Interprofessional education: An action learning approach to the development and evaluation of a pilot project at undergraduate level.

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Table of Contents

iv

Table of Figures

Table of Tables

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Prologue - July 2002

When reading the following thesis there are several important points to bear in mind regarding the context within which it was developed. An awareness of these points will help the reader to interpret the content of the thesis and enable them to place emphasis on the more valuable aspects of learning that have been described. The learning that has taken place will be summarised in the epilogue. The contextual points relate to the 'learning journey' of the action learner, the organisation and power structure of the faculty and the course structures of programmes within the faculty where IPE is being offered.

An action learning thesis represents the learning journey of the author as well as the progress of the research project. Within this thesis my learning journey took me from the starting point of a positivist radiographer to developing as an educator with an awareness of wider ranges of research and teaching/learning approaches. During this journey I spent a lot of time developing and testing interprofessional education using a statistical approach. This path seemed the most natural one to take considering the stage I was at in my understanding of research and that the literature in this area was also adopting this approach. The results produced during this part of my journey were inconclusive.

The Faculty Structure

The faculty structure (see diagram 0n page 5) is a complex and dynamic one and an understanding of the history of the faculty and its staff help to explain the current organisational and power structures which impinge on the development of the IPE module.

The faculty is composed of health care professions, nurses, midwives and social and sports scientists. The nurses and midwives were formerly in the Northern College of Nursing and Midwifery which joined the University in 1996. They had their own culture and ways of working which had developed over many years of working and evolving together as nurse and midwifery education progressed from hospitals to small schools of nursing to larger colleges of nursing and currently to higher education.

The health professions and social and sports scientists were previously in small uniprofessional or unidisciplinary schools linked to hospitals or colleges. They then moved into the polytechnic sector together and formed separate departments in the Centre for Health Studies at University College Salford. This happened at different times but was largely completed in 1990. The uniprofessional cultures were again a significant feature of the different departments but they tended to work largely autonomously so the cultures tended not to clash. The one exception was the Department of Rehabilitation that comprised physiotherapy, occupational therapy and prosthetics and orthotics.

The current Faculty is divided into three schools Nursing, Health Care Professions and, the rather convoluted, Community, Health Sciences and Social Care school. The nursing school is a large school made up of one profession but there are three main branches to this profession, adult, child and mental health, and with a total of 80 staff it is the largest school in the faculty.

The School of Health Care Professions is made up of seven professions and a group of sports scientists. The professions are midwifery; nursing; occupational therapy; physiotherapy; podiatry; prosthetics and orthotics; radiography. This school is functionally divided into sub-school units each representing a profession but these are not recognised formally by the university. There are approximately 75 members of lecturing staff in the School and they deliver separate programmes for each profession. Staff therefore tended to work largely uniprofessionally although some staff get the opportunity to work together if they are engaged on university

committees or projects. However, this usually involves the more experienced members of staff.

The School of Community Health Sciences and Social care has 64 staff and is mainly involved with running social work, health sciences and counselling programmes. There are no sub-units within this school and staff deliver joint programmes. There is a multiprofessional philosophy inherent in this organisational structure. However they too have subdivided themselves into directorates, one is Social Work and the other Health Sciences and Counselling. Interestingly they are in the process of subdividing these two units into several smaller directorates.

The schools are led by Heads and the directorates by Directors. Siting outside this structure there are other managers whose role is based upon the three areas of business of the university namely teaching and learning, enterprise and research. Each area has an associate head representing each school and there is an associate dean in each area for the Faculty.

The background of the key players in the faculty structure will now be described as this is important contextual information regarding their possible interprofessional interests. The Dean is a nurse by profession and heads up the faculty with the three Associate Deans coming from occupational therapy, radiography and computer science. The associate heads are from podiatry, physiotherapy and midwifery. These people plus the directors make up the Faculty Executive which is a group that is arguably the most powerful group in the faculty as they determine faculty policy and set the faculty agenda. The current dean and associate dean for teaching and learning are particularly supportive of interprofessional education.

Course Structure

There is a wide range of programmes delivered within the Faculty of Health and Social Care including BSc (Hons) and BA degrees, diplomas and certificates. Previous attempts at IPE in the Centre for Health Studies in 1996 had produced a

package of modules designed to sit, one in each year of the three-year degree programmes of each profession in the faculty. Yet radiography was the only profession to put the package into its degree programme at that time. In my view this was partly due to the programme team sharing the vision of multiprofessional education and partly due to the timing of the revalidation of the radiography degree which happened just as these new modules were being proposed. By the time radiography came to the third year of our newly validated programme there were no other programmes in the faculty who had put this module into their programmes. Out of the ashes of this module grew the interprofessional education module that was central to this thesis.

This thesis was based upon the vision of designing, delivering and evaluating a module that would enable all the professions across the faculty to take part. It was anticipated that this would enable a significant contribution to be made to the interprofessional learning of the health and social care students involved and, in a wider context, to knowledge of the value of interprofessional education.

Faculty of Health & Social Care

School of Community Health Sciences & Social Care

School of Health Care Professions

School of Nursing

Directorate of Social Work

Directorate of Health Sciences and Counselling

Directorate of Radiography

Directorate of Sport

Directorate of Midwifery

Directorate of Physiotherapy

Directorate of Prosthetics & Orthotics

Directorate of Occupational Therapy

Directorate of Podiatry

The structure of the Health and Social Care

xiv

Abstract

This thesis used an action learning approach to achieve two aims. Firstly to develop the authors knowledge of research and research methods and secondly to design, deliver and evaluate interprofessional education (IPE). An undergraduate IPE module was designed using the Contact Theory and delivered, in February 1999, to final year students of midwifery, nursing, occupational therapy and radiography through a problem-based learning approach. This IPE experience was evaluated in two phases.

Phase one was a positivist/post-positivist evaluation and used a quasi-experimental approach. Questionnaires measured the role perception, subject and skills knowledge that one profession had regarding another profession and participants enthusiasm for IPE. Pre and post module group interviews with staff and students were also undertaken. Phase two was a 1-year follow up of students' perceptions of their experiences on the module and used an interpretivist approach. This interview data was analysed from a phenomenological perspective.

Phase one results demonstrated some statistically significant differences for some of the questionnaire items but little more than would be expected by chance. Interview and learning index data showed that students had learned about the subject knowledge of other professions with all students combined learning the most about subject knowledge for nurses. Midwifery was revealed as the profession that students had learned most about for skills knowledge. There was a statistically significant difference between professions' enthusiasm for IPE with radiography the least enthusiastic. Phase two uncovered several themes including factors that have a detrimental effect on interprofessional working (IPW), the positive effect of the module on practice and positive and negative views of IPE.

My personal leaning led me to a broader inquiring approach to research and developed my understanding of research paradigms. I gained knowledge and skills in qualitative research and improved my interviewing and analysis skills.

The future of multiprofessional education is positive at both faculty and NHS levels and I conclude that there is a need for diverse forms of IPE including its delivery in the clinical context. Future research in IPE outcomes should use the qualitative paradigm.

Chapter 1: Background to the author's influences

"I was questioning whether I had the intellectual capacity to undertake a PhD,... that I was afraid of failing... I had concerns over my memory ... my relationships with colleagues... undertaking this qualification in tandem with my work responsibilities.
In spite of these concerns I still went ahead." This thesis p25

1.1 Introduction

I am a lecturer and practitioner in the field of diagnostic radiography who is not content with the current situation or my ability to do anything about it. Using action learning I tried to improve my self as a person and to develop my knowledge, skills and attitudes to enable me to be more influential. I have laid out my original beliefs and influences (in this chapter) and showed how I have changed. I posed and tried to answer some difficult questions in a number of different areas including teaching and learning, research, multiprofessional working in the health service and interprofessional education.

Multiprofessional working in the health service is recognised by many to be in need of improvement so I have explored the literature and investigated the reasons for this lack of effective team working (chapter 2). One of the proposed solutions to this team working problem is to engage health professionals in an educational process which will make them work better together. I questioned the evidence base for this commonly held belief by policy makers and asked Does MPE improve team working? What are the forms and features of this type of education? and What do the multiplicity of terms mean that are used to describe it? (Chapter 3). These two chapters are literature based.

In the real world (chapter 4) I developed a curriculum and implemented interprofessional education at undergraduate level at Salford. In order to do this I explored, in addition to the literature on multiprofessional education, the history of its development in the health faculty at Salford University. I then led a team that developed and delivered IPE through a problem-based learning approach. The development of my interpersonal skills and an exploration of my influencing styles, through my action

learning, was important in my being able to do this. I embedded the contact theory (Amir 1969) in the curriculum and discussed the problems encountered in the development and delivery of IPE along with the solutions.

This IPE project was evaluated in two phases. Initially through a positivist approach (phase one, in chapters 5 - 9) which utilised an interrupted time series design (Cook and Campbell 1979) and the development of outcome measures. These five chapters were written by the author largely in a third person positivist manner. The narrative is minimal in these chapters but returns in chapter 10 – 12 and I believe was revealing of the changed in research perspective I experienced moving from a narrow positivist/post-positivist to incorporate an interpretivist perspective into my thinking.

The outcome measures (chapter 5) designed in phase one were questionnaires that gauge role perception, knowledge, skills and enthusiasm for interprofessional education, using a repertory grid technique (Kelly 1955). The validity and reliability of the questionnaires was explored and data presented to support these measures. The ethical considerations of the research were also discussed in this chapter along with a justification for the data analysis techniques. Qualitative methods were also used in phase one of the evaluation (albeit from a positivist perspective) and chapter 6, a short chapter, describes and justifies the semi-structured group interview technique and data analysis methods used. There are some personal reflections on the interviewing process and of my skills as an inexperienced interviewer. The chapter ends with a description of the standard 'end of module' evaluation methods. This type of module evaluation is traditionally carried out as part of the quality assurance process in higher education.

Chapter 7 contains the results of the phase one quantitative and qualitative evaluations. The data from the analysis of variance and learning index from the role perception, subject knowledge and skills knowledge questionnaires are presented along with the enthusiasm scores for the different groups. The qualitative data from the phase one semi-structured group interviews is also incorporated into this results section. An analysis of the interview data focusing on the factors that promote and inhibit successful 'intergroup' contact, taken from the contact theory, is undertaken in an attempt to demonstrate whether the interprofessional education module was likely to promote successful 'intergroup' contact.

The 'end of module' evaluation results are described in the next chapter (chapter 8). These include the student and staff views of the module delivery methods and the group and tutor performance in PBL. Also discussed are the issues that can inform further interprofessional curriculum development at Salford. These issues are presented as problems and potential solutions. The recommendations from the curriculum team for future IPE in the faculty are also specified. The methods of disseminating these results through the organisational structure of the Faculty of Health and Social Care at Salford are explored through use of personal reflections.

Chapter 9 is a discussion and conclusions chapter which draws on the results of the positivist work from the phase one evaluation. The quantitative and qualitative elements of this phase are included and issues of validity and reliability, the interviewer effect, accuracy, truth and credibility are debated. The data are triangulated and links are made with current literature. Conclusions are drawn from this data and the chapter finishes with recommendations for future IPE curriculum development. These recommendations are based upon my personal experiences of managing IPE within the organisation.

This next chapter (chapter 10) demonstrates the change in research perspective I experienced during the course of the action learning and PhD. I discuss the discovery of new research paradigms and the different ways in which knowledge can be acquired. The literature, influence of my action learning set and my own personal reflections are included here to illustrate this change in perspective. As a result of this I undertook the phase two evaluation using different methods to those in phase one. This consisted of a 1-year follow-up interview of a sample of students who had taken part in the IPE module. This chapter goes on to show how, I used a more informed approach to interviewing based on my initial experiences and further reading and set discussion. I carried out a phenomenological analysis of the data and present the results of this analysis using as much as possible the words of the interviewees.

Chapter 11 attempts to show how during this period of action learning I have experienced significant learning which has made a difference to me and to my research. It describes the effect this has had on my research knowledge and skills, my thinking, and my interpersonal and influencing skills. There is a short critique of action learning and a critical comparison is made between problem-based learning and action learning.

The future of interprofessional education is discussed in the final chapter (chapter 12) in the context of the faculty of health at Salford, the health service and higher education. Research barriers to IPE are identified and areas for further study are suggested based upon the findings of this thesis. There are some suggestions on how work done in this thesis might be taken forward and used for IPE research in the future. The thesis concludes with the many questions that still remain unanswered about IPE.

1.2 Reflexivity: An introduction to my influences

This chapter will now introduce the notion of reflexivity and describe those people and experiences that have influenced me. My family background and upbringing in Liverpool feature strongly. Other influences included are from 10 years as a radiographic practitioner working in the health service and 10 years as a teacher. My initial views on teaching and research are presented showing my initial inherent positivist perspective, my focus on knowledge at the expense of the interpersonal and the process of learning. Alongside this is the new perspective and self-awareness I have learned following my action learning experiences. The chapter concludes by explaining why I chose to do a PhD and indicates the original aims and objectives of the project.

When starting to write this thesis it soon became clear that I would need to write about myself in the first chapter. Not because of egocentricity but because I am part of the research. My values and beliefs underpin that which I have selected to study and how I go about studying it. The action learning I have engaged in for four years represents a personal journey and in order to understand what I have achieved it is necessary to see where I came from and the path that I have followed. Therefore I will present myself honestly and openly, as I see it, for the reader to judge the work in the context of my experience. This process is termed reflexivity in qualitative research (Hammersley and Atkinson 1983) and operates at three levels. Firstly a theoretical level where the researcher specifies the theoretical framework in which they operate plus their values and commitments, secondly personal factors specific to their own experience that might affect the research and finally at a methodological level where the research describes and reflects upon the methods and context in which it is connected. In this chapter I will attempt to address the first two of these issues, the third being discussed in the chapter on research methodology used for the interprofessional education Pilot project.

These first two levels of reflexivity are contingent upon an individual's belief and value system. The theoretical framework a researcher selects and the personal factors that they may bring to bear upon the research are inextricably linked to their beliefs and values. This will become transparent during the chapter on self but it is useful to explain my understanding of these terms, as they are fundamental to the reader being able to understand what I have written.

Edelmann's (1996) description of attitudes sheds some light on the complex nature of beliefs and values. He describes attitudes as having three separate components: a belief or cognitive component, an evaluative component, and an action or behavioural component. The belief or cognitive component is the underlying factor an individual understands to be true e.g. the family is the most important unit within society. The evaluative component builds upon this and defines values as what an individual judges to be important e.g. family values are of great importance. Cormack then goes on to explain the link or "correspondence" (p 215) between values and behaviours.

The writing style adopted for this thesis will be both a scientific third person and a reflective first person. My experience up to the start of this action learning programme led me to believe that the scientific style of writing was the "correct" one. Removing the person and anonymising the text to focus on the subject matter of the writing. I have on many occasions castigated undergraduates for using the first person in their final year projects. However through action learning I have developed as a reflective thinker and feel comfortable with the use of the first person. There are times when a dispassionate report of facts is called for such as when reporting the results of data analysis or reviewing theories. Yet there are other times when personal reflection on one's learning journey or an analysis of personal interpretations of others comments are required. In this context I feel it is more natural to write as me and let my thoughts flow. It also has the advantage of enabling the reader to clearly distinguish between my own ideas and those of others. Interestingly I now encourage undergraduates to adopt both the scientific and reflective styles of writing and to explain why each is valuable.

1.3 Background

When considering the content of this chapter I have asked myself two questions. What has shaped me? And what beliefs and values do I have? Reflection on these questions led me to consider my family, educational experiences, my work experiences and my personality traits that I will now describe.

I began my education in a comprehensive school in Liverpool in 1972 and was never very inspired at school. I was in the cohort that was the first to go through the new comprehensive education system from 1st to final, upper 6th year. Several thousand pupils with scores of teachers, many new to each other, were placed on two sites and there was a wide range of ability and social background evident. A recent discussion with a form teacher of mine revealed that the teachers at that time felt that there was chaos for these first few years of comprehensive education. At this time my two elder brothers were going through the grammar school system. I have often been asked and have thought myself what effect might the grammar school system have had on me? Conversations with my brothers revealed the following information.

The grammar school ethos, I am told, was to value educational qualifications and that there was a culture of achievement in the school that focused pupils towards academic achievement particularly "O" and "A" level. The class sizes were smaller than in the comprehensive school system which meant greater attention from the teacher per student. It also made it more difficult for a strategic student to hide from work or classroom attention. The range of pupil ability was narrower which helped the teachers to target their teaching. All had achieved a certain level, the eleven plus exam, in order to gain entry. The teachers had delivered the same curriculum for a number of years and were familiar with it. This did produce an impressive set of academic results. This closer supervision, high expectation and competitive environment might have suited me.

My comprehensive school was new and suffered from organisational change that began in 1972 with a split site school. One newly built school for 14-18 year olds and one old grammar school building for 12-13 year olds. In this new organisation the teachers were unfamiliar with what was to be taught, how the school was organised and there was no sense of history or established culture in the school to guide the present. There was a wide range of pupil ability that was unfamiliar territory to some teachers. There was also a

culture of anti-achievement. If you did work you were not seen as doing something impressive or laudable by peers but something that teachers wanted you to do. You were put down if you did work hard and do the work you should be doing.

It is, of course, impossible to say whether I would have achieved better academic results had I attended a grammar school. The teaching style was didactic in both schools but there were benefits to my comprehensive experience. The mixture of social background meant that you developed an ability to communicate and relate to people from a wider social circle than the grammar school experience. I feel this today and am comfortable with people from all social strata. Having said all that the school still managed to enable me to get some qualifications.

I obtained 8 "O" levels but, in 1979, only managed to pass one of the four "A" levels I was put in for. This prevented me from going to university and was a profound shock. Especially as I had been told by my teachers that I was highly intelligent. This was a key marker event in my education.

Culver (1988) defines marker events as educational experiences of prime importance in shaping our motivations and our learning. This "failure" taught me several things. Firstly that I did not like failure and that fear of failure is, for me, a strong motivator. Secondly that up until this point in my education I had felt that I was working for teachers or parents not for myself. I believe this affected the amount of effort I put in to my work, as the inherent interest I felt in it was low. So I learned about the importance of taking responsibility for your own learning.

1.3.1 Family Values

The reason that my one 'A' level was viewed as "failure" by my family and myself rather than success was that I was judged against my families values. My two elder brothers had gone to university to read biology and accountancy. My father was a Captain in the Merchant navy who had a Masters degree and my grandfather, also a Captain in the merchant navy had been Harbour Master of Liverpool. This valuing of educational development and achievement is still very strong today and remains a powerful motivator. The desire for self-development and the development of others are among my core values

that will be discussed later in this chapter. When questioning my parents about their educational background I discovered some further interesting information that had shaped their views and inevitably mine.

My father was born in Liverpool although his parents are Scottish, his mother from Aberdeen and his father from Caithness. He had an austere Scottish Presbyterian upbringing and is a very strong man both physically and mentally. He had been educated at a grammar school and was very much a man of his generation. He was brought up at a time when from grammar school you went on to university, learned a body of professional knowledge and then went out and practised it for the rest of your life. Knowledge was therefore valued highly and thought of as a fixed entity. Unfortunately his schooling was affected by the war and he was evacuated to a small farm in Wales for two years aged thirteen. This caused him to lose a year of schooling due in part to his finding farming much more interesting than school work but also because he ran away from two foster homes he did not like. He passed his school-leaving certificate, scraping through with his mathematics he told me later, and then was expected to go to university. My mother also passed her school-leaving certificate with distinction, she likes to remind the family. Although at that time the expectations for women were lower than for men and my mother was not expected to go to university but to get married and have a family. However she has retained her enquiring and able mind, remains today extremely interested in current affairs and is a voracious reader.

But to return to my father, at the time he left school he was seventeen years of age, the war had ended and the forces had been demobilised. Therefore there was tremendous competition for university places and my father decided instead, against the wishes of his parents, to go into the Merchant navy. He entered at sixteen and through study and application to the task at hand worked his was up to the position of ships Captain, the so-called "Masters Ticket". This rise through the shipping ranks demonstrates to me the determination, drive and desire for self-development that my father has and why this is a strong feature of my own values today.

This instilled family value of self-development, although I was not aware of it at the time, influenced the path I chose to take at this testing point in my life, my first significant exam failure. I considered the options. I could retake "A" levels. This I did not feel would have been beneficial, as I had not changed the way I felt about school and the "A" levels and

without the motivation I know I would not be able to pass them. I could get a job. This was mildly appealing but I did not feel it was the right path although, at the time, I could not explain why. I could get a job and do some further study. This I felt was the right way to go as I could earn some money and have the opportunity to carry on studying which I knew I wanted to do. An opportunity came up to do a Diploma in radiography and work at the local hospital so I took it. I dare say if the opportunity had been in a different field but with the same dual focus I would have taken that instead.

I went on to do a 3-year Diploma course in diagnostic radiography in 1979 and applied myself fully to my studies in an attempt to show what I could do. This was as much for myself as my family. I passed at the first attempt in 1981, found that I enjoyed the study of anatomy particularly and decided I would return to further study after gaining practical experience as a radiographer. Having studied hard for this qualification, in contrast to the moderate effort of my "A" levels, I came to the view that I was capable of achieving something significant in life but that I was someone who needed to apply themselves wholeheartedly to the task.

Many of my values come from the strong family bond I enjoyed as a child. My family is a close one and I had a very happy childhood. I have three brothers with whom I used to play and fight. We were a competitive group of siblings always playing games such as chess, board games, cards, and football. I learned a tremendous amount during these games such as how to avoid conflict, cheating and how to deal with it, the value of making allies and brinkmanship. It was a rich learning environment and has provided me with good grounding for life although has left me rather competitive. Whether this competitive streak is due to a genetic tendency or is due to the family environment is difficult to judge. Interestingly my brothers and father are each very competitive. So it may be that the interplay between the two have produced such a significant result.

Debate and discussion was also a feature of family life. Not in any formal structured sense but when we were all together it was not unusual to find someone in the family putting forward their view on some topical issue. This would be the stimulus for discussion, debate and sometimes argument between individuals or groups who had formed around a common view. We would each try to persuade the others that they were wrong and we were right the implied outcome being to change the others perspective. Reflecting now on these discussions they became stereotypical. My mother would have a balanced, moderate

and enquiring perspective, my father would present his own personal or generation's view from which he would not be moved and my brothers and I would try to argue from our generation's perspective. This was another facilitative learning environment where I developed my debating skills and an understanding of intransigence. Interestingly I do not remember ever thinking that it might not be a case of right or wrong. The idea that there may be different perspectives that were equally valid never crossed my mind. This may be a result of the competitive streak that seeks more to defeat rather than to understand.

I fondly remember many family holidays where we all got in the car and went off to stay in a chalet or hotel usually somewhere in England. Family life centred on us as children and it is interesting to see this same focus in the families of each of my brothers. They are all married now with two or three children. Many of the beliefs and values of my parents I can identify within my own belief and value system. These being best described by the following selection of family maxims, "work hard and play hard", "never lose your sense of humour", "the family is the most important thing", "spend half and save half", "you get out what you put in". My family has had and continues to have a significant impact on the way I perceive the world. It is worth noting at this point that my home up till I was 21 was in Liverpool and this too has had a major influence on who I am today. I will therefore explore some of the effects that being from Liverpool has had on my beliefs and values and those of my family.

