needs all these interventions, then surely at some stage you need to cross over with each other, but I notice that doesn't happen, physios do their own assessment and do their own notes. Nurses do their own assessments and do their own notes ..And yet we're all there for the same goal, you know, the optimum health of that patient,"

RB interview lines 225-238

This is may not be an accurate representation of the multiprofessional teamworking which occurs in practice, at times students are not fully aware of all the liaising and teamwork which occurs. However, it is likely the student's interpretation of the interprofessional collaboration they observe will significantly influence their attitudes towards personal professional development.

The low priority given to IPL and lack of interest demonstrated above leads to low internal motivation among students to seek out opportunities. By stimulating interest in other professions this could in itself increase an individual's motivation to collaborate and access the existing interprofessional opportunities available.

Group Two

Previous Experience of Collaboration and Interprofessional Understanding

In group two the range of experiences of interprofessional collaboration with other students appeared more varied – this would be expected due to the stage in the programme.

Two students from two separate cases identified no previous collaboration with any students from other professions.

"No - seen them but not worked with them"

B Interview p1 para10

However, the rest of the students reported working with students if they were involved in the same patient's management. One student also identified interprofessional peer learning opportunities which had been valuable.

"You were just sort of chatting to them about how the patient was, had there been any change, basically what you would do with a [qualified] nurse and then also I was able to... talk through auscultation with the student nurse and teach them things and then they were able to talk about what they were doing and teach me."

S interview lines 59-62

This reinforces the view that there are opportunities for peer learning to occur currently within practice (Lloyd-Jones et al 2007). The cooperative learning described above had been opportunistically facilitated by the clinical educator and mentor.

Research question:

DOES THIS MODEL AFFECT IP COLLABORATION WITHIN THE EXISTING CLINICAL TEAMS?

5.3.1.4 Team Working

There was no evidence that the peer learning programme impacted on the existing clinical teams' interprofessional relationships or liaison in group one or two. There are a number of reasons for this, though generally related to the research design. The inequity of involvement between qualified professionals meant there was little liaison between clinical educators and mentors and so little opportunity to influence any existing interprofessional collaboration. For group two, patient identification and participation were arranged by both mentors and clinical educators. This shared the task of choosing appropriate patients, enabled students to see both professions participate and demonstrated the clinical component of the PLP could be supported within the clinical environment as long as there was a person to coordinate the overall activities. Despite this change there was no change in relationships between clinical educators and mentors.

However, mentors were required to consent to their student's participation. This demonstrates some support within the practice environment for facilitating interprofessional collaboration. Allowing students to undertake clinical tasks which were being organised by a colleague from another profession demonstrates the existing good relationships established between the physiotherapy and nursing teams.

Research Question:

DOES STRUCTURED PEER LEARNING FACILITATE THE STUDENTS' ABILITY TO COLLABORATE EFFECTIVELY WITHIN A MULTI-PROFESSIONAL TEAM?

Group one

5.3.1.4.1 Team work: Skills Practice

In cases where cooperative learning behaviours developed there was considerable evidence of the student pairs demonstrating team working skills of collaboration, support and negotiation when undertaking their clinical tasks. This started when they organised which unit to work on;

"I couldn't get to her so she came to me"

C interview line 70

and continued during the patient centred task.

"I think we worked it quite well, to help the patient feel comfortable with talking to us and expressing her opinions."

J interview line 121

*"I certainly don't think I tried to dominate the conversation or, I don't think I relied on him necessarily. I know there were occasions when I thought I'm not sure what to say now, and luckily * would come in with something so it kind of worked quite well and hopefully it happened vice versa as well."*

K interview lines 139 - 142

Following the patient interviews peers discussed their findings with each other and also in the group setting. In two cases a period of peer observation developed into a discussion where the peer was able to assist or discuss the patient's management from the perspective of their own profession. If related to Social Interdependence Theory and the key behaviours of substitutability, inducibility and cathexis this could be seen as an example of "Substitutability", where the actions of the peers substitute for each other during the patient interviews.

*"It was helpful because I got to see, at the same time what the * might do, even though I hadn't viewed him in his own environment on his ward, I still got to see him putting into practice what he does, but on my ward."*

J interview lines 261 - 265

Considering this arrangement was for students working in the same hospital but across different placement and specialities, it is encouraging to see how interactive a period of observation can become. This continued into the period where reflection and individual feedback was given.

*"when we were walking away from that bay and back towards washing our hands * did give me some really good feedback straight away."*

C interview line 194

Group Two

All cases in group two displayed cooperative learning behaviours; these required participants to use social and team working skills to facilitate the relationships in the group and between partners. Common to group one there was considerable evidence of teamworking skills being used within the programme.

"we all worked as a team, we had to communicate well and we all put our ideas forward and they were all looked at ."

J interview lines 205-207

The data reported cross professional discussion of roles in all of the clinical activities and by all parties, probably due to the overall confidence and competence in professional roles of students at this stage of their training.

"It was just very relaxed; he would explain what he was doing, I'd explain what I was doing.."

J interview line 147-148

One case chose the patients according to the learning needs of their partner.

"[It was] nice to help each other understand what's going on."

B interview line 61

5.3.1.4.2 Quality of Teamwork

Working together and discussing each other's roles led to students questioning current practice relating to communication and information sharing within existing multiprofessional teams. The data related to two separate aspects of practice; the gathering of patient centred information and onward referral.

"we tend to get the same information, but don't actually utilise it together as much, I think there are some ways of improving working practice, just purely from the fact that "these guys get that information, so do we, well why aren't we using it in one step rather than the two".

C interview lines 127-130

The students stated they did not realise they often gathered similar information or that they were both involved in onward referral; they found through discussion both professions to be repeating this process.

"The thing that came out from that really is that in everything we are doing it is really for the patient, it's patient care really. That's why we are all here and that through team work we can achieve that really can't we.." K interview lines 199-201

Group Two

Group discussions regarding interprofessional communication were informed by the everyday working patterns observed within practice. Students drew upon their experience to identify and describe factors which they felt could enhance or inhibit collaboration.

"When we did handover in the morning it was the nurse who did the handover and there was always a PT and OT in that meeting aswell. Everyone just seemed to have...good communications with each other." S interview lines 162-164

"[there was] lots of input from the dietician, [it's] nice having personal contact....she lets you know what she has discussed, some people walk in write in the notes and then leave.....there is much less communication." B interview lines 50-53

The opportunity to reflect and discuss their experience may have heightened the students' awareness of interprofessional working in practice.

The research is not able to identify if any team work in the practice setting improved, however, understanding how professional roles fitted together and how much information sharing needs to occur to ensure holistic patient centred care is evident within the interviews and reflective diaries. It is not possible to assess if any behavioural changes occurred. A heightened awareness of the need for close collaboration, however, would be the first step towards valuing and prioritising this aspect of patient care.

It was possible to consider the student self assessments of interprofessional relationships, learning and interaction by considering the UWE IPQ results.

5.3.1a UWE IPQ Results

UWE Interprofessional Relationship Scale

The Interprofessional relationship scale identifies how students perceive their own relationships with colleagues in health and social care, not just the peers participating in the programme.

Group One			
Pre Peer Learning Programme		Post Peer Learning Programme	
Score	Category	Score	Category
21	neutral	16	positive
21	neutral	16	positive
20	positive	18	positive
20	positive	18	positive
20	positive	12	positive
17	positive	16	positive
16	positive	14	positive
15	positive	24	neutral
18.75 average score Positive		16.75 average score Positive	

Table 23: UWE Interprofessional Relationship Scale Group One

The majority of participants were within a positive scale both before and after the programme. Two students self assessment moved from a neutral to positive score. One participant's score become neutral from an initially positive score. This score is associated with a student who felt the peer learning programme exposed a lack of knowledge regarding other profession's roles. Despite this, the overall trend is for an improvement in students' self assessment of their interprofessional relationships.

Group Two			
Pre Peer Learning Programme		Post Peer Learning Programme	
Score	Category	Score	Category
16	positive	12	positive
17	positive	16	positive
15	positive	15	positive
18	positive	13	positive
Average 16.5 Positive		Average 11.5 Positive	

Table 24: UWE Interprofessional Relationship Scale Group Two

The self assessed score in group two identified all participants had positive attitudes towards interprofessional relationships both before and after the programme. This suggests the programme has not had a negative effect. The positive scores recorded before the programme started may have contributed to the development of positive relationships.

It is challenging to interpret professional differences within such a small study population; however, I feel it is important to consider the data which are available. I have excluded data from the uni-professional case as they were not placed in a multiprofessional clinical environment.

The following table identifies the average scores before and after the programme organised by profession for group one. Following the PLP it appears there was little professional difference, despite the nursing students having considerably more clinical experience.

Average IP Relationship Score	Physiotherapy	Nursing
Pre PLP	19.5	18.66
Post PLP	17	17.33

Table 25: Average UWE Interprofessional Relationship Scale by profession.

UWE Interprofessional Learning Scale

This scale is designed to explore students' attitudes towards learning in an interprofessional context (Pollard 2004).

Group One

Group One			
Pre Peer Learning Programme		Post Peer Learning Programme	
Score	Category	Score	Category
26	neutral	20	positive
18	positive	16	positive
18	positive	15	positive
18	positive	14	positive
13	positive	11	positive
12	positive	14	positive
10	positive	10	positive
9	positive	9	positive
15.5 average score Positive		13.6 average score Positive	

Table 26: UWE Interprofessional Learning Scale Group One

It is not surprising considering research participation was voluntary that all but one participant in group one had a positive score before the programme. The range of scores has narrowed post programme and one previously neutral score has become positive, it suggests the programme has not had a detrimental effect and that their previous views have remained stable.

Group Two

Group Two			
Pre Peer Learning Programme		Post Peer Learning Programme	
Score	Category	Score	Category
9	positive	9	positive
21	positive	20	positive
11	positive	10	positive
18	positive	12	positive
Average 14.75 Positive		Average 10.25 Positive	

Table 27: UWE Interprofessional Learning Scale Group Two

In group two all the participants' interprofessional learning scores were within a positive range before and after the programme. This is likely to be strongly influenced by the opportunistic sample of volunteers who participated. When considered along with the positive interprofessional relationship scores it suggests this group were likely to be open to cooperative learning before the programme started.

When considering this scale within professions, in group one it appears the nursing students may have held more positive attitudes towards learning together. While both populations were opportunistic, the majority of physiotherapy students volunteered to participate. Recruitment from the nursing students was more challenging due to the lack of an established relationship within the programme and no previous contact with nursing students. This may have meant students more likely to seek interprofessional learning opportunities were the ones who volunteered.

Average IP Learning Score	Physiotherapy	Nursing
Pre PLP	16.5	13.3
Post PLP	14.5	11.66

Table 28: Average UWE Interprofessional Learning Scale by profession

Interprofessional Interaction Scale

This scale is designed to identify students' perceptions of the way health and social care professionals relate to each other when they interact (Pollard et al 2004).

Group One

Group One		Group One	
Pre Peer Learning Programme		Post Peer Learning Programme	
Score	Category	Score	Category
39	negative	43	negative
35	negative	34	negative
33	negative	34	negative
33	negative	33	negative
29	neutral	28	neutral
28	neutral	29	neutral
28	neutral	36	negative
27	neutral	29	neutral
31.5 average score neutral		33.3 average score negative	

Table 29: UWE Interprofessional Interaction Scale Group One

One student's score moves from a neutral to a negative score and reflects the overall change in average score for this group. Interestingly this student comes from a case which developed strong cooperative learning behaviours and was overall positive in all other scores. This pattern is common to one identified in a large longitudinal study (Pollard and Miers 2008).

Pollard and Miers (2008) identified students who had been involved in an interprofessional curriculum were more aware of poor interprofessional practice when reflecting on their placement learning. In their study no students from the uni-professional curriculum had identified poor interprofessional working among placement staff.

UWE Interprofessional Interaction Scale Group Two

Group Two			
Pre Peer Learning Programme		Post Peer Learning Programme	
Score	Category	Score	Category
26	neutral	25	neutral
22	positive	24/25	neutral
32	negative	28	neutral
29	neutral	28	neutral
Average 27.25 neutral		Average 26.5 neutral	

Table 30: UWE Interprofessional Interaction Scale Group Two

The self reported responses to the interprofessional interaction scale in group two are difficult to interpret although their baseline appears to suggest a more stable neutral position when compared to group one. One participant appears to have become slightly more positive with another becoming slightly more negative. Overall the third year students have self rated this scale within the neutral range while the average score for group one indicated negative attitudes towards interprofessional interaction post PLP. This may be identifying a difference due to experience; due to the small numbers in group two it is not appropriate to consider this scale by profession. The individuality of responses within this and other scales reminds us how people may respond differently to the same educational intervention.

It is possible to consider this scale from a professional perspective using data from group one. It can be seen the physiotherapy students post PLP score has become less positive and more in line with the nursing students. This could support an increase in awareness of interprofessional issues. This was the physiotherapy students' first placement; the nursing students had considerably more clinical experience. This could further support the apparent difference being due to experience rather than profession; with accruing experience in group two suggesting even more experience leads to a more positive (neutral) position. However, it is important to note my view is strongly speculative.

Average IP Interaction Score	Physiotherapy	Nursing
Pre PLP	29 neutral	34.33 negative
Post PLP	32 negative	35 negative

Table 31: Average UWE Interprofessional Interaction Scale by profession

Negative responses to IPL initiatives have been identified within studies which produced an overall positive effect (Carpenter and Hewstone 1996, Coster et al 2008, Ponzer et al 2004). Concerns this may lead to reinforcing negative stereotypes have been expressed (Coster et al 2008, Freeth et al 2001). This has been identified as a recognised challenge in that intergroup relations can worsen through proximity as well as improve. However, there is no evidence to suggest the peer learning programme has had a detrimental effect on the ability of the participants to work or collaborate with peers; it may be the programme has led to greater reflection on interprofessional interaction within the clinical environment and this scale may reflect a heightened awareness of interprofessional issues within the practice environment.

5.3.2 Individual Learning

Research Question:

CAN PEER LEARNING BE USED TO ESTABLISH MUTUALLY BENEFICIAL RELATIONSHIPS WHICH FACILITATE INDIVIDUAL SKILL ACQUISITION AND CONSOLIDATION?

5.3.2.1 Communication Skills

UWE Questionnaire Communication and Team work Scores

The UWE Interprofessional Questionnaire has a specific Communication and Teamwork Scale which was completed before and after the peer learning programme. While it is not possible to separate the communication skills development which occurred during the placement with those which occur due to the peer learning programme, five of the nine statements specifically relate to group work alone. While team working occurs throughout routine placements, group work does not and so it is reasonable that changes within these statements relate to the group work associated with the PLP.

Group One

Group One		Group One	
Pre Peer Learning Programme		Post Peer Learning Programme	
Score	Category	Score	Category
21	neutral	17	positive
22	neutral	14	positive
24	neutral	17	positive
22	neutral	22/23	neutral
19	positive	15	positive
11	positive	9	positive
16	positive	16	positive
20	positive	22	neutral
19.4 average Positive		16.6 average Positive	

Table 32: UWE Questionnaire Communication and Team work Scale Group One

In group one four out of eight students scored within the neutral range before the placement started. This included students from all participating academic levels i.e. year 1 to year 3. Three of these students progressed to a positive self rated assessment post placement.

One student started in the positive range and moved to the neutral category. This is important to explore as it appears participation led to a less positive self assessment.

In this student's pre programme UWE IPQ, there appears some ambiguity between the answers to two of the statements referring to expressing opinions within a group. One statement identified the student was uncomfortable expressing opinions in a group, the other comfortable (the statements are separately placed within the scale and reversed).

Following the programme, the statements were both rated the same, with the student stating they were not comfortable expressing personal opinions within a group setting. One further statement had also changed regarding taking the lead in a group. While the student's associated qualitative data gave considerable insight into their opinions of working within the group, the peer learning programme does not appear to have helped the student to become able to express opinions comfortably within a group setting.

Without the depth of data gathered within the study, it would be reasonable to associate the change in self assessment to be related to the multiprofessional nature of the group work, however, while this is a factor, personal attributes are highlighted within the data.

"I'm quite quiet anyway, so I don't think I put very much into it, I realise that on placement, they have told me that I am a bit quiet and I need to ask some questions and stuff. I found it a bit difficult, because of.. there were some louder characters in the group.

"Were you comfortable to be quiet?"

"Yeah, I am comfortable being quiet, yeah but I do tend to take too much of a passive role. There were some louder characters, and it was like in [routine group work], I find it hard to put my point across."

"Do you think that changed over the four weeks..?"

"I don't think I changed much. Once I get into that role, I do find it hard to change."
M2 interview lines 83-96

"[when] we were split into [profession specific groups] and I know the [students] more. So I felt comfortable to put my input..... I think I just feel comfortable with people I know more."

M2 interview lines 232- 238

The student also went on to discuss the age of participants within the programme and considered that this may have influenced the “*follower*” role adopted in the group. There were a number of mature students within the programme. This student had come from college with some work experience but none in a hospital setting. The student identified knowing the person as being the most significant influence on his ability to participate with colleagues.

It is important to remember this is a very specific aspect of group work; the student’s self assessment also identified being comfortable working in groups and being able to become quickly involved in new groups and teams. These ratings did not change. Associated data demonstrated interpersonal skills practice within the group work had been relevant and was transferred to the practice setting.

However, this highlights the role and expertise of the group facilitator. Not only is there a requirement to ensure participation among all group members and equity of status among participants due to the interprofessional nature of the group, with pre-registration students there must be an awareness of and sensitivity towards individual personal development.

“I haven't had a huge amount of experience talking to other people in other professions so I didn't really know how I would feel going into that, but I didn't find talking to people that I didn't know that hard and we obviously found out a bit about each other and I found chatting to some new people fine, especially in a group as sometimes I do get a bit nervous and hold back a bit, but I found it alright to talk in front of the group.”

J interview lines 65-69

Clearly here there was also some concern about working both with new people and people from a different profession, however, overall the group functioned well and appear to have contributed to the positive changes in the Communication and Teamworking Scale.

When this scale is organised by profession there is surprisingly little difference in the average self rated scores; particularly when the difference in clinical experience is so great. There appears little difference between professional groups.

Average UWE IPQ Communication and Team work Scores Group One

Average IP communication & Teamwork Score	Physiotherapy	Nursing
Pre PLP	20.5	19
Post PLP	17	16.3

Table 33: Average UWE Communication and Teamworking Scale by profession

Group Two

All students in group two were third year students in their final placement. It can be seen from the table below students in this group who completed the questionnaire all self assessed their communication skills in a positive range with similar pre programme scores.

Group Two			
Pre Peer Learning Programme		Post Peer Learning Programme	
Score	Category	Score	Category
19	positive	14	positive
17	positive	15	positive
17	positive	17	positive
17.7 average Positive		15.3 average Positive	

Table 34: UWE IPQ Communication and Teamwork Scale Group Two

Overall, the qualitative data correspond to the quantitative self assessment as students felt their communication skills were good at the start of the PLP.

"I think my communication has always been good and I don't feel as if I have ever had a problem with communication."
S interview line 174

The cases in group two did not identify the same benefits associated with extra practice of active listening skills as those in group one. However, they did identify "refreshing" the communication skills was useful and appeared to evaluate and reflect on their use of these skills in practice.

"as I said over the past three years my communication skills have just grown so much.. But over the past four weeks it's the way you use your communication skills.. just simple things like the open and closed questions, body language, facial expressions, getting down to the same level as the patient instead of towering over them 'cause it feels intimidating..it's something that over the past four weeks it's grown for me."
J interview line 97-102

One student compared undertaking these exercises in practice with the university setting; the patient centred aspect of the activities was valued.

"Didn't find communication skills that beneficial in the classroom but [it's] useful in the clinical setting."

"seeing it first hand with the patient and being able to discuss before hand what [my colleague] was looking for was much more beneficial."

Third year student

In group two in all cases the interviews had generated discussion and reflection associated with personal development, clinical practice, team working and developing insight into professional

roles. This may have indicated the ability to use active listening skills more effectively or just relate to the confidence and competence of students at this stage of their programme.

"I generally question the patient and don't really think about the line of questioning ..but having gone through the types of questions and then applying it to the patient I was thinking more in depth about how I could control the conversation and extract the right information from the patient and then cut it at the right point as well."

S interview line 145-148

"The second [interview], it was more reinforcement perhaps with the things that we'd been taught in our amputee module. ..the gentlemen had been in a lot of pain, he'd had previous operations and he was just relieved really to have that amputation. ...so it was quite interesting to meet someone to hear [about their experiences]."

S interview lines 280-285

"The patient told us it was "small things that matter to us really" e.g. name, a smile. We did some further questions, used paraphrasing, personally I often didn't want to broach the subject [the patients condition] since then I've done it quite a lot. I've found it a benefit."

B interview lines 85-88.

Despite the students feeling confident in their communication skills there was complete consensus that communication skills were an appropriate focus for cooperative clinical practice.

5.3.2.1.2 Interprofessional Communication Skills

One student also raised an interesting point. When asked if communication skills was an appropriate focus he replied

"Yeah, definitely, it's the basics, if anything is too complicated it would just increase the barriers and people would become defensive of one another."

Third year student nurse

It may be more challenging to establish trusting relationships which are open to peer review if the skill level required is not readily accessible to all parties. The focus of the first two tutorials were basic communication skills; body language, questioning strategies, active listening, paraphrasing, all professional groups cover these skills at an early stage to prepare students for practice.

"I think probably communication is one of the main, best things to start with ..because you have got to do that first haven't you. I don't see what else you can focus on which is going to get that relationship between the two. You've got to communicate...before you can build anything else."

M interview lines 353-355

In the second interview the students were asked to include assessment tools when appropriate. This enabled the students to consider written forms of communication. In all cases the data

identified students were sharing new aspects of their role and at times assessment tools their partners had not previously encountered.

In one case a student had previously encountered specific notation but had not known how to interpret the abbreviations used.

"he was going over a respiratory assessment and they write, not in code but in short hand ..he explained what he was writing and why he was writing.being written in short hand you don't understand what is written there so you just look at the plan[but] it's something he's explained to me." J interview lines 269-275

This gave the students the opportunity to consider different forms of communication and led to some interesting insights.

One participant stated active listening with patients was a skill promoted throughout the course but active listening between professions, including the impact of body language on interprofessional communication was not. When discussing reflective communication Johns (p205 2004) identifies how communicating with colleagues "seems to be an altogether more difficult form of dialogue than with patients, because issues of power and different agendas infest the communication space".

Data within two cases identified how participants felt interprofessional relationships could be affected if a significant amount of interprofessional communication was written. They felt the impact of routinely using written communication may be reduced interpersonal relationships between professional groups. One participant also felt this could lead to a reduction in the efficacy of patient management through a lack of carryover and compliance in activities. It was clear the students were evaluating their placement experiences alongside the PLP and considering how to improve practice. This is encouraging as research evaluating teamwork has identified the effectiveness of teamwork being affected by issues such as organisation and team contact (Baxter and Brumfitt 2008b). There was no opportunity in this research to identify if any behaviour changes occurred.

The comments above echoed a point made by one of the participants in group one who had felt it very important that partners knew they had been listened to.

"I think it's important for each other to know that you did listen to each other"

RB interview lines 321-324

And also links with comments made by another group one student who identified knowing how to approach different professional groups was at times challenging.

"everything they [medical students] do is separate and that's what makes it so difficult. I'm not sure how to approach them." M interview line 143

These opinions ratify the specification of specific interprofessional communication skills (Walsh et al 2005) and suggest there is benefit in overtly supporting their development in the practice environment.

Research Question:

ARE THE STUDENTS ABLE TO PUT ASIDE PROFESSIONAL DIFFERENCES AND WORK WITH EACH OTHER TO DEVELOP THEIR COMMON LEARNING NEEDS?

All cases identified students working well together within the tutorial setting, with the ability to participate in the tutorials which included peer review and feedback on interpersonal communication skills. Considering the data above, the use of dyads and triads within the group for communication skills practice and peer review enables less confident students to participate. Feedback was never given across the whole group but when students were working with each other.

Cooperative learning behaviours where the students supported the development of their peer developed within five out of six cases. In the case where individual learning behaviours were displayed, participants worked professionally within the tutorial setting and participated in all tutorial activities which included peer review.

Each case, however, has slightly different emphasis in what was learnt and what was helpful. This reminds us that learning is an individual process which is driven by previous experience, ability, personal attributes, understanding and context.

The most common learning need identified by all participants was associated with developing a greater understanding regarding the profession of their peer. Individual learning needs regarding communication skills varied according to ability, not level of student, however, all cases identified the programme had helped to consolidate interpersonal communication skills, particularly those associated with active listening.

"I think you don't really look into communication and active listening, it's not something you go and get a book on and read is it.. but it's something we all do, every day, and I think the listening side of it is more important than the actual communication side because we can all speak, you know, but it's listening isn't it. That's important."

RB interview lines 386 - 389

Group Two

All cases in group two developed cooperative learning behaviours, and established relationships which were described using terms such as "*relaxed*", "*comfortable*" and "*open*". In two cases participants identified how they felt they had similar personalities to their partner and how this may have positively influenced their relationship.

"we did just seem to get on really well....we'd seemed, I thought, quite similar people."

S interview lines 198 -199

" was really open and easy to approach and laid back which is just the type of person I get on with anyway so it was a nice match."*

S2 interview lines 105-106

There had been no deliberate matching. The "pairing" process occurred opportunistically during the first tutorial and entailed matching students from different professions and different areas. However, this is likely to have positively influenced the individual relationships which developed.

Gender

In group one four out of five cases within this research involved single gender pairs. Pollard (2008) produced evidence that male nursing students interacted with male doctors in a way not observed or reported among female nursing students (p35). It was not possible to identify any differences in learning behaviour or opinion which could be attributed to gender.

In group two all cases involved same gender pairs. While it is not possible to identify any differences in behaviour associated with gender, in two cases participants identified being comfortable with their partner, and that this could have partly been because their partner was of the same gender. This occurred in both a female and male case.

Research Question:

DO THEY CONSOLIDATE THEIR OWN KNOWLEDGE BY SHARING PATIENT CENTRED ACTIVITIES?

5.3.2.2.1/2 Consolidate own practice and share skills

Two cases within group one specifically identified explicit incidents of students consolidating their own knowledge through the patient centred activities.

"It made you make sure you know what you are talking about and try to explain it to them as well. If you are teaching someone else you need to make sure you know exactly what you are doing and why."

P interview lines 88-90

"...it makes you realise what you actually do know. It pulls it together a bit."

P interview lines 103-104

Group Two

However, all cases in group two clearly demonstrated aspects of skill sharing through the clinical activities, either through discussing patient assessment and joint management or by observing tasks which often had previously not been observed before. Aspects central to patient management which would be useful to each profession were often identified and students discussed these with reference to everyday placement experiences.

"we were doing warming up exercises before the patient moved, ... I didn't know this - maybe we should."

B interview line 54

One student felt they always made sure the patient understood their management to maximise compliance but had not considered ensuring other healthcare professionals also understood. The PLP had helped him to "*recognise my own knowledge base*" which had prompted him to reflect on his practice.

Data from all cases identified all students demonstrating clinical skills to each other.

*"We were both in the same situation, I had to explain to him what I was doing and why I was doing it as well as explain to the patient and * did the same."*

J interview lines 373 – 374

These were often skills which were new to their partner and at times appeared to involve indepth explanations.

"I'd ask him about the ECG and he went into depth and I didn't understand certain aspects so I probed that."

S2 interview line 223

More often the students related the level of explanation given to their peer as being similar to that which they would give to the patient.

*"I enjoyed teaching *, found it quite easy, and the patient was great to speak to. I always talk it through to the patient and so was educating * and the patient at the same time."*

B interview lines 117- 119

There is little direct data to state participants were aware of consolidating their own knowledge, but considerable data which identified all being involved in the process of explaining their actions to their partner. This could be related to a peer tutoring or peer teaching situation where it is generally

accepted the tutor benefits most from the experience due to the cognitive reorganisation of material required when explaining it to another (p5 Falchikov 2001).

Other factors which positively influence learning from peers relate to the closeness of the status of participants and the individualization of the learning experience that occurs when working in pairs (p267 Falchikov 2001). In this research peer review was included in the period of observation to ensure both parties remained engaged throughout the activity. It appears the process of peer review became linked to gaining an understanding of the skills being demonstrated. If there was an aspect of the task which was not explicitly explained, the students all reported feeling able to ask questions to clarify any aspects, thereby possibly including clinical reasoning skills.

5.3.2.2.3 Facilitating Higher Cognitive Skills

Other aspects of learning such as reflective practice, linking theory to practice and stimulating clinical reasoning were identified across other cases. If these findings are considered as a whole, all cases demonstrated evidence of higher cognitive skills development being supported.

All cases agreed the focus on communication skills was appropriate and useful to facilitate interprofessional learning, relating this from the outset to effective patient management enabled the relevance of the tasks to be transparent.

"I would say communication probably underpins everything that's perhaps good about collaborating together and what potentially can cause problems when groups of practitioners don't work together so I think it's definitely a good subject to use. I perhaps would quite like to learn more about the job roles of different practitioners but definitely I think communication would be the starting point for it."

K interview lines 314 - 317

5.3.3 Peer Learning

5.3.3.1 Peer support

Peer support was apparent among cooperative pairs during the specific clinical activities undertaken for the peer learning programme e.g. patient interviews. Within group two there was considerable evidence the students were supportive of each other when working together clinically.

"Yeah, we didn't talk over each other, were supportive, we got on really well."

B interview line 91

In all cases in group two the students discussed what they were going to do, take turns to ask questions, ensured they were sensitive to the patient's needs and then discussed their findings after.

"Both students took it in turns to undertake their assessment ..they consider[ed] their communication skills and styles, swapped places according to who was interviewing and noticed their interview structure and strategies were quite different."

S27 interview lines 137-139

An interprofessional peer support network was not identified in either group. However, this was apparent among the physiotherapy students. This may have had more opportunity to develop as the students often lunched together, studied together and learnt together through their uni-professional peer learning activities. Social time together has been suggested to be important when developing interprofessional learning opportunities (Hammick et al 2007).

The exception to this was in one case in group one where a student identified having a particularly challenging placement and valued the support given by his cross professional peer. He described how his partner was "*enthusiastic*" and "*this was what I needed*".

The development of an additional support mechanism for peers has been identified by other placement based interprofessional initiatives (Pearson et al not dated), however, this did not develop here. This may have been due to the clinical educators and mentors not participating in the tutorial programme along with the lack of social opportunities outside the peer learning programme. In group two, there was active participation in identifying appropriate patients by mentors; however, this was task orientated rather than collaborative between mentors and clinical educators. As the students were not placed in the same clinical areas, there were no opportunities for socialising together.

5.3.3.2 Peer Observation

All students were given the choice of jointly observing colleagues undertaking multiprofessional tasks or observing their peer. All cases in both groups chose to undertake peer observation with students being asked to identify a skill central to their professional role. In group one most of the time the skills observed were opportunistic and determined by the time the student peer could go to their partner's unit. There was no reported stress or anxiety associated with any period of peer observation. This was overwhelmingly described as a useful exercise which enabled insight into professional roles to be gained. In group one data associated with two cases identified cooperation occurring regarding patient management and consolidation of own professional knowledge occurred within another two cases.

"I felt very comfortable with her being with me when I was doing work and vice versa"

C interview line 102

*"Although * was viewing me he still wanted to help out, and always had the patient's best interest in mind."*

J reflective diary week 3

Group Two

In group two all cases chose to observe their partner undertaking tasks central to their role. Data across all cases also identified this being a comfortable experience which did not generate stress. One student described the experience as:

"Really good, nice to help each other understand what's going on. Teaching each other was comfortable, they have not much knowledge so I felt confident, no pressure at all. If they were within your own profession they could challenge what you were doing."

B interview lines 61-63

The group identified there was a difference being observed by a peer from another profession but that this was in fact less stressful due to their lack of knowledge regarding the task being observed.

"it was towards the end of my placement as well so I knew exactly what I was doing and I felt 100%. And its quite nice having someone watching you and having someone who perhaps hasn't got that knowledge in that particular area and someone who's interested in what you are doing. ...No, it was fine being observed but I think it definitely comes with confidence."

S interview lines 231-236

Concern has been expressed within the practice based peer learning literature that students could teach each other incorrectly (Zavadak et al 1995); in the academic environment concern has been expressed that peer tutoring could "lower standards" of teaching (p131 Falchicov 2001). In this programme, students were asked to choose tasks they had been deemed competent in i.e. skills they would be allowed to undertake independently without direct supervision. Where this was not possible e.g. inexperienced students in group one, they were supervised. However, when asked about this one third year student explained what their experiences were within uni-professional peer learning situations:

"Would there be any possibility that you might teach each other bad practice?"

"I guess.. It is unlikely that both people would be doing the same bad practice and if they were then obviously you wouldn't notice but if someone was doing something that was not quite right then the other person would say... I guess you could pick up bad habits but its unlikely when you are on placement because you are only with the

student every now and then - and if you start doing it [elsewhere] someone else is going to pick up on it."

S4 interview lines 232-237

There also appeared to be a distinction between activities which involved consolidated skills and those which were developmental.

"If you are doing something that you are still learning about then you aren't more relaxed [by being with a student]. I'd probably take more care with it 'cause I would know the person I was with wasn't going to pick up if I was doing something not quite right. When you are with a student you both need to know exactly what you are doing so you plan it out more than when you are with a supervisor so you don't let mistakes happen, that's how I feel."

S4 interview lines 239-242

One student felt it was more useful using peer observation with a student from a different profession

"it's more useful than a being from a different speciality because you are finding out more."

M3 interview lines 329

Another student, after stating peer observation was not stressful, was asked to identify what would be stressful. He identified being observed by a qualified member of his profession.

"Yeah it's someone who you perceive to know a lot more than you and that can tend to put you under a lot of pressure, but you get use to it [over the three years]. ...So having a student [] there asking questions about what you are doing and you're telling them gives you confidence because you are speaking it as well as thinking it and you are coming out with hopefully the correct stuff and that boosts your confidence a bit."

S2 interview line 207-212

This returns us to the difference in status of those involved and indirectly corroborates the establishment of peer status among the students in this group.

"It's quite intimidating sometimes working with someone from a different profession that isn't a student - 'cause they have a lot more knowledge in their area than you could ever imagine. Whereas at least with a student you are both students and you both have respect for the fact you don't know everything. I feel like it is a lot easier to talk to a student about things and if I'm not really sure about something I'll admit to it more easily to a student than I would to a qualified [professional]."

S4 Interview Line 212-216

The key influences here appear to be knowledge base and status. By sharing skills through the process of observation, students are also able to recognise the knowledge base of each profession. Establishing peer status among students enabled a comfortable and open relationship to form; requesting the inclusion of peer review of communication skills ensured an element of interdependence within the task with both parties having an active role.

The data also suggest a symbiotic relationship between confidence and the process of observation.

If the findings of this research are found to be consistent among other student groups and there is less pressure associated with being observed by a peer from a different profession, using cross professional peer observation could be an educational strategy used not just to promote interprofessional understanding, but also to facilitate the attainment of confident competent practice. The strategy could be implemented opportunistically encouraging cooperative relationships to develop in the practice arena. This also suggests the benefits associated with uni-professional peer learning of increased student confidence in practice (Secomb 2008) also occur in an interprofessional situation.

5.3.3.3 Peer Feedback

Research Question:

DO THEY DEVELOP THE ABILITY TO GIVE AND RECEIVE APPROPRIATE FEEDBACK?

Supporting individual development through informal, verbal feedback was an integral part of the peer learning programme. However, there was concern expressed during the development of the research proposal that one student group might dominate or that students would find this threatening. The aim was to identify if this was an appropriate strategy to facilitate cooperative learning among physiotherapy and nursing students or whether it was going to be stressful and intimidating. The ability to undertake this exercise must lie in the development of a trusting relationship, one in which students are sensitive to each other's needs; this in turn requires considerable self awareness.

Within the peer learning programme no one identified the peer review process as being stressful or challenging. Peer review when it occurred was valued and may have contributed to the cooperative relationships which formed as this occurred within both the tutorial and clinical setting.

" fed back that I was professional - patient and took care of patient. Great to hear that I'm doing it well!!!"*

C Reflective Diary

"We had different perceptions about what my partner observed, I feel pleased that her feedback to me was positive."

M Reflective Diary

No evidence was gathered as to the quality or type of feedback that was given or received other than the student's self reported data. The students were asked to feedback verbally on the communication skills observed. Learning to give effective feedback is a skill in itself. Enabling students to gain some experience of this within the clinical setting can be seen to aid in the establishment of equal status and begin to establish skills for future interprofessional collaboration.

Group Two

In all cases the students felt able to engage with the peer review process in both the tutorial and clinical setting. However, in two cases while they felt able to give each other feedback on the communication skills they had observed because they felt the communications skills used were good they had little to say.