1.3.2 The Liverpool effect

Liverpool was founded in 1207 by King John and developed as a port due to it being a deep-water estuary even at low tide (Cooper 1990). This enabled large ships to enter and leave Liverpool at high tide and some smaller ships throughout the tidal cycle. Liverpool has mirrored the changing fortunes of Britain's mercantile and naval activities. In the nineteenth century the port developed largely because of its position on the west of the British Isles, which was ideal for trade with America and the rest of the world. Unfortunately the stock market crash of 1929 and subsequent economic depression affected Liverpool's prosperity greatly.

Liverpool rallied in the 1940's and was an extremely busy and important port throughout the Second World War. Evidence of this is found in the fact that the Battle of the Atlantic

was commanded from Liverpool. It again experienced a downturn in the post war period due in part to dock strikes but mainly as a result of the changing pattern of trade. In the 1970's Liverpool found itself on the wrong side of Britain as the Atlantic and the trade routes to the west became less important for the country compared with new European trade (Longbottom 1995). Another change that was occurring at this time was the move away from break bulk and palletised cargo to containers. Break bulk and palletisation was the traditional way of transporting goods from factory to destination one unit or pallet at a time. Cargo ships with the traditional hold were used of approx. 10-14,000 tons gross. Moving cargo in this way was labour-intensive and required in-depth knowledge of how to stow a ship. Containers, on the other hand, were large boxes that could be packed at the factory and unloaded at their destination. They were loaded onto container ships that could carry large numbers of containers at any one time. These ships were of approx. 30-40,00 tons gross. This was a much cheaper, more efficient and labour saving way of moving goods by sea. The first container ship offloaded in Liverpool in 1968 (Longbottom 1995).

The decline that set in to Liverpool in the 1970's and '80's had a significant effect on my family and me. In 1976 my father, who by this time had come ashore and worked as a cargo superintendent for P&O in the port of Liverpool, was made redundant. This produced mixed fortunes for the family. We were lucky as he gained a promotion into another company at this time and brought more money into the household. But unlucky as he was he forced to go to London for the position. So he went to work in London and commuted back to Liverpool at weekends for a year. Following this period he worked with the same company back in Liverpool for their container operation. In 1985 he again did a secondment in London, for two years this time, before retiring in 1987. So this meant increased prosperity for the family but the loss of my father during the week. As well as this change in family circumstances, which had an effect upon me, the whole Merseyside area was changing. It was slipping into another decline.

During the 1970's and 1980's unemployment in Liverpool was high, there was civil unrest, with the racially inspired Toxteth riots in 1981, the last major dock strike which collapsed in 1985 after changes in legislation allowed casual labour on the dock work force. The Liverpool council had been found to be corrupt with nefarious councillors such as Derek Hatton being guilty of stealing public money from Liverpool. The mid-eighties were the low point in Liverpool and although I was by now working in London, I returned home often and was greatly saddened by the decline.

Following Liverpool's nadir, European money poured in to the city and the rejuvenation of Liverpool began. Firstly there was rebuilding of the infrastructure with new roads and the declaration of an area of Liverpool as a free port. This stimulated new business and with it jobs. The concrete sixties tower blocks of the inner city were bulldozed and new city centre housing was erected. The dock complex was redeveloped into high quality housing, a marina, several hotels, museums and shops. Granada TV relocated there and broadcast a popular daytime talk show. Unfortunately the image of Liverpool being full of thieves, footballers and musicians will take longer to shift.

The future looks brighter for Liverpool now and there is optimism that with the new Channel Tunnel opening up a route to Europe and the planned improvements in the rail network that Liverpool might once again become the Gateway from the West to Europe. The container terminal and Freeport are now thriving and in September 1995 the Port of Liverpool recorded the highest ever tonnages of cargo to pass through the port and the shipping industry newspaper Lloyd's List described the Liverpool Dockers as 'the most productive work force in Europe' (Pilger 1996).

Writing this short history of Liverpool has been interesting but the key question is how has being from Liverpool affected me? And how have these events influenced me?
I have a strong affinity with the area and its cultural heritage. The passion for football, the Liverpudlian humour and the music had a great influence on me as I grew up. I was however from Crosby, an affluent suburb of Liverpool that was spared the cycles of social deprivation and economic fortune of the rest of Liverpool. This meant that I had an enjoyable and privileged upbringing in a middle-class area that I appreciate to this day. I moved away from the area in 1982 and worked in London for ten years. During this time I was very proud of where I was from but would often meet people who knew nothing of Liverpool other than the stereotypical view that is peddled in the media. I had no hesitation in trying to re-educate those with whom I came into contact about the area and its people.

Being from this affluent area of Liverpool also meant that politically I was brought up a conservative due mainly to the fact that my parents voted conservative. I had been exposed to largely conservative views. My time at comprehensive school changed that as I mixed with children from a wide range of backgrounds. I remember debates with my friends about socialist and conservative doctrines that seemed to serve simply to reinforce each of

our political positions. In 1981 Shirley Williams stood as the parliamentary candidate for the Social Democrat Party (SDP) in Crosby. This was my first opportunity to vote and I voted for the values of the Centrist party of the SDP's "Gang of Four" – Shirley Williams, David Owen, William Rogers and Roy Jenkins. I subsequently have voted for conservative values until the election on the 1st May 1997 when I switched to new labour.

As a researcher I believe political ideology can have a significant effect on research. Reflexivity, as mentioned in the introduction, is intended to make transparent the factors which my cause the researcher to follow a particular research path. Hammersley and Atkinson 1983, suggest that researchers should state their theoretical framework, values and commitments. These are clearly influenced by a researcher's political view. My awareness of my past and its influence on my political views has enabled me to identify the possible biases and limitations I have. This should help the reader and I to understand my research and the interpretations I have made.

1.4 Preparing professionals for practice.

I returned to study in 1985 studying higher radiography qualifications. Radiography education at that time was outside the traditional educational boundaries of Higher Education and was focused very much upon knowledge at the expense of higher order skills such as critical evaluation, analysis and reflection. The combination of protocol driven practice and this narrow view in professional education I believe held me back in my personal and intellectual development and perpetuated the view that knowledge is essentially black and white and that all things are known.

I found as a radiographer that there were many occasions when what I had been taught to do did not work in certain situations. For example I was taught in anatomy where the stomach was situated within the abdomen and its size. When I came to undertake x-ray examinations on the stomach, the barium meal, I discovered that there were many different shapes, sizes and positions of the stomach in different people. What I had not been taught was that the anatomical characteristics of human beings follow a normal distribution curve with wide variations. I would need to carry on learning about these differences throughout my career and may or may not experience the full range of the human stomach variation. This was a distinct theory practice gap. Yet because I did not have the ability to question

what I had been taught, still holding the view that the knowledge I had been given should be sufficient for my needs, I felt that there was something wrong with me. This dented my confidence and frustrated me as a radiographer. Although I was promoted to a senior level I felt I had not developed my practice a great deal.

Another example of how my professional education poorly prepared me for practice was how we were taught to adapt out technique. In a trauma situation we were told never to move the patients injured limb as this might lead to further complications. Any student who answered an exam question describing moving a limb was immediately failed on what was called a dangerous practice. Yet in reality it is possible to move a limb to a small degree and using a careful technique without inducing any further harm to the patient. This enables a better quality radiograph to be obtained in the process. There is clearly a need to ensure that practitioners are safe to practice but here is a situation where there is an imbalance between the need to set safety standards within the profession and the limitations of using an examination to test practice.

These experiences affected the way that I practised radiography my reliance on the radiologist when things did not go as I expected them to and my views of knowledge. Perry (1970) describes a model of intellectual development which American College students go through. He describes an "epistemological flip" as they pass from a position whereby they focus on knowledge and exhibit a dependency on authority to one where they are independent and critically minded individuals able to make independent judgements. I have now experienced this "flip" but it did not occur until I came out of professional practice and began teaching and studying for an MSc.

I moved into radiography education in 1989, obtained teaching qualifications and began my MSc in Behavioural Biology and Healthcare in 1990. It was at this time that I started to open up and become aware of research and of my own critical faculties. I will now describe my development in the areas of teaching and research, explain how I have learned and developed over the previous ten years and identify the key learning points along the way.

1.5 My experiences of teaching and learning

As I entered teaching I began with a certain view of teaching and knowledge. I saw knowledge as a fairly fixed entity which you were "filled up" with when you went on a course. As a teacher I was the oracle or sage and my job was to present this knowledge in as much detail as I could. Students had to understand it and regurgitate it to pass the exam and become a health professional. If I missed out any aspects of a topic area I was not doing my job properly and I had to memorise all the facts that students needed. I am an anxious personality type and found the early teaching experiences very stress full. Especially as I felt I was failing my students due to my inability to cover all the facts in as much detail as I felt I should. I did not know everything that they should know.

But why was this view prevalent? I had studied for a teaching qualification in 1989 and had supposedly learnt about teaching. Reflecting upon this event revealed some interesting insights into teaching and learning. The qualification I studied for was a Further & Adult Education Teaching Certificate that I took at Acton Technical College in London. The group with whom I was taught was a mixture of people from the professions and other services. There were policemen, hairdressers, healthcare workers to name but a few and we gelled quite well as a group. One of the policemen, an inspector, was the self-appointed spokesperson for the group. The tutor for this course, Mr Eric Soto, used to teach us by presenting us with short extracts from a range of texts. I remember work by Piaget, Skinner, Holt and Abercrombie. We were asked to read the piece and then he would say speak to the person next to you and have a chat about it. Then he encouraged us to have a group discussion on the issues raised from the text and our own thoughts.

Sometimes he would leave the room and let us discuss the issues without him. The group reaction to this was that he was not doing his job properly and that we were not learning anything about teaching. We wanted to know how to stand up in front of a class and teach, how to construct overhead transparencies, how to manage classroom behaviour and to be able to present information more effectively. Eventually the whole class rebelled and called a meeting to discuss this with him. The atmosphere was quite hostile and the tutor was clearly upset by our complaints. At a subsequent session he came in and read to us a letter from a former student he had taught on the course. The letter described how this student had found, years afterwards, that the course had been a powerful learning experience which had fundamentally changed the way that they had taught. We were still

not convinced but completed the course and passed our classroom observations. This uprising of students was, as I see it now, due to our traditional view of teaching, which was to pass on pieces of knowledge and to essentially reproduce the way that we had been taught. It also shows how a teacher has to work with students to enable them to learn and that even if you think you are doing a good job teaching if the students are not with you, you will not be able to encourage them to learn. Another perspective here is the one that values the 'deep end' effect. This is where there could be value in throwing students in at the deep end and letting them experience learning in the real world with all its complexity and ambiguity. When we were looking at the excerpts from these educational texts we were being asked for our view. I think we were expecting to be told what view to have by the teacher. Asking students to think for themselves might enable them to develop the skills required to exist and develop in the real world. There were other valuable lessons learned from this experience.

He taught us several basic teaching principles. That teaching is a compromise between what the teacher would like to do, what the students would let them do and what the other stakeholders, such as funding bodies, the general public and the government, would allow teachers to do. He also said that some of the principles of teaching were to make the student an active learner, working directly on the material to be taught and that the focus should be on student learning not on the teacher teaching. He explained to us about the value in encouraging the students to use their cognitive and affective domains (Bloom 1964) to enhance the learning experience. I am not sure much of this excellent advice was understood or acted upon at the time and our tutor is probably unaware of the effect he has had on my teaching. In 1994, several years after the course, I discovered problem-based learning. This was a revelation to me and changed my view of knowledge and teaching.

1.5.1 Problem-based learning

This form of learning has several features (Schmidt and Bouhuijs 1983). Small groups of six or seven students are presented with a 'problem or issue' that they have not met before. Through a series of predetermined and structured stages the students discuss the 'problem or issue' and its meaning to them to obtain a clear group view. They then set about trying to identify what they currently know about the 'problem or issue' and what they do not know. This is followed by discussion, debate and questioning leading to formulation of

learning objectives that the students believe they need to know in order to answer the problem or address the issue. They then go away and through private or group study they gather information and learn about the areas they identified in their learning objectives. They return the following week and present their findings to the group. Through discussion and debate they then try to resolve the problem with a more informed debate than they had previously. This form of learning requires very different skills of the teacher. In stead of being the font of all knowledge the teacher now becomes a facilitator of the learning process and enables students to discover the answers for themselves.

I experienced this new form of teaching by accident rather than by design. I was strongly encouraged by my then boss to get involved in something new. She was always pushing her staff to take up new roles and new ideas. So in 1994 a colleague and I joined the multiprofessional teaching team at Salford University which taught the multiprofessional modules in the Faculty of Health and Social Care using problem-based learning. There were three modules one in each year of the undergraduate degrees and they were shared with physiotherapy, prosthetics and orthotics and radiography. The module content was designed around three strands, research methods, information technology and the sociology and psychology of health and illness. I had considerable worries about doing this as it was outside my sphere of knowledge and experience, radiography, and used an unfamiliar teaching and learning strategy, that of PBL. I asked about the induction programme for teachers new to this style of teaching and the module leader said we could have a chat about it. My colleague, the module leader and I discussed the process and what would be required of us as facilitators. We talked through some of the 'problems' in the same way that the students might. Subsequently my colleague and I went through the other problems we would be facilitating to try to work out what sort of discussion the students might have so that we would be prepared for their responses. This was our staff development in preparation for what was to be a major shift in my role as an educator. A week later the programme and our problem-based learning experience started with the new first years that began their course with the first multiprofessional module People in Society.

For the first few weeks I felt out of my depth, not knowing whether to interject in the student's discussion or to sit quietly and listen. I felt I was not doing my teaching job properly, as I was not peddling knowledge. I subsequently learned that this is a common feeling for teachers going through this paradigm adjustment (Mayo et al 1995) and this has

influenced the way I have led the PBL staff development for my colleagues. On reflection I was at times too quiet and the students discussion flowed unfocussed, sometimes missing out on some of the expected learning outcomes. At other times I was too active and contributed too much to the discussion, leading and controlling the group. But after a few weeks of the experience I observed some surprising effects. The students were often all active and were sometimes emotionally involved (using their affective domain) discussing the issues stimulated by topics such as euthanasia or stress. They were searching out literature, extracting from this the pertinent issues and many were coming to the groups and discussing these issues without any more than a glance at their detailed notes. Personally I felt excited by this. The students were demonstrating higher order skills in the first module of year one and they appeared to be enjoying the learning. As a facilitator I began to enjoy the sessions and relax a bit more. Teaching became a more exciting and human activity and the traditional barrier between teacher and students dissolved as the power relationship changed. This form of learning excited me and it felt right. When considering this student-centred form of learning which gives responsibility and empowers the student it occurred to me that this was what I lacked when doing my "A" levels. If the teaching and learning strategy had been more student-centred, would I have applied myself more and achieved better results at school? This is a difficult one to be sure about as there were many distractions as a sixteen to eighteen year old male in a mixed school. Football, music and girls were much more important than schoolwork and though my parents encouraged me I developed several strategies to give the impression that I was working for long periods when in fact I was not. One of the key issues though was that I was also kidding myself. Even after getting poor mock "A" level results I still managed to convince myself that they were only practice exams and that I might do better in the real thing. This lack of self-awareness may have been altered by a more empowering teaching method. This might have helped me to develop a greater responsibility towards and ownership of my studies. When teaching using this method I am keen to encourage every individual in the group to participate and have developed strategies for inclusion of such individuals. I want to help each individual, through effective teaching, to develop their full potential.

I developed as a teacher from a knowledge-focused oracle to a process-focussed facilitator of student learning. I now enable students to seek out the knowledge themselves and to critique this knowledge watching them develop their confidence and knowledge base as well as their ability to question. This gives me great satisfaction and has broadened my range of teaching skills. I still have anxieties about how much knowledge they have at the

end of the process and find facilitating is a demanding role but a rewarding one.

1.5.2 The value of problem-based learning to my profession.

During a set meeting a question was posed about what value PBL might have to my profession?

Current evidence of problem-based learning comes mainly from research in medical education and particularly from three meta-analyses into the effectiveness of PBL. These studies were undertaken during the 1970's & 1980's by Albanese & Mitchell, Vernon & Blake and Berkson all published in 1993 and covering 17, 11 and 35 studies respectively. This evidence claims that for 'hard' outcomes e.g. student assessment results, there is little difference between the problem-based and traditional curricula. However, for 'soft' outcomes e.g. satisfaction and happiness with the programme, students prefer the PBL way of learning (Marks-Maran & Thomas in Glen & Wilkie 2000). Another benefit according to Lewis and Buckley (1992) is that PBL encourages deep rather than superficial learning.

Others cite personal experience as well as the literature and make further claims for the benefits of PBL. Schmidt (1983) states that PBL may help to reduce the amount of irrelevant material in traditional curricula, integrate subject matter from different disciplines and support the need for CPD. Dr Charles Engel has taught at the medical school at Newcastle in Australia for many years and is committed to PBL. He describes it as

> *"… not a mere method to be taken up and discarded as just another passing fashion."*

It is

> *"..an essential means for H.E. into the next century"*

> *(Engel 1991)*

The radiographic profession required practitioners to study to Diploma level for entry into the profession up until the late eighties. By the early nineties the first Honours degree qualified radiographers were produced who were expected to be more autonomous

practitioners able to think about their practice rather than just to follow protocols determined largely by the Radiologist, the qualified doctor specialising in the reading of x-rays. This alteration in level of qualification for entry into the profession began the change from producing practitioners following protocols to thinking autonomous professionals. However essentially the same people who had taught the Diploma course did the teaching. So a lead in time was required before these educationalists developed their educational practice to more effectively deliver the degree curriculum and develop the autonomous practitioner.

A move to a problem-based curriculum would appear to offer many benefits to a developing profession such as radiography. This form of learning requires students to learn in context. That is to say they are presented with a problem that they are likely to experience in the real practical world in which they will practice. As a result the students develop the skills necessary to learn about what is required to overcome that problem in that and other similar contexts. They become adaptable and able to respond to different situations. Confidence is built up and students feel more comfortable with the unknown.

Qualified practitioners would be developed who were autonomous and life long learners, more responsive to continuous professional development (CPD). CPD is a topical issue in radiography and new legislation requiring radiographers to get involved in compulsory CPD is planned after the new Health Professions Council begins operating in April 2002. If radiographers do not get involved in CPD they will not remain on the professional register and would be unable to practice in the Health Service. This new legislation is a government response to restoring public confidence in the health professions following high profile cases such as the incompetent child heart surgeons at Bristol Royal Infirmary, the organ retention scandal at Alderhey Hospital and the murders carried out by the G.P. Dr Harold Shipman.

PBL also breaks down the traditional and artificial subject area boundaries that have developed over the years. In radiography these subjects include physics, anatomy and physiology. The curriculum content can now be extensively reviewed and the knowledge and skills that are not relevant to practice can be identified and removed. In my view previous reviews in vocational programmes of study have been undertaken largely by subject specialists who have tended to hold on to traditional content in their subject. Indeed this may be taken further as it is often the subject specialists' own area of interest, usually

their research interest, which is maintained in the curriculum. The content then is decided upon not always for the purposes of developing the profession but on occasion developing the teacher/researcher. The more direct focus on practice outcomes which will happen as a result of the new PBL curriculum model will make the new curriculum better able to deliver a practitioner who is well prepared for the demands of working in the modern health service.

Interestingly much of the research around problem-based learning comes from medical education and is heavily biased towards a medical model. That is the setting of hypotheses and then testing them out. Other health professionals are now adopting a problem-based learning approach but are adapting it to meet their own needs in midwifery (Glen & Wilkie 2000), occupational therapy (Sadlo in Glen and Wilkie 2000) and nursing (DoH Making a Difference 1999). The Directorate of Radiography at Salford is changing the curriculum to a problem-based one due to start in September 2002. This influence of the medical profession on health professionals thinking I will return to in chapter 2 and discuss how it has affected the development of the radiography and other health care professions.

At the time of starting my PhD I was already convinced of the value of student centred teaching and learning strategies and my interest in action learning stemmed in part from this interest. Having made the shift from lecturer to facilitator where would I next go to improve as a teacher? And what is the logical next step for society if higher education produces effective autonomous learners?

If higher education shifted its teaching and learning strategies to problem-based learning and to the facilitation of student learning it would produce autonomous learners. These learners would then be able to learn with little or no help from formal higher education.
This is not only a desirable outcome but a necessary one. The increasing rate of change of knowledge will make it increasingly difficult for professionals to return to higher education for updating. There will simply not be sufficient time. Professionals will need to become self-motivated autonomous learners who continue to learn as they practice. They will need to identify gaps in their knowledge and skills and to use their ability as an autonomous learner to seek out and acquire this relevant information. Therefore this effective method of learning is invaluable for society as it moves into the new information age where knowledge and skills have a short shelf life. Problem-based learning enables the development of autonomous learners but other strategies such as action learning may be

equally effective. Chapter 11 presents a discussion of the similarities and differences of action learning and problem based learning.

Having considered my teaching and learning influences and the requirement of the new information age I will now explore my research influences and development as a researcher.

1.6 The Research Process

My experiences of action learning and of my project have broadened my perspective of research. However I think it is pertinent to ask the question What were my views of research before starting my PhD? This is of benefit in order for the reader to understand the change in perspective I have experienced as a result of my learning. I will therefore explain the theoretical framework within which I was operating before and some of the reasons for this.

1.6.1 Why was I a Positivist ?

At the start of the action learning programme I was a positivist (Cohen and Manion 1994 p 9). I can say this now that I have spent time exploring research approaches yet at the time I did not realise that I was. My first exposure to the term was when at school through a Monty Python sketch. In it two people were in a general knowledge contest with one being asked simple questions and the other extraordinarily hard ones. One of these being about logical positivism and Cartesian dualism. I laughed at the contrasting complexity but never understood what the terms meant. Later on when I undertook research for my higher radiography qualification the focus was on the methods that could be used to undertake research and not on the underpinning philosophy or alternative paradigms. Even when studying for my MSc which was in Behavioural Biology and Healthcare the emphasis was on combining different research approaches to behaviour although they were largely measurement techniques. Topics studied included genetics, biological rhythms, sleep, ethology, neurotransmitters and statistics with a small section on quantitative and qualitative methods. Interestingly a Police statistician who told us not to believe any of the police statistics because they were subject to manipulation, taught the research and statistics module. My dissertation was an investigation of the personality differences between groups of radiographers using a validated and commercially available personality

questionnaire, the Saville and Holdsworth Concept Model, which was analysed using inferential statistics. So even though this could be described as a social science qualification positivism was the implicit and commanding message.

Reflecting on another possible influential source of my positivism I thought about the effect of my being a radiographer. In health the medical model is the dominant way of thinking. There is one "truth" which is known or can be discovered by using a hypothetico-deductive approach, coming up with a statement that you believe might be true and testing it out, and empirical study, by using your observations of data to look for patterns. This domination by the medical profession has affected all health care professions but particularly radiography. My profession has been controlled by radiologists, qualified doctors specialising in the study of diagnosing from images, for many years. (Some of this history is presented on chapter 2.) This may have contributed to my positivist stance, as might my early school life.