"we were a bit rubbish as we said "really good". I didn't feel we needed to."

B Interview line 132

While they did tell each other they felt their communication skills were good, one participant felt the most useful aspect was not the peer review but discussing things from each other's perspectives as this gave additional insight into their partner's profession.

In the remaining case, feedback appeared more specific; however, data exposed how the peer review blended with the discussion following a clinical task. One student, when asked if there was anything different in the type of feedback you get from qualified staff and students replied.

"student[s], in my experience were more questions of interest - why are you doing that and it wouldn't feel like there was any pressure on you, whereas seniors would be asking you why are you doing that but its more of an intense level expected - same answer but it's still a different pressure definitely."

S Interview lines 216-218

It was not possible in group one to identify the quality of the feedback given regarding the peer review of communication skills. Here the data suggest in two of the cases this may have not been very specific.

During tutorial two group two developed a written checklist as an option to augment their verbal peer review. The checklist was circulated by email to the group. It was identified as an option to be

used within the clinical setting, to support the peer review process. One student completed the form but did not share this with their peer as no one else in the group had picked up the email and used the form.

However, the checklist provided by the participant demonstrates the use of a peer generated feedback form is an option which could be useful to explore. The feedback was succinct, relevant and would provide evidence for a student's portfolio as well as something which could be reflected upon later.

Communication Skills Peer Review	Comments
<p>Consider the following points when observing your peer:</p> <p>1. Environment</p> <p>2. Establishing rapport</p> <p>3. Non verbal Body language Position Eye contact Use of voice Gesture</p> <p>4. Active listening Demonstrated by:</p> <p>5. Questioning techniques Patient centredness (thoughts, feelings, concerns, expectations) Structure Strategy</p> <p>6. FEEDBACK Start by encouraging your peers' reflection. Clarify any points.</p> <p>Consider ACE feedback A - Achievable, analytical. C - Constructive E - Empowering</p>	<p>1. Next to patient's bed, curtains pulled round to maintain privacy + dignity.</p> <p>2. Patient knew * from a previous meeting + it was obvious that they had an instant rapport developed from the previous meeting.</p> <p>3. * bent down to the patients level to ensure that she was not intimidating. Bending down allowed her to gain direct eye contact with the patient. She used eye contact + a change of voice to ensure that the patient understood. Used gesture to demonstrate + gain patients full attention.</p> <p>4. Nodded: reiterated what patient said to ensure that she is understanding what patient said.</p> <p>5. Asked her how she felt about what she had taught her. Began questioning from the start + continued to ask Q's throughout to ensure pts understanding.</p> <p>6. Communication was v. good, patient fully understood what was going to happen. It was a convenient time, had really good relationship with the patient + understood their needs. Possibly provide information on what the next session would entail so that patient can prepare or ask any questions.</p>

Table 35: Copy of student peer review form.

Incorporating a student generated peer review form may be a useful strategy to promote teamwork within the tutorial situation and ownership of the clinical task. In this situation it may also be a way of improving the specificity of the feedback given. The communication skills under review are

attainable by all parties and so the introduction of a student developed written feedback form should not increase the stress of the situation however, this would be an area for future evaluation. In the case above, it was interesting the student had completed the form but not shared it with their partner. This reminds us while the students worked well together there are sensitivities associated with complying with the designated task and also giving and receiving feedback.

Peer Status

Cooperative learning behaviours require a commitment to develop others alongside personal development. The data associated with peer observation and feedback identifies all participants from both groups were able to represent their profession, appeared to hold similar standing within the group and respect the opinions expressed. Data identify students were able to function as peers.

"It was a bit more relaxed on my half, meeting these people and being able to chat to them without someone over my shoulder watching me. [my partner] was there but I felt a bit more comfortable with someone who wasn't marking me or anything like that on my communication skills.

J interview lines 171-174

Data suggests the power difference perceived between students and mentors in this interprofessional context are similar in both professional groups. The mentors are assessors and authority figures. Despite the students coming from different professions the participants appear to have established a similar relationship status as that within a uni-professional peer learning model.

In another case a student describes their partner as *"a relative peer"* K interview line 280.

And a third case again supports the establishment of students viewing each other as peers despite the difference in profession and levels of experience.

*"Was it useful getting feedback from a student?"
"Yeah, yeah, it doesn't feel so intimidating coming from someone at your level"*

P interview line 243

All of the cases in group one were cross level pairs i.e. students from year one working with students from year two and in one case a year three student. The difference in academic level does not appear to have influenced the relationship, although at times there was recognition of the difference in level of experience.

Management and Leadership

Secomb (2008) identified one of the reported benefits of peer learning is the development of student leadership skills. While this was not one of the aims of the research one of the students felt they had been aware of time management.

"I have possibly had to manage my time a bit better ...But I think it's been beneficial..... it certainly hasn't affected my placement it's just made me aware of managing my time."

K interview lines 291-298

While another student felt the peer learning programme had prepared them for their next module.

"I'm really pleased actually that I did it, because our first module in our third year is management and leadership so obviously within that is going to come all these communication skills and [we] have had a springboard really - we've had a bit of a taster I think of what's to come and it can only be for the good. So I feel yeah, quite privileged."

RB interview lines 368-371

A unique aspect of the study was the responsibilities given to the students regarding liaising and arranging the clinical component.

One case identified how they initially required support for their first task but subsequently became independent.

"we actually went back to our respective mentors and said to them that we needed to do this and it was kind of arranged between them, rather than [us]. Having said that yesterday we met up and we actually just made a decision to go ahead and do something, which we did. So we have kind of moved on in those three weeks, from maybe being a bit shy about sorting something out to actually saying, yes we have worked together a couple of times now, let's go ahead and just get on with it."

SP interview lines 117-122

These all provide indirect evidence for the development of skills associated with management and leadership.

5.3.4 Peer Learning Programme

5.3.4.1 Facilitating Factors

The thematic analysis identified factors which influenced the outcome of the peer learning programme. Enabling factors were identified as:

- equal effort

- mentor support
- socialisation
- level of challenge

There was evidence to suggest these as potential barriers to interprofessional learning developing if they were not present. The significance of these factors varied slightly in group two, possibly due to the level of competence and the modification of interview two.

However, the thematic analysis needs to be considered alongside the theoretical framework which informed the structure of the peer learning programme.

Cooperative Learning Framework

Social interdependence and individual accountability are suggested to be significant variables which will independently influence the outcome of a cooperative learning experience (Johnson and Johnson 1998). Considering elements associated with cooperative learning such as cathexis,²⁸ may help to consider other less obvious factors which may have influenced individual learning behaviour.

5.3.4.1a Equal effort / Cathexis

Within this peer learning programme, equal effort and reciprocity regarding clinical activities appears to be more significant influences rather than any challenges regarding professional status. This was also found to be a significant element in IPL in the academic setting (Howell 2009).

During group facilitation both groups when developing their group rules identified equal input from group members as important with group one being very specific regarding this point. When asked if the group worked well, one participant identified the use and maintenance of group rules as being particularly important. This appears to be equally important within the pair, where successful partnership has developed equal effort appears to be exerted in arranging to meet. This appears to positively influence the relationship. Respect has been identified as a key element of interprofessional working (Pollard 2008), it may be equal effort represents this.

It is clear from the data in group two that both students in all cases put considerable effort into coordinating and undertaking their placement and research activities. Students took turns when interviewing patients and at times considered individual learning needs. While it is not possible to ascertain whether equality of effort occurred, it is clear both parties made a conscious effort and this does appear to be a significant factor in establishing cooperative relationships. The energy

²⁸ Refer to Table 5: Elements of cooperative learning behaviour page 69

expended within a relationship may be an indicator of the student pair working interdependently. The data, therefore, would support the theory that when social interdependence is established positive benefits of cooperative learning become manifest.

Individual Accountability

Individual accountability also needs consideration. In tutorial three a number of the students for various reasons had been unable to undertake interview two. At the time, I reassured the group that if this happened it was included in the research data, as it was important to identify if it was going to be possible for them to physically collaborate in practice within normal placements.

I had encouraged them to arrange to meet for the next clinical task after the tutorial, however, my response identified that although individual accountability and contribution was preferred, it was not essential. On reflection, this may have impacted on the student's motivation to organise the clinical tasks.

Motivation is suggested to decrease when a group member see their efforts as non-essential for group success (Johnson and Johnson 2003). All group members were able to continue with the tutorials whatever the level of participation with their peer through the week.

The combination of challenges in getting together, little mentor support, a clinical interview which was challenging and the understanding that everyone can continue to participate in the tutorial whatever the level of clinical participation may have influenced internal motivation and promoted individual learning behaviours in the one case which did not continue to participate in the clinical tasks.

The influence of individual accountability is, therefore, an element to be considered further in any future peer learning programme.

5.3.4.1b Mentor support

Within the practice environment, the learning culture for nursing is mainly determined at ward level (Eraut 2007, Edgecombe and Bowden 2009) with the style of the mentor influencing student satisfaction (Freeth et al 2001). The quality of supervision has been shown to be the most significant determinant of student satisfaction in interprofessional learning models which involve a training ward type setting (Freeth et al 2001, Ponzer et al 2004). Models which integrate interprofessional learning opportunities into routine placements are more complex to evaluate.

Exploring the data for insight into influences at ward level has identified a number of factors. For nursing students the ward manager, student's mentor and attitudes of colleagues among the wider

nursing team appear influential. This is different to physiotherapy where the clinical educator appears the single most important influence.

One student identified the mentor as being very supportive in general

"My mentor was fabulous, she was very supportive - open to learning herselfshe made it very clear that you learn everyday and she said it's lovely when you get new students"

RB interview lines 403 – 408

and also interested and supportive of the research.

"When I used to go back to the ward after, she'd want to know what we did; she was very interested, yeah."

RB interview Lines 176-177

The significance of being welcomed into a placement area is known to promote integration and learning (Ranse and Grealish 2007). Displaying interest and support for the project was likely to reinforce the positive attitude towards interprofessional learning identified by this student's own questionnaire. Each case displayed varying levels of support for the students from their clinical educators and mentors. In cases where mentor support for IPL from both professions was evident cooperative learning developed.

However, cooperative learning behaviours also developed in cases which did not have support from both the clinical educator and mentors. One case included a student who described the ward manager as not being happy when the student was away from the ward and the staff on the ward *"not valuing the experience"*.

Despite this the students supported each other, developed cooperative learning behaviours, expressed support for the programme and UWE IPQ data demonstrated a positive change in rating on a number of scales. Although one student in this case was aware of less than positive attitudes towards the value of the programme within the learning environment, being able to participate allowed a positive interprofessional learning experience to develop.

In the case where no cooperative learning behaviours developed, there was a lack of support for the organisation of clinical tasks. Clearly optimum conditions for supporting interprofessional learning is within a supportive environment which values the experience, however, this is a facilitatory condition. The absolute necessity lies in practical support in enabling cooperation to occur.

This appears further supported by the data associated with group two. In group two the data did not identify mentor support as an essential factor. This may have been due to greater organisation and management skills being present in group two. However, group two also had mentor involvement in the choice of patients for the clinical interviews. This may have increased the level of support for the project within the learning environment. The impact of this along with encouragement from the clinical educators is very likely to have been important to the overall success of this group.

While consent and permission for the students to participate in the project was gained from all mentors, often nursing students would not be working with their primary mentor on the day of an activity and so would need to explain where they were going and why. In some units as well as consent being gained from the students' mentors, information was also placed on the staff notice board and an informal discussion occurred with the ward sister. However, the interviews suggest this was not apparent to the students.

"Yes, I mean the OT and Physiotherapy knew all about what you were doing but the staff on the ward didn't .. it was just the ward manager that was a bit funny."

RB interview lines 168 – 170

This gives some insight into the power structures within the setting and also the difference between espoused and displayed behaviour.

Communication channels among the physiotherapy students were much clearer with one clinical educator being responsible for each student – engaging these clinicians with the research meant the physiotherapy students were encouraged to arrange their interprofessional work. All the clinical educators also happened to be team leaders and so were the most senior authority figure within the clinical environment. This was not considered when setting up the study but clearly is an important factor when considering sustainability and continued success of the model.

5.3.4.1c Socialisation

Social Identity Theory (Brown 2000) suggest that to influence attitude change elements of personalisation, establishing an ingroup identity and highlighting professional identity are elements which need to be present. There was no evidence of a group identity being formed by the participants within the peer learning programme. However, aspects of socialisation did become a recurrent theme.

During the peer learning programme, there were opportunities for both interpersonal and intergroup interaction. There were varying levels of interaction between cases which appeared to influence the students' experiences.

One case identified significant time pressure when working together which led to an inability to increase interpersonal contact. This was seen as a loss:

"I don't think we had enough time to actually sit down and get to know each other. We needed some allocated time and we could have done that."

C Interview lines 92-93

In this case one student identified not having the time to "bond" as a group or in the pair as they would have liked, although their peer identified the group "as a whole got on really well".

In another case listening to each other was identified as being important and the opportunities for social chat valued.

"I think through our 4 weeks together then, when we were walking through the corridors to each place we were going, we talked about... you know it was just general chit chat as we were walking that we remembered from that first meeting. Which is important, I think it's important for each other to know that you did listen to each other".

RB interview lines 321-324

The quantitative outcomes for both cases above were positive with a greater improvement in the first case mentioned where scores on three ratings improved from a neutral to positive scale. This suggests while greater time for socialisation on a personal level was preferred, it was not essential for a positive outcome.

Group Two

The qualitative data across all cases in group two identified the importance of establishing a relationship between partners. This was described as more of a "one to one" relationship and identified as different to the relationship routinely established by meeting and working opportunistically in practice.

"I've spent time with the physios and OTs and MDT throughout the three years but.. even though its only been a few assessments over the past four weeks it's having that one to one being able to sit there and listen when the assessment is being done and watch the assessment.. I've been in and seen them mobilise a patient and all the bits and pieces before but [its] never taught me how like over the past four weeks."

J interview lines 352-357

This student appears to relate the difference in amount of learning taking place to the relationship developed with their partner. He had previous experience of cross profession observation but learning "how" and possibly why did not seem to have occurred in the same way. Smith (2002)

identified vicarious learning as a benefit of peer observation in a “tandem teaching placement”. In the teaching model peer observation was found to be less intimidating because it was less authoritative and not “connected with the assessment” (p262). However, an additional benefit was found to be vicarious learning associated with observing a peer who was less skilled which enabled the student to learn from their peer’s mistakes. This was proposed to be more helpful than observing a skilled qualified teacher “who might provide far less clues and cues for the student..” (p262 Smith 2002).

It is very likely establishing this “one to one” relationship was also essential to enable peer review to take place. While the specificity and therefore the developmental value of the peer review is impossible to identify, the fact the students were comfortable sharing these processes demonstrates they were comfortable working together, open to opinions from their partner and corroborates a cooperative peer relationship had been formed.

5.3.4.2 Content

This aspect of the peer learning programme is discussed extensively in chapter four.

Clinical Tasks

What does appear significant across the collaborative cases was the positive impact of working together and seeing each other in the practice environment. This was valued by all. The association between the tutorials and the clinical tasks appeared to give the students the confidence and the skills to work together and while there was a preference expressed for this combination, it is not possible to determine if both components are required for the clinical component to be successful.

"Especiallyour first meeting as well to do that because if we hadn't started off with that then I don't know if we'd been any good at interviewing our patients and the different words that we used."

R interview lines 193-195

All cases in group two felt the link between tutorial and clinical tasks helped to prepare the students for the clinical tasks, reflect on them afterwards and retain the focus for the next activity.

"I think with the tutorials ..brought out more information for the next assessment [that] you could actually use on the assessment.. without the tutorials I didn't think you would have brought out why you'd done the assessment and what you were aiming for next."

J interview lines 403-407

They also identified the tutorial being useful for developing the relationship required for the clinical component of the programme

"I think also for the group although we divided off I think it gave you time to get to know the other person as well so that when you came back - even in the second tutorial that we had everyone seemed more relaxed. I suppose you have got a better understanding of each other"

S interview lines 338 - 343

and enabled the group to share experiences.

"..it was a time when you could hear other peoples experiences" S interview line 340

5.3.4.2a Level of challenge associated with clinical interviews

The level of challenge associated with the clinical task was a significant theme across all cases in group one. Out of all of the participants, only one student felt uncomfortable in the patient choice for a clinical collaborative experience. This may have influenced their attitude towards future participation within the clinical environment. The student was not used to the environment the patient was in and appeared to be required to take the leading role in the patient interview which made the student feel uncomfortable. However, the patient was happy to be interviewed and the student gained insights which they felt made them reflect on their role with patients in this setting. This inequity in participation among peers during a clinical task was reported in one case and by one student only. It may have influenced future participation with clinical tasks.

As discussed in chapter four, there were a number of calls for more of a challenge associated with interview two and also reported benefits when the students felt appropriately challenged within the interview.

"we interviewed a patient up there, who actually had communication difficulties herself so it was good to actually..... it was a bit of a challenge as well to communicate with her and understand her feedback to us, so that we could then ask questions based on her feedback to us."

J interview lines 107-109

Students wanted to be appropriately challenged by the interviews; level of challenge was not mentioned when discussing the peer observation.

"both patients we have interviewed has been really nice and really open. In some ways that has made it more difficult because we haven't had a challenge to overcome"

K interview lines 185 – 187

Group Two

The level of challenge associated with the clinical components was not raised as an issue and so the refining of interview two appears successful. One participant still reported feeling unsure if they were doing the right thing, however, when they discussed their activities, all were appropriate and had led the students to share skills and gain greater insight into their roles. The introduction of sharing assessment tools appeared valued by all.

5.3.4.3 Organisation

5.3.4.3 a / b Shift Patterns and Time

The weekly tutorials were arranged when the majority of the students were available – short notice meant room booking was difficult, the venue varied and at times was not ideal. The weekly clinical tasks were discussed at the end of each tutorial to support the written information distributed at the start of the project, the students were then responsible for organising this aspect of collaboration with the support from their clinical educator / mentor.

The working patterns of the students were identified as a significant obstacle to undertake their clinical activities. The students were allocated a peer to work with throughout the four weeks in the first tutorial. At this time they were also asked to exchange contact and placement details. Where students were unable to undertake the clinical tasks they cited the cause as being the difficulty in getting together and the lack of time during a busy clinical environment. In the case where students were based on the same ward the co-ordination of the activities was felt to be easier. In one case, the challenges associated with shift patterns and clinical duties appeared to become insurmountable.

*"I found because of * workload it was hard as she was only in the three days a week. We found it hard to catch each other at the right times and that was the problem really."*

M2 interview lines 58-59

The following extract also identifies that priorities associated with placement learning mean it is difficult to remember everything and this can pose challenges when introducing a new element.

"I was only in three days a week you'd often find it was really difficult, you'd get to lunchtime and suddenly realise that you hadn't spoken to your partner about what you are supposed to be doing."

R interview lines 76-78

While neither student requested further support it is clear from this case that active support was required to enable the students to co-ordinate their clinical tasks. Prioritising and valuing this

activity by an authority figure may influence motivation and compliance as well as providing practical support.

Challenges associated with balancing workload with learning were also identified.

*"I thought ... the only thing that got to me was the time, I was on a ward that was extremely busy, and ok I know you're supernumerary status and you should be allowed to do these things but it was very difficult to meet up with the * student and undertake what we'd been set out to do."*

Second Year Nursing Student

Despite consent for the students to be involved in the peer learning programme, pressure was apparent for both professional groups of students to ensure they continued with the workload they would have been routinely expected to undertake.

"I mentioned before the time constraintswe know that we have got to see some patients by the end of the day. It is time constraints and balancing and it can be quite difficult, unfortunately."

C interview lines 194 - 199

This is not unique to interprofessional learning; as conflict between clinical workload and learning has been previously identified (Ranse and Grealish 2007).

"I suppose a general point I would make about all of the tutorials is that they weren't long enough. After the hour I felt there was still lots to say and obviously you would only have that amount of time and so it would have been quite nice to carry on and work through different things and elaborate"

K Interview lines 240 – 243

This was in contrast to the perceptions of the clinical educator

"I think they felt they were a bit long."

CE A interview line 164

"That was the sort of impression that I got, that probably it could have been done quicker. I don't know maybe it was a bit longwinded for what you were doing. I think they seemed to pick it up very quickly what you wanted from them. So perhaps it could have been done in less time. I think that was the impression that was all."

CE A interview lines 170-173

The initial structure of the model was influenced by my position as a student and academic. While I was able to negotiate the students' participation with the programme to count as clinical time, there was concern from both professional groups that the impact on the placement should be minimal. All placements are summatively assessed and so it was essential to blend activities as much as possible with a clinical day. It was not an option to undertake half day activities as I wanted the project to continue over a number of weeks so that individual relationships among students could

be developed. One hour tutorial time with approx 30 mins clinical time each week was seen as long enough to achieve some goals but not be detrimental to the placement overall.

Cross Case Analysis Group One

A summary of the identified themes and their recurrence across cases is presented below.

Cross Case Analysis Summary

Category and related themes	Case A	Case B	Case C	Case D	Case E (single student data)	Case F (single profession case)	Case H	Case I	Case J
	Group One						Group Two		
Learning Behaviour Displayed	Cooperative	Individual	Cooperative	Cooperative	Cooperative	Cooperative	Cooperative	Cooperative	Cooperative
INTERPROFESSIONAL LEARNING									
Increased understanding of professional roles	••	•	••	••	•	••	••	••	••
Stereotypes	••	•		••	•				•
Increased interest in other professions		•		••	•				•
Low prioritisation of IPL by students			•	•	•				
Develop IP respect	•							•	
Value of working together / “seeing” in practice	••		•	•			••		••
INDIVIDUAL LEARNING									
Interpersonal communication skills	••	•	••	••	•	••	••	••	
Provide extra communication skills practice	•	•							
Reflective Practice	•	•	•				•	•	•
Link theory to practice				••		•	•	•	•
Consolidate own practice	•				•		••	••	••
Stimulate clinical reasoning	•					•			•
Skill Sharing	•		••				••	••	••
Question current practice			•				•	••	••
Improve Time Management				•					

Category and related themes	Case A	Case B	Case C	Case D	Case E (single student data)	Case F (single profession case)	Case H	Case I	Case J
	Group One					Group Two			
Learning Behaviour Displayed	Cooperative	Individual	Cooperative	Cooperative	Cooperative	Cooperative	Cooperative	Cooperative	Cooperative
PEER LEARNING									
Peer Support			●	●●		●●		●	
Peer Observation: ease of	●●	Did not occur	●●	●●	●	●●	●●	●●	●●
Peer feedback	●●	●	●●	●●	●	●●	●●	●●	●●
Establish rapport				●●			●		
Peer status				●			●	●	
Uni professional Peer Learning		●				●●	●	●	●●
Peer Learning Programme									
Mentor Support (positive)	●			●	●				
Mentor support (Lack of)		●	●						
Learning environment WM & others			●						
Level of challenge associated with clinical task	●	●	●	●●	●	●			
Age	●	●	●	●●					
Time pressures: shift patterns and clinical load	●	●●	●●		●		●	●	
Level of student	●				●				
Attitudes of staff negative			●						
Ground Rules	●								
Group size				●					
Tutorial time				●					

Table 36: Cross Group Case Matrix of Identified themes and Learning Behaviours

● indicates data from one participant.

5.4 Cross Group Analysis

5.4.1 Interprofessional Learning

Increased understanding of professional roles.

In both groups the majority of participants reported developing a greater depth of understanding of professional roles and how these roles complemented each other.

Within both groups there was one student whose questionnaire results identified participation in the peer learning programme had led to the student realising he did not have the understanding of other professional roles he had initially thought; thereby exposing of a lack of insight into their own knowledge base.

While this involved a small number of students, this finding was present in both groups. If considered alongside the data which identified erroneous perceptions of roles being challenged in group one, it does suggest a barrier to participating in interprofessional learning could be a student's inaccurate self assessment of their understanding associated with other professional roles.

Increasing interest in other professional roles

There appears to be quite low prioritisation of interprofessional learning among students across three cases in group one. Little data related to this topic in group two. Both groups identified the PLP had increased some of the participants interest in other professional roles and how this can influence the quality of patient care. In group one this was apparent in terms of becoming more aware of the multiprofessional team and the roles of other team members. In group two, this was apparent where students had become more aware of the overlap in roles and tasks undertaken by each profession.

5.4.1a UWE IPQ Results

UWE Interprofessional Relationship Scale

All students except one remained stable or improved the self rating of the interprofessional relationship scale. This would support the overall qualitative data which identifies all participants valued participating in the programme. Where this did not occur, the participant identified the programme had exposed a lack of understanding regarding professional roles which they had not expected. This appeared to be the reason for the change from a positive to neutral score.

Group One			
Pre Peer Learning Programme		Post Peer Learning Programme	
Score	Category	Score	Category
21	neutral	16	positive
21	neutral	16	positive
20	positive	18	positive
20	positive	18	positive
20	positive	12	positive
17	positive	16	positive
16	positive	14	positive
15	positive	24	neutral
18.75 average score		16.75 average score	
Group Two			
Pre Peer Learning Programme		Post Peer Learning Programme	
Score	Category	Score	Category
16	positive	12	positive
17	positive	16	positive
15	positive	15	positive
18	positive	13	positive
16.5 average score		11.5 average score	
Combined group scores			
18 average score		15.8 average score	

Table 37: UWE Interprofessional Relationship Scale

UWE Interprofessional Learning Scale

The interprofessional learning scale across both groups is positive before and after the programme. This pattern suggests the majority of the students may have been predisposed to forming cooperative relationships.

Group One			
Pre Peer Learning Programme		Post Peer Learning Programme	
Score	Category	Score	Category
26	neutral	20	positive
18	positive	16	positive
18	positive	15	positive
18	positive	14	positive
13	positive	11	positive
12	positive	14	positive
10	positive	10	positive
9	positive	9	positive
15.5 average score		13.6 average score	
Group Two			
Pre Peer Learning Programme		Post Peer Learning Programme	
Score	Category	Score	Category
9	positive	9	positive
21	positive	20	positive
11	positive	10	positive
18	positive	12	positive
14.75 average score		10.25 average score	
Combined group scores			
15.3 average score		13.3 average score	

Table 38: UWE Interprofessional Learning Scale

UWE Interprofessional Interaction Scale

The pattern over both groups appears to be one of stability. Where individual scores have moved from one category to another, two have moved in a negative direction and one in a positive. It would suggest overall the PLP has not had a detrimental effect.

Group One			
Pre Peer Learning Programme		Post Peer Learning Programme	
Score	Category	Score	Category
39	negative	43	negative
35	negative	34	negative
33	negative	34	negative
33	negative	33	negative
29	neutral	28	neutral
28	neutral	29	neutral
28	neutral	36	negative
27	neutral	29	neutral
31.5 average score		33.3 average score	
Group Two			
Pre Peer Learning Programme		Post Peer Learning Programme	
Score	Category	Score	Category
26	neutral	25	neutral
22	positive	24/25	neutral
32	negative	28	neutral
29	neutral	28	neutral
27.25 average score		26.5 average score	
Combined group scores			
30.08		31	

Table 39: UWE Interprofessional Interaction Scale

5.4.2 Individual Learning

Communication Skills

Group One			
Pre Peer Learning Programme		Post Peer Learning Programme	
Score	Category	Score	Category
21	neutral	17	positive
22	neutral	14	positive
24	neutral	17	positive
22	neutral	22/23	neutral
19	positive	15	positive
11	positive	9	positive
16	positive	16	positive
20	positive	22	neutral
19.4 average		16.6 average	
Group Two			
Pre Peer Learning Programme		Post Peer Learning Programme	
Score	Category	Score	Category
19	positive	14	positive
17	positive	15	positive
17	positive	17	positive
17.7 average		15.3 average	
Combined group scores			
18.9 average		16.3 average	

Table 40: UWE Communication and Teamwork Scale

The table above identifies the self rated communication and teamworking scores across both groups. While it can be seen the average pre PLP score is higher in group two than group one, one third year student initially self assessed their communication skills in a neutral range and the student who most highly rated their communication skills was in the second year.

If this aspect of the self assessment questionnaire reflects ability a range of ability is present across years which would make the use of communication skills as a focus of interprofessional learning appropriate whatever the level of student.

There was consensus across all cases and both groups that communication skills was an appropriate vehicle for IPL but that their overall interest lay in learning more about each others roles and how to work together to improve patient care. This appeared to suggest that the communication skills practice was part of the “promotive interaction” (Johnson et al 1998) required to establish the interpersonal relationships needed to work together in practice.

The majority of more experienced participants identified greater self awareness of communication skills while less confident and experienced students benefited from the practice elements. There was an overall awareness of everyday challenges associated with interprofessional communication in the data and possibly due to this the choice of a generic attainable skill appeared important.

"I think the communication bit was the important part definitely. Just to make you think about it more. I mean its there, you've improved it throughout the three years but to think about it again in those terms I think is very important."

S2 interview lines 189-191

The value of undertaking this in the clinical setting was apparent across both groups.

"..if you just sat down in the classroom I would get bored. But seeing it first hand with the patient and being able to discuss before hand what [] was looking for was much more beneficial."

S27 interview lines 193 - 195

5.4.3 Peer Learning

Peer Observation and Feedback

A strong theme, which emerged across all cases and both groups, was the ability to establish relationships in both tutorial and clinical settings that fostered peer support within the programme, along with the ability to comfortably observe peers and give and receive feedback.

The concern expressed by my colleagues in the development phase of the study is not supported by the data. Participant status and knowledge base are known to be key variables which influence peer learning (p16 Ladyshevsky 2000, p8 Falchicov 2000). These aspects were identifiable within the data associated with this research, particularly when the students were discussing peer observation and peer review.

Data identified the students felt they had a relatively equal status and felt secure in their profession specific knowledge which they were able to share through the process of engaged observation. This was apparent across groups. Enabling the students to be responsible for what would be observed ensures they are able to control this aspect and identify skills in which they have established competent practice. In group one the skills observed appeared to be opportunistic in nature while participants in group two appeared to discuss what would be useful to each other.

All data identify peer observation as an appropriate and useful strategy when used within a peer learning programme. In some cases participants suggested it is easier to be observed by a peer from a different professional group, the expressed reason for this was the difference in knowledge base i.e. a student from a different profession would not know the correct procedure.

Peer review of communication skills due to the common knowledge base and status within the groups also appeared appropriate and useful. While the quality of the peer review was not able to

be established, receiving feedback on interpersonal communication skills from a peer was valued by a number of participants.

Establishing peer relationships

When all the data are considered together, a theme associated with establishing peer relationships did emerge.

While there was general acceptance that the first tutorial aimed to establish peer relationships;

"I remember this tutorial as getting to know the group." S27 interview lines 93-94

one case in group two implied this was further developed over time.

"We needed the background from the tutorials to do the clinical collaborative tasks, [they] got us working together and improved our relationship."

B interview lines 127-129

"I did like the link between the two [tutorial and clinical] although we divided off I think it gave you time to get to know the other person.. so that when you came back- even in the second tutorial that we had - everyone seemed more relaxed. I suppose you have got a better understanding of each other"

S interview lines 338-343

The combination of cooperative group work with paired peer learning appears to enable a reciprocal relationship to develop; where the group benefits from each pair's experiences but the pairs "individual" experiences enables a more collegial dyadic relationship to form between individual students.

Peer Discussion

In uni-professional practice settings peer learning is associated with a reduction in the amount of superficial questions asked of the student's facilitator (Baldry Currens 2003). Within this model it is clear the students were happy to ask each other for explanations, discuss how roles overlapped and fitted together. This appears to provide similar benefits.

Patient Choice

While the choice of patients has not previously been discussed at depth, it is clear all patients chosen were appropriate, willing to participate and enabled the students to work together. The positive experiences reported by students are likely to have reinforced the motivation of the students to continue with the programme. The choices of patients were completely dependent on the clinical educators and senior staff nurse on one ward. The expertise of the clinicians in

choosing appropriate patients for these collaborative activities and the impact on the overall programme must not be underestimated.

*"the patient was a lovely patient, she was a good patient to do, cooperative and quite chatty as well throughout. Vice versa I think as well the patient who * was treating was cooperative as well."*
S interview lines 233-236

In the one case in which one student reported feeling uncomfortable in interviewing a patient, this case did not continue with patient centred tasks.

5.4.4 Peer Learning Programme

Time

The change in organisation of the clinical component for group two worked extremely well and in the future would be the strategy of choice.

However, following the evaluation of students' comments, the overall structure of the peer learning programme could be improved by the clinical tasks receiving similar protected time as the tutorial. This may be manifest by the clinical tasks occurring after the tutorial. This would help the students with the coordination of activities, but not withdraw their ability to influence the clinical component itself.

Research Question

CAN THE PEER LEARNING PROGRAMME INCREASE THE AMOUNT AND TYPE OF PRE-REGISTRATION INTERPROFESSIONAL LEARNING WITHIN THE CURRENT PRACTICE SETTING?

RIPLS questionnaire from three clinical educators and two mentors identified these colleagues as holding strongly positive attitudes towards interprofessional learning.

Three interviews with the clinical educators facilitating the clinical component of the programme identified a consensus that the activities blended well with routine placement activities and had no detrimental effect on the physiotherapy students' opportunities to achieve their learning outcomes.

"It was quite easy to fit in with the workload and what we were doing. It didn't infringe on what we were doing or it didn't take too much time out at all. It seemed to work. There was no problem organising it."

CE B interview lines 118-119

The clinical activities were discussed with the clinical educators and one suggested the incorporation of sharing assessment strategies. This was implemented in group two to establish a clear difference between interview one and two.

The clinical educators' data reinforced and corroborated the student data which identified lack of time as impacting on the ability to facilitate learning within an acute clinical environment.

"We release them for an hour and you have a million other things to think about. Then they come back from a tutorial and then we get on with the workload. It is all quite hectic."

CE C interview lines 230-231

The difference in shift patterns was also a challenge but one clinical educator identified how the students put effort into organising this.

"..the students I had were quite proactive, very proactive in contacting their nursing student and arranging the time understanding that they had to fit it in before the next tutorial because that was their goal and they did very well with that so I was pleased."

CE B interview lines 125-127

Identifying appropriate patients for the clinical activities was identified as a challenging aspect of the programme.

"..it was trying to find one of those patients that was probably the trickiest thing."

CE C interview line 121

When asked what they thought the students had got from the experience overall there appeared to be a view that the activities complemented the placement but that the clinicians could have been more involved in the tutorials and then reinforced the learning throughout the rest of the placement.

"I think they enjoyed it. I think they got to meet some different students from a higher ..year so that was a benefit and .. how different professions do communicate and the different information that physios and nurses are trying to get."

CE B interview lines 133-135

When discussing the relevance of the clinical tasks there was a range of opinions.

"Understanding the patient's perspective on their journey in the hospital, I think is vital for the students."

CE A Interview Line 153

"especially going to a different ward and interviewing a patient that they didn't know anything about. I think they got quite a lot out of that, especially as it was a different area, so they went from medical to orthopaedics."

CE C Interview Line 163 - 165

There appeared to be support for establishing this type of interaction early within the programme

"especially first year on their first placement it is really good. If they are on a ward environment in that situation and they get to collaborate with nursing students and work together then it is a good grounding for the next two, three years when they are on different placements.."

CE A Interview Line 319-321

Overall the consensus from the coordinating clinical educators was that the programme blended well with the placement but that they would have preferred more involvement with the tutorials as they did not feel engaged with the programme. Two identified they were not sure what the tutorials were covering despite written and verbal information being exchanged. Both also identified they had not had time to read the material given due to work pressures.

Although the PLP blended well with placement activities, this suggests a time protected coordinators role would be essential in facilitating any future programme.

5.5 Chapter Summary

This chapter has presented and discussed the data evaluating the peer learning programme. Individual case presentations identified a range of individual responses to the PLP. These varied within group one from a case which identified consolidating own knowledge as the most valuable aspect to another case which identified challenging existing perceptions and improving a depth of understanding regarding professional roles. However, all cases identified an increase in role understanding and identified the use of communication skills as an appropriate and useful focus.

The following thematic analysis provided a detailed discussion regarding the facilitation of interprofessional, individual and peer learning within the practice environment. The combination of tutorials and paired activity enabled a patient centred focus to be maintained among a group of diversely placed students.

Finally the cross group analysis was able to discuss the differences between groups attributed to level of student.

6.1 Introduction

This final chapter will consider the evaluation of the Peer Learning Programme as a whole. It will identify the limitations associated with the methodology, discuss the evaluation of the peer learning programme and consider the suitability of a cooperative learning framework to inform interprofessional learning in the practice environment. Finally, it will highlight the unique contribution this doctoral research has made and identify recommendations for practice and future research.