My educational experiences at school also exhibited characteristics of positivism. There was a focus on knowledge as a fixed entity. This was reinforced when studying the sciences as the experimentation and hypothesis generation led to something already known and in the textbook. I do not remember any philosophy being taught prior to being introduced to science in order to explain the underpinning ideas. There was an implicit acceptance in the teaching system that there was "one truth" that we could discover. As Chalmers (1982) put it:

> "..knowledge is treated as something outside rather than inside
> the minds or brains of individuals."

Teachers had all the knowledge and you were expected to learn it. Rarely did I hear a teacher say "We do not know the answer to that yet." There was also an obsession with regurgitating this knowledge to pass the exam. Objectivity was a prized skill in the sciences. There was no alternative way of thinking allowed as it could not be catered for at a busy school which had to produce as many children with "O" or "A" level exam passes as possible.

1.6.2 How did this implicit positivism affect my beliefs?

Reflecting on this question, I realise the power this research paradigm had on me at the time. Positivism was more than just a research paradigm it was a way of thinking and affected my beliefs, values and the way I interact with others. The notion of "one truth" which exists out there was an interesting one. It led me to believe that knowledge and theory was discovered by scientists or teachers and passed on to mere mortals like myself. This developed within me a reliance on authority as these individuals or institutions had the knowledge that I needed and could provide it for me at times when I did not know the answers myself. This is a form of social control.

Positivism encouraged me to focus on knowledge and theory put it on a pedestal. Society at large tends towards this valuing of knowledge. One only has to look at the number of game shows on television. "Who wants to be a millionaire?" (ITV production 2000) offers 1 million pounds to anyone who can answer 16 general knowledge questions. Even the traditional highbrow programme "University Challenge" (BBC2 production) is largely knowledge based, as was "Mastermind" (BBC1 production). This would suggest that society views clever people as those who are able to remember facts.

Accounts of important theories such as the theory of relativity are often presented in the form of dehumanised statements that seem to bear little resemblance to what is important for human relationships. If there is "one truth" what does this mean for interpersonal relationships? At a personal level I interpreted this notion of truth as there being only one right or wrong. I believe this has had an impact on the way I relate to other people. I saw others who had a different view to me as being either right in which case I was wrong and would need to change my thoughts or as wrong in which case I would need to persuade them of my view because I was "right". This fuelled by my competitiveness hampered my interpersonal and intrapersonal development.

This way of thinking also affected the way I supervised BSc and MSc student projects. I valued the use of inferential statistics in research as being the "proper way" of researching and gave little credibility to qualitative research. I rationalised this by thinking that you could not trust the subjects nor researchers to tell the truth therefore you needed to use statistics to "prove" that new knowledge existed. Therefore I steered students into doing quantitative research and perpetuated the thinking that I had been subjected to. I was also unaware of what qualitative research was and had never undertaken any.

It is quite frightening now to think that such a powerful and pervading way of thinking was subconscious. I had learnt it not by Revans's "sober and deliberate action" but by taking on the implicit beliefs of the culture and narrow learning that I had been exposed to.

Before summarising this first chapter I will explain the reason for embarking on an Mphil/PhD programme in action learning at what was then called the Revans Centre for Action Learning and Research and make explicit the aims and objectives of my project as it was planned in October 1997.

When considering whether to undertake this programme I was encouraged to read "A guide to learning independently" by Marshall and Rowland (1981). This encourages the reader to reflect on several questions such as, what are the positive aspects of your study skills? what worries you most about the course? It emerged from this that I was questioning whether I had the intellectual capacity to undertake a PhD, that I was afraid of failing and that I was afraid of the effect on the quality of my current teaching work of undertaking this qualification in tandem with my work. I had concerns over my memory and my relationships with colleagues as they would have to cover some of my duties. In spite of these concerns I still went ahead.

I decided I would like to develop my research and research supervision skills having had only a few papers to my name and supervised only one MSc dissertation student. My research experience had essentially been in the area of "hard" science research in radiography and in behavioural biology where I looked at true experimental research and evaluative research of equipment and procedures. Yet I now had an opportunity to move into an unknown area, that of educational research. This form of "soft" science research presented a different set of problems to the researcher and the research techniques that could be employed were new to me. In addition to this I was moving to a higher level of research where I needed to be researching to produce new knowledge. This required me to develop new skills and presented new challenges.

At this time I was interested in problem-based learning and interprofessional education. These were topics I was considering researching for my thesis. Although I gave it some thought I eventually chose not to look at problem-based learning as I felt that there had already been a lot of research in this area and I didn't have any ideas as to what aspect I could focus on. Interestingly reflecting upon this now I realise that I had not done a

thorough literature search and really tried to apply myself to investigate the research that had been done. Multiprofessional education seemed to have been less researched in Oct 1997 and so I decided to look at this. This major decision had actually been more of an intuitive one than an objective one yet I felt that it was the right way to go.

The initial project outline is in appendix 1. This has evolved as I have learned more about the subject and myself. The aims were revised and broadened to include some personal goals after the interim report. These were to improve

- my research skills
- my ability to supervise research at MSc and PhD level.
- as a teacher and as a person.

After the phase one evaluation I refined the project aims and presented my final plans to my set on the 2nd February 2000 (appendix 11).

1.7 Summary

This started off as a difficult chapter to write, as I am not normally comfortable with writing about my feelings. On the other hand it has been a fascinating chapter to write which has revealed parts of my thinking which I had not considered in any detail before. Some events and times which I recalled from memory, when investigated further turned out to have occurred at a different time and further information was revealed about events that I had not been aware of previously, particularly the knowledge of my family and Liverpool.

Born and bred in an affluent suburb of Liverpool into a close knit family. One of four sons each of whom has achieved a successful position in life. Early experiences of family life were that it was a happy, supportive and competitive environment. Personal development and education were valued highly within the family as was achieving your potential. A strong sense of drive, determination and an ability to apply oneself to a task seem to be family traits present in my father and brothers and evident in me. Liverpool influenced me through the humour in the culture, the varying economic and social fortunes of the city and my privileged position whilst this was going on. I have a strong sense of belonging to

Liverpool.

Educational experiences at school were uninspiring due in part to the change in the educational structure at that time from grammar to comprehensive and the lack of teaching methods which empowered or instilled a sense of responsibility. Fear of failure is a strong motivator probably due to this early failure at school. I successfully studied for radiography qualifications and worked for 10 years as a radiographer in London. My education as a radiography practitioner did not prepare me well and I found several situations that were at odds with my radiographic education such as the theory practice gap and inappropriate assessment of practitioners for practice. My discovery of problem-based learning was a key developmental step in my evolution as a teacher. The student-centred nature of the education and the fact that it instils a sense of responsibility and autonomy attracted me probably because it was resonant with a solution to my own inadequate early educational experiences.

My formative teacher education experiences demonstrated to me the power of education to have an effect on people's lives years after the initial experience. Mr Eric Soto, my FAETC teacher laying some important foundations for teaching that I did not appreciate at the time but still use today.

Research experiences were inherently positivist and this way of thinking seems to have been embedded in a number of different arenas including teaching and culture. My MSc in Behavioural Biology perpetuated and supported the positivist approach. I completed a dissertation looking at personality traits in radiographers using a single questionnaire. This is something I was comfortable with at the time but question the value of now.

Having considered myself as an instrument of the research and thought about the life experiences which have brought me to the point of starting my PhD it seems valuable to now direct the reader to the aims and objectives I had set for myself during the project (appendix 1 and 11). This will enable the reader to judge my learning and whether I have managed to achieve the targets I set for myself.

Chapter 2. Interprofessional working: The context and the problem

"...two surgeons within the [health service] *Centre developed an animosity towards each other and began to work as two separate individuals. This led to the two teams working more for their own ends than for those of their patients." (Bridge et al 2000)*

This chapter will explore the literature on teamworking in the context of health and social care. It will begin by presenting definitions of teamwork and explaining the different types of activities that teamwork might involve. The benefits and barriers to successful teamwork will then be presented. Barriers such as tribalism, re-organisation of services and occupational dominance will be expanded upon to provide the reader with a feel for the context in which teamwork in the health service is expected to be effective. The chapter will conclude with real life examples of recent failures of interprofessional working that have occurred at the Oxford Cardiac Unit in the John Radcliffe Hospital (Bridge et al 2000) and Eastbourne District hospitals (Greenwood et al 1999). Finally the common factors that have mitigated against successful teamworking at these institutions are summarised. I have used the term interprofessional working interchangeably with the term teamworking. This is the understanding I currently have on completing the writing up of this thesis. I have arrived at this point after considering the literature and my experience of interprofessional working. As this and the next chapter will show the literature itself is inadequate for identifying a definitive meaning.

2.1 Teams and teamworking

In the health and social services there are many different teams who work together for the benefit of the patient. The reason why teams are necessary in health and social care is, according to Leathard (1994), due to a number of factors. Two of the main ones are that the complexity of health and welfare services has increased in recent years, and that the degree of specialisation of services has also increased. For example in 1953 the structure of DNA was uncovered Roberts (1977). Since then a whole host of new services have become available such as genetic screening and genetic counselling.

Leathard also describes there being a perceived need for rationalisation and an increase in efficiency of services as well as a need to avoid duplication.

These health and social care teams function in different settings, have different funding arrangements and organisational structures and are composed of a range of professional and non-professional staff. Their goal ostensibly is the same - to provide a service for the client/ patient. However as I shall explain in this chapter this is not always achieved.

Before considering how teams work and the factors promoting and hindering team work it is necessary to explore some definitions of teams and team working. The World Health Organisation (1984) defined the health care team as;

> *" a group who share a common goal and common objectives, determined by community needs, to the achievement of which each member of the team contributes, in accordance with his or her competence and skill and in co-ordination with the functions of others."* *(WHO 1984:13)*

This may appear to be an important and comprehensive definition by a world body. Further scrutiny is required to unpack this definition. The first question that springs to mind is if the community determines the goal and objectives how is this achieved. Is this through the democratic process of voting for the political party with whom the community believes will set appropriate goals for Health and Social care. If so does this mean that the views of the members of the community who voted for the unsuccessful party are not taken into account. Therefore the team can not be working for the benefit of all of the community. Co-ordination is a feature of a team in this definition and may be affected by several factors. The leadership of the team, the individual members of the team sharing and contributing to the common goal being just three examples. However in health and social care there are many individuals involved in the team each trained separately and working in different contexts who might not be able to share the common goal.

Engel (1994) too offers a critique of this definition. He questions the common goal ideal which presupposes that the group of people in the team have agreed the goal and are happy to work towards achieving it. Looking more widely he compares teams in the armed forces and sport to those in health and social care contexts noting that the former

may share the same education and skill but the professionals in the latter have their own body of knowledge, skills and attitudes. This he suggests is a barrier to effective teamworking. He does, however, note some similarities which are team spirit and extensive training.

Miller et al (1999) in their study of multiprofessional teams in a range of contexts such as community mental health and primary care offer a simpler definition

"a group of people working together towards a common goal".

They too question the goal centredness of the team but also make the point that some people work towards the same goal but do not describe themselves as a team. They go on to expand upon the idea of working together. People who are designated to work in a team may also work independently some of the time but when they do work together this may be in parallel, series or a combination of the two. Another dimension of "working together" is whether the work is based around tasks or decisions and if it is decision-making what weight is given to the input from different team members. There is clearly a complex, multidimensional nature to teamwork and Miller et al begin to provide some possible explanations in table 1 below.

Team
Designated as a "team" but may work as individuals or together
Not designated as a team but may work together
Work together may mean
Work independently in sequence
Work independently in parallel
Work collaboratively in sequence (i.e. separately but each member feeds back to the next at the end of their input)
Work collaboratively some of the time
Work interactively all of the time
Collaborative work
Tasks
Decision-making contribution (input of different members may have different weight)

Table 1: The multidimensional nature of teamwork (Miller et al 1999 p 18)

West and Slater (1996) define some characteristics of formal groups or teams in a primary care context. They state that members of teams have collective responsibility for achieving shared aims and objectives and that they must interact with each other to achieve these objectives. They do not however make any reference to who should set the wider goal for the team unlike the "community" role as implied by the WHO definition above. They suggest that primary care teams have well-defined roles some of which are differentiated from one another such as doctors, district nurses, receptionists. These teams should have an organisational identity, they suggest, as a work team with a defined organisational function. West and Slater (1996) also define the size of the team in this context which they say should be less than 20 members. Although they then go on to state that in some practices there can be 40 primary care workers.

There are many other definitions of teams in the literature however as Ovreveit (1996) points out. From his research into team organisation, and work to help practitioners and managers to develop multidisciplinary working in health and social services he believes it would not be possible to define a team comprehensively by using only one descriptive approach. He offers a five point descriptive approach to defining teams.

1. Degree of integration
2. Extent of collective responsibility for team resource allocation
3. Membership
4. client pathway and decision-making
5. Management structures

Ovretveit concludes with some reasons why we need to define different types of teams and types of interprofessional working. These being to help new practitioners to understand how a team works; to compare different ideas about what teams to create; to be able to improve teams and to facilitate different types of research into teams.

Having defined and discussed team working in health and social care it would seem prudent to now explore some of the benefits that can be accrued from successful team working and some of the features of team work that promote success. However prior to doing this some explanation of the range of terms used for when teams work together in a health and social care context is required.

As can be seen already in this chapter the terms interprofessional, multiprofessional and multidisciplinary have been used by different authors for ostensibly the same thing, teamworking. A wide variety of terminology has been used throughout the literature to define situations where groups of professionals work or are educated together in the context of health and social care. Before proceeding with this chapter it is necessary to shed some light on what Leathard (1994) calls a "terminological quagmire". Leathard listed fifty-four terms she had come across to define when professionals learn and work jointly. She classified them into concept-based, process-based and agency-based. These included such terms as inter-, multi- or trans- disciplinary/professional, joint training, shared learning and collaborative care planning. It is clear that at this time individuals were using a range of terms indiscriminately and that although they may have an understanding of what the term meant in their context there was no agreed national or international definition. She summarised her discussions by saying:

> *"What everyone is really talking about is simply learning together to work together" p 6*

One of the aims of Leathard's publication was to help clarify and define the ambiguous terminology in this developing area of education and work. Rawson (1994) offered a grammatical analysis of the range of terms and provided some clarity by recognising that there are three sets of concepts. These he describes as

1. The problematic associations that cover the examples of the prefixes inter, multi, and trans.
2. The grouping for example the terms professional, occupational, disciplinary, sectoral and agency.
3. The focus of operations which are work, teamwork, collaboration, co-operation and integration.

He states that although different permutations from the list have been used each variation has different connotations. The term 'inter' he suggests denotes relationships between and among professionals and implies some notion of reciprocal operations. The term for the grouping he admits is problematic and does not suggest a definitive answer. He concludes that occupational and professional may be the best options. However one disadvantage of the term professional is that much of the team working that goes on in

the health service requires significant contributions from non-professionals such as administrators, voluntary workers and hospital porters.

Work, with regard to the focus of operation, he regards as his favoured term as it provides the most encompassing definition. In the end he suggests:

> *"Interprofessional work is arguably the phrasing with the greatest utility." p40*

This terminology for 'working together' has not been widely adopted and other terms are still found throughout the literature and practice. Therefore for the purposes of this thesis the terms put forward by the authors of the literature reviewed will be used in the absence of an agreed definition. The term multiprofessional working will be used by the author of this thesis when referring to practical situations when health and social care professionals work together. This has been influenced by the terminology in the literature for 'learning together'. The terminology regarding 'learning together' will be discussed in the next chapter.

2.2 The benefits of multiprofessional teamworking.

Governments over the past four-decades have heralded multiprofessional working in health and social care as desirable in order to improve the quality of care to patients. Foreman and Nyatanga (1999) discuss the political and professional developments that have been put forward to encourage the development of what they call ' co-operative care delivery practice'. They provide a list of legislation and reports covering the period 1962 – 1997 that they claim should have fostered interdisciplinary co-operation.

During this period (1988) Griffiths coined the phrase the "seamless service" and it appears in the NHS and Community Care Act of 1990. This was intended to enable the different agencies to work better together and to deliver care based on the needs of the patient. Patients should be able to move between hospital and primary care efficiently without problems arising with the communication of information between different professional groups delivering the service. As with many government documents this was more of a vision than an evidence-based achievable goal. But what research evidence is there for the benefits of teamworking?

Work done by Guzzo (1996) suggests that only in the past 15 years has the importance of teams to public and private organisations been realised and acted upon. Although there has been effective teamworking for many centuries. The Egyptians would have required teams to work well together in order to have built the pyramids and military teams have been operating as successful units over probably a greater number of years.

Convergent evidence for the benefits of teamworking comes from work by Macy and Izumi (1993) and Applebaum and Batt (1994) in West and Slater (1996). Macy and Izumi analysed 131 organisational change studies in order to determine their effectiveness. The interventions with the greatest effects on financially related measures of organisational performance were found to be team related interventions. They also reduced staff turnover and absenteeism more than other interventions. This showed that team related activities can have positive effects on organisations. Applebaum and Batt reviewed a dozen surveys of organisational practices and 185 case studies and found evidence of improved organisational effectiveness. On a cautionary note West and Slater, who looked at effectiveness of primary care teams, state that when determining effectiveness, teams can be seen as effective or not depending upon the criteria used to determine effectiveness.

So there is some research evidence to suggest that there are benefits to multiprofessional teamworking but what are the features that would lead to teams being successful and can these be transferred to teams in different contexts?

Guzzo and Shea (1992) developed some research-based recommendations for developing effective teamwork.

1. Individuals need to believe that they are a vital part of the team. If they feel there contribution is not valued they are less likely to perform effectively or put in much effort to achieving the team goals. Roles should be developed to make individuals feel *indispensable and essential.*
2. Roles should be *meaningful and intrinsically rewarding*. This will make individuals feel more committed and creative if the tasks they are doing are engaging and challenging.

3. Teams should have *intrinsically interesting tasks to perform* this makes them committed, motivated and co-operative.

4. Individuals contributions need to be *identifiable and subject to evaluation*. People need to feel that their work is being seen by others.

5. Above all *the team goals need to be clear and have built in performance feedback*. There is consistent research evidence that suggests that when people are set clear goals their performance is better than with ill-defined goals.

These are general team rules but are they applicable to the range of situations that are found in the multidimensional teams in health and social care. West and Slater (1996) question whether these are applicable to Primary care teams. The first three conditions they believe are met but they feel it is rare for individual contributions to a team to be measured and for feedback to be given on performance. Most noticeably they assert that primary health teams do not have clear, specific objectives and goals (West and Poulton 1995). If this is the case then the notion that a "seamless service" can be accomplished with better teamworking in health and social care would appear to be an unattainable goal. If the teams do not have clear targets they will not be able to function effectively.

Taking a more specific view of the successful features of teams in interdisciplinary working contexts Mandy (1996) suggests five characteristics for successful teams.

Goal directedness: There should be a clear, central purpose and recognisable idea which serves as a focus for the work which transcends disciplinary boundaries. This may be difficult as members of healthcare teams often have different interpretations of the care required depending upon their professional perspective.

Disciplinary articulation: The role of each member of the team should be clear and areas of commonality transparent. Role development is the expansion of the traditional duties and responsibilities of a professional into roles undertaken by others. For example a nurse practioner, with suitable education and training, may undertake some of the duties of a doctor. With the increase in role development that is likely to occur as a result of the NHS plan (D.o.H. 2000) there is an even greater imperative for professions to communicate their role within the multidisciplinary team. Failure to do this may affect the ability of professions to be able to work efficiently together, as they might not know what the other does or may be able to do for the patient. This could lead to a duplication or omission of services.

Communication: It is necessary for professions to understand the different ways in which disciplines understand, gain and use knowledge otherwise they will not understand how the same phenomena are interpreted differently by others. For example some disciplines use a medical model to inform their body of knowledge. This knowledge is passed on using language particular to this model and uses a hypothetico-deductive approach to knowledge acquisition. There is often a disease process or reductionist focus to care. Others use a social model which again has <u>its</u> own language and uses a more sociological approach to knowledge. There is often a holistic approach to care.

Flexibility: This refers to the valuing of different perspectives, accepting changes in authority and status and a willingness to take on challenges. With the increasing pace of change in the health and social services this is likely to become an imperative.

Conflict management: This can include the understanding of the difference between accountability and responsibility for the team members as well as knowing what is expected of them.

These are the conditions that can promote effective and successful teamworking in health and social care teams. If implemented the quality of the service patients receive should be extremely high. The reality of the service provided for many patients suggests that there are many problems and difficulties in trying to achieve these conditions for effective teamworking. Several of these barriers to effective teamworking will now be discussed and some examples of poor teamworking described.

2.3 The barriers to effective teamworking

There have been several authors who have identified barriers to successful interprofessional working. Mackay, Soothill and Webb (1995) offer their thoughts on the barriers. They describe the perceived and ascribed occupational status, occupational knowledge and the perceived importance of that knowledge for health care as being significant barriers along with a fear or distrust of the perspectives of other occupational groups. The relationship of different professions will be discussed later as the 'tribal' nature of professions is explained but the context within which many professionals work has a significant affect on their teamworking ability. The turbulent nature of this context

will now be described by looking at working relationships prior to and since the inception of the NHS in 1948.

2.3.1 Organisation and re-organisation in the NHS

Between 1870 and 1948 consultants and nurses developed a stable pattern of working in healthcare which according to Gamarnikow (1978) replicated the paternalistic relations of the Victorian family. The nurses adopted many similar organisational features to doctors such as graded hierarchy, strong professional ethics and similar licensing of practitioner arrangements.

The NHS since its inception in 1948 was never carefully designed and, in the aftermath of the Second World War, a political deal was struck with the doctors that put hospitals under the control of the local councils (Klein 1989 in Ackroyd 1995). The political influence on the NHS continued and their administration was soon changed so that hospitals were run by hospital boards and health authorities. However the organisational structures established in hospitals at this time were unusual as they lacked direct management and Ackroyd (1995) states that

> *"It was a puzzle how such organisations worked at all, never mind effectively"*
>
> *p224*

Yet they did function well. The basis of efficient working in hospitals at this time was put down to co-operation of different professional groups within what Davies and Francis (1976) described as a triple hierarchy made up of bureaucratic, professional, and political elements. Klein 1989 in Ackroyd (1995) describes this relationship between nurses and doctors as being like a "producer's co-operative". Since the producers of hospital treatment (the doctors and nurses) effectively co-ordinated and directed the organisations in which they worked.

In short the NHS functioned on good will between the consultants and nurses with the consultants making the clinical decisions and the nurses providing hospital care and organisation, practical care for patients and managing personnel and materials. They also managed the co-operation of other health workers (Ackroyd 1995). Although they

had been subjected to several re-organisations the staff continued to provide the services to the best of their ability.

Throughout the 50's 60's and 70's the NHS delivered an enviable level of service to many people. But there were changes emerging in the users of the service and the running costs could not be contained by local political control. The public became more demanding and therefore doctors responded with new and more elaborate treatments. As costs spiralled the health service required subsidising by the state not just for clinical services but administrative services too. This was at the time, in the 1970's, of the OPEC crisis when oil prices increased substantially and money became scarce.