6.2 Methodological Considerations

An aim of this thesis has been to apply experiential knowledge gained regarding uni-professional patient centred peer learning techniques to the interprofessional forum, thereby integrating existing professional knowledge with academic knowledge to develop a new understanding. The use of mixed quantitative and qualitative methods has enabled an in-depth exploration of the student's experiences of the PLP. Qualitative data captured individual perceptions of their experiences while the UWE IPQ considered self-reported communication skills development and attitudes and understanding towards the healthcare community as a whole. The contrast between the quantitative and qualitative results²⁹ reinforces the value of combining methods to enable an in depth understanding to develop of individual experiences. Quantitative data on its own would have suggested little development in role understanding among participating students. The inclusion of qualitative data enabled an exploration of these results that identified a development of a greater depth in understanding; the data also identified challenges in the accuracy of self-assessment and the subtle difference in what the methods were measuring.

A chronological narrative account (Yin 1994) has been used throughout the thesis to present the case study. This has provided an audit trail, and by writing reflexively may also give others insight into how the values of the researcher influences the research process. Yin's (1994) methodological approach provides construct validity while the strong influence of Stake's (1995) approach to education evaluation enables the complexity of the situation to be retained and avoids the temptation to tidy up the data into neat categories.

Despite the lack of direct observation, the triangulation of data enabled the credibility of participants' accounts to be scrutinised and valuable insight into the student-student relationship to be achieved. Choosing not to use direct observation ensured there was no change to student behaviour during the clinical component due to researcher observation (p102 Yin 2009) and enabled the students to establish autonomous relationships within the practice environment.

²⁹ See p104-107

Throughout the presentation of this case study the structure has been strongly influenced by the consent detailed within the ethical approval process. Maintaining participant anonymity and considering how to combine the original deductive analytic framework with an inductive analysis has been challenging. Coffey and Atkinson (1996) remind us “writing actually deepens our level of analytic endeavour. Analytical ideas are developed and tried out in the process of writing and representing” (p109).

The addition of an inductive analysis I feel has enhanced the quality of the research and enabled the complexity of the case study to be more fully explored. Including the full range of data within the analysis rather than selected representative cases posed its own challenges, but ensures equal value is attributed to all data. Many aspects of interest have been highlighted – where possible I have shared these, but I have imposed my authority as researcher in identifying only those aspects which resonate with the quintain – that of understanding the students’ experience of the peer learning programme. Framing the data analysis with the original research questions has ensured the focus of the study has been retained.

Maintaining anonymity while presenting individual cases was extremely challenging due to the potential for one participant to recognise data from their partner. This led to the detachment of cases from identifiable details during the individual case presentation. One way of overcoming this challenge in the future could be the use of more collaborative or participatory approaches to evaluation, which are aimed at empowering stakeholders (p45 Stake 2004). The collaborative development of vignettes representing each case could be one way of ensuring student’s interpretation of their experience is portrayed from their perspective and may give valuable insight into the development of relationships over time. However, the use of vignettes would lead to a loss of anonymity between peers. This may influence the openness and honesty of discussions and, where experiences were less positive, could precipitate conflict between peers. If students felt unable to openly express both positive and negative experiences, research results could become biased with data emphasising positive experiences leading to a less balanced account.

While maintaining individual confidentiality has limited the way in which individual cases can be presented, ensuring participants’ anonymity appeared to lead to the freedom of expression required to gain genuine insight into the students’ experiences. Presenting each case has enabled the range of responses to the PLP to be explored. This ranged from one case, which most valued the consolidation of own knowledge through peer observation, to a more representative case in which individual perceptions of each profession were challenged by the development of a more accurate understanding of roles. This reminds us evaluating the impact of any educational intervention will elicit a range of individual reactions influenced by previous experience, level of skill, personal and professional attributes, attitudes and values along with the context within which

the programme has been delivered. Age and previous educational background are significant when considering individual responses to interprofessional education (Pollard and Miers 2008).

6.2.1 Study Population

A limitation of this study is the lack of long term follow up and the inability to assess any behavioural change; it is not possible to know whether the changes espoused by participants actually impacted on practice as described or would influence future practice. This has been recognised as a limitation associated with much research associated with interprofessional education (Barr et al 2006). However, the aim of evaluating the impact of the peer learning programme has been achieved, with data identifying students making the initial steps towards developing interprofessional capability (Walsh et al 2005).

The inclusion of only two professional groups is also a limiting factor and further research needs to be done to determine if cooperative learning behaviours can be facilitated within a wider multiprofessional group using this approach. There is evidence to suggest group composition may impact on individual levels of participation (p45 Pearson et al not dated). Within this model, the use of student pairs may help to dissipate differing attitudes towards IPL as promotive behaviour is facilitated and joint experiences are brought back to contribute to the group. However, whether or not this is the case can only be established through the application of the programme to a wider range of professions.

Data from the UWE IPQ identified the study population held positive attitudes towards IPL before they started the programme. Recruiting volunteers is likely to have enabled students with less positive attitudes to opt out and predispose the participants to develop cooperative learning behaviours. It would, therefore, be valuable to repeat this research with a group of students expressing a more diverse range of attitudes. It is likely this would be achieved by increasing the number of professional groups (Horsburgh et al 2001).

The lack of active participation with the research from nurse mentors has led to limited data from a mentor's perspective and the lack of opportunity to influence interprofessional relationships between educators of both professions. While mentors agreed for the participation of students, there were no volunteers to participate with the research and this has led to the perspective of clinical educators only being portrayed. This could be improved in the future if a peer learning programme is implemented with all students placed in pre-arranged placements so educators from all participating student groups could collaborate.

6.3 Peer Learning Programme

6.3.1 Structure

The students felt the ability to meet in the tutorial setting facilitated the clinical experiences. It is not possible to establish how important this is without comparing this programme to one without tutorial support. The protected time associated with the tutorial setting was in considerable contrast to the clinical activities. Even when a participating clinical educator was involved, students felt pressure to return to routine clinical duties as quickly as possible. Interestingly this was not identified in the data associated with group two. Group two fully completed all associated tasks and appeared to balance the PLP activities with their placement with little support. This is likely to reflect their greater organisational and management skills. It may also reflect a more smooth coordination of the PLP. For students to collaborate in practice protected time must be allocated. This could be achieved through the identification of interprofessional activities within the learning contract.

6.3.2 Mentor / Clinical Educator Support

It is clear any interprofessional learning initiative within practice is more likely to succeed when mentors have a positive attitude towards it. However, in one case this was a facilitatory factor rather than an essential aspect – one case in group one demonstrated positive IPL experiences could be facilitated within a sceptical environment. However, in the case where little involvement from either clinical educator or mentor was apparent the challenges in organising collaboration within the clinical setting became insurmountable.

Where clinical educators and mentors were involved in patient selection and interested in the outcomes of the tutorials this positively reinforced the value of the activities undertaken. In group two the equal involvement of both professions in patient selection was the optimal model.

6.3.3 Clinical Activities

Patient Selection

Patient selection itself is a significant factor to consider when enabling students to collaborate in patient centred activities. Ensuring the patients are happy to participate in the activity but also provide a developmental challenge appropriate for the level of the student requires an experienced educator; this was identified by one of the educators as “probably the trickiest thing” (CE C interview line 121) to achieve. The choice of the patient in case B may have been one of the influences that led to a lack of cooperative learning developing.

Level of challenge

There is some evidence to suggest the relevance and challenge associated with clinical tasks influenced engagement. In group one, a number of participants voiced concerns there was little

difference between the first two clinical tasks. While some of the students continued with the task, case C chose not to participate. The feedback regarding interview two and lack of involvement with this task suggests if there was no obvious gain from participation individual motivation will be reduced with priority being given to other clinical activities. There was evidence of the constant conflict between clinical workload, the attainment of individual learning outcomes and interprofessional learning. Each student was juggling multiple priorities – those dictated by the programme, the mentor / clinical educator, clinical demands and participation with the research programme that required individuals to organise, manage and co-ordinate activities in addition to the routine placement. Participation rates on their own could, therefore, be seen as an outcome measure indicating how manageable it was to blend the PLP with these competing priorities.

If the clinical component had continued to have an apparent lack of challenge or relevance it is likely more participants would have disengaged. However, this did not occur and the majority participated fully until the end of the programme. This suggests continued participation with the clinical tasks were, in part, associated with an individual's continuing motivation to participate with the programme. It is likely that motivation to continue with the programme was reinforced by the positive gains associated with the clinical tasks reported in the data.

This proposal is supported by the disengagement from the clinical component of Case B. Issues surrounding case B are symbiotic and complex. However, one element, a less positive experience during interview one, may have reduced student motivation to fully engage with the clinical part of the programme as well as inhibit the development of cooperative learning behaviours. This would support the significance of promotive activity developing where "individuals encourage and facilitate each other's efforts to learn" (Johnson and Johnson 1998, Johnson et al 1998) along with successful joint working (Dickinson 2009). It was clear in Case B individual learning behaviours were at play in interview one; during the interview there was no evidence in the data of equity of participation and data identified a perception of inequity of effort when attempting to arrange future clinical tasks. As this was not identified at the time, support and facilitation to improve this situation did not occur. Group two was openly sceptical regarding the possible benefits of the peer learning programme due to the focus on skills they felt they had already developed. However, the group chose to work together and there was 100% participation with the paired clinical tasks over the four weeks.

It is important to remember the complexity associated with case study where actions are influenced by complex contextual issues. There may be influences at play, which have not been identified by the data.

Tutorial time associated with the PLP could have been seen as an opportunity for a break from clinical practice in an otherwise hectic day. However, there are no data to support this and it was

clear each participant needed to organise their clinical duties to allow engagement with the programme e.g. nursing students needed to ensure they were working on the day.

Group two was at the final stages of their programmes, soon to be applying for jobs. While I am not associated in any way with the hospital, it may have been particularly difficult for this group of students to step off the PLP when there was support for the programme from senior staff.

6.3.4 Peer Review

Giving and receiving feedback is a central aspect of uni-professional patient centred peer learning. Peer review of interpersonal communication skills was included in the PLP as a strategy to facilitate interdependence among pairs. During the developmental stage of the research, it was suggested the students would find this threatening. This has not been the case. Peer review was found to be acceptable in both the tutorial and clinical setting with students' valuing the feedback they were given. While data on this aspect of the study are self-reported, the ability to triangulate the interview data with reflective diary entries and consider cross participant reporting of the same event strengthens the validity of the findings.

The concerns expressed above are similar to concerns expressed in the uni-professional evidence base, which identified "some supervisors are cautious about facilitating it [peer observation and critique] for fear it will cause competition or feelings of intimidation between students" (p6 CSP 2002). The review by the CSP also found "that despite proven advantages, many clinicians hesitate to adopt the collaborative model, anticipating difficulties which rarely occur in practice" (p4 CSP 2002).

However, it must be remembered that peer review occurred after peer relationships had been established via two group tutorials and the initial patient interview. The establishment of a trusting relationship and the review of communication skills at a level which was readily available to all students may have ensured competitive behaviours did not develop and the peer review was seen as non-threatening. The promotive interaction experienced appears to have led to continued effort being expended in organising future clinical activities leading to elements of cathexis, inducibility and substitutability being displayed.

The inclusion of interprofessional peer review of interpersonal communication skills in practice is unique with little published research discussing this strategy being used in practice based interprofessional learning. The data support its use to facilitate promotive interaction. The peer review process may have influenced the equality of status achieved, which in turn may have helped cooperative relationships to form. It would be valuable to repeat the PLP with a study population with a wider range of communication skills to see if the results of this research are repeated. It would also be valuable to extend the peer review process to include written feedback. This would be an activity which could contribute to each student's professional portfolio and start to develop

the more complex skills associated with co-mentoring across professions proposed as part of the interprofessional capability framework (Walsh et al 2005).

6.3.5 Peer Observation

When considering how to represent the data regarding key elements of the PLP, the following comment appears significant.

“If you were going to design something like this in which you got together with students from different professions, what would you get them doing?”

“I would definitely get them viewing each other in practice and being there to observe it, knowing the person and observing them so that you can ask them questions directly..... It is like having more of a one to one relationship and then observing. Definitely keep with that.”

J interview lines 346 – 355

This suggests peer observation among peers with established relationships can play a significant role in facilitating interprofessional learning.

All cases except one chose to observe their partner. This was described as “enjoyable”, “comfortable” and one participant described it as “easier than being observed by your own profession”. When discussing the ability to be observed, students in group two felt a prerequisite of being observed was confidence in your own practice. The data suggest the process of being observed by a peer from another profession may enhance student confidence due to the consolidation of skills through demonstration and explanation. The demonstrator is placed in a position of greater knowledge and this may make the experience less stressful. This is supported by the evidence base associated with uni-professional peer learning which identifies peer observation “is valued highly amongst compatible peers” (p6 CSP 2002). Overall peer observation was identified as being an enjoyable and valuable experience.

Baxter and Brumfitt (2008) identifies the presence of exchange and sharing as a key feature of interprofessional working practice; this was present in both groups and appeared in all cases in group two. The specialist skills shared varied across teams but among other things included aseptic technique, ECG, Waterlow Scale, auscultation, respiratory and balance assessments. Profession specific knowledge and skills is what marks professions apart (Baxter and Brumfitt 2008), enabling students to share this while also recognising common ground allows students to recognise and reflect on each others’ skills and may promote vicarious learning (Smith 2002). This can then be related to how the team they are a member of functions.

The peer observation itself occurred towards the end of the programme after the students had been working together for two weeks. This may have facilitated the ability of peers to ask questions and be happy to be observed. A reduction in superficial questioning of clinical educators has been

reported in association with uni-professional peer learning (Holland and Hurst 2001, Baldry Currens 2003, Moore et al 2003). It could be in this interprofessional model, the attainment of peer status enables students to ask questions without concern that they should already know the answer.

6.4 Cooperative learning

There has been the suggestion that cooperative learning is not truly student centred due to the facilitator's role being central, that the approach is only appropriate to develop learning outcomes which are factual in nature, or that "in guaranteeing accountability, it risks maintaining authority relations...that replicate the authority relations of traditional education" (Bruffee 1995 p18). However, in any educational situation, it is the role of the facilitator to ensure a safe environment for learning is established. The five principles associated with cooperative learning (Johnson and Johnson 1998) enables an explicit focus to be identified – the group's common goal; but include processes which support the development of the social skills required for team working, conflict resolution and interprofessional practice. Enabling students to have an element of self-determination regarding the way clinical activities are carried out respects their autonomy and potentially scaffolds the development of organisation and management skills. However, the boundaries set by the cooperative framework of individual accountability alongside an interdependent partnership may promote professional relationships to form. These are essential elements of teamwork and were apparent in the cases where cooperative learning behaviours were identified.

The use and adaptation of the conceptual framework associated with Social Interdependence Theory enabled student – student relationship to be scrutinised and explicit aspects of cooperative learning behaviours to be considered. This was a valuable framework, particularly when undertaking the deductive analysis as it identified specific elements with which to scrutinise the data. The findings complemented the inductive analysis which identified equity of effort, peer liaison and peer support during clinical tasks as significant. In all cooperative cases cathexis; identified in this interprofessional model as the equity of effort expended between partners when organising, structuring and carrying out the clinical activities, was apparent. Substitutability was apparent in cases that shared responsibility and worked together during the patient interviews to ensure both the patient was happy during the interview and the student partner felt supported. Inducibility became apparent in the results when students self-reported challenges to existing beliefs and attitudes towards each professional group. Interestingly inducibility was not limited to pairs undertaking the clinical aspects of the programme. Data identified students whose primary participation was in the group tutorials were influenced by their peers and so the promotive behaviours within the tutorial setting also influenced the overall outcome of the PLP and promoted inducibility –the ultimate aim of any interprofessional education. These findings support the positive influence of successful promotive interaction.

Within the practice arena there will always be a considerable amount of unpredictability; educational strategies must be flexible and appropriate for an environment designed to provide patient care. The evidence base associated with practice based peer learning gives considerable insight into how patient centred activities can be central to peer learning during routine practice (Holland and Hurst 2001, CSP 2002, Baldry Currens 2003, Moore et al 2003). The literature associated with learning in practice identifies many benefits associated with learning in the environment in which knowledge is to be applied (Eraut 2007). However, conflict associated with delivering patient care and achieving learning outcomes is also documented (Ranse 2007), this conflict was present in this case study.

The evidence base associated with establishing interdependence of peers during patient focused activities is, in part, associated with models of reciprocal peer coaching where the “students’ goals are inter-related” (p18 Ladyshevsky 2002).

In my experience, unless interdependence is established through the formation of a common goal at the outset the potential for one student to disengage and become disenfranchised or bored is high. For example, when students participate in an activity, only one can lead. If the remaining student does not have a role, they can view this activity as irrelevant. This is overcome by ascribing roles and ensuring either student can be assessed in any element of the task. However, within the PLP there was no assessment. Instead peer review of communication skills was included to ensure at all times both students were active participants. This aims to avoid one student dominating the proceedings, or a lack of participation.

Considerable research has evaluated models of interprofessional learning designed to enable students from different professions to work together in practice. In models that use a PBL philosophy, interdependence is established in various ways – for those which develop student teams providing patient care is the common goal and students’ roles are defined by their profession (Freeth et al 2001, Lumague et al 2006, Wilhelmsson et al 2009). For other patient centred activities, the uni-professional evidence base can provide examples of how this can be achieved.

Some of the interprofessional practice based initiatives involve students collaborating within tutorial settings (Anderson et al 2006, Pearson et al not dated). Using a tutorial setting to introduce students, establish relationships and ground rules is now well established as a strong basis for IPL in practice. It is easier to control this type of interaction and ensure factors identified as significant to interprofessional learning are met. Yet enabling open and honest discussions to occur within a group where sensitivity to others’ experiences and opinions are encouraged can be challenging.

I propose a cooperative learning framework has the ability to provide a safe learning environment for this discourse to occur and appears readily transferable into the practice environment. The use

of Social Interdependence Theory as a conceptual framework enables an explicit understanding of what constitute cooperative learning and how successful promotive interaction may lead to students becoming open to the influence of their peer.

In a placement setting, established hierarchies are part of the students' daily experience. It is impossible to control for these, while a student group may participate in a discussion regarding interprofessional working and relationships, they will be drawing on the environment they are working in to inform that discussion. Highlighting best practice within a tutorial setting will involve some members of the group finding resonance with this in the daily routine while others may not (Robson and Kitchen 2007, Pollard 2008). Practice based IPL enables parties with differing experiences to meet to discuss common ground and start to explore more challenging aspects of professional life which they will be required to navigate once qualified.

Once qualified interprofessional practice is patient centred. When participants in the PLP described previous interprofessional interaction occurring in practice these communications were driven by the need to provide holistic care. While many of these experiences enabled students to gain interprofessional experience, this did not always translate into interprofessional understanding. The combination in this research of a tutorial setting with paired patient centred activities enabled this to occur and for students to develop a depth of understanding and collaboration not previously achieved.

6.5 Preparation of Educators

It has been recognised educators facilitating interprofessional learning need support in developing appropriate skills (Hammick 1998, Bray and Howkins 2006, Anderson 2009,). These skills include "a clear understanding of how group dynamics can impact on the learning environment" (Bray and Howkins 2006). The literature on uni-professional peer learning also identifies the need for educators to have a good understanding of group dynamics (Mason 1999). While PBL approaches are being introduced to the practice arena with considerable value, there have been some challenges identified due to the time requirements associated with the PBL cycle (Freeth et al 2001). Exposing cooperative learning principles may enable clinicians to develop their own patient centred strategies most suited to their environment and for educators to have a greater awareness of the difference between individualistic, competitive and cooperative learning behaviours.

"The influence of evaluation studies on education practice is likely to be increased substantially when, and only when, evaluators and practitioners share a common understanding" (p10 Anderson 2007).

While the complexity associated with IPL cannot be underestimated, the wide range of theoretical frameworks could be argued to limit the accessibility of these to clinicians interested in promoting IPL in practice (Hean et al 2009). Sharing principles of educational practice which are most likely to promote positive educational experiences need to be developed in a way that is accessible, relevant and transferable to practice. The unique context associated with each practice environment means it is challenging to transfer a successful model from one environment to another; principles of cooperative learning, however, can be readily adapted to suit any encounter. Those clinicians already familiar with this approach through the facilitation of patient centred uni-professional peer learning could be seen as a source of expertise to support the expansion of these techniques interprofessionally.

According to Lave and Wengers' (1991) initial discourse on legitimate peripheral participation, as students become legitimate peripheral participants in their own professional groups, they also become participants in the wider social order. Currently the evidence base associated with interprofessional learning identifies social status, professional hierarchies and subcultures affecting interprofessional relationships and impacting on interprofessional teamwork (Cook, A. et al 2001, Barr et al 2006). Without active engagement in a process which makes overt, discusses and challenges this wider culture, students will clearly refract the local attitudes of the group they are peripheral but attached to. As detailed in the discussion regarding stereotypes in chapter five, these are not always positive.

The PLP may enable the students to view each professional subgroup from the perspective of a "temporary" legitimate peripheral participant, using the understanding of their partner to elucidate practice. This enables a greater level of insider participation, and could explain why at times the students in the PLP appeared to have developed an understanding of what it would be like if they were in the other profession.

"They just seemed to have so much to do, I think perhaps you can appreciate that at times when you do talk to a nurse and they seem a little bit harassed or stressed and you can think yes - I can see where you're coming from. I'll just stand back and just be patient."

Third year physiotherapy student

"I didn't realise actually myself that he, he said that he could see, this [patient's] ...improvement in a week and I thought that must be so great to see a lady who comes in and can't walk very well, a week later walking up and down the side of her bed and you've helped to do that, must be huge."

Second year Nursing student

6.6 Motivation to engage in IPL.

Data identified a low interest and motivation to participate in IPL in routine placements among second and third year students in both groups and identified previous opportunities for IPL in practice that had not been undertaken or prioritised. While interest in learning about professional roles was low, once engaged it was the aspect most valued. If we consider collaborative learning as the natural learning which occurs when students work together to “create their own learning situation” (p28 Johnson et al 1998, Smith et al 2005); we can see from the data that little natural collaboration occurs across professional groups. This appears to endorse research that suggests that collaboration among peers does not naturally occur within the practice setting (Russell et al 2006) but that considerable opportunities exist.

A potential barrier to interprofessional learning in practice exposed by this research is that students may feel they already fully understand the role of their professional colleagues and so not perceive this as a priority for learning. This may be further exacerbated when mentors do not value or promote interprofessional collaboration.

6.7 Communication Skills

Working together in practice was valued by all cases in which this occurred. The data identified students felt interpersonal and interprofessional communication skills were relevant to individual professional development and central to patient care. This common goal appeared to enable the participants from group one to understand the relevance of working together. While group two was sceptical regarding the possible benefits of the peer learning programme due to their level of skill and understanding; following the programme they all felt this had been beneficial and appropriate to their stage of study. Pearson et al (not dated) has related this to Knowles (1990) theories of adult learning which suggests the best time for learning to occur is when a problem needs solving. Enabling the students to work together may have helped them to understand the relevance to future practice.

The skills incorporated into the PLP appeared to be readily transferred into practice and complement placement learning. Overall there was reported to be an increased awareness of individual interpersonal skills and their relevance to both patient centred and interprofessional communication. These skills are routinely developed and assessed in practice and it could be argued there is no need to further support their development. However, I feel this research demonstrates there is value in consolidating these skills alongside colleagues from other professions so that the challenges associated with interprofessional communication can be discussed. Early use of a peer learning programme in practice may positively affect the students’

attitudes towards learning together in the university by highlighting the need for teamwork early within the professional socialisation process. It may also help students to develop the ability to more comfortably approach colleagues from other professional groups.

One aspect of the research that surprised me and has caused considerable reflection were some comments made by third year students in one case.

"The patient told us it was "small things that matter to us really" e.g. name, a smile.

B interview lines 85-88

Both participants went on to reflect that their clinical lives were so busy that it was useful to be reminded by the patients of the significance of basic communication skills such as using someone's name. When developing the programme, I had been concerned the levels of communication skills being covered in the programme were basic. However, at no point had I really considered how these basic skills may be acquired and then negatively influenced by work pressures. This has made me much more aware of the potential significance of reflective time in practice for students to be able to discuss how situational and contextual issues may influence their behaviour.

6.8 Timing of IPL

"We get told about it a lot, but unless you actually experience how it works it is quite hard to get your mind to understand like how much of an integration there needs to be."

J interview lines 27-29

Recent research is now beginning to highlight the significance of integrating both academic and practice based learning (Morison et al 2007, Wilhelmsson et al 2009). However, it is known professional groups have different attitudes towards the relevance of interprofessional learning which may form a barrier to learning (Horsburgh et al 2001). HEIs delivering IPL within their curriculum have identified that pre-registration students may have difficulties in understanding the relevance of IPL early on in their programme and appreciate the value more once they have "experienced its relevance to their own professional practice" (p1 Pollard et al 2008).

This research demonstrated the students identified themselves with their profession within the first practice placement and were perceived as such by their peers.

"I think it was good for him to see a physiotherapist in practice"

First Year Physiotherapy student

They also articulated the difficulty in discussing professional roles within the academic setting before they had good insight in to them

"I think it [the PLP] would be hugely helpful especially after doing the first year, finding out a lot more about how physiotherapy works, especially in a hospital and actually having a wider knowledge after being in the first year and being able to then adapt that into explaining to other professions in the academic situation what we do."

First Year Physiotherapy student

The first placement within the physiotherapy programme occurs at the very end of the first year. The data here suggests even within the first few weeks of clinical practice the students identified themselves as representatives of their profession and were viewed as such by other students. The data also suggests clinical experience helps students to start to understand the relevance of IPE. It may be, therefore, when considering when IPE should start that consideration of where placements occur within a curricular structure is more important than the stage of study. This research would support the introduction of IPE early in association with a student's first placement experience. This would enable the relevance of IPL to be highlighted at the earliest opportunity and may influence attitudes towards IPE in the academic setting.

6.9 Concluding Thoughts

The embedding of interprofessional education within professional curricula in the UK has led to an expanding evidence base associated with the facilitation of interprofessional learning in practice. However, while theoretical frameworks and principles have been used to inform this development, there has been little consideration given to the existing evidence base associated with uni-professional peer learning within the healthcare practice environment.

This thesis reviewed the evidence base associated with peer learning in physiotherapy practice. This identified the potential for competition among students to occur, and for different learning styles, differing levels of ability and "overshadowing" to impact negatively on the peer learning experience (Zavadak et al 1995, Mason 1999, Farrow 2000, Martin 2004, Secomb 2008). While these situations were not identified as commonly occurring (CSP 2002, Martin 2004), strategies which consider the active facilitation of cooperative learning behaviours have been proposed to minimise these complications (Ladyshevsky et al 1998, Ladyshevsky 2000).

Cooperative learning has been identified as being an appropriate strategy for interprofessional learning (D'Eon 2005), and is being advocated by some interprofessional education providers within the UK (www.faculty.londondeanery.ac.uk/e-learning/interprofessional-education accessed Oct 2009). However, there appears to be little evidence of the explicit application and evaluation of cooperative learning within the literature on practice based interprofessional learning.

Considering how cooperative learning principles can be transferred to an interprofessional setting expands the existing evidence base associated with uniprofessional peer learning and aids the transfer and application of this evidence base to the interprofessional domain. The identification of cooperative learning behaviours in terms of cathexis, substitutability and inducibility enables behaviours relevant to and promotive of the skills required by the interprofessional capability framework to be identified (Walsh et al 2005).

Peer Learning Strategies

Three different activities within the practice environment were combined within the peer learning programme: cooperative patient centred activities, peer review and peer observation. This research has contributed to the body of evidence associated with all of these strategies.

Key aspects highlighted when using the cooperative patient centred activities were the levels of challenge, mentor support, facilitated reflection and choice of patient. It could be seen within group one how a reduction of motivation and compliance occurred when there appeared to be no additional or developmental challenge associated with the task. Mentor support and facilitated reflection with each pair could have highlighted the lack of cooperative learning behaviours within an activity and facilitated continued participation. It would also have allayed any concerns regarding the choice of patient and may have encouraged future promotive interaction to develop.

The use of peer review of communication skills associated with patient centred activities is unique and while peer review in a tutorial setting is a commonly used educational strategy; peer review within the clinical setting is less evident within the interprofessional literature. During the development of the research proposal this was an area consistently highlighted as causing concern among colleagues. This suggested students from different professional groups were not seen as peers by qualified staff. This was not the perception of the students in this research; during the peer learning programme the students worked together and identified their partner as having peer status.

When cooperative learning principles are used to structure the activity, peer observation can promote IPL through the process of professional representation (Howell 2009) and promote benefits associated with peer tutoring i.e. consolidation of own professional skills, possibly due to the cognitive reorganisation required to verbalise and explain (p5 Falchicov 2001). Vicarious learning regarding common skills may also occur (Smith 2002). Cooperative learning behaviours can be facilitated without the use of external assessment drivers, however, establishing interdependence appears key to facilitating promotive behaviours.

Interestingly the PLP did not promote the development of a peer support network which has been highlighted as a strength of other interprofessional (Pearson not dated) and uni-professional peer learning programmes (Baldry Currens 2003). This may be due to students working in different clinical areas and so having a lack of contact outside the PLP. There was evidence the physiotherapy students using peer learning strategies as part of their routine placement experiences did provide each other with peer support. This supports the suggestion social time together may be important when developing interprofessional learning opportunities (Hammick 2007).

6.10 Recommendations for Practice

The application of cooperative learning principles previously used to structure uni-professional peer learning in practice can be recommended for use when promoting interprofessional peer learning. This includes patient centred strategies. These strategies can be used to maximise existing opportunities for IPL and blend with routine placement structures. This research supports the existing evidence that suggests IPL in practice is unlikely to become manifest in future placements without support and facilitation (Russell et al 2006).

For people in positions of programme design or clinical coordination, considering the inclusion of cooperative learning principles in routine educator training would enable the embedding of these principles in practice education. Highlighting the importance of prioritising IPL activities via the learning contract may stimulate greater interest regarding IPL in students by demonstrating hierarchical support, will provide the ring fenced time required and may help to maximise the use of existing IPL opportunities.

Low prioritisation of and interest in IPL was apparent among participants in this research and many students felt they had a good understanding regarding the role of their professional colleagues. While an understanding of roles may exist, this often appears to be based on easily observed repetitive tasks that, if anything, reinforce existing stereotypes.

Enabling students to identify with and feel part of the interprofessional team may also be significant as teams focused by commonly held patient centred goals appear to facilitate the acquisition of a team identity (Sheenan et al 2007), something some of the students became more aware of following the PLP,

For clinical educators and mentors in practice facilitating learning using cooperative learning principles can be recommended. Patient centred strategies facilitate immediate access to the

significance of interprofessional working. However, any task needs to be at an achievable developmental level appropriate for both students, the choice of patient is significant and promotive activities need to ensure both individual accountability and interdependence is established. Once positive promotive activity occurs where “individuals facilitate and encourage each other’s efforts to learn” (p29 Johnson et al 1998b) the positive benefits associated with cathexis, substitutability and inducibility may be manifest.

6.11 Recommendations for future research

Undertaking this research with student volunteers can be seen as a weakness of the research as it enables students predisposed to developing cooperative learning behaviours to participate. Further research using this model with students who were required to participate as an integral part of a routine placement would enable the cooperative learning framework to be more robustly evaluated with participation rates and utility among other professional groups to be assessed. Consideration of how to facilitate the acquisition of a multiprofessional team identity is worthy of exploration as is the use of mixed methodology to ensure data capture identifies individual change.

An evaluation of peer review in the practice environment among a greater range of professional groups including the use of student generated written feedback forms would be of great interest and may facilitate the development of co-mentoring across professions.

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Appendix A

Contains Mentor / Clinical Educator

1. Letter of Invitation
2. Information Sheet
3. Non-Participation Questionnaire
4. Consent Form
5. Teaching Plan
6. Patient Centred activities: Guidance for Mentors
7. Interview Schedule

Contact Details

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Dear

I am writing to invite you to take part in a study which gives students from nursing and physiotherapy the opportunity to work together on their placement.

The study aims to explore how suitable and practical it is to enable students to develop their interpersonal and interprofessional communication skills together. It will also identify if this helps students to develop a greater understanding of each others' professional roles. The study will form the basis of my doctoral thesis.

I am sure you are aware that it is thought that patient care can be enhanced through effective team working and good Interprofessional communication. Your participation in this study would contribute to developing a greater understanding of how to effectively facilitate students from different professions to learn together during their pre-registration practice education.

I hope you can take the time to read the enclosed information sheet which explains the study in more detail. I have also enclosed a consent form. Full instructions for participation are given at the end of the information leaflet. If you choose not to participate in the study I would be grateful if you could answer a couple of questions and return the information in the envelope provided. This is completely voluntary, the information will be treated as confidential and the form is anonymous.

Thank you for reading this letter. Please do not hesitate to contact me if you have any queries or would like to discuss the study further. I look forward to hearing from you.

Yours sincerely

Fiona McLeod, Lecturer in Physiotherapy
MSc MCSP PGDip(Ed)

Peer Learning among Nursing and Physiotherapy students within the Clinical Environment: An Interprofessional Model.

PLEASE TAKE TIME TO READ THE FOLLOWING INFORMATION. IF YOU ARE UNCLEAR ABOUT ANY POINTS ASK FOR CLARIFICATION USING THE CONTACT DETAILS AT THE BOTTOM OF THIS FORM.

Mentor Information sheet

What is the project about?

The purpose of the study is to increase the opportunities for nursing and physiotherapy students to learn together within the clinical environment. Often there are a number of students from a variety of professions within the same hospital at the same time but placed in different clinical teams.

The study aims to explore how suitable and practical it is to get students developing core communication skills together and to see if this enables students to develop a greater understanding of each others' professional roles

Why you have been asked to participate?

You have been asked to participate because you are supervising a student who has volunteered to take part in the study.

Who is carrying out the project?

Fiona McLeod -I am a Physiotherapy lecturer at the University of Plymouth. I am carrying out the project as part of studies towards a Doctor of Education degree with the University of the West of England.

There is no funding associated with this study.

How is the study going to be structured?

The study will last a period of 4 weeks. During this time the students will be organized into nurse/physiotherapist pairs. The students will remain in the same pairs throughout the study. You will be given the details of your students peer and their supervisors name and contact details. Each week the students will be asked to

- Participate in a group tutorial lasting approximately one hour at the*.
- Then undertake one joint clinical experience within their student peer. This will take approximately half an hour.

What will my participation involve?

During the study:

1. You will be asked to release the student from practice so they can attend the tutorial.
2. You will also be asked to collaborate with another supervisor to identify suitable patients for the "joint clinical experience". These are experiences which are routinely organized for students during placements to give them an understanding of the patients' experience. The difference here is that the students will be doing these together.

In week 1 the student pair is asked to interview a patient together for approximately 15 minutes about their experiences of being in hospital.

In week 2 the student pair is asked to interview a patient together about their condition and current treatment.

In weeks 3&4 the students can chose between x2 tasks. The first is to spend a period of time shadowing each other undertaking a task which is central to their professional role, or they may choose to explore multidisciplinary team working. In this case they will be asked to arrange to observe situations where Multidisciplinary team working is taking place e.g. multidisciplinary meeting.

The students will be responsible for the organization of these activities which when possible should occur close to the tutorial. However, all of this will occur through close negotiation with you.

The tutorials will focus on students practicing and exploring Interpersonal and Interprofessional communication skills, while the joint clinical work allows them to put both elements into practice.

What information will I be asked to provide?

If you decide to participate, you will be asked to complete a validated questionnaire which identifies attitudes towards interprofessional working. This will take approximately 10 minutes.

After the study has finished you will be asked to participate in a short interview with the colleague you have been coordinating the clinical activities with. This will be audio taped and will last approximately 20 minutes. It will occur at a mutually convenient time. If it is not possible to arrange this joint interview, you will be offered the opportunity to undertake an individual interview either face to face or by phone at a time of your own convenience.

A transcription of the interview will be returned to you to read. You will be asked to check the transcription for accuracy and verify the account. You will also be able to provide any clarification and/or comments you feel you would like included.

Do I have to take part?

Your decision to take part is voluntary and you are free to withdraw from the project at any time without giving any explanation and without detriment.

If you choose to withdraw no information collected from you will be used without your permission. It is possible for you to allow your student to take part in the project but not to participate in the study yourself. Or you may feel it will be impossible for your student to take part and fulfill their placement commitments. If this is the case the student would not take part in the study.

What are the possible advantages of participating?

You may find this supports your students' development regarding communication skills and interprofessional working. You may find that you form links with other colleagues involved in practice education.

The information from the study will be used to inform the development of future opportunities for pre-registration collaboration between nursing and physiotherapy students.

What are the possible disadvantages of participating?

You may find that the time taken for the study detracts from the time spent on uni-professional mentoring activities to the detriment of your students' practice experience.