A new form of administration was introduced into hospitals in the 70's and early 80's that put a tier of administrators between the government and local structures. This upset the autonomy of the clinical hierarchy that had survived in hospitals for many years and is likely to have had a significant effect on staff. For example rather than having a member of the clinical staff e.g. matron determining what services or equipment should be offered to patients based upon need, this was done by an administrator. Hence there was a shift in power and status which destabilised service provision. The budgetary and political control for services shifted more towards central government. Ackroyd describes the organisation of the hospital system for the period up to the end of the 1970's as being

"...characterised as that [period] *of its greatest success.."*

p227

Ackroyd (1995) describes the problems that existed at the end of this period. He states that firstly hospitals were increasingly subject to administrative direction from central government. Secondly there was an increasing cadre of administrators developing accountancy-based limits on expenditure to curb costs. Thirdly costs were spiralling out of control and the service was having difficulty providing the range of new and traditional medical treatments. Finally the general public were becoming increasingly unhappy about the services being provided for them and wanted to have a say in how they were run.

The response to these problems was another re-organisation and the introduction of general management from the Griffiths reforms (1983). According to Donaldson and Gray (1998) the effect of this on the hospital service was that senior managers were appointed as heads of each hospital and health authority and they became responsible for all aspects of its performance. Gradually doctors were drawn in to management by being able to control clinical budgets and head up clinical directorates, the sub-units of clinical services based around specialities. The emphasis of accountability for managers at this time was on financial duties and meeting workload targets. The quality of care was a stated aim of the service but in reality the responsibility for this was at a clinical rather than managerial level.

The development of centrally direct management gradually changed the function of the administration in hospitals and as Ackroyd (1995) notes this was focussed towards the control of costs with the administration

> *"..far from being simply supportive of the activities of health professionals, now involves the exertion of control over them.."*
>
> *p231*

In 1990 another NHS reorganisation took place which was to have a significant effect on the staff within it (Working for Patients, Secretary of State for Health 1989). An internal market was created in which responsibilities for purchasing and providing services were separated. This meant that the purchasers of care i.e. health authorities and general practice fund-holders, negotiated with the providers of hospital and community health services i.e. the Trusts, to fund services to meet the needs of local populations. The supposed benefits of this system were to create incentives to increase efficiency and improve quality. Donaldson and Gray (1998) describe some of the effects of this re-organisation. Firstly that purchasers of service would have a choice as to where to buy services so good hospitals would be rewarded by additional income and bad hospitals would flounder. This is likely to have concerned staff in the Trusts who might have had concerns about their job security which could well have de-motivated them and affected moral. The team may have consisted of some weak elements which would have reduced the effectiveness of the team and made a 'bad' hospital.

Secondly, hospitals and other providers of service would vie with each other to offer better and more innovative services and thereby win a bigger share of purchasing budgets. Health workers who are essentially there to provide a service to patients might have felt uncomfortable about the notion of competition for a publicly funded service. This puts health workers in competition with other health workers and introduces an atmosphere of rivalry and suspicion that would not be conducive to professions working together for the benefit of the patient.

Thirdly, for the first time, contracts for services were to be struck between purchasers and providers and this would offer a way of making explicit expectations about the quality of services to be delivered. This would put the control of the quality of service with the purchaser and may have lessened the autonomy of the health professional. The cost reducing aims of these reforms could be described as being at odds with the health professional ethos of the patient coming first with other services being organised to support this.

2.3.2 The new NHS

The latest government policy for the NHS, which will effect another reorganisation, is the NHS Plan (DoH 2000). This sets out 10 'core principles' describing them as the common ground between the government and the NHS. Two of the core principles are number six - "The NHS will support and value its staff "and number eight – "The NHS will work together with others to ensure a "seamless service" for patients". These appear to be worthy goals but will this latest re-organisation support and promote effective teamworking within the NHS or hinder it?

The plan admits that the NHS and social services do not always work effectively together as partners in care, so denying patients access to seamless services that are tailored to their particular need. It sets out new 'integrated teams' called rapid response and hospital-at-home teams to provide intermediate care. These new teams will probably need to consist of health professionals who work within the philosophically different medical and social models of care. How will these two, often opposed, views come together for the benefit of patients in intermediate care?

The NHS plan links NHS and social services but this thesis will focus in on issues for NHS staff rather than those for social care.

From the literature presented earlier in this chapter the setting out of a clear team goal is important to the ability of the team to achieve it. The plan requires Trusts to set out annually a prospectus which makes explicit its standards, performance and the views of its patients. This might well have a positive effect on shaping team performance as individuals are able to share the standard set out. They may also feel that they own it and would be motivated towards achieving it.

West and Slater (1996) and Mandy (1996) have made reference to the benefit of having well defined roles in a team. The NHS plan (section 9 p 82) promotes the expansion of roles for a number of healthcare workers including nurses, radiographers, midwives and therapists. This increasing complexity of role and lack of clearly defined role for a professional may have a detrimental effect on the ability of teams to work well together.

Another feature of this new legislation is that there will be extrinsic rewards available to promote teamworking as the plan proposes to reward interdisciplinary working. Local authorities, health authorities, primary care groups and primary care Trusts will receive incentive payments to encourage and reward joint working.

At the moment these are plans and have yet to be put into practice. The NHS plan and other planning and strategy documents will be discussed further in chapter 12 when considering the future of interprofessional working and education.

The effect the NHS plan will have on teamworking is unknown. Yet what is clear is that with the reorganisations of health and social care services since the NHS began in 1948 the ability of teams to work effectively has been severely hampered. As Bruce Tuckman (1965) first described, in his theory of team development, a team goes through the stages of 'forming', 'storming', 'norming' before it starts 'performing'. Once a team is changed around, such as has been happening in the NHS and social care context this might effect the performance of the team. Paradoxically this surfeit of reorganisations intended to promote interprofessional working may actually be having a detrimental effect upon it.

These changes have been imposed on the professions by the government yet the professions themselves have impeded the development of teamworking too and one often cited inhibiting factor is that of professional tribalism.

2.4 Tribalism

The healthcare professions have been described by several authors as behaving in a tribal manner Dearden (1985), Pietroni (1994), Atkins (1998), Beattie (1995). Pietroni (1994) looked at the history and development of interprofessional teamwork in hospitals; general practice and community care in the U.K. He cites Bligh (1979) as explaining that "each profession acts in a sense like a tribe" and he goes on to identify several of the tribal features that exist in the health professions. These include having their own leaders; imposing sanctions on non-members; developing their concepts in exclusive gatherings; and being nurtured in distinct ways.

Beattie (1985) in Soothill et al (1995) describes the use of the word tribalism as a "vivid anthropological metaphor" and gives some historical context to the tribal boundaries that have built up in the healthcare professions. He suggests that the professions evolved separately due to the class divisions and gender barriers that existed in Victorian Britain. He also goes on to explain that the boundaries reflected

> *"...prevailing cultural codes surrounding social selectivity, sponsorship and patronage."*

In order to understand the development of this tribal mentality it is necessary to explore the origins of a profession and make explicit the pressures and determinants of professional status. The author's profession of radiography provides a useful example of the interaction between radiologists, the medically qualified doctor, radiographers, degree qualified independent practitioners and also includes some contribution from the profession of engineering during the chronological development of these professions. This historical perspective also highlights the effects of government and medical organisations.

2.4.1 The Emergence of the Radiographic Profession

After the discovery of x-rays in 1895 by Professor Wilhelm Conrad Roentgen, a physicist, a society was soon set up to look after its affairs. This was The Roentgen Society (1987) and was largely organised by medical doctors. However at their second meeting they decided to admit some non-medical members so physicists and engineers were invited to join (Reynolds 1956). Although there was no exclusive medical association with x-rays at this time, Larkin (1983) observes that:

"…medical proprietorship of x-rays developed very quickly"

p 63

He goes on to layout the early evidence for the view that the radiographer was subordinate to the medical practioner. At the time there were no radiographers rather these workers were referred to as laymen. Larkin offers the following quote from the British Medical Journal of 1903:

"There is no reason for professional prejudices against the practice of radiology by laymen, so long as they confine themselves to the mere mechanical act of producing a picture and abstain from assuming a scientific knowledge of the bearings of their radiography on diagnosis and prognosis. Of those engaged in x-ray work only qualified practitioners are entitled to undertake the treatment of disease."

BMJ (1903)

This signifies that the debate regarding role boundaries between the radiological and radiographic factions had begun. Larkin explains how the medical profession put forward reasons why there should be medical control of x-ray diagnosis. As was known at the time x-rays were unsafe and therefore the medical profession would be guardians of this dangerous discovery. They would also be able to guarantee competence in its use. However little was known about the safety issues in the early twentieth century so competence and safety were not guaranteed. Larkin goes on to cite examples where doctors had overdosed patients and staff. So many of the reasoned arguments put forward by the medical profession were weak.

The outbreak of the First World War led to great advances in x-ray technology and many lay people were trained in the use of taking x-rays for army and civilian benefit. Once the war was over there was the prospect of many radiologically experienced doctors, who were not radiologists, and lay men returning from the war keen to secure a job and exploit their new talents. Many of these people had been trained in the taking and reporting of x-rays by radiologists.

There was also pressure on radiologists at this time who were battling with their medically qualified colleagues trying to get their work status recognised. In 1916 Dr T. Holland, President of the Roentgen Society, complained that prominent physicians and surgeons were sending their patients to radiographers to avoid consulting a radiologist (Larkin p 66). So the issue of role conflict was affecting the radiological as well as radiographic professions.

In 1917 the British Medical Association recommended that radiography be placed under the direct instruction and supervision of medical practitioners. In addition medical doctors suggested an initiative to set up an organisation for 'lay assistants' in radiology in order to limit and control the work of the lay radiographers (Larkin 1983). This organisation became the Society of Radiographers, which was formed in 1920. Its committee was composed of six doctors and six engineers. Subsequently six selected radiographers from the London area were added to it. Dr Hernaman-Johnson drew up the Society's by-laws and a qualification was developed for radiographers which was a condition of membership of the society.

The aims of the society to control the practice of radiography was not successful and there was still role conflict and blurring of professional boundaries between radiologists and radiographers. Larkin (1983) states that in 1923 there were still radiographers reporting on x-ray images and advertising these services to doctors. Further professional conflict occurred between the engineers and the medical doctors within the Society of Radiographers. The GMC tried to amend the articles of association thus removing reporting from the role of non-medical practitioners namely radiographers and engineers. Many of the engineers where in private practice and this would have affected their income so they withdrew their membership of the Society en mass in 1925.

The inter-war years' records of the Society of Radiographers mostly reflect, according to Larkin (1983), its desire to improve standards and restrict the role of the radiographer. The admission of the Society to the Board of Registration of Medical Auxiliaries added a further dimension to the medical dominance of radiography.

The interprofessional relationship between the radiologist and the radiographer was demonstrated by recounting the view of a radiologist that was published in the Journal of the Society of Radiographers in 1952. On the subject of the "Ideal X-ray Technician" a radiologist stated :

> *"One attribute which will quickly assist the technician in gaining the radiologist's approval is the habit of good listening. Pay rapt and undivided attention when he is giving advice or instruction...a technician who cannot feel a real deep loyalty after a reasonable time should seek employment elsewhere."*
>
> *Radiography 1952:133 in Larkin 1983 p90*

This form of occupational dominance described above runs counter to the modern day principles of teamworking espoused by West and Slater (1996), World Health Organisation (1984) and Miller et al (1999). The historical pressures on the radiographic and radiological professions highlight the competitive environment within which each must function. They need to compete for precious resources and status to ensure their professions survive and develop. The division of x-ray work into the judgmental and the mechanical has been at the heart of the interprofessional rivalry between the two professions. Yet the experiences of the author during ten years of professional radiographic practice would suggest that there is considerable teamworking and co-operation between the professions at the coal face despite the competitive element that still exists.

The occupation dominance described above is also reported by Larkin (1983) to exist in chiropody, physiotherapy, nursing, midwifery, and ophthalmic opticians. He goes on to define the relationship from a sociological perspective as 'medical imperialism'.

An important development for the professions was the setting up of the 1960 Professions Supplementary to Medicine Act (PSM act). This gave a degree of autonomy and a much-needed recognition of status for several professions. The role of the BMA

as the professional body for the medical profession has been significant in the domination of the professions. This organisation controlled the Board of Registration of Medical Auxiliaries and had subjugated the professions but this Board contributed eventually to the setting up of the PSM act.

In 1949 the Cope Committee was set up to report to the health ministry on the supply, demand, training and qualifications of medical auxiliaries employed in the NHS. This influenced the PSM act which provided for seven professions, chiropody, radiography, physiotherapy, dieticians, remedial gymnasts, occupational therapists and medical laboratory technicians. Its main purpose was with the protection of title and supervision and control of training. This enhanced the developing autonomy of the professions and was, as Larkin identifies (p176) disliked by the BMA. However this was a halfway house because although the medical profession no longer solely controlled the role definition, education and other affairs of the paramedical professions, the paramedical professions didn't control them either as this had been handed to the Council for the Professions Supplementary to Medicine. This council consisted of seven auxiliaries (paramedical professions) seven doctors and seven 'others'.

This example of the development of the radiography profession, the control exerted over it by the medical profession and the tribalism apparent is mirrored across other professions. Atkins (1998) cites research by social psychologists, sociologists and social anthropologists which provide an example of why this tribalism might be perpetuated. He describes the impact of specialist training schools e.g. medical schools, schools of radiography, nursing etc as transmitting a unique professional culture.

This tribalism between professions is considered one of the key factors that can affect teamworking. If the professions could consider that they belong to one 'healthcare tribe' with one goal teamworking would be likely to improve. Unfortunately there are many examples of poor interprofessional working and some of these will now be discussed. The chapter will conclude with a list of factors hewn from these examples, and from those earlier in the chapter, which have hindered or prevented successful interprofessional working.

2.5 Failure of interprofessional working.

A community mental health team was studied by Miller et al (1999 p104). The team comprised community psychiatric nurses, social workers, occupational therapists and consultant psychiatrists. This team was expected to manage the care of all people aged between 18-65 with severe or enduring mental health problems within a defined geographical area. Miller found that there was considerable mono-professional activity with duplication of role between the community psychiatric nurse and the social worker, a lack of role understanding generally and a paucity of detailed communication within the team. There was professional defensiveness due to the differences in interpretation of the 'key worker' role (which is part of the community mental health team approach to patient care management). There were also tensions witnessed as a result of the communication style of the consultant psychiatrists. One was seen as authoritarian and brusque the other as attempting to direct the professional practice of others. Some professionals interpreted this as undermining their professional judgement and angry exchanges occurred between staff at team meetings.

There are other examples of poor interprofessional working which have occurred in the recent history of the NHS and have led to public enquiries into the circumstances of the failure. The Oxford Cardiac Services Report (Bridge et al 2000) and the Eastbourne Nursing Review (Greenwood et al 1999) will now be discussed and the key failures of teamworking highlighted.

2.5.1 Oxford Cardiac Services

A Report of the External Review into Oxford Cardiac Services (Bridge et al 2000) was undertaken following public instances of several failures in the Oxford John Radcliffe Heart Centre (cardiac) services unit since 1997. These failures included the suspension of a consultant, the withdrawing by the specialist advisory committee of the Royal College of Surgeons in England of the higher surgical training status from the Centre and the increase in waiting lists for adult open-heart operations in the year 2000 by 30%. In the 1990's the annual number of adult open-heart operations had been 1,400 this fell during the problem period to just 800 (p6 para. 1.15).

The management structure of the Oxford Heart Centre in the 1990's, it was hoped, would devolve decision making involving clinicians in the running of the unit. It was envisaged by senior management that

> *"the clinical staff would manage their own resources and build a team spirit in which the needs of the organisation, and hopefully the patient, always came first."*
>
> (P3 para1.1)

However several difficulties occurred during this time. One of these was that two surgeons within the Centre developed an animosity towards each other and began to work as two separate individuals. The staff of the Centre were torn between two masters and had divided loyalties. This led to the two teams working more for their own ends than for those of their patients. There was also a lack of professionalism in the Centre with the surgeons allowing personal issues to affect their professional behaviour. Staff at the Centre were confused over the on call arrangements as they believed that surgeon 'x' would only allow surgeon 'y' to treat his patient "over his dead body".

Other problems at the Centre were a lack of leadership in the Trust and the Centre. When a newly appointed surgeon was brought in to help manage the situation he failed to take an active stance towards the problem. The report noted several other contributory factors as the lack of any 'job plan' or appraisal system for the consultant surgeons. They continued to undertake research and private work as they saw fit with no accountability. There was some confusion over managerial responsibilities as a result of a lack of clearly defined roles. One of the conclusions of the report was that the cardio-thoracic surgeons must

> *"..put aside their personal animosities and genuinely try to work together as a team.."*
>
> *(para 6.2, p 41)*

There were thirty-four recommendations made in order to improve the service at Oxford. The five surgeons were told that they must function as a team with a common vision of how to improve. There should be an 'ethos of trust' between the consultants combined with a friendly attitude of 'give and take'. The unit was advised to invite the

Commission for Health Improvement to visit Oxford in 2001 as a way of restoring public confidence and demonstrating that progress would be monitored.

It is interesting to note the measures used to determine the quality of the care at this time. The clinical outcomes as determined by the returns to the Society of Cardiothoracic surgeons were reviewed by independent experts and showed 'no cause for concern'. However they note in the review that the data is not validated nor risk stratified. Independent reviews of minuted monthly audit meetings also showed there were no concerns. Another measure of clinical success is the number of 're-openings'. This is usually for bleeds and can be taken as a surrogate of surgical quality. This did not show a higher incidence than normal nor did an audit of mortality for mitral valve surgery. There is a suggestion in the report (para 5.11 –5.13) that they may have been some selective use of some statistics. Nonetheless the gross measures of quality of care appear to have been unable to demonstrate the lack of teamworking and poor communication between member of the cardiac services team.

2.5.2 Eastbourne Hospitals Nursing review

Several incidents raised concern about the quality of care at Eastbourne District General Hospital (Greenwood 1999). This led to local MP's asking questions in the House of Commons regarding the quality of nursing care and levels of staffing at the hospital. They were particular interested in the care of two named patients.

A review team was assembled and their terms of reference were to

1. determine what quality standard were in place and assess whether these are monitored effectively.
2. Assess the adequacy of investigation, documentation, reporting and follow up of untoward incidents
3. Consider Trust progress in implementing the clinical governance agenda.

There were features of the review outcomes which demonstrated that there were problems in the teamworking aspects of the service at Eastbourne.

Staff of different levels consistently told the review team that they had lost confidence in the leadership of the Trust. They described the management as,

> *"...autocratic, centralist and unwilling to truly involve clinicians in management or to devolve responsibility to them."*
> *(Para 4.1.2, p 4)*

There were other elements of poor leadership at Trust and Senior nursing level. The senior management team was unable to articulate the Trusts strategic direction. The roles and responsibilities of key people were unclear and employees told the review team that they were unsure about whose responsibility it was to ensure that the quality of care within the Trust was delivered to an acceptable level. There had been a nursing strategy produced in 1998 but this had not been discussed or approved by the Trust board a year later.

A major source of concern was that the nursing workforce had been deployed inappropriately. Described as a 'dilution of skill mix' this referred to a blurring of duties by the qualified nursing and support staff. This may have contributed to the nurses feeling of not being valued and losing faith in senior management. This was put down to confusion in the minds of managers about the roles of these two staff groups. Communication within the Trust was poor particularly with regard to the reporting of untoward incidents or near misses. There was a strategy agreed by the Trust board in 1998 but there was no clear leadership to implement this. Staff at both clinical and managerial level reported not knowing what an untoward incident was. This lack of direction hindered communication of important information that could be used to improve the quality of care in the Trust. This organisation could not learn from its mistakes. The report concluded stated that staff had lost confidence in the Trust and that they were concerned about the basic nursing care, poor attitudes of staff and poor communication. There were fifteen recommendations made in the areas of management, nursing, complaints and untoward incidents and clinical governance. Many of these recommendations relate to the communication of information, leadership and the setting up of systems to allow staff to function effectively as a team.

The quality indicators reviewed in the report were interesting to read. The patient satisfaction surveys had shown a high level of patient satisfaction with nine out of ten

patients being very satisfied or satisfied with the care they received. The clinical indicators published by the NHS in June 1999 were used to compare the Trust with the national average. There was no evidence that the Trust's overall performance was poor or good. They were described as 'close to the England average.' The report stating that,

> "Whilst the Trust does not do as well as some other South East
> Trusts, there are no significant indications of serious cause for
> concern"
>
> (para. 4.3.2 p 6)

The significant problems of this Trust and those of the Oxford cardiac unit, that are identified in the reports do not seem to have had a detrimental effect of the quality of care as reflected in the clinical indicators used. This does suggest that the measures are not sufficiently sensitive or appropriate for identifying poor teamworking within a Trust. This is likely to lead to more significant problems occurring if not put right.

2.6 Factors affecting successful teamwork

The examples of poor interprofessional working described in this chapter show some common themes that appear to have a detrimental effect on teamworking.

- re-organisation of the NHS which prevents teams form getting to know what each other does
- tribalism which encourages each profession to work for its self rather than for the benefit of the patient
- domination by the medical profession leading to 'occupational imperialism' which produces competitiveness between professions
- variation in status of professionals which can contribute to animosity between professions
- poor communication that can hinders team effectiveness
- lack of leadership reducing the goal centredness of a team
- lack of professionalism leading to behaviours which hinder teamworking
- lack of clarity of roles which can lead to duplication or omission of services

As a result of the many examples of poor interprofessional working a potential solution to the problem has been suggested. This solution is to educate healthcare workers to work better together and is often called interprofessional education. In the next chapter IPE will be defined and described, its scope will be clarified and the evidence for its effectiveness reviewed and discussed.

Chapter 3. Interprofessional education: the potential solution to poor interprofessional working.

IPE is 'learning together with the object of promoting collaborative practice.' Barr (1996)

This chapter begins with a definitions debate analysing the terms used to define learning together. This shows IPE to be an important subset of MPE. This is followed by an exploration of the literature on multiprofessional education describing and explaining the purpose and forms of MPE and explaining how the learning methods and content are used to define the type of education being undertaken. The likely participants of current IPE programmes are presented and there is a debate on the ideal timing of IPE. This discusses the benefits of undergraduate, continuing professional development or postgraduate level education. The contact theory, a commonly cited theory to promote successful intergroup contact, is then described and the favourable and unfavourable contact conditions are discussed. This leads on to an action learning inspired debate about what is theory and how do we develop theory. Then the limitations of the contact theory are described along with some other theories pertinent to interprofessional education.

The literature on the effectiveness of IPE is then reviewed with a focus on two key systematic reviews in an attempt to discover whether, IPE, the potential solution to poor interprofessional working is effective. Kirkpatrick's model for evaluating educational outcomes presented in the literature is used to help illuminate this analysis. Further examination of this literature provides a description of a possible causal pathway for the way in which interprofessional education might work.

3.1 What is interprofessional education?

One of the aims of Leathard's (1994) publication was to help clarify and define the ambiguous terminology in this developing area of education and work. In the last chapter the terminology surrounding working together was discussed and it was concluded that no particular agreed definition has emerged from the literature but that Rawson's 'interprofessional working' definition (see chapter 2) appears to have greatest utility. The

debate surrounding the definitions used for when professions learn together has taken a rather different course.