Will my participation be kept confidential?

All information will be kept strictly confidential and referred to anonymously. As the study is small, opinions expressed within the data will not be attributed to a professional group unless it is possible to do so without identifying the individual.

The information you provide will be shared with three other teachers in education who will act as supervisors to the study. Any information you give will be kept in a secure environment for a period of 5 years and then destroyed.

What will happen to the results of the study?

The results of project will be used as the basis of my thesis. A copy of the final thesis will be lodged in the University library and available through the British Library. The results of the main study will also be submitted to journals and presented to conferences. You will be provided with a summary of the projects findings.

Instructions for participation in the study

If you are willing to take part in the study please complete the enclosed consent form and return it in the envelope provided. Do not hesitate to contact me if you have any queries about the study or would like further information.

Fiona McLeod, Lecturer in Physiotherapy, Faculty of Health and Social Care, School of Allied Health, Peninsula Allied Health Centre, Derriford Road, Plymouth, PL6 8BH. **Tel:** 01752 238851
E-mail: fiona.mcleod@plymouth.ac.uk

Non Participant Questionnaire

If you are not participating in the study I would be grateful if you could complete the following question. This is not compulsory but will provide me with information which can be used to influence the organisation of any future initiatives.

What is your main reason for not participating?

Would you be interested in this sort of collaboration in the future?

Many thanks for your time. Please return this in the envelope provided.

Mentor Consent Form

Title of Project:

Peer Learning among Nursing and Physiotherapy students within the Clinical Environment : An Interprofessional Model

	Please initial box
I confirm that I have read and understood the information sheet for the above study.	
I have had the opportunity to consider the information, ask questions and these have been answered satisfactorily.	
I understand that my participation is voluntary.	
I understand I am free to withdraw at any time without giving a reason and without detriment.	
I understand data from this study will be used to develop a thesis and may be disseminated via conferences and journal articles.	
I agree to my interview being audio taped.	
I consent to participating in this study.	

Name of participant:

Signature

Position:

Contact Details:

Date:

Name of researcher:

Signature:

Date:

Teaching Plan Summary

WEEK 1 **TOPIC:** **EFFECTIVE COMMUNICATION: THE IMPACT ON PATIENT CARE**

Tutorial 1

Aim

- **To establish the basis for peer learning and Interprofessional collaboration**
- **Discuss the significance of effective Interpersonal & Interprofessional communication on patient care**
- **Identify the structure of patient interviews**

Collaborative Clinical Experience 1

Aim

- **Identify the patients experience as central to the need for good communication and effective Interprofessional working.**
- **Facilitate collaboration between peers**
- **Practice active listening skills.**

Students will jointly interview a patient for 10-15 minutes about their experiences of being in hospital. They will reflect on the patients experience and discuss the relevance of the information gained to their individual practice.

WEEK 2 **TOPIC:** **INTERVIEW SKILLS**

Tutorial

Aim:

- **To practice skills associated with interviewing a patient.**
- **Introduce an element of self evaluation and peer review.**
- **Discuss commonalities and differences in the interview process.**
- **Discuss the understanding of “patient- centredness”**

This tutorial will be scenario based.

Collaborative Clinical Experience

Aim:

To collaboratively structure and undertake patient interview.

To explore the use of specific questioning

To discuss how each student would use this information to inform their professional practice

Students will jointly interview a patient for 10-15 minutes about their reason for being in hospital and the treatment they are receiving. They will reflect on the patients' experience, the patients' understanding of their management and discuss how the information is relevant to their own professional practice. The students will also reflect on their own participation within the interview

WEEK 3 **TOPIC:** **PATIENT CENTRED INTERVIEW SKILLS**

Tutorial

Aim:

To further develop interview skills – focus chosen in collaboration with group

To establish ground rules for the shadowing experience.

This tutorial will be scenario based. Students will work in triads when possible – interviewer/patient/observer.

Collaborative Clinical Experience week 3 & 4

For week 3 & 4 the students can choose between two activities

A. Students will be responsible for arranging for their student peer to shadow themselves or a colleague in practice undertaking a task which they feel is central to their professional role.
OR

B. Students will be responsible for arranging x2 collaborative experiences which involve Interprofessional team working e.g. multidisciplinary meeting.

The final two collaborative clinical experiences will provide the basis for the final tutorial discussion. In the final week the tutorial will happen at the end of the week and the collaborative activities will occur before this.

WEEK 4 Topic: Interprofessional communication

Tutorial:

Aims:

- To discuss the experiences of Week 3 & 4 Collaborative Clinical Experiences – each pair will have an opportunity to informally reflect on and present their experiences.
- To discuss the principles underpinning Interprofessional communication
- To discuss factors which may inhibit effective IP communication
- To discuss factors which promote effective IP communication.

The underlying principles which underpin the tutorials are those of:

Peer learning (Lincoln and McAllister 1993)

Interprofessional facilitation (Bray and Howkins 2006)

Multiprofessional working is best structured around the needs of the patient (Wee et al 2001)

References

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Wee et al (2001) **Palliative Care: a suitable setting for undergraduate Interprofessional Education.** *Palliative Medicine*, 15:487-492.

Patient Centred Activities: Guidance for Mentors

The aims of these activities are to:

- Give nursing & physiotherapy students the opportunity to learn together in practice.
- Facilitate an in depth understanding of the roles of each professional group involved including identifying generic skills and common areas of practice.
- Consolidate core communication skills through explanation and demonstration to a peer.
- Develop the ability to give and receive appropriate, effective feedback to a peer.

Week 1 & 2

The activities in week 1 & 2 both involve the students interviewing a patient.

Please choose a patient who:

- Is able to give informed consent for this educational activity
- Is willing to informally chat about their experiences of being in hospital and the impact of their condition on their lives for 10-15 minutes. (week1)
- Requires some form of assessment from both students.(week 2). If this is not possible, choose a patient who is receiving input from both nursing & physiotherapy – the students will interview the patient about their current management.

If possible the patient should not be known to the students. This is so both students have equal status when undertaking the interview. The students will also be asked to reflect on their collaboration when participating in the interview.

This first interview will enable the students to:

- Establish a working relationship with each other.
- Practice active listening skills.
- Gain an insight into what it is like to be a patient.
- Discuss how this information is relevant to their individual professional practice.
- Identify if they have interpreted the information gained from the patient in a similar way.

The second interview will enable the students to:

- Discuss the “standard” assessment undertaken in practice.
- Practice the use of specific questioning.
- Discuss how this information is relevant to their individual professional practice.
- Give each other feedback on their Interpersonal communication skills.

Week 3 & 4

The activities in weeks 3 & 4 involve the students shadowing each other for a period of time. They are asked to choose an activity which they believe is central to their professional role. They will spend a short period of time before and after discussing what they have achieved, answering any questions and also giving each other feedback on the communication component of the activity.

The tasks will last approximately 30 minutes.

Mentor Interview Schedule

Consent: The audio-recording of the interviews will previously have been consented for. There will be a verbal check to ensure participants are still happy with this. When possible this interview will be with the nurse and physiotherapy mentor of each student pair.

The interview will be unstructured to allow an in depth exploration of topics most significant to the mentors. A checklist of subjects will be used to ensure all relevant research topics have been covered and improve reliability between interviews. Interview notes will be kept, along with a post interview comments on rapport gained, disruptions, insights regarding the interview itself.

In all sections experiences of facilitating peer learning, the development of interpersonal and interprofessional communication skills, the mentors experiences of facilitating the joint student patient centred activities and interprofessional working in practice will be explore.

Checklist

Background

- Experience of mentoring – length, number of students, level.
- Attitudes towards students learning together in practice – from the same profession and other professions.

Previous Placement experiences.

- Experience of previous student placements including routine organization of placement.
- Previous student collaboration facilitated
- Types of strategies used to develop Interpersonal and interprofessional communication skills

Current Placement experiences

- Experiences of working with the students over the last month
- Experiences of working with a mentor from another profession.
- Experiences associated with managing the joint patient centred activities

Mentors own summary of experience

- expectations/ benefits / challenges
- recommendations for the future

Why did you decide to join the study?

Appendix B

Contains Participant

1. Letter of Invitation
2. Information Sheet
3. Non-Participation Questionnaire
4. Consent Form
5. Teaching Plan
6. Reflective Diary
7. Patient Centred activities: Guidance for Students Group 1
8. Patient Centred activities: Guidance for Students Group 2
9. Interview Schedule

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Dear

I am writing to invite you to take part in a study which will give you the opportunity to work together with students from nursing and physiotherapy on your next placement.

The study aims to explore how suitable and practical it is to enable students to develop their interpersonal and interprofessional communication skills together. It will also identify if this helps students to develop a greater understanding of each others' professional roles. The study will form the basis of my doctoral thesis.

I am sure you are aware that it is thought that patient care can be enhanced through effective team working and good Interprofessional communication. Your participation in this study would contribute to developing a greater understanding of how to effectively facilitate students from different professions to learn together during their pre-registration practice education.

I hope you can take the time to read the enclosed information sheet which explains the study in more detail. I have also enclosed a consent form. Full instructions for participation are given at the end of the information leaflet. If you choose not to participate in the study I would be grateful if you could answer a couple of questions and return the information in the envelope provided. This is completely voluntary, the information will be treated as confidential and the form is anonymous.

Thank you for reading this letter. Please do not hesitate to contact me if you have any queries or would like to discuss the study further. I look forward to hearing from you.

Yours sincerely

Fiona McLeod
MSc MCSP PGDip(Adult & Nurse Education)
Lecturer in Physiotherapy

Peer Learning among Nursing and Physiotherapy students within the Clinical Environment: An Interprofessional Model.

PLEASE TAKE TIME TO READ THE FOLLOWING INFORMATION. IF YOU ARE UNCLEAR ABOUT ANY POINTS ASK FOR CLARIFICATION USING THE CONTACT DETAILS AT THE BOTTOM OF THIS FORM.

Student Information sheet

What is the project about?

The purpose of the study is to increase the opportunities for nursing and physiotherapy students to learn together within the clinical environment.

The study aims to explore how suitable and practical it is to get students developing core communication skills together in the clinical environment and to see if this enables students to understand each others professional roles more fully.

Why you have been asked to participate

You have been asked to participate because Nursing and Physiotherapy practice placements at * overlap during May – July 2007.

Who is carrying out the project?

Fiona McLeod -I am a Physiotherapy lecturer at the University of Plymouth. I am carrying out the project as part of studies towards a Doctor of Education degree with the University of the West of England.

There is no funding associated with this study.

What will your participation involve?

The study will last a period of 4 weeks. A summary of the teaching plan is attached. Each week there will be:

- A group tutorial lasting approximately one hour at the*.
- followed by a joint clinical experience with a student peer for approximately half an hour.

As this is an educational study you will be asked to provide some information:

- A questionnaire at the start and the end of the study. This will take approximately 10 minutes each time you fill in the questionnaire.
- A reflective diary to be completed during each week. This will be photocopied once a week.
- An individual interview at a time of your choice will be undertaken at the end of the study. It is anticipated this will take approximately 30 minutes.
- Three months after the study has finished you will be asked to participate in another short interview. This is to give you time to reflect on your experience and consider if the experience has influenced your studies.

The reflective diary is yours to keep for your professional portfolio after a photocopy has been made. A transcription of both interviews will be returned to you to read. I will ask you to check the transcription for accuracy and verify the account. You will also be able to provide me with any clarification and/or comments you feel you would like included.

Do you have to take part?

Your decision to take part is voluntary and you are free to withdraw from the project at any time without giving any explanation and without detriment. If you choose to withdraw no information

collected from you will be used without your permission to do so. Your clinical placement allocation will not be affected by this study.

What are the possible advantages of participating?

You may find you enhance the development of your Interpersonal and Interprofessional communication skills and understanding of the role of another professional.

The information from the study will be used to inform the development of future opportunities for pre-registration collaboration between nursing and physiotherapy students.

You will receive a certificate of participation for your CPD portfolio.

What are the possible disadvantages of participating?

You may find that the time taken for the study detracts from the time spent on uni-professional activities to the detriment of your practice experience. If that is found to happen, you are free to withdraw from the study at any time. This will in no way affect your practice placement assessment.

Will my participation be kept confidential?

All information will be kept strictly confidential and referred to anonymously. As the study is small, opinions expressed within the data will not be attributed to a professional group unless it is possible to do so without identifying the individual.

The information you provide will be shared with three other teachers in education who will act as supervisors to the study. Any information you give will be kept in a secure environment within the University of Plymouth.

What will happen to the results of the study?

The results of project will be used as the basis of my thesis. A copy of the final thesis will be lodged in the University library and available through the British Library. The results of the main study will also be submitted to journals and presented to conferences. You will be provided with a summary of the projects findings.

Instructions for participation in the study

If you are willing to take part in the study please complete the enclosed consent form and return it along with your contact details in the envelope provided.

Do not hesitate to contact me if you have any queries about the study or would like further information.

Fiona McLeod, Lecturer in Physiotherapy, Faculty of Health and Social Care, School of Allied Health, PAHC, Derriford Road, Plymouth, PL6 8BH.

Tel: 01752 238851 E-mail: fiona.mcleod@plymouth.ac.uk

Non Participant Questionnaire

If you are not participating in the study I would be grateful if you could complete the following question. This is not compulsory but will provide me with information which can be used to influence the organisation of any future initiatives.

What is your main reason for not participating?

Would you be interested in this sort of collaboration in the future?

Many thanks for your time. Please return this in the envelope provided.

Student Consent Form

Title of Project:

Peer Learning among Nursing and Physiotherapy students within the Clinical Environment : An Interprofessional Model

	Please initial box
I confirm that I have read and understood the participant information sheet for the above study.	
I have had the opportunity to consider the information, ask questions and these have been answered satisfactorily.	
I understand that my participation is voluntary.	
I understand I am free to withdraw at any time without giving a reason and without my placement being affected.	
I understand data from this study will be used to develop a thesis and may be disseminated via conferences and journal articles.	
I agree to my interview being audiotaped.	
I consent to participating in this study.	

Name of participant:

Signature:

Profession:

Date:

Contact Details:

Name of researcher:

Signature:

Date:

Teaching Plan Summary

WEEK 1 **TOPIC:** **EFFECTIVE COMMUNICATION: THE IMPACT ON PATIENT CARE**

Tutorial 1

Aim

- **To establish the basis for peer learning and Interprofessional collaboration**
- **Discuss the significance of effective Interpersonal & Interprofessional communication on patient care**
- **Identify the structure of patient interviews**

Collaborative Clinical Experience 1

Aim

- **Identify the patients experience as central to the need for good communication and effective Interprofessional working.**
- **Facilitate collaboration between peers**
- **Practice active listening skills.**

Students will jointly interview a patient for 10-15 minutes about their experiences of being in hospital. They will reflect on the patients experience and discuss the relevance of the information gained to their individual practice.

WEEK 2 **TOPIC:** **INTERVIEW SKILLS**

Tutorial

Aim:

- **To practice skills associated with interviewing a patient.**
- **Introduce an element of self evaluation and peer review.**
- **Discuss commonalities and differences in the interview process.**
- **Discuss the understanding of “patient- centredness”**

This tutorial will be scenario based.

Collaborative Clinical Experience

Aim:

To collaboratively structure and undertake patient interview.

To explore the use of specific questioning

To discuss how each student would use this information to inform their professional practice

Students will jointly interview a patient for 10-15 minutes about their reason for being in hospital and the treatment they are receiving. They will reflect on the patients’ experience, the patients’ understanding of their management and discuss how the information is relevant to their own professional practice. The students will also reflect on their own participation within the interview

WEEK 3 **TOPIC:** **PATIENT CENTRED INTERVIEW SKILLS**

Tutorial

Aim:

To further develop interview skills – focus chosen in collaboration with group

To establish ground rules for the shadowing experience.

This tutorial will be scenario based. Students will work in triads when possible – interviewer/patient/observer.

Collaborative Clinical Experience week 3 & 4

For week 3 & 4 the students can choose between two activities

A. Students will be responsible for arranging for their student peer to shadow themselves or a colleague in practice undertaking a task which they feel is central to their professional role.
OR

B. Students will be responsible for arranging x2 collaborative experiences which involve Interprofessional team working e.g. multidisciplinary meeting.

The final two collaborative clinical experiences will provide the basis for the final tutorial discussion. In the final week the tutorial will happen at the end of the week and the collaborative activities will occur before this.

WEEK 4 Topic: Interprofessional communication

Tutorial:

Aims:

- To discuss the experiences of Week 3 & 4 Collaborative Clinical Experiences – each pair will have an opportunity to informally reflect on and present their experiences.
- To discuss the principles underpinning Interprofessional communication
- To discuss factors which may inhibit effective IP communication
- To discuss factors which promote effective IP communication.

The underlying principles which underpin the tutorials are those of:

Peer learning (Lincoln and McAllister 1993)

Interprofessional facilitation (Bray and Howkins 2006)

Multiprofessional working is best structured around the needs of the patient (Wee et al 2001)

References

Bray, J. and Howkins, E. (2006) **Facilitating interprofessional learning in the workplace: a research project using the Delphi technique.** *Work Based Learning in Primary Care*, 4:223-235.

Lincoln, M.A. and McAllister, L. L. (1993) **Peer learning in clinical education.** *Medical Teacher*, 15,1:17-25.

Wee et al (2001) **Palliative Care: a suitable setting for undergraduate Interprofessional Education.** *Palliative Medicine*, 15:487-492.

**Peer Learning among Nursing & Physiotherapy students within
the Clinical Environment: An Interprofessional Model.**

Student Diary

Name:

If this diary is found please return to Fiona Mcleod, Lecturer in Physiotherapy via the Faculty of Health & Social Work Reception desk *.

Or email Fiona.mcleod@plymouth.ac.uk Telephone: 01752 238851

Reflective Diary

This diary is to enable you to keep a record of your experiences and to introduce an element of collaboration and reflexivity into the research process. A photocopy of the entries for each week will be taken at the end of the group tutorial. This is so that the researcher is aware of developing issues and so that you can influence the development of the tutorials. You may be asked to clarify a diary entry so that the researcher is clear her interpretation is accurate.

The photocopy will be regarded as confidential data. It will not be discussed with any member outside the research supervisory team.

There are some questions to facilitate your reflection but feel free to write about issues which you feel are relevant to the study.

Please

- **identify any ongoing issues**
- **reflect on your experiences during the tutorials**
- **reflect on the collaborative clinical experiences**
- **consider how this fits in with your placement overall**
- **identify topics you wish to discuss or include at the next tutorial**

WEEK 1

Tutorial

Briefly describe the tutorial.

What have you learnt?

Date:

WEEK 1

Collaborative Clinical Experience

Briefly describe the event and who was involved:

What have you learnt?

Date:

This format was repeated for weeks 2,3, and 4.

Comments

Date

Patient Centred activities: Guidance for students Group 1

Working with your peer has a number of aims.

The aims of this activity are to

- Give you the opportunity to learn together in practice.
- Facilitate an in depth understanding of the roles of each others' profession, including identifying generic skills and common areas of practice.
- Consolidate core communication skills through explanation and demonstration.
- Develop the ability to give and receive appropriate, effective feedback.

Week 1 & 2

The activities in week 1 & 2 both involve you interviewing a patient together.

Please choose a patient who:

- Is able to give informed consent for this educational activity
- Is willing to informally chat about their experiences of being in hospital and the impact of their condition on their lives for 10-15 minutes. (week1)
- Requires some form of assessment from you both (week 2). If this is not possible, choose a patient who is receiving input from both nursing & physiotherapy – you will interview the patient about their current management.

If possible neither of you should know the patient. This is so you both have equal status when undertaking the interview.

Week 1

As discussed, the aim of this activity is for you to work together with your peer to understand the patients' experiences of being in hospital and living with their condition. At all times you must be sensitive to the patients' responses and if the patient becomes distressed stop the interview and inform your mentor.

Spend a few minutes before the interview agreeing how you are going to collaborate with your peer, remember to prepare the environment so that you are both able to fully participate.

Once you have finished talking to your patient, find a quiet area so you can discuss what you have learnt, the relevance of this to your professional practice and to see if you have both picked up the same information from the interview.

Patient Centred activities: Guidance for students Group 2.

Working with your peer has a number of aims.

The aims of this activity are to:

- Give you the opportunity to learn together in practice.
- Facilitate an in depth understanding of the roles of each others' profession, including identifying generic skills and common areas of practice.
- Consolidate core communication skills through explanation and demonstration.
- Develop the ability to give and receive appropriate, effective feedback.

Week 1 & 2

The activities in week 1 & 2 both involve you interviewing a patient together.

Please choose a patient who:

- Is able to give informed consent for this educational activity
- Is willing to informally chat about their experiences of being in hospital and the impact of their condition on their lives for 10-15 minutes. (week1)
- Requires some form of assessment from you both (week 2). If this is not possible, choose a patient who is receiving input from both nursing & physiotherapy – you will interview the patient about their current management.

If possible neither of you should know the patient. This is so you both have equal status when undertaking the interview.

Week 1

As discussed, the aim of this activity is for you to work together with your peer to understand the patients' experiences of being in hospital and living with their condition. At all times you must be sensitive to the patients' responses and if the patient becomes distressed stop the interview and inform your mentor.

Spend a few minutes before the interview agreeing how you are going to collaborate with your peer, remember to prepare the environment so that you are both able to fully participate.

Once you have finished talking to your patient, find a quiet area so you can discuss what you have learnt, the relevance of this to your professional practice and to see if you have both picked up the same information from the interview.

Week 2

This interview will enable you to:

To collaboratively structure and undertake a patient interview

To explore the use of specific questioning

To discuss how you will use this information to inform your professional practice

Give each other feedback on Interpersonal communication skills

Either choose a patient who:

Requires some form of assessment from both students OR

A patient who is receiving input from both nursing & physiotherapy – the students will interview the patient about their understanding of their current management.

- Discuss the "standard" assessment undertaken in practice – share assessment documentation and explore any overlaps in information gathered.
- Choose and plan a specific aspect of the assessment – one which can be achieved within approx 15 mins. Discuss how you are going to collaborate and structure the interview, consider the type of questions you are going to use.
- Once you have finished, find a quiet area to discuss what you have achieved, how things went.

Week 3 & 4

The activities in weeks 3 & 4 involve you shadowing each other for a period of time. Choose an activity which you believe is central to your professional role. Spend some time before the activity explaining what you are doing and why. Once you have finished, find a quiet area to discuss what you have achieved, how things went, and to answer any questions your colleague may have. Also use this time to give each other feedback on the communication component of the activity. (peer review).

The tasks will last approximately 30 minutes.

Student Interview Schedule

Consent

The audio recording of the interviews will previously have been consented for. There will be a verbal check to ensure participants are still happy with this.

The interview will be unstructured to allow an in depth exploration of topics most significant to the student. A checklist of subjects will be used to ensure all relevant research topics have been covered and improve reliability between interviews. Interview notes will be kept, along with a post interview comments on rapport gained, disruptions, insights regarding the interview itself.

In all sections experiences of peer learning, developing interpersonal and interprofessional communication skills and the students experiences of interprofessional working in practice will be explore.

Checklist

Background

- educational background
- work history
- previous involvement in research.

Previous Placement experiences.

- Experience of previous placements
- Previous experience of working with other students while on placement
- Any experiences working with or observing qualified staff from professions other their own

Current Placement experiences

Experiences of working with other students over the last month

- Group Tutorials
- Peer Learning – in tutorial and clinical setting
- Joint clinical experience

Experiences of working with a mentor from another profession.

Students own summary of experience

- expectations/ learning achieved/ benefits / challenges
- recommendations for the future

Why did you decide to join the study?

Appendix C

Contains

1. UWE Interprofessional Questionnaire (UWE IPQ)
2. Attitudes to Interprofessional Learning (RIPLS) Questionnaire
3. Search Strategy
4. Trust Research and Development Approval
5. Case Summary Sheet

UWE Interprofessional Questionnaire

Communication and teamwork skills: self-rating questionnaire

For each of the following statements please circle **one** number that best reflects how you would feel or behave.

1 = *Strongly Agree* 2 = *Agree* 3 = *Disagree* 4 = *Strongly Disagree*

1. I feel comfortable justifying recommendations/advice face to face with more senior people.

1 2 3 4

2. I feel comfortable explaining an issue to people who are unfamiliar with the topic.

1 2 3 4

3. I have difficulty in adapting my communication style (oral and written) to particular situations and audiences.

1 2 3 4

4. I prefer to stay quiet when other people in a group express opinions that I don't agree with.

1 2 3 4

5. I feel comfortable working in a group.

1 2 3 4

6. I feel uncomfortable putting forward my personal opinions in a group.

1 2 3 4

7. I feel uncomfortable taking the lead in a group.

1 2 3 4

8. I am able to become quickly involved in new teams and groups.

1 2 3 4

9. I am comfortable expressing my own opinions in a group, even when I know that other people don't agree with them.

1 2 3 4

Attitudes to learning with other health and social care professionals:

For each of the following statements please circle **one** number that best reflects how you would feel or behave.

1 = *Strongly agree* 2 = *Agree* 3 = *Neither Agree nor Disagree* 4 = *Disagree*
5 = *Strongly disagree*

10. My skills in communicating with patients/clients may be improved through learning with students from other health and social care professions.

1 2 3 4 5

11. My skills in communicating with other health and social care professionals may be improved through learning with students from other health and social care professions.

1 2 3 4 5

12. I would prefer to learn only with peers from my own profession.

1 2 3 4 5

13. Learning with students from other health and social care professions is likely to facilitate subsequent working professional relationships.

1 2 3 4 5

14. Learning with students from other health and social care professions may be more beneficial to improving my teamwork skills than learning only with my peers.

1 2 3 4 5

15. Collaborative learning would be a positive learning experience for all health and social care students.

1 2 3 4 5

16. Learning with students from other health and social care professions is likely to help to overcome stereotypes that are held about the different professions.

1 2 3 4 5

17. I enjoy the opportunity to learn with students from other health and social care professions.

1 2 3 4 5

18. Learning with students from other health and social care professions is likely to improve the service for patients/clients.

1 2 3 4 5

Health and Social Care Professionals: relationships and roles

For each of the following statements please circle **one** number that best reflects how you would feel or behave.

1 = *Strongly agree* 2 = *Agree* 3 = *Neither Agree nor Disagree* 4 = *Disagree*
5 = *Strongly disagree*

19. Different health and social care professionals have stereotyped views of each other.

1 2 3 4 5

20. The line of communication between all members of the health and social care professions is open.

1 2 3 4 5

21. There is a status hierarchy in health and social care that affects relationships between professionals.

1 2 3 4 5

22. Different health and social care professionals are biased in their views of each other.

1 2 3 4 5

23. All members of health and social care professions have equal respect for each discipline.

1 2 3 4 5

24. It is easy to communicate openly with people from other health and social care disciplines.

1 2 3 4 5

25. Not all relationships between health and social care professionals are equal.

1 2 3 4 5

26. Health and social care professionals do not always communicate openly with one another.

1 2 3 4 5

27. Different health and social care professionals are not always cooperative with one another.

1 2 3 4 5

28. I have an equal relationship with people from other health and social care disciplines.

1 2 3 4 5

For each of the following statements please circle **one** number that best reflects how you would feel or behave.

1 = *Strongly agree* 2 = *Agree* 3 = *Neither Agree nor Disagree* 4 = *Disagree*
5 = *Strongly disagree*

29. I am confident in my relationships with my peers from my own professional discipline.

1 2 3 4 5

30. I have a good understanding of the roles of different health and social care professionals.

1 2 3 4 5

31. I am confident in my relationships with people from other health and social care disciplines.

1 2 3 4 5

32. I am comfortable working with people from other health and social care disciplines.

1 2 3 4 5

33. I feel that I am respected by people from other health and social care disciplines

1 2 3 4 5

34. I lack confidence when I work with people from other health and social care disciplines.

1 2 3 4 5

35. I am comfortable working with people from my own professional discipline.

1 2 3 4 5

Attitudes to Inter-Professional Learning

This questionnaire is designed to test the attitudes of health professionals towards the topic of inter-professional learning. For the purposes of the questionnaire, inter-professional learning is defined as mixed health professional groups, learning with, from and about each other at the same learning events with a view to improving collaboration and the quality of care. Please respond to the following questions by placing a cross in one box for each question to indicate the extent to which you agree or disagree with each statement.

	1	2	3	4	5
Teamwork and Collaboration					
	strongly disagree		disagree	neutral	agree strongly agree
1 Learning with other health care professionals will help me be a more effective member of a health care team.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 For small group learning to work, health care professionals need to trust and respect each other.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Team-working skills are essential for all health care professionals to learn.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Shared learning will help me understand my own limitations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Patients ultimately benefit if health care professionals work together to solve patient problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6 Shared learning with other health care professionals will increase my ability to understand clinical problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7 Learning with healthcare students from other disciplines before qualification would improve relationships after qualification.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8 Communication skills should be learned with other health care professionals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9 Shared learning will help me to think positively about other health care professionals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10 Shared learning with other health care professionals will help me to communicate better with patients and other professionals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11 I would welcome the opportunity to work on small-group projects with other health care professionals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12 Shared learning helps to clarify the nature of patient problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13 Shared learning before qualification would help healthcare professionals become better team workers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Sense of Professional Identity

	1	2	3	4	5
	strongly disagree	disagree	neutral	agree	strongly agree
1: Clinical problem-solving skills should only be learned with professionals from my own discipline.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1: The function of nurses and therapists is mainly to provide support for doctors.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1: There is little overlap between my role and that of other health care professionals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1: I would feel uncomfortable if another health care professional knew more about a topic than I did.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1: I have to acquire much more knowledge and skills than other health care professionals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Patient Centredness

	1	2	3	4	5
	strongly disagree	disagree	neutral	agree	strongly agree
1: I like to understand the patient's side of the problem.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2: Establishing trust with my patients is important to me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2: I try to communicate compassion to my patients.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2: Thinking about the patient as a person is important in getting treatment right.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2: In my profession one needs skills in interacting and cooperating with patients.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Thank you for completing this questionnaire.

Please return in the envelope provided to Fiona Mcleod, Lecturer in Physiotherapy, Faculty of Health & Social Work, University of Plymouth, Peninsula Allied Health Centre, Derriford Road, Plymouth, PL6 8BH.

Permission to use this questionnaire has been gained from Katie Allstaff, Project Officer, Tayside Centre for General Practice, Kirsty Semple Way, Dundee DD2 4BF.

Search Strategy

The original literature search was completed in Jan 2007 this was updated in September 2009.

Key Words:

Student or novice
Placement or clinical
Peer learning or coaching, tutoring, review, evaluation, feedback.
Communication + interpersonal or interprofessional
Cooperative learning
Healthcare
Physiotherapy
Interprofessional learning
Interprofessional education

Physiother\$ and peer coaching
Physiother\$ and peer tutoring
Physiother\$ and peer learning
Physiother\$ and peer review
Physiother\$ and peer evaluation
Physiother\$ and peer feedback
Physiother\$ and cooperative learning
Physiother\$ and collaborative learning
Physiother\$ and interpersonal communication
Physiother\$ and interprofessional communication
Physiother\$ and peer coaching and placement or clinical
Physiother\$ and peer tutoring and placement or clinical
Physiother\$ and peer learning and placement or clinical
Physiother\$ and peer review and placement or clinical
Physiother\$ and peer evaluation and placement or clinical
Physiother\$ and peer feedback and placement or clinical
Physiother\$ and cooperative learning and placement or clinical
Physiother\$ and collaborative learning and placement or clinical

Healthcare student or novice and peer coaching
Healthcare student or novice and peer tutoring
Healthcare student or novice and peer learning
Healthcare student or novice and cooperative learning

Peer learning and placement or clinical
Peer learning and feedback and placement or clinical
Peer learning and review and placement or clinical
Peer learning and evaluation and placement or clinical

Interprofessional Communication skills and placement or clinical
Interprofessional communication skills and placement or clinical
Interprofessional education and cooperative learning
Interprofessional learning and cooperative learning

Databases

AEI
BEI
ERIC
AMED
ASSIA
BNI

CINAHL
Cochrane

Web-sites

International Center for Cooperation and Conflict Resolution: Morton Deutsch Publications

<http://www.tc.columbia.edu/icccr/index.asp?Id=ICCCR+Publications&Info=Morton+Deutsch+Publications>

Department of Health <http://www.dh.gov.uk/>

Centre for the Advancement of Interprofessional Education www.caipe.org.uk

European Interprofessional Education Network www.eipen.org

Higher Education Academy, Health Sciences and Practice Subject Centre

www.health.heacademy.ac.uk

Common Learning site for University of Southampton and Portsmouth www.commonlearning.net

The Common Learning Programme for the Universities of Newcastle, Northumbria and Teeside

<http://commonlearning.ncl.ac.uk/clp/index.html>

London Deanery www.faculty.londondeanery.ac.uk/e-learning/interprofessional-education

Hand searched:

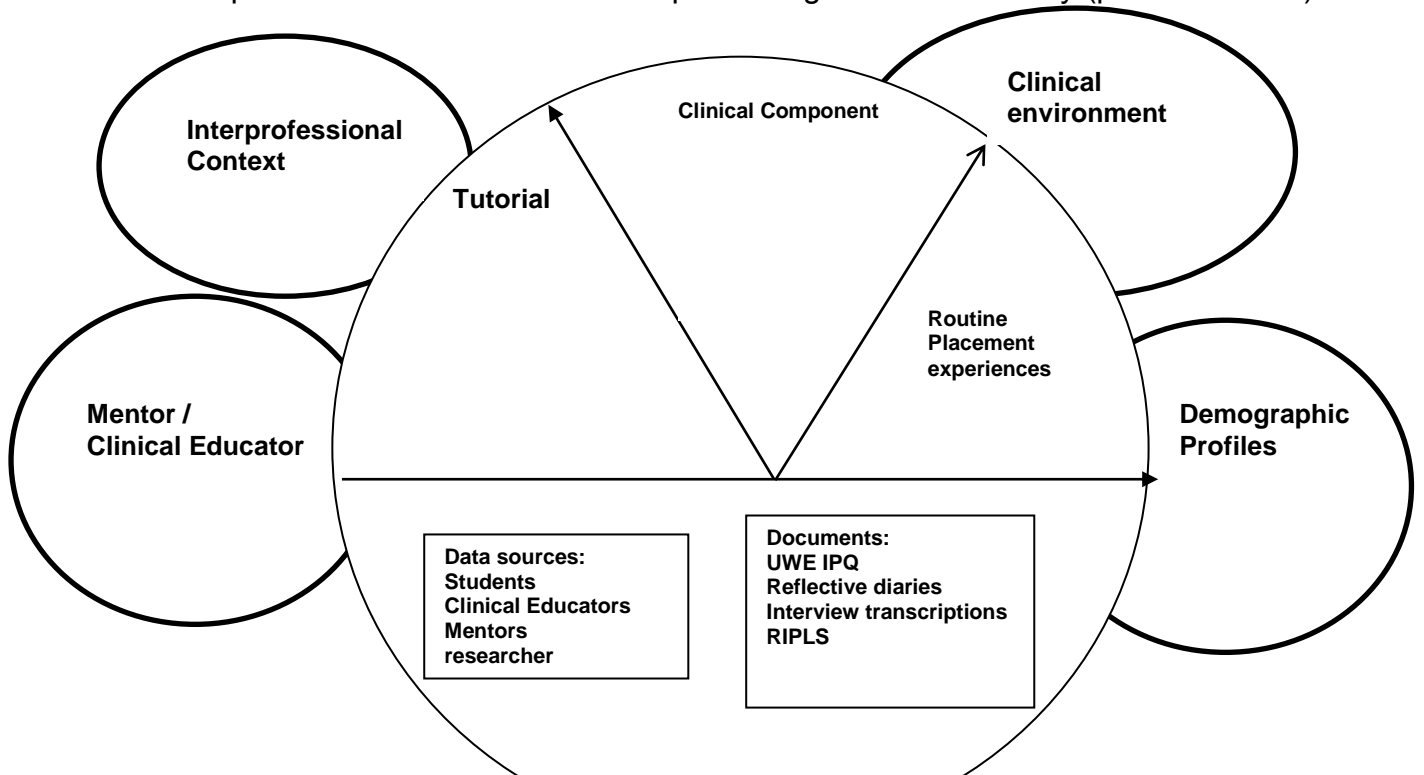
Physiotherapy (2005-2009)

Journal of Evaluation in Clinical Practice (2006 – June 2009)

Nurse Education in Practice (2000-2009)

Single Case Summary Sheet

adapted from "Worksheet one. Graphic Design of a Case Study"(p5 Stake 2006)



Cooperative Learning

Substitutability: actions of one substitute for another

Cathexis: psych energy in actions of other

Inducibility: openness to influence

Thematic Analysis

Attach UWE IPQ results

Peer Learning Programme :