As Leathard (1994) has described in the last chapter there were 54 terms used to describe situations when professions learn and work together. Barr and Shaw (1995) helped to focus the definitions debate for 'learning together' down to two key terms which were emerging from the literature in continental Europe, the United States and the U.K. These terms were multiprofessional and interprofessional education. They stated that multiprofessional education was defined by the World Health Organisation (1988), and adopted by the European Network for Multiprofessional Education in Health Sciences (EMPE). It was also used widely in Continental Europe and is described as

> *"....initiatives involving three or more professions."*
> Barr and Shaw (1995)

The Barr and Shaw (1995) definition for interprofessional education, which they note is more common in the USA, has been adapted in the UK by the national Centre for the Advancement of Interprofessional Education (CAIPE). This specifies the type of education method, which should be interactive and encourages professions to learn from and about each other.

In a later seminal work by Barr (1996) he uses this CAIPE adopted definition and neatly differentiates between multiprofessional and interprofessional by saying:

> *"There is, therefore, a need to distinguish between those occasions when students simply learn together (**multiprofessional education**) and those where they do so with the object of promoting collaborative practice (**interprofessional education**)." [Emphasis added]*

The key difference being that in multiprofessional education the learning method is not specified whereas in interprofessional education the learning should be interactive in nature in order to enable the professions to learn from and about each other.

The other term, which is often used in the context of joint learning and working and was used at University College Salford in the late eighties and early nineties during the

development of multiprofessional education, was 'shared learning'. A definition for this, adopted by CAIPE (Barr 1994), is

> *"All opportunities where two or more professions within and across health and social care studies together."*

This would appear to be similar to the broad multiprofessional term but distinct from the interprofessional one in that it does not specify the degree of interactivity of the study.

To summarise multiprofessional education and shared learning are all embracing terms encompassing educational initiatives where two or more (shared learning) or three or more (multiprofessional education) professions study together. Interprofessional education is a specific form of the above two educational initiatives whereby the learning is focused towards the other professions involved in using an interactive teaching and learning strategy. The concepts surrounding these three terms can be found throughout the literature and even though the terms used are not always consistent with these emerging definitions the concepts appear to be well understood by many in this field of work.

In the early years of multiprofessional education learning situations were set up which placed learners together but the outcome was more focussed towards saving resources than promoting collaborative practice. In 1997 the education purchaser local to Salford University, the Lancashire and South Cumbria Education and Training Consortium published a visionary document entitled "A prospective view of the National Health Service in the year 2005: Implications for the Education and Training of the total workforce." This document clearly articulated the desire of the purchaser to buy education and training from the higher education institutions that was designed with the aim of promoting collaborative practice. They state:

> *"This needs to be genuine shared learning where students gain real common understanding (not just shared teaching where different students happen to sit in the same lecture)"*
>
> *p 16*

It is interesting to note that the terminology used by the consortium is not congruent with that in parts of the literature. However as practice is the 'real world' of interprofessional work it might be better to say that the literature is not aiding the understanding and

communication of information regarding this type of work in the field. Nonetheless the consortium have ably demonstrated the education that they wish to purchase to prepare the professionals for practice.

When making reference to the literature this thesis will use the term offered by the author of the work. When describing activities that the author of this thesis has been involved in where students learn together, the definitions adopted by CAIPE (1996) will be used.

The nomenclature surrounding multiprofessional education continues to be debated however and Harden (1998) quotes the WHO definition (1988) which is similar to the interprofessional education definition adopted by CAIPE (1996). He makes the point that this may be an unduly restrictive definition. He quotes Rogerson and Harden (1998) who suggest that even though learners may not interact with their fellow healthcare professionals they could still gain valuable learning that could promote collaborative practice from the teachers and staff of other professions.

By way of expanding upon the possible contexts within which valuable multiprofessional education could be offered Harden (1998) set out an 11 step multiprofessional continuum (appendix 2). This framework for multiprofessional education is a theoretical one put forward by Harden (1998). This classification system is valuable in that it provides a framework for assessing the amount of multiprofessional/interprofessional activity being undertaken on a programme. Yet it is a very scientific approach to classification. There are types of multiprofessional activity which do not fall into the neat divisions that Harden presents. There is also no evidence offered to support the notion that this continuum of multiprofessional activity is one of increasing effectiveness towards the transprofessional end.

There is much literature on the different forms of multiprofessional education that have and are being delivered. The following section will discuss some examples of these educational initiatives from across the field and where possible, classify them using the Harden nomenclature. It will also discuss issues which might impact upon the design of future MPE/IPE curricula.

3.2 The forms of multiprofessional education

3.2.1 Multiprofessional and Interprofessional Education Objectives

Many authors have set out a range of aims of their multiprofessional education programmes. A common aim is that it sets out to promote collaborative practice (Carpenter 1995a & b, Carpenter and Hewstone 1996, Barr 1996, Wahlstrom et al 1997). [By the previously discussed CAIPE classification these are interprofessional education programmes.] The skills of collaboration are promoted by many courses (Miller et al 1999, Perkins and Tryssenar 1994, Pomeroy and Philp 1994). Some authors go further and define the collaborative skills that participants will acquire. Morrow and Hargie (1996) describe the influencing and persuading skills that students should develop during their education in order to be able to collaborate effectively at the practitioner-practitioner interface although this was a uniprofessional programme for pharmacy students. They specify that students should gain theory, an ability to reflect on personal influencing style and the application of tactics and strategies that enhance the influencing situation. Miller et al (1999) also found collaborative skills to be a valuable aim for multiprofessional education in particular an ability to communicate using assertive and facilitative communication styles across status differences and to be able to deal with interprofessional conflict.

Barr (1996) focuses the objectives of IPE into three key areas. Firstly programmes should attempt to modify attitudes and perceptions. This refers to reducing the negative and enhancing the positive attitudes of one profession towards another and valuing others perspectives. Secondly to enhance motivation to collaborate so that professions are positively disposed towards working with others and finally help students to acquire what he calls 'collaborative competencies' such as networking, communicating, negotiating and handling conflict. Pirrie et al (1998) found in their 2-year qualitative study of the views of students and course providers that they suggest some courses enhance personal and professional confidence which helps to underpin participants ability to undertake effective collaborative practice.

3.2.2 Programme Content

All courses developed participants knowledge but in different areas. The following are some of the types of content included in programmes and concludes with Barr's (1996) typology which sheds light on the range of content available.

Some courses offered professional knowledge in for example the area of profound and multiple learning disability (Lacey 1998) or ambulatory care of patients with diabetes (Lorenz and Pichert 1986). Other courses aim to promote an awareness of the roles of their own and other professionals' roles. Knowledge of stereotyping was seen as important on some courses with Miller et al (1999) suggesting that participants should be aware of stereotypes and their value. Carpenter (1995b) designed a whole course for medical and nursing students with the aim of reducing the typical doctor/nurse stereotype. The incorporation of reflection into programmes is seen as important with several initiatives aiming to promote reflective practice (Holland et al 1994, Pirrie et al 1998, Miller et al 1999) in interprofessional learning and working so that participants are able to be flexible and open to different perspectives.

Barr (1996), who is at the forefront of developments in interprofessional education, sets out some of the curriculum features, which he believes will help to engender the philosophy of collaborative practice. He divides these into the course objectives, curriculum content and learning methods. The curriculum content he argues should contain common, comparative and specialist content. Common being subjects that are shared by professions such as themes from the health and social sciences e.g. early multiprofessional work at University College Salford included a common communication skills element (Hughes and Lucas 1997). Specialist content he describes as being particular to one profession. An example here might be the knowledge and skill required to correctly position patients on a ward for a mobile x-ray examination. This would be specialist radiography knowledge but valuable for nurses who collaborate with radiographers at the bedside. Comparative content that bridges the gap between common and specialist content. Barr describes this as opportunities for students to learn about one another. This might be in respect of roles and functions or the opportunities and constraints of a profession.

This typology neatly categorises the different content of interprofessional education programmes. Having considered the content of programmes it would seem logical to discuss how the content is delivered as this will have consequences on the effectiveness of the education and will determine, by the definition above, whether the educational programme is inter- or just multiprofessional.

3.2.3 Learning method

Two types of learning method are distinguished by Barr (1996). These are 'received learning' and 'interactive learning'. He goes on to subdivide the latter and describes, among others, problem-based learning. Interestingly he quotes University College Salford as taking the UK lead in this (Davidson and Lucas 1995).

Received learning was operating on several courses although this was often in conjunction with some other interactive learning method. Lorenz and Pichert (1986) provided team training for medical students in ambulatory care of the diabetic patient. The programme was 32 hours long spread over 8 mornings in 1 month. Each morning consisted of a 1-hour seminar where doctors and other professionals in roughly equal proportions presented core content. This would suggest that this programme would be classed as 'Nesting' in the Harden (1998) classification (appendix 2). The students then see patients under teacher supervision. Although portrayed as an interprofessional training course it is designed essentially for medical students. The authors stating that:

> *"Opportunities for medical students to participate in encounters between patients and nurses or dieticians are routinely provided so the [*medical*] students can observe first hand the functions of the non-doctors." p 196*

Therefore although dealing with real patients it could not be classified as truly 'Transprofessional' (Harden 1998 – appendix 2) as the situation is not as it would be in the 'real world', there being a lack of interprofessional activity. The nature of the learning appears to be more observational hence it could be classed more as received than interactive learning.

Lacey et al's (1998) 1-year part time programme for those involved with learning disability was set up to provide an interactive multidisciplinary learning experience. Participants formed multiprofessional groups from different educational backgrounds and can be assessed at different levels. The teaching was interactive including for example role-plays and of 30 taught sessions 7 were devoted to collaboration. However over the four years experience they reported that only 1 of 18 groups taking the course together were 'multidisciplinary across agencies'. This the authors felt lessened the value of the multiprofessional learning as much of the learning disability work required was across agency boundaries. Although there were some role plays within this teaching and learning strategy the paper did not specify any other interactive method. This would imply that there was a proportion of traditional didactic teaching occurring. This programme was also offered as a distance learning package that might also have reduced the interactive nature of the learning experience.

3.2.4 Transprofessional education

Greene et al (1996) designed a course for medical and pharmacy students that was truly interactive and transprofessional. A problem-based learning approach was taken and real elderly patients were selected as it was felt that they have a variety of medical problems and polypharmacy needs. Students spent one 2½ hour session working in pairs with a patient. They were required to obtain a medial history and compile a medication profile for the first 30 minutes whilst with the patient. They had tutor support when and if required. They then organised their information and presented it back to the whole group with justification of their findings. The major disadvantage of this programme was that the session was only 2½ hours long. It is unlikely that this would be sufficient to change attitudes and develop sufficient skills and knowledge for the session to have a major impact on the future collaborative working for the participants. However it was positively evaluated by the students and staff.

Probably the most innovative of approaches to interprofessional education has been undertaken in Sweden at the University Hospital in Linkoping. This could be described as being at the ultimate end of transprofessional in Harden's classification. Wahlstrom et al (1997) describes the Linkoping Training Ward which has been set up using real patients and health professional students along with some qualified staff. At Linkoping

University all the faculty of health students study a 10-week module together in a problem-based learning format. Called 'Man and Society' it is integrated between the health programmes, including medical students, and enables students to acquire knowledge in tutorial groups related to for example, 'ethics', 'health' and 'conditions of life'. There are other joint elements later in the programmes. At the end of the programmes, in the last or second to last term, students spend a compulsory 2 weeks on the training ward. The ward is based in an orthopaedic clinic and contains patients with hip fractures. It was felt that this category of patient needed the care of a complete medical and rehabilitation team. Students are divided up into multidisciplinary care teams and are given primary responsibility for the care and rehabilitation of the patient. Permanent and part-time qualified staff provides supervision but it is stressed that they are there as resource people. The authors report positive learning experiences and are undertaking a fuller evaluation.

One of the criticisms of this clinical teamworking experience by the students is that the time is too short. They don't begin to work effectively until the second week and feel they would benefit from 2 further weeks. It would be interesting to look at the views of patients who might be cared for in such an establishment. As the students are usually given responsibility for the care of patients what happens when something goes wrong? Is it ethical to provide such care for patients by unqualified staff? Also are patients given the choice of being cared for here or in a more traditional setting? This form of learning experience fits in with Barr's (1996) typology for a successful interprofessional learning environment. It is interactive and transprofessional but as with other papers on interprofessional education has yet to be rigorously evaluated.

The need for interactivity within the interprofessional learning experience was met through modern technology on a programme designed to educate health and social care service teams involved with the care of the elderly (Holland et al 1994). The 'LIFE SPAN' interdisciplinary curriculum for the elderly was composed of four modules. The curriculum aimed to provide learning experiences which involved the formation of a team, patient assessment and planning activities and a care planning conference. Six-month long training seminars were offered in a year. Each seminar was divided into four sessions each meeting once a week for 4 hours. Teams of between 6 and 11 people were formed and they gained their learning experiences at a retirement campus in Louisville, Kentucky. This provided experience of providing services to the elderly who

had no, little or total care needs. The authors recognised the difficulty of getting all team members together in one place at one time for face-to-face contact. They overcome this problem by using a range of communication aids. These include email, telephone conferencing, two-way videoconferencing and facsimile. Unfortunately no evaluation of these facilities was undertaken although the authors state that a grant has been awarded and they will be evaluating videoconferencing in the future. If this form of communication was found to be successful it might open the way for greater collaborative opportunities in the future as participants are not bound by geographical constraints. This has the potential to open up a whole new area of interactive multiprofessional learning.

3.3 Who takes part in multiprofessional education?

Multiprofessional education has been used in a range of contexts in health and social care. Areas where it may have the greatest potential for success are those where several different professions or agencies are required to work together for the patient and where this includes overlapping roles or different professional goals. Examples of such areas can be found throughout the literature.

Holland (1994) describes a USA IPE initiative aimed at nine professions who may be involved in the care of the elderly. The students of nursing, medicine (family practice), physical therapy, dentistry, social work, divinity and pastoral care, audiology and speech pathology, dietetics and pharmacy have mastered the basic skills and knowledge of their own practice. They are seeking to enhance their practice by increasing their knowledge and improving their interpersonal team skills.

In the field of learning disability teachers, therapists, nurses and social workers are required to work together for the benefit of the client. However as Lacey (1998) states they are often taught in a uniprofessional environment and whilst there is considerably complimentarity in their roles there is also role overlap and the potential for duplication and conflict. She goes on to state how difficult it is to meet the needs of all the people who are in the care of these multidisciplinary teams. Lacey has designed implemented and evaluated a 1-year part-time interdisciplinary training programme for qualified staff.

Perkins and Tryssenaar (1994) set up a project at undergraduate level to promote interdisciplinary learning between occupational therapists and physiotherapists. These two professions work together to provide rehabilitative care for patients. There is potential for overlapping roles between these professions and in their study Perkins and Tryssenaar found that the students had an incomplete understanding of the role of the other profession.

A review of the U.K. literature on multiprofessional education was undertaken by Barr et al (1999). His review team searched the MEDLINE databases from 1968 – 1999 and presented data on the professional mix found in the published articles. This revealed the number of times a particular profession was involved in an interprofessional education initiative (see Table 2)

Professional group	No of articles in which they appear
Nurses	86
Doctors	72
Professions Allied to Medicine	41
Social workers	27
Pharmacists	23
Occupational therapists	19
	268

Table 2: Number of times professionals are involved in interprofessional education. (Barr et al 1999)

Nurses and doctors made up the majority of the professions who were involved with interprofessional education. This outcome is not a surprising one as the nature of the work of the nurses and doctors is such that they are required to interact with a wide range of health professionals. In order to be able to work effectively they therefore have the greatest need to understand the nature of the work of other professionals. These findings do not necessarily relate to the number of professions involved in interprofessional initiatives. It might be related more to the number of initiatives that

have been written up and published. This would be likely to favour those professions with a track record and culture of publishing and would include doctors and nurses.

Owens et al (1999) discovered supporting evidence for the degree of involvement of professions in MPE in another survey. They set out to identify how much MPE was being undertaken by health professionals working within a single health authority, North and East Devon. This survey focused on the needs of qualified health professionals as opposed to several other surveys (Barr and Waterton 1996, Pirie et al 1997, Storrie 1992) which investigated the provision by education institutions and training providers. They used a postal questionnaire sent out to 24 health professions in three NHS Trusts, all GP's and their practice nurses and managers, NHS dentists and pharmacists. A total of 4,954 were sent out and a 43% response rate was achieved. Professions reporting the highest rates of involvement with MPE were health visitors (94%), clinical psychologists (89%), occupational therapists (88%) and district (86%), school (86%) and practice (85%) nurses. These are all community-based professions. The professions with the lowest levels of involvement were radiographers (55%), chiropodists (42%), medical laboratory scientific officers (41%), dentists (25%) and pharmacists (22%). This contrast with Barr's (1999) findings in that the occupational therapists were involved in many MPE initiatives. As occupational therapists are very much involved in the team care of patients their greater involvement in MPE might be expected. This survey does however support Barr's (1999) work as nurses were again found to be highly involved in MPE. Nurses work closely with patients in primary and secondary care and as a profession probably come into contact with nearly all other healthcare professions at some time. This would suggest that they have the greatest need to be able to work closely with other professions and to understand their roles and functions.

On further investigation the professions reporting the least multiprofessional education, which Owens et al (1999) describe as the 'excluded professions', often gave lack of opportunity as their reason for not having been involved in MPE initiatives. One chiropodist stated that:

> *"During the last five years, no details of multiprofessional education have been brought to my attention."* p280

The other excluded professions made similar comments.

From the results of this survey there seems to be a reasonable amount of provision of multiprofessional educational opportunities at post-qualifying level for many professions. However surprisingly the educational opportunities provided seem to focus on issues such as updating of clinical and managerial skills, research, teaching and supervision. Only 1% of courses was reported by participants to deal specifically with teambuilding issues or collaborative practice. This implies that the courses they took part in were multiprofessional with very view being interprofessional. It is unlikely that these other courses would provide any direct improvement in collaborative skills which would enable the professions to work better together. This does illustrate the confusion that can arise when describing multiprofessional and interprofessional education. Not only is there confusion as to what the terms mean and hence what the courses aim to achieve but it leaves open the possibility of hijacking of the IPE agenda for the benefits of other interested parties. This might include the provision of a MPE course without interactive learning and with larger numbers of students to save on resources rather than to promote collaborative practice.

Three quarters of respondents felt that there should be more opportunities for multiprofessional learning than there were at present. A clear indication that qualified professionals are in favour of learning more about the other professions with whom they work.

3.5 When will MPE have the greatest impact?

So a wide range of professionals has taken part in IPE but does it matter at what stage in their career they take part? The literature contains examples of education at undergraduate, (Pomeroy and Philp 1994), (Greene et al 1996) pre-qualification (Holland et al 1994) and postgraduate/continuing professional development (Lacey 1998) (Wahlstrom et al 1997)(Hewstone et al 1994). There is also some that stood outside these traditional demarcations. One programme, where professionals from education, health and social services were all working in the field of learning disabilities, provided IPE where participants learned together but were assessed at different levels (Lacey 1998). In another programme IPE was delivered during a pre-

qualification programme but was not a formal part of the educational programme (Perkins and Tryssenaar 1994).

The Barr review group (Barr et al 1999a) identified 96 IPE programmes from their review of the UK literature and found that 32 programmes were at pre-qualification level, 5 were at post-qualification level and 59 were at continuing professional education level. This would suggest that programme developers have different perceptions as to the most appropriate stage in training MPE should be introduced. The arguments for delivering MPE at various stages will now be explored.

Pirrie et al (1998) undertook a two-year qualitative study of the perceptions of multidisciplinary education in health care. She conducted interviews with course organisers, students and qualified health professionals in two clinical setting. These were accident and emergency medicine and general medical practice. The views expressed were that MPE would have a greater impact if it were delivered at post-registration or late in the pre-registration programme. It is important to note here that the MPE experiences of the study group contained example of inter- and multiprofessional education.

The argument for this late delivery being that in order for professionals to be able to reflect on their practice and discuss 'comparative content' they need to have had sufficient professional education and experience. They may be required to discuss for example areas of potential duplication of practice, the role of the profession with different patients/clients in different contexts, professional status and power. If they are in the early stages of their pre-qualifying professional education they are unlikely to be able to make informed judgement in these areas.

The potential for MPE to enhance personal and professional confidence was also thought to be greater at post-registration level. The understanding of students in the early years of a professional programme of the value system of their profession was thought to be rudimentary. This, along with the students need to prioritise becoming a professional in their own field meant that they often did not see the value of doing multiprofessional education in their uniprofessional degree course.

Pirrie (1998) reported that pre-registration MPE was often presented in a didactic large group format. She alluded to the fact that this might have been incorporated into the programme for the benefit of reducing staff contact time, hence freeing up research time for staff, rather than being selected for the purpose of promoting collaborative practice. It is interesting to point out here that multiprofessional education with common content where large numbers of students are taught didactically may offer some underpinning knowledge which might contribute towards the goal of collaborative practice. However Barr (1996), who describes this form of learning as 'received learning' does state that for education which is aimed at promoting collaborative practice, 'interactive learning ' is required. He suggests that informed opinion support the use of interprofessional education to achieve this goal. Later in this chapter the evidence for the effectiveness of interprofessional education will be discussed.

Pirrie's study would suggest that MPE is best left till later in the curriculum or after qualifying. Harden (1998) states that there are strong arguments for a professional to learn independently initially, acquiring confidence and a suitable level of ability in their own profession. Harden (1998) quotes Horder (1996) who offers a counter argument. He believes that Education should start early on in a professional's training

"…to anticipate the development of negative stereotyping".

Yet these stereotypes may already be in place. Carpenter (1995b) quotes Bridges (1990) who states that doctor and nurse stereotypes are fostered in the media. So students are likely to be exposed to these prior to training and may begin their educational programme with negative stereotypes about other professions.

In writing this thesis my experience of designing, delivering and evaluating IPE over the previous 6 years has led me to develop a view of when the most appropriate timing for IPE might be. Interprofessional education should be started late in undergraduate education and then continue throughout the professional's career. I subscribe to the view that until a professional has developed their professional identity they cannot enter into effective dialogue with other professions and debate the practice issues which promote or hinder effective teamwork. Their professional identity or their ability to 'think like a member of their profession' does not develop, in the case of radiographers, until late in year two or early in year 3 in a three-year programme. Whilst this

undergraduate training can prepare them for '1ˢᵗ post competence' and provide underpinning knowledge and skills for interprofessional practice the range of contexts in which this must be applied and the rapid developments in health and social care require professionals to constantly update their professional and teamworking/interprofessional skills.

Many of the professional activities of radiographers do not begin until after qualification where a radiographer may specialise in a range of different areas e.g. ultrasound, magnetic resonance imaging. It would not be possible at undergraduate level to include interprofessional education that would cover the wide range of practice that students might engage in after qualification. This would be better done at continuing professional development level.

The negative stereotypes that students do build up about other professions can be used to inform the educational processes used when developing undergraduate and postgraduate curricula for interprofessional education. The other important influence on interprofessional curricula is underpinning theory. Several theories have been put forward from social science to explain how the objectives of interprofessional education might be achieved. These will now be discussed and their application to IPE illuminated.

3.6 The Contact theory

Both Carpenter (1995a) and Hewstone et al (1994) designed their IPE programmes around creating the appropriate conditions for successful contact between the different professional groups involved. They did not specifically define successful contact but this is presumed to be linked to the objectives of the programme. These were to examine similarities and differences in attitudes and skills of the members of the other profession, acquire knowledge of the role of professions and to explore methods of working together co-operatively. They were among few authors in the field of multiprofessional education who attempted to place their IPE programme in any theoretical context. The theory they selected as being relevant to interprofessional education was based upon the Contact Hypothesis.

It is unclear who the originator of the contact hypothesis was. The principle, upon which it is based, that contact between members of different groups will improve relations between them, goes back to Allport's (1954) book The Nature of Prejudice. Although Amir (1969) quotes Saengar (1953), Williams (1947) and Rose (1948) as being key contributors. Much of the early work on the contact hypothesis was developed by studying ethnic and racial groups particularly the Jews and the Arabs in Israel, the blacks and the whites in the United States and the Catholics and Protestants in Northern Ireland.

But is this hypothesis relevant to studies involving different professional groups?

3.6.1 The contact hypothesis and its relevance to interprofessional relations.

There are several similarities between the professional, racial and ethnic groups that suggest that the contact hypothesis might be relevant across each group. As discussed in chapter two, there is tribalism within the healthcare professions. They have their own codes of conduct, they limit membership to their group, and promote their own culture. Atkins (1998) cites research by social psychologists, sociologists and social anthropologists, which describe specialist training schools for professions that transmit a "unique culture". There is also evidence of stereotyping (Carpenter 1995b) within healthcare a feature found within racial and ethnic groups.

In addition Allport (1954/1979) states that there are several areas of intergroup contact for which the contact hypothesis may be relevant. These included 'occupational' settings (p263).

3.6.2 The contact hypothesis explained

The hypothesis has been discussed widely in social psychology and according to Pettigrew (1975) is important for its rare theoretical status and impact on social policy. Its importance in interprofessional education is summed up by Wittig (1998) who describes the contact hypothesis as:

> .."*one of the most researched theoretical constructs for designing and evaluating programs to promote more positive intergroup relations.*"

Allport's (1954/1979) hypothesis suggests that positive effects of intergroup contact occur only when four conditions are met. These are equal group status within the given situation; common goals; intergroup co-operation; and the support of authorities, law and custom. Amir (1969 pp338) discussed these principles and examined some of the early evidence that has evolved from contact studies. He identified (see table 3) the favourable conditions, that tend to reduce prejudice and promote successful contact and the unfavourable ones, which might inhibit any positive effect.

The favourable conditions
1. Equal status between members of the group
2. When an "authority" and/or the social climate are in favour of and promote the intergroup contact.
3. When the contact is of an intimate rather than a casual nature.
4. When the intergroup contact is pleasant or rewarding.
5. When members of both groups interact in functionally important activities or develop common goals that are higher ranking in importance than the individual goals of each group.
The unfavourable conditions
1. When the contact situation produces competition between groups.
2. When the contact is unpleasant, involuntary or tension laden
3. When the prestige or the status of one group is lowered as a result of the contact situation
4. When members of the group or the group as a whole are in a state of frustration
5. When the groups have moral or ethnic standards which are objectionable to each other
6. In case of a majority/minority group, when the members of the minority group are of a lower status or are lower in any relevant characteristic than the members of the majority group
(Amir 1969 pp338)

Table 3: The favourable and unfavourable conditions which constitute the contact hypothesis

When compared to Allport's four conditions Amir has ostensibly, omitted the co-operation condition. However when looking at the unfavourable conditions competitiveness is cited which can be considered to be the antithesis of co-operation. He has also included two new ones that of intimate and rewarding contact. These could be considered as elements of a friendly contact experience.

Although the contact hypothesis is now over 30 years old Pettigrew (1998) reviews both initial and recent empirical evidence over this time which cites this hypothesis. He states that most studies report positive contact effects even in situations lacking key conditions. He identifies several problems with the hypothesis that will be discussed shortly.

On reflecting upon the use of this hypothesis which appears to have been successfully applied over 30 years it seems unusual that it should still be called a hypothesis. If so much research has supported the principles of this hypothesis why is it not now the contact theory? Interestingly Pettigrew's (1998) article which offers a critique and evidence for development of the contact hypothesis is entitled Intergroup Contact Theory. Following Personal Communication with Pettigrew (email 12.4.01 appendix 3) He suggested that there was sufficient evidence now for the Contact hypothesis to become a Contact theory. This raises several interesting questions. What is theory? what is a hypothesis? and when does a hypothesis become a theory? My set discussed this issue early on in our action learning experience. Several meetings were given over to it and the key elements of the discussion supported by examples from the literature will now be debated.

3.7 What is a hypothesis? What is a theory?

Kerlinger (1970), in Cohen and Manion (1994 p18), defines the hypothesis as a conjectural statement of the relations between two or more variables. Or in laymen's terms an educated guess. In science this guess is based upon a high level of knowledge in a particular subject area. This leads to the formulation of a statement that might be true. This statement, in order to be a good hypothesis, needs to be characterised by two features according to Kerlinger (1970). Firstly that it should be a statement about the relationship between variables and secondly that it should be able to be tested. This statement, also called the 'working instrument of theory', after successful testing might then become a theory.

Cormack (1996) adds to the body of knowledge on the hypothesis by explaining that it is a type of prediction which is usually derived from a survey and analysis of previous research. He suggests that it is inductively derived i.e. the generalisation is derived from specific observations, and then deductively tested i.e. predictions are made, based upon the generalisations.

Theory was also described by Robson (1993) who states that it is a general statement that summarises and organises knowledge by proposing a general relationship between events. A good scientific theory will cover a large number of events and predict events that have not yet occurred or been observed. As stated above theory can be derived from a hypothesis that has been successfully tested using scientific means. Alternatively it can be derived from a grounded theory approach. This approach, which does not assume any prior knowledge about the topic under investigation but seeks to derive theory from it, is called inductive theory. However as Polit and Hungler describe (1978, p22) one of its limitations is that it lacks a wide generalisability which is a feature of a good scientific theory. The main purpose of a theory then is to be able to explain and predict future events and relationships.

The belief in our set, and this was also my own belief, was that theory was written in a 'tablet of stone' and was the key building block of knowledge. Once the scientific community had described a theory as such it carried great weight. Yet reading (some of!) Stephen Hawking's book A Brief History of Time (1989) helped me to understand the value and role of scientific theory.

Hawking describes how Aristotle, the Greek philosopher, in a book called On The Heavens in 340 BC, put forward arguments to suggest that the world was a sphere. This was a very new idea at that time, as it was generally believed that the world was flat. This new theory was supported by his knowledge of the subject matter and observations. His two main arguments were that he knew that an eclipse of the moon was due to the earth coming between it and the sun and that when this occurred the earth's shadow was round. Secondly he knew that the accepted Greek knowledge at that time was that the North stars position was lower when viewed from the South than from the North. Also that by observation you see the sails of a ship coming over the horizon

before you see the hull. What had been considered as theory in Aristotle's time, that the earth was flat, was in error and after scientific observations a truer picture emerged.

Hawking also puts forward another commonly held theory which lasted for several centuries. Aristotle in the third century BC believed that the earth was the centre of the universe and that the other planets and the sun orbited around it. Ptolomy in the 2nd century AD put forward a cosmological model based on eight spheres orbiting the earth with the outermost one being the "fixed stars". Interestingly Ptolomy recognised a flaw in his calculations but despite this the model was generally accepted. The Christian church adopted it too, as it allowed for heaven and hell. It was not until 1514 that Copernicus suggested that the sun was at the centre of the universe and the earth and other planets moved around it. This was not taken seriously until a century later. In 1609 the telescope was invented and enabled Galileo to observe the sky better. He saw that Jupiter had several satellites that orbited around it so this implied that everything did not have to orbit around the earth. This new way of observing the phenomenon added to the ability of the scientific community to investigate it.

Hawking gives other examples about the start of the universe, the attractive forces between bodies and time as theories that have been developed and changed over time as new observations and new thinking has emerged. The message here seems to be that all theory is tentative and that at any time someone could come along and find something that would change our current view. Hawking's definition of scientific theory based on the physical world, is that it is "a model of the universe" or " It exists only in our minds and does not have any other reality".

He suggests that it must have two requirements. It must accurately describe a large class of observations as a model with only a few arbitrary elements and it must make predictions about the results of future observations.

Any physical theory is only provisional and can never be 'proved' no matter how many repeated observations are done. Next time it is carried out the results may contradict the theory. Popper (in Hawking (1989) p10) emphasised good theory as being one that makes a number of predictions that could be disproved (or falsified) by observation. Each time the results of a new experiment agree with the theory it survives and our confidence in it increases.

Interestingly the two key theories of the 1st half of the 20th century, the theory of relativity and quantum mechanics are inconsistent with each other. Both cannot be true so Physics is searching for a new theory to unite them.

These examples relate to scientific theory based on the physical world where cause and effect is an underlying principle and the scientific method is largely observation. As Cohen and Manion (1994) explain the status of theory in the scientific world is high as it has been developed over a number of years and has a high degree of elegance and sophistication. This is in contrast to educational theory which is in the early stages of development and is 'characterised by great unevenness'.

The contact theory then is only tentative. Although there have been many studies which have supported the theory and substantiated the claims for the favourable and unfavourable conditions within the theory there may be other studies which might require the theory to be modified. The criticisms of the contact theory will now be discussed and the conditions that would be essential and facilitating for successful contact explained.

3.8 The limitations of the Contact Theory

Pettigrew (1998) suggests that the contact hypothesis suffers from four main problems. Firstly the causal sequence problem. Selection bias in many studies may be occurring such that prejudiced people may not interact with other groups as some of the situations set up for intergroup contact are being avoided. Hence a positive bias is occurring in cross-sectional studies due to their being a preponderance of individuals who are predisposed to having positive contact.

Secondly, the independent variable specification problem. Allport's original list of conditions which will result in favourable contact are being added to by researchers offering new situational factors. This risks the list becoming too large and excluding many contact situations. Pettigrew suggests this may be due to researchers confusing essential from facilitating conditions.

Thirdly the hypothesis whilst specifying the conditions for a favourable contact outcome

does not state how or why this might happen. Fourthly the generalisation of effects problem. The degree with which the effects of the contact can be generalised to other situations is not addressed. For example Pettigrew questions whether the changes brought about by the contact could be generalised across other situations or to other members of the outgroup not involved in the contact.

Pettigrew (1998) suggests that the contact hypothesis brings about changes in attitude through the following processes which may be interrelated.

Learning about the outgroup. This was classically how the initial hypothesis was thought to have its effect. When an individual learns new information about an outgroup this will correct the false information e.g. negative stereotypes which they initially held and should in turn reduce the prejudice. While Pettigrew supports this view he also suggest that there are some rival plausible explanations and that learning about the outgroup is only one of several processes involved. He cites Rothbart and John (1985) who, writing from a cognitive analysis viewpoint, state that there are a host of mechanisms that limit learning material that will counter our attitudes and stereotypes. They conclude that disconfirming evidence alters stereotypes only if particular conditions are met. These condition are that a) the outgroup's behaviour is starkly inconsistent with the stereotype and strongly associated with their label, b) that the contact occurs often and in many situations, c) the outgroup members are seen as typical of the whole group. So learning about the outgroup is important but is only one of the processes involved in effecting positive outcomes from contact.

Changing behaviour. If participants in the contact process are placed in new situations or a new environment with outgroup members and are required to conform to new expectations such as acceptance of outgroup members then behaviour modification can occur. This can then lead to attitude change particularly if the contact is repeated and rewarded.

Generating affective ties. Pettigrew suggests that emotion is critical in intergroup encounters. He discusses the effect of negative emotions such as the anxiety of initial encounters with other groups. Positive emotions, he says, which are aroused by optimal contact can moderate the effects of contact. Intergroup friendships can be a powerful way of promoting positive effects.

Ingroup reappraisal. According to Pettigrew optimal intergroup contact can provide significant learning for the ingroups about its own customs and norms. Participants in the contact realise that their own ingroup ways of seeing the world are not the only ones and this can lead to a changed perspective.

The conditions for successful contact as defined by Pettigrew (1998) are divided into essential or facilitating situational factors. Essential factors he regards as the four Allport conditions presented above plus his own friendship potential condition. These promote less negative stereotyping, prejudice and discrimination. The other factors from Amir (1969) and others he suggests are facilitating factors. Therefore when using the contact hypothesis as the underpinning theory for interprofessional contact it will be necessary to consider the conditions for favourable contact and unfavourable contact as described by Amir (1969) from Allport's (1954) initial work as well as look at the extra condition that Pettigrew (1998) suggests. The essential conditions will be interpreted as necessary for successful contact and the facilitating ones as desirable. Both will be used to inform the design and development of the interprofessional education programme which is to be delivered and evaluated for this thesis. Applying this theory suggests that negative stereotypes and prejudice will be reduced, and successful intergroup contact promoted.

3.9 Mutual Intergroup Differentiation

Another theoretical constructs which may have relevance to interprofessional relations is the mutual intergroup differentiation theory. This different approach to intergroup contact comes from the social identity theory put forward by Tajfel (1978). The theory states that people tend to define themselves according to the social groups of which they are a member and seek to have a positive social identity. They attempt to achieve this by undertaking a comparison between the group to which they belong and another group with the aim of establishing a 'positively valued distinctiveness'. The theory claims that positive comparisons with another group that seem to favour the ingroup are seen to provide a satisfactory social identity, whereas negative comparisons that seem to favour the outgroup convey unsatisfactory identity.

For example in healthcare professions the ability of a profession to refer patients on to

other health services, hence directing the practice of others, is a valued element of the professions responsibility and is seen as a high status professional activity. This is likely due to it being a feature of a profession's autonomy. If radiographers and midwives were to have intergroup contact the midwives might see this aspect of their professional role as advantageous and it is likely to be perceived as a positively valued difference when compared to the radiography profession who have their practice directed by others.

Motivational as well as cognitive factors are seen to underpin this intergroup differentiation. Hewstone and Giles (1984) argued that mutual intergroup differentiation might usefully be applied to intergroup contact situations rather than try to deprive individuals of their valued group identities. Hence the positive aspects of the midwives perception of their referral role could be usefully promoted whilst the negative aspect of a radiographers role played down. This theory will also be applied to the development and delivery of the interprofessional education module which forms the focus of this thesis. One further psychological phenomenon, which might also be useful when developing interprofessional contact situations, is ethnocentrism.

3.10 Ethnocentrism

This term was first suggested by Sumner (1906). He used it to describe the situation where a defined group sees itself, the ingroup, as being the centre of everything and all others, the outgroups, are scaled and rated in comparison. Each ethnocentric group such as a profession has its own values, beliefs and attitudes and will tend to look after itself. It might potentially look at outgroups, or other professions, with contempt. Forman et al (1999) argued that this is a normal part of social identity and self-perception and presented evidence which supported the view that ethnocentrism begins in childhood.

The theories relevant to interprofessional relations have now been discussed along with the possible value they might have when developing an interprofessional education programme and planning evaluation. Another factor that will help to inform programme development and evaluation is the current literature for evidence of the effectiveness of interprofessional education to which I now turn.

3.11 The effectiveness of interprofessional education: the evidence base

Interprofessional education is claimed by many educationalists to improve collaboration between different professions and as a result of this that it improves the quality of care and the outcomes for patients. In this new climate of evidence based practice there is a need to provide supporting evidence for any new initiative, or indeed current initiative, especially one that uses public money, to show that it does what it claims to do. In addition it is valuable to demonstrate any unwanted effects that might ensue.

McMichael and Gilloran's (1984) evaluation of an IPE course for social workers, student primary school teachers and student community workers demonstrated some negative attitude changes. The student community workers and social workers tended to develop more negative attitudes towards the student primary teachers even though the teachers were more positively disposed toward the other two groups by the end of the programme. Carpenter and Hewstone (1996) also reported some negative outcomes. They investigated attitudes between doctors and social workers and although they found some positive attitudinal changes, where members of both groups reported more favourable attitudes after the IPE programme, they also found that in 19 % of cases attitudes actually worsened. These negative attitudes were equal across the two groups. The authors state that:

> *"....it was clear that for some of the participants at least the experience was aversive and the programme itself was at fault."*
> *p255*

So IPE might, in some circumstances, actually be doing the opposite of what it purports to do and have a detrimental effect on attitudes and hence may affect team working. There is a need therefore to identify whether IPE is successful and to understand what makes it successful, identifying the objectives, content, learning method and timing which will promote collaborative practice. In order to illuminate this there is a need for quality research.

Interprofessional education evaluations have been carried out for at least 25 years with Hasler and Klinger (1976) being among the first to evaluate an IPE programme. They studied a four-day residential course for GP's and student health visitors. Therefore it might be rational to assume that during the quarter of a century since then sufficient

evidence has emerged to judge the effectiveness of interprofessional education. The evidence produced over this time was recently reviewed (Barr and Shaw (1995) and Zwarenstein et al (1999) and there was a clear outcome from the later piece of work.

3.11.1 The systematic review of interprofessional education

Barr and Shaw (1995) undertook the first major appraisal of IPE activity found in the literature studied yet were unable to draw any conclusive outcome from the evidence. This was largely according to Mulrow and Oxman (1997) because it was a narrative view that did not offer any evidence for or against the effectiveness of IPE. However in 1997 a research group was set up under the auspices of the Cochrane Collaboration to undertake a systematic review of the literature relating to the effectiveness of IPE (Zwarenstein et al 1999). The late Archie Cochrane who was a British Doctor and epidemiologist set up the Cochrane Collaboration. He believed that a database should be constructed of systematic reviews, with updates, of all health interventions in a format that could be utilised by policy makers, health care providers and consumers. One arm of this collaborative group is the Effective Practice and Organisation of Care Group (EPOC) which was formed to evaluate interventions designed to improve professional performance, patient care and health outcome (Zwarenstein et al 1999). It was as part of this EPOC group that Zwarenstein and his colleagues, the systematic review group, worked using the guidelines that had been laid down for them.

The systematic review group identified 552 articles from the CINAHL database (from 1982 - 99) and 510 from MEDLINE (from 1966 - 99) which had rigorous study designs of interprofessional education. They reviewed the abstracts and selected 89 articles for further review. Each of these articles was reviewed by at least 2 researchers from the group. There was consensus by these reviewers that no papers were eligible for inclusion in the review as they did not meet the methodological criteria of the EPOC group. Zwarenstein et al (1999) state that for the Cochrane review groups only randomised controlled trials are considered sufficiently rigorous. Although the EPOC group also allows two further designs which they consider provide a sufficient strength of evidence. These are the interrupted time series and the controlled before and after study designs. This sends a clear message to curriculum developers, policy makers and researchers that we do not yet know whether IPE is effective.

Although the authors state at the beginning of the article that they discussed the contribution to the IPE evaluations of the empirical-positivist and qualitative interpretive-critical paradigms of research, this may have been a weakness in this evaluation. They state that:

> *"Each paradigm contributes something different and each may*
> *be emphasised at a different stage of the research process"*
>
> *p418*

Yet the methodological criteria that they have used are firmly within the positivist paradigm and as such do not give any credence to the ability of qualitative aspects of research which may add knowledge to this area of the effectiveness of IPE.

Also searching other databases e.g. ERIC might have yielded further evaluations of interprofessional education in health. These might have had sufficient rigour to be included although, in light of the lack of numbers from MEDLINE & CINAHL the numbers from ERIC are unlikely to be large enough for a rigorous study. They might, however, have shed some light on the effectiveness question.

Zwarenstein et al (1999) conclude that although within the criteria agreed with EPOC they have been unable to find rigorous quantitative evidence of effectiveness of IPE this does not imply evidence of *in*effectiveness. They call for more rigorous studies both quantitative and qualitative to help transform the meanings, experiences and explanations of IPE.

3.11.2 The wider parallel review

Members of this review group joined with other researchers and produced a second review of the literature (Barr et al 1999b). This time they widened the remit of the review. Rather than asking Is IPE effective? they asked. What type of IPE, under what circumstances, results in what type of outcomes? In their article the team make an extremely pertinent point with regard to IPE evaluation. There are a wide range of contextual factors in IPE such as duration, purpose, type of IPE, type of evaluation and hence the outcomes of these educational initiatives can be quite different. Therefore it

would seem logical to evaluate the programmes not against the ideal aims of IPE i.e. the improvement in the quality of care and outcomes for the patient but on the stated aims of each course. For example some programmes aim to modify negative stereotypes (Carpenter 1995b) or change attitudes and perceptions (Shaw 1994) each, it is suggested, might have a beneficial effect on changing the underlying factors which influence collaboration behaviour. As such they are valuable pieces of research that could offer evidence of the first step towards achieving the desired outcome of IPE.

The parallel review (Barr et al 1999b) looked for a model with which to classify the range of outcomes of the IPE evaluations they had identified. For this they chose a modified form of Kirkpatrick's (1967) four-stage hierarchy of evaluation because of its simplicity and its focus on outcomes.

Level 1: **Reaction**. This covers the learners' perspective of the learning experience focusing on organisational issues and the attitudes to undertaking IPE.
Level 2: **Learning.** This demonstrate changes in attitude, knowledge, skills and competencies relevant to IPE
Level 3: **Behavioural change.** This documents the transfer of learning from the education to the work environment**.** It will show application of interprofessional skills, competencies and attitudinal change.
Level 4: **Organisation/practice change**. This focuses on the structure and process of the organisation of care and health outcomes. This final level is the one that is most desirable.

The stage at which the IPE training was delivered seemed to have an effect on where in Kirkpatrick's hierarchy the outcomes of the programme might be placed. Data presented by the review group (Barr 1999a) looked at 32 papers at the pre-qualification stage of training. Of these there were 58 positive outcomes identified (N.B. some papers showed outcomes at more than one level). There were 51 outcomes which could only be classified at one of the first two levels of Kirkpatrick's hierarchy i.e. learners reaction to the programme and learning of knowledge and skills. For the IPE programmes that were undertaken as part of continuing professional education there were 59 papers with 93 outcomes. Of these there were 58 that had assessed outcomes at the two highest levels i.e. behaviour change and organisation of care level. It is thought that this demonstrates how difficult it is to make valid claims of behaviour change or changes to the

organisation of care from pre-qualification IPE. The implications of this might be that those engaged in early stage IPE will have to be content with demonstrating outcomes which show attitudinal or knowledge changes. Whereas those involved in later stage IPE programmes might be better positioned to show changes in professional behaviour and real changes in outcomes for patients. This is likely due to an implicit causal pathway by which IPE might have an effect.

3.12 A causal pathway for IPE ?

Firstly IPE might change a participants attitudes, beliefs and values. Secondly this might lead to a change in professional behaviour that could then lead to improved teamworking in health and social care contexts. Finally that this improved teamworking will improve care and outcomes of practice for the patient (see figure 1).
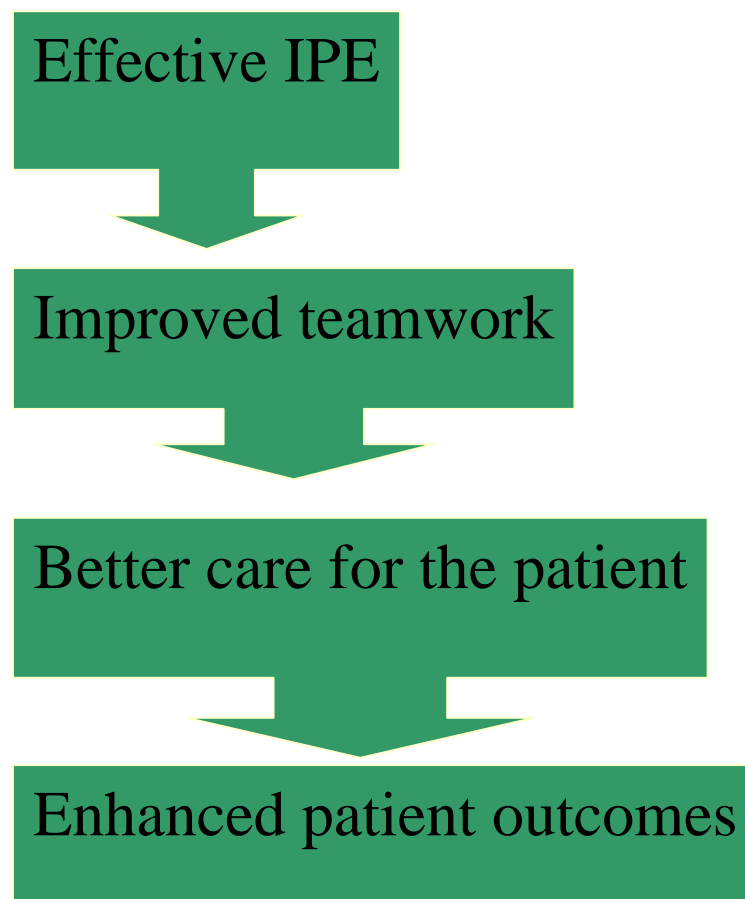
Figure 1: an implicit causal pathway for the effect of interprofessional education

There is some evidence for attitudes having an effect on behaviour in certain circumstances. Fishbein and Ajzen (1975) in Cormack (1996) state that attitudes do seem to be able to predict behaviour so long as each are defined with a similar level of specificity or generality. So it might be possible to predict facilitating team working behaviours if team members exhibit positive attitudes towards the other team members. However they also exercise caution as they state that there are many other factors which are predictive of behaviour.

Being able to demonstrate that changes in behaviour might lead to better team working might not be too difficult a concept to believe. But, as but as Barr et al (1999b) point out, it is most difficult to show the effects of IPE on changes in organisational care and patient outcomes as there are many organisational constrains which might inhibit individuals freedom of action. Therefore to ensure rigour in evaluations of undergraduate education the 1st and 2nd levels of Kirkpatrick's model would appear to be the most attainable outcomes.

3.13 Summary

This chapter has discussed the definitions of multiprofessional education, shared learning and interprofessional education and shown that IPE is a subset of MPE with interactive teaching designed to promote collaborative practice. The many forms of MPE that are being offered have been described and the objectives, content, and learning methods used to classify the different types. The multiprofessional education continuum presented by Harden suggests that transprofessional is the aspirational form. Doctors, nurses and occupational therapists seem to be the most common participants in MPE with most educational opportunities being at post qualification continuing professional development level. There is some debate about when the ideal timing might be for an interprofessional education initiative although the author of this thesis and some literature support the late undergraduate and CPD times as being the most beneficial.

A common theoretical context for IPE is the contact theory. This has been critically analysed and the favourable and unfavourable conditions for successful intergroup contact identified. These will be used to inform the curriculum development undertaken

by the author for the faculty of health at Salford University.

The evidence for the effectiveness of IPE has been explored and using strict Cochrane guidelines, which investigated whether IPE demonstrated improvement in the quality of care and outcomes for the patient, no evidence of effectiveness of IPE was found. However there is some poorer quality research which was analysed using Kirkpatrick's classification of learning outcomes. This work indicates that early stage IPE i.e. at undergraduate level, might be effective in changing learners reactions to undertaking IPE and changes in attitude, knowledge and skills. Also that later stage IPE i.e. at CPD level, might be more likely to demonstrate behavioural change and changes in outcomes for the patient.

Finally a causal pathway for IPE has been suggested which indicates that IPE efficacy might lead to closer teamwork which could produce better care for the patient and improved patient outcomes.

Although the review of IPE effectiveness found no papers of sufficient rigour as to be able to be included in the review, there are several examples in the literature of papers which have positive design features and could be used to inform further research into IPE. These papers will be evaluated in both chapter 4 and chapter 5. These two chapters will show how several key papers influenced the design of the evaluation strategy, in particular the outcome measures and the method, along with the curriculum development.

Chapter 4. The development and implementation of a possible solution: The interprofessional education pilot project.

" There is only one way under high heaven to get anybody to do anything .... And that is by making the other person want to do it" Carnegie (1981)

This chapter will return to real life experiences, it will include personal reflections and show where my action learning set had an influence in my research. It will explore the background to MPE at Salford and will describe some of the issues that had to be tackled in order to develop the interprofessional education pilot project. Some of these were personal issues that I had to overcome in order to improve my interpersonal skills and ability to influence the staff and students in the faculty of health (formerly the Centre for Health Studies). Contextual problems will be highlighted to show how the organisation has learned some lessons from the introduction of 'shared learning' in 1990 and the subsequent rebirth of MPE using problem-based learning as the method of delivering the philosophy of MPE in 1994. Yet some of these problems still remain and could not be solved for the pilot IPE project. The facilitating and constraining organisational factors are highlighted and issues such as negative staff attitudes, the planning problems for the interprofessional curriculum and the need to market the final module are explained. The impact of the contact theory, introduced in the last chapter, will be discussed showing how it influenced the development of the curriculum.

4.1 The historical context to multiprofessional educational at Salford.

There have been several attempts to introduce multiprofessional education into the health curriculum at Salford. One of the early models was introduced in 1990 and was called 'shared learning'. This was at a time when University College Salford was in the polytechnic sector and had a vibrant Centre for Health Studies that ran a range of professional degrees and diplomas at pre-registration level. There were seven programmes at this time that involved the professions of occupational therapy, physiotherapy, podiatry, prosthetics and orthotics, radiography and social work.

4.1.1 The shared learning programme

The shared learning programme was taken up by four of the professions initially in 1990 rising to five in 1993 and consisted of nine modules. The content was selected by the curriculum developers because it was according to Davidson and Lucas (1995):

> '...relatively non-contentious, yet applicable to all the professions involved.'

This content was communication skills, information technology, sociology of health and illness, research methods, health education and promotion and organisation and management. This would be what Barr (1996) defined in the last chapter as 'common content'. The programme was delivered in each of the three years with four modules being delivered in year 1, 3 in year 2 and 2 in year 3. The aims of the programme were to encourage team-building and to develop a reflective practitioner (Davidson and Lucas 1995). The teaching method was not prescribed but was left up to individual lecturers this usually consisted of a series of lectures, tutorials and seminars.

Evaluation of the programme was by staff and student perceptions and incorporated student attendance data. Unfortunately the shared learning programme was evaluated poorly. The main problems were that students' attendance rates were meagre with only 60% attending any one session. The students perceived MPE to be of low priority to staff and the teachers did not put MPE into practice themselves. The induction was reported to be insufficient and the students stated that anything other than exams as an assessment method would be translated as a soft option and avoided (Davidson and Lucas 1995). There were also administrative problems experienced with timetabling and room allocation as the programme was delivered concurrently with the professional programmes.

Further unpublished evaluations of this shared learning (Davidson and Lee-Gow 1992-93 and 1993-94) showed that the aims were not being achieved. There was little evidence of teambuilding or interdisciplinary communication because students '..just weren't given the opportunity.' They merely 'share' a classroom with other paramedics so the subjects might as well have been taught unprofessionally. Students saw the aims of MPE as important but that the subjects were not relevant to their profession. This is an enduring theme that will be returned too in later evaluations. The issue of ownership of the modules was raised and

it was felt that no school owned the shared learning. It was seen as something additional to their programmes. The lecturers on the programme felt that their heads of school did not support them and that MPE had been 'forced on them'. At this time, as Hughes and Lucas (1997) imply, one of the benefits of the shared learning curriculum was the 'possible advantage of economies of scale'.

4.1.2 The health professional studies programme

In 1994, following the poor evaluation, shared learning was repackaged and re-launched as Health Professional Studies (HPS). It was delivered using problem-based learning and consisted of three modules, one in each year of the three-year pre-registration programmes. The modules were entitled People in Society, Developing Professional Co-operation and Interprofessional Clinical Practice. The aims and objectives of the programme changed with the aim now being to learn together to work together (Hughes and Lucas 1997). The specific objectives sought to foster collaborative social attitudes, an ability to share knowledge, an acceptance of others' values, the development of mutual respect and understanding, reflection and promotion of the concept of team working. This contrasts strongly with the shared learning aims. The HPS aims are much more interactive and would appear to be truly interprofessional in nature. Two professions took part in the 1994/95 academic year these were prosthetics and orthotics and physiotherapy. The following year radiography was introduced into the programme.

The 1st module from the HPS curriculum was evaluated over a two-year period using several published tools. The effectiveness of the curriculum was evaluated using a Salford University based tool adapted from earlier work at University of Adelaide and the University of Linkoping (Davidson and Lucas 1995). This provided a structured format for measuring the perceptions of staff and students. One of the striking improvements to come from the evaluation of the People in Society module was that the attendance improved dramatically. In 1994/95 the attendance rates were 97%. Although this is a large improvement there were only 68 students on the programme for 2 schools whereas on the final two years of the shared learning programme there were over 500 students from 5 schools. Some of this improvement in attendance might therefore be due to the better monitoring that is possible with a smaller number of students.

The other positive reports were for the students' perception of their achievement of the objectives of the module. Over the two years (1994/95 and 1995/96) 92% of the students felt that the objectives of the module had been achieved. In 1996/97 this was still high at 89% (Mackay et al 1997). The problem-based learning aspects of the programme were also favourably evaluated. The degree of interaction and reflection deteriorated over the two years but this was felt to be due in part to the size of the PBL groups. The first year 1994/5 saw groups of 6 or 7 compared to 8 or 9 in the following year. Students were reported as being enthusiastic about the objectives of HPS.

After this positive period MPE took a down turn with some professions choosing to pull out of HPS. This action was taken when the undergraduate programmes each came up for revalidation and the staff decided not to keep the faculty wide modules within their programme. The 3rd year module Interprofessional Clinical Practice was never run and professions within the faculty decided to take other multiprofessional education opportunities. The reasons for this are unclear but may be related to staff attitudes which focused on negative aspects of MPE. Staff and students also failed to see the relevance of pursuing interprofessional education with professions whom they rarely or never work with upon qualification. Whilst they often report enjoying the educational experience, problem-based learning in particular, they are unable to see any value in the encounters for their own professional practice.

MPE had been getting a bad press due to previously poor evaluations and in my view this was how staff and students viewed all MPE. This public relations problem will be returned to later in this chapter (4.6.1).

It was at this time that occupational therapy and physiotherapy developed another MPE programme called Patient Management Skills. This consisted of common content delivered in year 1 and 2.

In 1996 the old University College Salford amalgamated with the University of Salford and the Centre for Health Studies became the Faculty of Health Care and Social Work studies. This opened up other opportunities as the Northern School of Nursing and Midwifery also joined the University and faculty widening the range of health professionals in the one institution.

In 1997/98 the HPS programme now consisted, in the first and second year, of just two professions, prosthetics and orthotics and radiography. In addition the student who had begun in the 1995/96 were now faced with the problem of there being no other students to undertake the final year interprofessional clinical practice module with.

I took over the co-ordination of the HPS programme in 1996 when it was on a downward spiral. The NHSE, NHS strategy papers and the consortium who managed the education contract with Salford all wanted MPE in the education programmes for health professionals. They were also becoming aware that what they wanted was not just MPE but specifically IPE (Lancashire and South Cumbria Education Consortium 1997). Staff attitudes in the faculty were polarised. There were those who supported it and made an effort to develop it and those who were not convinced of its value and either blocked or pushed it well down their agenda. The Head of the Centre for Health Studies and the previous Co-ordinator of the MPE programme, who were the driving force behind the shared learning and then the successful introduction of PBL as the teaching method, had both now left the university.

4.1.3 The new challenge for MPE

As the Co-ordinator of MPE for the faculty I was determined that it was going to work. I had seen some of the successes of the programme and witnessed the students of different professions learning together and discussing health issues together as a team. I wanted the quality of MPE to improve and for it to become a sought after educational experience in the faculty so decided that I would study it as the topic for my MPhil/PhD which I started at the Revans Centre for Action Learning and Research in September 1997.

I was faced with several challenges. Firstly how was I going to prove to people that IPE could work? Secondly How was I going to move IPE forward in the faculty? Thirdly I needed to put together a proposal for my MPhil/PhD.

At a set meeting on 12th November 1997 I was being questioned about the next step of my project. I had brought to the set the following problem. How was I going to influence others to get involved with the IPE programme when many of the key people were Heads of Department, Senior Lectures and course leaders? I was a lecturer lower down the

hierarchy who did not know many of these individuals and did not have access to them. During the session I was asked several questions. What is meant by influence? What did I think they [these other professions] were worried about? I was left feeling confused about were I might go next and how to influence others but it was suggested that I might look at some literature on influencing others.

At a subsequent set meeting (10.12.97) I was asked what skills I though I might need to influence others and this was a key question to which I did not know the answer. Searching the literature using the key word "influence" identified an old text. This book had been revised several times so I assumed it must be popular and read it.

How to Win Friends and Influence People was an international best seller written by a successful businessman from the 1930's called Dale Carnegie, in his book he wrote

> *" There is only one way under high heaven to get anybody to do anything.....And that is by making the other person want to do it"*

This was a very interesting statement but how can you make someone <u>want</u> to do something?

I had the following three unanswered questions in my mind which were causing me some concern. Firstly how could I gain access to other professions? Secondly what was my personal influencing style? And similarly was my ability to influence others sufficient to persuade them to get involved with the IPE programme? It was at this point that progress was made on these problems and they became inter-linked.

I had heard through a colleague at work that there was a cross faculty group in existence called the Undergraduate Working Party (UGWP). It's remit was to look at multiprofessional education and other areas of health and social care curricula that might be shared to avoid duplication of effort across the faculty over the next few years. On this working party were several representatives from the different professions. Unfortunately the group were not making much progress and there was much resistance and ambivalence to multiprofessional education and working. As I had an interest in MPE I was able to get myself co-opted onto the group to represent radiography. So I found that I had access to a multiprofessional group of people who each had influence within their own profession. If I

could persuade this group of the value of MPE I might be able to develop the MPE programme.

4.2 How do you get someone to do what you want them to do?

I was not aware that I had a personal learning style and I felt that I did not have the confidence or the personal skills to be able to persuade others to get involved in the MPE programme. I felt this as I had been unable to answer the question put to me in the set about what skills I thought I might need to have to influence others. In an attempt to learn more about myself I carried out a skills audit using the Honey and Mumford Learning Styles Questionnaire (Honey and Mumford 1986). This identifies the type of "learning person" you are. They describe four types of style of learner theorist, pragmatist, reflector and activist. The basic tenet of the work is that you will be able to learn effectively and adapt to different learning situations if you score highly on each of the four styles. I knew I would have to learn about the needs and wishes of other members of the UGWP as well as to improve my learning generally for my studies so thought this would be a good starting point to develop my learning skills and self awareness.

The results showed me to be high on the first three dimensions, theorist, pragmatist and reflector, but low scoring on the last one, activist. For each dimension Honey and Mumford have compiled a short description of the strengths and weaknesses of each learning style. I needed to identify the areas in which I was weak so that I could work on these and turn them into strengths. With this in mind I compiled a list of the weaknesses of the theorist, pragmatist and reflector, which would correspond to my weaknesses as I had scored highly on these dimensions. To this list I added the strengths of the activist; again these would correspond to my weaknesses as I scored lowly on this dimension. For each weakness the scores ranged from 1 - not relevant to 5 - very relevant so I identified weaknesses were I had a score of 4 and 5 as those that were the most important. This gave me a list of skills I was weak in.

In summary (see table 4) it appeared I had become a task-oriented person, impatient with waffle, not assertive and with no 'small talk'. Reading these statements was a real eye opener. I felt that these were activities that I had been guilty of doing (or not doing). Throughout my working life at Salford I felt I had changed and that factors such as the

volume of work, stress, need to achieve had all had a negative influence on me and the way I related to other people in the organisation. But I did not believe that this represented areas that I was naturally weak in. I believed that it was within my capacity to focus on these failings in my dealings with others to use the traits and attributes I have, to bring them out and begin to apply them to situations as and when I needed to. I felt I should take something positive from this personally striking finding.

Reflector	**Pragmatist**
Too cautious Slow to make decisions Not assertive Have no 'small talk'	Tend to reject anything without an obvious application Tendency to seize on the first expedient solution to problem Impatient with waffle Task oriented not people oriented
Theorist	**Activist**
Low tolerance for uncertainty, disorder and ambiguity Intolerant of anything subjective or intuitive	"not" flexible and open minded "not" happy to have a go "not" happy to be exposed to new situations "not" optimistic about anything and therefore likely to resist change (these are the strengths of an activist which I don't have as it is the dimension I scored poorly on)

Table 4: List of personal weaknesses identified using Honey and Mumford's learning styles Inventory

So I looked through the full list of weaknesses and identified four key themes, these were People, Ambiguity and Change, Decision Making and Assertiveness. Under these themes I

used Honey and Mumford's list of strengths in these areas and added a few of my own which involved influencing others. This produced a list of activities for me to work on and try to improve my personal performance in interacting with colleagues.

People – Spend time chatting to people finding out about their point of view; practice developing the conversation towards my agenda; take time to let the conversation develop.

Ambiguity and Change - treat uncertainty and change as an opportunity for developing something new; actively seek to change current situations; try to be flexible in your views and the views of others; do not reject ideas just because you cannot see their application.

Decision making – give some time, thought and input from others prior to decision making but do not dwell for too long.

Assertiveness - ask others directly to take on tasks but allow time to develop the conversation; praise them and stress their attributes relevant to taking on the task; explain why something needs to be done and when, giving contextual information.

In addition to these Carneagie (1981) suggests several other factors that he has found successful. These are to remember people's names and use them when you speak to them, getting people to talk about themselves and listen, and to make the other person feel important.

Having gone through this process of learning how I might influence others I felt invigorated and was looking forward to my first meeting of the Under Graduate Working Party.

4.3 The deliberations of the Undergraduate Working Party

Prior to attending the first meeting of the UGWP I felt that I did not have sufficient factual knowledge in the area of MPE to be able to make meaningful and informed contribution. This would be vital as the problems and barriers to MPE implementation are well documented, Leathard (1994) categories these into three key areas organisational, financial and attitudinal and the group would need some convincing if it were to become a forum for developing MPE. I also read a number of papers related to MPE programmes looking at programme design, content, teaching methods. These papers have been discussed in the previous chapter.

Interestingly a later paper by Pirrie (1999) sums up problems that can occur when setting up MPE programmes. She investigated the perceptions of course developers, deliverers, service managers and students and identified internal inhibitors to course development. These include such issues as library and IT facilities being stretched, single group dominance, timetabling across discipline specific programmes and accommodation.

I was completing a work diary and using my set during this period. Reflection on these experiences and writings have been a powerful learning tool and serve to 'tell the story' of how I began to influence the UGWP. I have included some excerpts from my reflections from the first two meetings of the group.

"The first meeting comprised the whole of the working party and I put forward my definitions, described areas in which IPE had been used before, discussed PBL and its value and used evidence to support my arguments. I think I was enthusiastic. The chairperson praised me for my contribution but it is difficult to know what the others thought. Had I begun to persuade people of the benefits of MPE? Did they think I was a cocky individual who seemed to have an answer for everything?"

There seemed to be little enthusiasm for MPE within the group but a lot of negativity about how we couldn't do it. "Old Trafford Syndrome" was suggested as being what the faculty wanted to implement. A reference to the resource saving possibilities of MPE where all the students in the faculty are put into the Old Trafford Stadium of Manchester United and are lectured to about common areas such as biological sciences. I suggested that we could do a pilot project with some professions in the faculty to see if we could develop an effective IPE module.

The second meeting was of a smaller sub group of the working party. Just two other professions were represented and there were two of us from the Department of Radiography. One of the representatives from another profession was an open minded individual who was ambiguous about her views of MPE, the other representative had been resistant to the whole idea, complained about the amount of work involved and tended to be negative about any possibilities raised.

The purpose of the meeting was to try to persuade them to commit a few students to a pilot

study for next year and to begin to identify the strengths and weaknesses of a cross faculty MPE programme. Each maintained their position as I have described them above until the conversation moved towards the delivery of the programme and how it might actually work in practice.

I had suggested that we might form the students into say 5 teams each based around a case study. The students would join the case study groups that they felt their profession would have a significant role in. I suggested one might be diabetes and a discussion followed about how each profession might contribute to the diagnosis and/or treatment of the patient.

> *"A short time later I realised that the two other professionals had moved the conversation on to a case study that they might be involved in and began to discuss their relative roles. My colleague and I sat back as it was not one that our profession would have had a significant role in. They expressed their surprise that the other had a role and began discussing the relative merits of their roles."*

It was evident to me at that point that they were learning about each other's role themselves. They were actually unaware of the others role and found it quite stimulating to learn about it. This is exactly the learning experience that we try to set up for students.

> *"I let the conversation continue between them and watched as they became more and more enthusiastic about this possible delivery mode I had suggested. This was a very exciting moment for me as I felt that I had found something that I might use to influence them and others. They now wanted to be involved in this MPE programme as they had, I felt, "shared the vision" of how it might run. Following this discussion the individual who had been negative suggested we ask other working party members to take a third year timetable with them to the next meeting so that the feasibility might be further explored."*

This was clear evidence that the colleague who had been so negative had been transformed into someone making a positive contribution to the group. I think this was due to her being able to visualise her professions' involvement in the patient care scenario and actively learning from her discussion with the other professional that her profession could have a complementary role with another that she had not considered before. This case study involvement I felt I could use to excite others on the working party. It appeared that I had

managed to achieve what Carnegie described as important, I had got other people to want to do it. Interestingly at a later date the negative colleague returned to her position of negativity but again moved to a position of being positive and interested about the MPE programme and has continued to vacillate at meetings ever since.

These examples demonstrated to me the importance of having a tolerance of ambiguity and uncertainty. To allow strands of thought to develop but be left unanswered and unconnected yet live so that the threads can be linked in to other thought processes when relevant.

Many of the questions I had formulated at the beginning of this project were still unanswered and I began to sense a coming to terms with this uncertainty. I realised that there will always be lots of unanswered questions so one needs to make a cognitive adjustment to this constant uncertainty and become comfortable with change.

As mentioned earlier the cross faculty group had not being progressing well and when I joined it I felt that this might be because people did not know each other very well. I felt that in order to work better together as a group we could do with getting to know one another better. This is one of Pettigrew's (1998) essential conditions for favourable intergroup contact. It had not occurred to me before but the process the UGWP were going through was one of interprofessional education. The learners were learning about interprofessional contact. We had joint goals Mandy (1996), were fostering collaborative practice (Barr 1996). The definition by the WHO of the healthcare team, described in chapter one was also relevant we were

> *" a group who share a common goal and common objectives, determined by community [*educational*] needs, to the achievement of which each member of the team contributes, in accordance with his or her competence and skill and in co-ordination with the functions of others."*

(WHO 1984:13)

So in order to improve the working of the group I felt that we should get together more and begin to get to know each other better or as Pettigrew (1998) puts it 'generate affective ties'. So I suggested that we have an "awayday" where we all met together and explored some of the key issues of the group.

I had also previously suggested that we could run a pilot study across the faculty for IPE and that we might progress this on the day too. These suggestions were taken up and I was beginning to feel that I was having an influence on my colleagues and that I was moving forward towards achieving the aims of my project.

One of the awayday issues that was identified was that if we were to develop cross-faculty curriculum for a pilot IPE module then this would require organisation and management by one person and would also need administrative support. I was asked to lead the project and the UGWP put in a bid for some monies to the Teaching and Learning Quality Improvement Scheme. This is an internal pot of money in the university to fund innovative teaching and learning projects. The bid was successful and a Learning Support Officer was appointed for 1 year starting in 1998/1999. A subgroup of the working party was formed of those who were interested in taking part in the module and the project began to gather pace. The professions interested at this stage were occupational therapy, podiatry, nursing, midwifery, radiography and social work.

So I found myself in a position where I could lead the Pilot IPE module project and influence and directly manage a multiprofessional development team. I had a forum through which to discuss the curriculum development issues and I had administrative support to help to organise meetings and minutes and produce the pilot IPE module. But I was still unsure as to whether I would be able to use this module as part of my MPhil/PhD studies. My diary entry of 10.3.98 records from a IPE Pilot module subgroup meeting on the 8.5.98

> *'Although there was enthusiasm for the pilot module my colleagues were only offering to put forward 1 or 2 volunteers. This might be too few for a significant study group for a PhD.'*

I was also concerned as to how I was going to evaluate interprofessional education. There were several questions which I could not answer. What learning outcomes should I be measuring? What tools are available for me to use? What would be the most appropriate research design?

During March and April 1998 my set provided me with tremendous support as I was unsure as to how I was going to progress with my project. They helped me to explore some

options. I had considered using the pilot IPE module although this was now in doubt due to the likely small numbers involved. There was an interprofessional module called Patient Management Skills being developed and delivered by the occupational therapy and physiotherapy schools that I might be able to explore as my study group. Alternatively the new nursing degrees were being developed at that moment and it was possible that I could get the nurses involved with the radiographers in the Interprofessional Clinical Practice module.

For answers to the questions about research design and which outcomes to measure I turned to the literature to see what had already been done.

This chapter will now provide the response to these three unfolding problems. Each was important to the development of the interprofessional education module and its evaluation. The next section will cover the pilot IPE curriculum describing the curriculum features and justifying their selection by the multiprofessional group.

4.4 The pilot IPE module curriculum

The module specification for the final Pilot IPE module guide can be found in appendix 4. The aims of the programme were selected to facilitate the aims implicit in the CAIPE (1996) definition of IPE. Students would be able to work collaboratively together in a multidisciplinary team. They would be given an opportunity to gain knowledge and skills and understand the roles of other health and social care professionals. Students would be able to develop teamworking skills. The module was designed for students in their final pre-registration year, as by then they would have developed a professional identity and be able to discuss practice problems from an informed position (Pirrie et al 1998). This would help them to develop their assertive and facilitative communication styles enhancing their collaborative skills.

4.4.1 Teaching method

The teaching method chosen was problem-based learning. This is an interactive method as commended by Barr (1996) for IPE. This has been well described by Hughes and Lucas (1997) so only a summary will be included here. The Salford interpretation of

PBL centres on the formation of problems or triggers that are based upon, usually, health themes. Students engage these triggers in small groups with a tutor facilitating the process. The technique used is the seven-step process described by Schmidt (1983). Students work systematically through the trigger and identify what they know about the trigger and what they do not know and need to know. These gaps in knowledge then become learning objectives and the focus of student's self-study prior to the next facilitated session. At this subsequent session students report back their findings and through group discussion make sense of and validate the knowledge they have acquired.

As Hughes and Lucas (1997) suggest the aims of PBL are often congruent with those of MPE. That is they develop skills in critical reasoning, logical thought and analytical thinking, identify and overcome group conflict, promote and develop communication skills and provide a forum for donating and gaining knowledge, developing ideas and gaining insight about problems of common interest. Previous evaluations of PBL have been positive although the group size is suggested as being optimum at 7 students (Hughes and Lucas 1997, Mackay et al 1999).

4.4.2 Content

Case studies were constructed which would provide the focus for the content of the module. Barr (1996) describes this as comparative content as it bridges the gap between common and specialist content enabling students to explore both their own and others professional practice. Having the end point of the case studies as the production of a holistic plan of care for the patient/client enabled students to have a joint goal, a key feature of successful teamwork according to Guzzo and Shea (1992). This interactive learning process is similar to the five the characteristics of successful teams as defined by Mandy (1996) in Chapter 2.

The curriculum development team felt that if the learning environment was relaxed and well facilitated then students might feel able to discuss the stereotypes that they held of the other professions. This would make them aware of and facilitate the dispelling of negative stereotypes as Miller et al (1999) and Carpenter (1995b) have suggested.

The contact theory (Amir 1969) was used to underpin the educational process and the favourable and unfavourable conditions for successful contact will now be discussed. In order to apply the theory successfully the conditions have to be planned into the curriculum in accordance with the recommendations of the theory. Each condition will now be discussed and its relevance and application to the IPE context made explicit

4.5 The Application of the Contact Theory

4.5.1 The favourable conditions

1. *Equal status between members of the group.* The subjects who took part in the module in February 1999 were final year pre-registration students at the same institution who are studying for a specific professional qualification in health. Their status is therefore similar in these respects. However the students were occupational therapists, midwives, nurses, and radiographers and their programmes of study are at different levels. The radiographers and occupational therapists were studying for BSc (Hons) degree's and were in their 3rd year. The nurses although doing a similar level qualification were only in their 2nd year as 3rd year students were not available (see later under problems 4.6.2). The midwives were in the final year of a diploma course. This inherent difference might have had an effect on the perceived status of professions in the group. Although with the range, complexity and current dynamic educational environment these differences might not be perceived as important by the students. In addition the entry qualifications for diploma's and degree's is different with again a possible inequality of status being the result. The notion of status is a perceived one and students may have differing views as to which of the professions they feel is higher, lower or similar status. They may be ambivalent to other professions or harbour negative stereotypical views. Other issues, which might influence their perception of status, are gender, previous personal experience, knowledge of differences in salary and working conditions. The way the students will perceive other professions might initially be inequitable but the teaching team, by example, would be able to stress the peer nature of health care work and try to reduce the effect of any perceived differences in status.

2. *When an 'authority' and/or the social climate are in favour of and promote the intergroup contact.* The 'authority' here could be interpreted as the institution or the members of staff within it. The University and faculty had made clear that it is in favour of

interprofessional working and it is clearly stated in the University Mission Statement. The views of the members of staff within the health faculty, where the students mix with others, towards I.P.E. are mixed with some not being convinced of its importance and therefore do not actively promote it. However the staff who will be involved in the delivery of the module will be those who have been involved in earlier initiatives or are new but have opted to be involved. This expressed desire to be part of the I.P.E. programme can be interpreted as a positive sign that the members of staff are in favour of the principles of IPE. Although there may be some who have been asked to be involved by their line managers. However it is envisaged that the majority of staff with whom the students will learn IPE would support the IPE philosophy and spread a positive view to the students.

3. *When the contact is of an intimate rather than a casual nature.* This favourable condition can also be considered to affect Pettigrew's (1998) friendship condition as the more intimate the contact the more likely that friendship might result. The learning strategy that will be utilised for this IPE programme is problem based learning (PBL). This involves small group tutorial work over several weeks and is designed to promote a positive, collective group dynamic. The curriculum development team wanted the students to be in the same group throughout the module so that they would be able to get to know the other students and develop closer relationships. Yet this is counter to the advice of Hewstone et al (1994) who have used the contact theory, arguably successfully, for IPE. These authors state that the consensus from available research evidence suggests that failure to generalise from members of the outgroup to the outgroup in general is a critical weakness in contact theory. Essentially this means that if students learn with only one member of a different professional group they may not see them as a typical member of that group and hence not change their perception of that profession. Therefore I proposed that on this evidence the students should be moved around groups after each trigger, i.e. after 1 week of a four-week programme. Although this would make the encounter less intimate it would enable students of one profession to see students of another as typical members of the outgroup. This decision will need to be re-evaluated after the evaluation of the programme to see if there is any evidence to suggest which course of action should be followed in the future.

4. *When the intergroup contact is pleasant or rewarding.* The IPE programme will be part of the degree programme for some students so there is an inherent reward for those

students. Problem-based learning has been described in evaluations as an enjoyable learning method (Vernon and Blake 1993). For some students the IPE module stood outside their normal programme and they were volunteers (see para. 4.6). These participants may benefit from being given a certificate of attendance and be able to put the experience on their CV thus making them more attractive to the labour market. The certificates were sent out to students on conclusion of the module.

5. *When members of both groups interact to develop common goals that are higher ranking in importance than the individual goals of each group.* The common goal of all the healthcare professions is to provide quality healthcare for all patients and clients. However some professional groups have profession specific goals and sometimes-loose sight of the common goal and focus on their own professional contribution. The content of the programme centres on a case study approach in which each profession contributes their skills and knowledge to the benefit of the patient. However this will be carried out alongside other professions so that each will be able to see their contribution to the whole process. It is anticipated that this might engender a feeling within the professions that they are all working towards a common goal.

As Pettigrew suggests that conditions 1, 2, and 5 are the essential conditions along with the co-operative rather than competitive atmosphere. This last essential condition is implied by Amir's first unfavourable condition. The application of the unfavourable conditions will now be discussed.

4.5.2 The unfavourable conditions

1. *When the contact situation produces competition between groups.* The goal of the programme is to develop a team approach to healthcare although it is inevitable that some students will feel in competition to perform better then others. This might be due to natural competitiveness or by a desire to achieve high marks on their degree programme. The IPE programme will need to foster co-operation rather than competition and the facilitators will need to be briefed about how to develop the latter and reduce the former. They might achieve this by stressing the joint goals of the programme, encouraging equal contribution from group members and promoting a valuing of the contributions of the different professions. Carpenter (1995a), using medical and nursing students and Carpenter and

Hewstone (1996) using medical and social work students investigated the degree of co-operation or competitiveness in their studies of IPE programme. They both used interactive learning methods and found that their groups reported a more co-operative than competitive learning environment. These findings were from professions that have quite different underlying philosophies and could be described as having had difficulty in working together in the past. Therefore it is anticipated that there might be less competitiveness within the paramedical students in the group to be included in the pilot as they have more similarities than differences. The degree of co-operation or competitiveness will be incorporated into the evaluation of the pilot module.

2. When the contact is unpleasant, involuntary or tension laden. The educational experience should be enjoyable if the module runs as planned. As the module is designed as a pilot the students taking part in the module will be voluntary with the exception of the radiography group (see para. 4.6). There is no history of resentment between any of the professions likely to be involved in the Pilot and the learning environment is intended to be an enjoyable and co-operative one. This should reduce the risk of a 'tension laden' experience. When the module eventually ran nursing and midwifery students were involved. There is some tension between these professions according to my colleagues in each. This was something that I was mindful of when looking at the evaluation data.

There are several unfavourable conditions that can be linked to one important feature of the programme. That of the ability of the facilitators to promote the favourable and limit the unfavourable conditions.

The 3ʳᵈ and 4ᵗʰ conditions, When the prestige or the status of one group is lowered as a result of the contact situation. When members of the group or the group as a whole are in a state of frustration can be affected by the skill and commitment of the facilitator. If they sense that there is a situation arising where the status of a group might be affected they should be able to limit the effect of this. Similarly if there appears to be any frustration emerging from the group this should be picked up on at an early stage and the problem dealt with to limit any damage. As can be seem from the discussion of other favourable conditions above the facilitator plays a crucial role in determining the effectiveness of the contact. There will need to be effective training of the facilitators prior to the module and a thorough evaluation of their performance during it.

5. When the groups have moral or ethnic standards which are objectionable to each other. The professions in the health service each have their own moral code which are implied by the ethical codes drawn up by the professional body as well as that which is past on through the professional culture. Whilst there are many similar perspectives within these codes there may well be issues upon which professional and individuals disagree. Some of these issues have been incorporated into the curricula used in the past to deliver shared learning (Davidson and Lucas 1995) and MPE (Hughes and Lucas 1997). Issues such as euthanasia demonstrate considerable different views, as does the care for patients from different social and religious backgrounds. There is potential here for some differences to emerge and this will need to be brought to the attention of the facilitators.

6. In case of a majority/minority group, when the members of the minority group are of a lower status or are lower in any relevant characteristic than the members of the majority group. It is quite likely that this situation will occur. The numbers of the professions that will be taking part in this module will be different, as there are unequal numbers of students on the various programmes within the faculty. Therefore there is likely to be a minority/majority group situation. As discussed previously there could well be professionals who view themselves as of a higher or lower status than other professions and some of the students who might be taking part in the module are from different levels of programme e.g. degree or diploma. Therefore it is likely that this unfavourable condition will be present.

Having considered the relationship of these conditions to the pilot IPE module there were still two key questions which have yet to be answered. What effect will any one condition have on the success of the contact? and What effect will a combination of different conditions have? This will need to be revisited when the results of the programme evaluation are known. If the programme can be deemed as successful this last unfavourable conditions that will be present could be described as having a minor effect.

4.6 Curriculum development problems and how they were overcome

A small team was formed as a subgroup of the UGWP and met regularly to consider the production of a pilot IPE module. The group had representation from, midwifery,

nursing, social work, occupational therapy, radiography and podiatry. In this group there was only myself who had had any significant experience of interprofessional education. We encountered several problems during the development the main ones will now be discussed.

The tutors and some of the students were not familiar with problem-based learning yet this was one of the teaching and learning strategies that was gaining credibility as the valuable 'messenger' of MPE (Davidson and Lucas 1997). The current professional programmes were all validated without containing the IPE module so we did not have any formal educational framework within which to put the module. There were also no students identified to put through the module as this time. The different programmes operated on different timetables with students being placed in the university and clinical placement at varying times so it was difficult to get students from different professions together in the same place at the same time. The wide variety of numbers of students in each professional programme meant that there was always likely to be an imbalance of numbers from each profession in any IPE module. Geographically students and staff were spread over two campuses with 3 mile between them so it was going to be difficult to bring them all together. There were students on degree and diploma courses so there was no single educational level at which we could aim the module. Staff attitudes in some cases were still against the philosophy of IPE and for others it was simply not a priority on their agenda.

In addition to these IPE related problems there was also the other pressures which were generally around in higher education. The current working environment was one where staff were very busy. They had high teaching workloads and were experiencing pressure from the new enterprise initiative at Salford University. This was an initiative whereby staff were being encouraged to undertake enterprise activity in addition to their normal workloads and were paid for doing so. There was pressure from the research lobby in the faculty and University for staff to develop their research capability and get returned in the next research assessment exercise. There was also a Quality Assessment Audit planned for the February 1999 and many staff had been given an extra administrative burden to prepare for this event.

It as a source of amazement to me that we managed to get anything off the ground but with the team of people that I had and the learning support officer we set about overcoming these problems.

4.6.1 Marketing of the IPE module

In light of the pressures on staff and student time and energy the curriculum development group decided that it needed to market the module to potential participants. A series of road-shows was planned to inform staff in the faculty about what was being planned and to help to recruit students onto the module. The learning support officer and I organised sessions on the programme timetables of each profession in the faculty to deliver the road-shows and a series of posters were designed and displayed which publicised them. At these events we stressed the benefits of the module and tried to recruit students onto it (see appendix 5 for contents of the road-shows). We highlighted issues such as the improved marketability of a student at the end of their programme by having IPE on their CV, that it would develop the skills of collaborative practice so that they could work better with other professions and that patient care might well be improved.

Staff had initially suggested that they could offer to put forward one or two of the students from their profession for the module so that we had a core of multiprofessional participants. Following the road-shows there were a greater number of interested students than had been first thought. There were 10 volunteers in the final year of a diploma in midwifery and 9 from the 2nd year of a BSc (Hons) degree in nursing. There was interest from podiatry and social work.

In addition to the need for volunteers we also adapted some current programmes to enable other professions to take part. The diagnostic radiography honours degree had the previously discussed final-year multiprofessional education module validated within the programme called Interprofessional Clinical Practice. The previous MPE enthusiasts in the faculty devised this module at a time when the radiography degree was being revalidated so radiography had 'shared the vision' and put it in the programme. It had never run as no other professions had put it into theirs. Therefore the 30 final year

radiography students for this module could be channelled into the new pilot IPE module.

In the occupational therapy BSc honours degree students select one module from a package of options in their final year. The IPE module was added to this list with potentially 20 students who might be able to take part. Close to the module delivery time the podiatrists, prosthetists and orthotists and social workers dropped out as they were unable to commit students to the module at this time. Several students from the nursing group also withdrew just prior to the delivery of the module due to the pressure of the summative assessments they had to complete. Four decided to take part in the module despite these pressures. This left a wide range of numbers from each profession taking part (see table 5).

Professions	Numbers
Radiographers	30
Midwives	10
Occupational Therapists	7
Nurses	4
Total	**51**

Table 5: Number and profession of the students who took part in the pilot IPE module

The development group realised that this imbalance of numbers might present a problem. There would need to be groups of 7 – 8 students for the PBL to be effective so it was decided to spread the professions across the groups as much as possible to enable there to be input from at least 3 professions. The group had to compromise and accept that in all groups there would be a dominance of radiographers and in some groups there would be no nursing presence. This aspect of the delivery was incorporated into the evaluation strategy to determine whether it had a significant effect on students.

4.6.2 Variable educational level.

The variability of educational level was a problem for equality of status and level of assessment. The curriculum group considered that the final year status of three of the professional groups should be stressed to the students. It was thought that this might help to reduce the effects of this potential status difference. The nursing group had only recently delivered the new nursing degree and did not have any year 3 students to offer the pilot module at this time. In this instance it was decided that the students being at the end of the 2nd year had experienced sufficient time to begin to develop their professional persona. The case studies would be chosen so that they did not have to learn too many new areas and could apply many of their current nursing skills.

The group took an innovative view of the assessment strategy. The assessment was an essay analysing and critiquing interprofessional working and providing examples from the joint work the student's were undertaking. It was decided that the assessment could be taken as an option for the midwifery and nursing students at a level commensurate with their programmes. For occupational therapy the students could undertake the assessment if they required to obtain the credit rating for the module. This would depend on other modules within their uniprofessional programme. For radiographers the assessment was compulsory and at level III. This decision was arrived at as a compromise in order to get the module off the ground. It was thought that this might introduce variations in motivation for the students, as they are often assessment led. However the fact that those students who were not being summatively assessed had volunteered to do the module over and above their normal educational programme suggested to the group that they were highly motivated individuals.

4.6.3 Staff development in problem-based learning

Several staff put themselves forward to teach on the module, were committed to the philosophy of IPE and were keen and motivated. There were 10 facilitators in total with 3 from nursing, 3 from occupational therapy 2 from radiography and 2 from midwifery. Most had not experienced PBL before so the learning support officer and I devised a staff development session which ran in January 1999 just prior to the module. In

addition a tutor guide was adapted from Engel (1991) and a module guide was put together for staff and students.

4.6.4 Negotiation of the time of delivery of the module

The time of delivery for the module was problematic but the group got together with their uniprofessional timetables and mapped out the times when all the professions could get together for joint delivery of the programme. This was at a stage when all professions were considering being involved. There were no times when joint delivery would be possible. Attempts were made to subdivide the professions up and look to delivering the module at two separate times. In parallel with these discussion were those of who could be involved and the module was developed within a high degree of uncertainty. Yet it still seemed to move forward with the support and commitment of the learning support officer and myself. Eventually after professions had dropped out occupational therapy moved their optional module to a different semester as did radiography and the midwifery and nursing students timetables were re-organised to enable delivery over a four week period in February 1999. One half day a week contact time over four weeks was set aside on each professions timetable.

This development work led to the production and validation of a level three IPE module. This module incorporated theoretical underpinning, elements from the previous shared learning and health professional studies programmes, a teaching and learning strategy which had been found to be successful for delivery of MPE. It also brought together a multiprofessional group of staff, who had previously worked in an essentially uniprofessional way, to begin to share and overcome some of the difficulties of working interprofessional in an educational context. The next task I had to perform was to develop a strategy for evaluation of the module. This would require designing a method and identifying some tools with which to determine the outcomes of the IPE experience (see chapter 5).

4.7 Summary

This chapter has presented some of the background developments that led to the interprofessional education pilot project. The history of the shared learning and health

professional studies initiatives at Salford were explained and the effect this had on staff and student attitude to MPE. In order to influence my colleagues to further MPE activities I looked, with the help of the set, to my own interpersonal skills and learning style. This personal development improved my ability to influence others and my diary excerpts have been used to show how this development was effective.

The cross-faculty undergraduate working party provided a forum which enable contact with colleagues from other professions and led to the development of an interprofessional education module. The curriculum development for this involved identifying and overcoming many problems including staff resistance, lack of experience of problem-based learning, lack of participants and the competing demands of teaching and other higher education initiatives on staff time. The favourable and unfavourable conditions of the contact theory were discussed in the context of the developing curriculum and the possible effects on the interprofessional contact suggested. Solutions were found to many of the problems identified and the module was developed, validated and delivered with fifty students from four professions taking part.

Chapter 5. The evaluation strategy: Phase One - a positivist approach

Repertory grid technique is "..a way of standing in the shoes of others, to see the world from their point of view, to understand their situation, their concerns." Beail (1985)

The development of the strategy for the evaluation of the IPE pilot module was in two phases. The first phase consisted of a rigorous quantitative and qualitative evaluation carried out as a pre-module, post module and eight-month follow up evaluation of the IPE intervention. For this a method was selected and outcome measures designed which were essentially from the positivist paradigm. These are detailed in this chapter and chapter 6 with the results detailed in chapter 7. An 'end of module' evaluation was also undertaken using evaluation tools that had been used previously to evaluate MPE for the purposes of curriculum development. This is detailed in chapter 8 with the discussion of phase one in chapter 9.

There then followed a period of reflection with the set and the literature that led to a real shift in my thinking. The second phase, detailed in chapter 10, was a 1-year follow-up group interview that was a more naturalistic qualitative design.

5.1 Planning for the phase one quantitative evaluation

Interprofessional education has been evaluated by many authors and a wide variety of outcomes, methods and tools have been used. The evaluation of the pilot IPE module was based upon the best evidence from the literature as well as the authors developing research awareness. The IPE review group (Barr et al 1999b) had used Kirkpatrick's (1967) four-stage hierarchy of evaluation that focuses on learning outcomes to obtain a perspective on the range of evaluations in the literature they studied. On reflection, after I had planned and begun to carry out the evaluation, I discovered that I had used the first two levels of the hierarchy. These were Level 1, the learners reaction to the programme and their attitudes to undertaking IPE and Level 2 the changes in attitude, skills and knowledge that occur as a result of the IPE programme (See Chapter 3).

These two evaluative levels had been chosen because of the nature of the programme being delivered. At undergraduate level students are learning attitudes, skills and knowledge to prepare them for professional practice. As students they are supernumerary so perform supervised practice and are not directly responsible for the organisation of care or patient outcomes. Hence the 1st two levels of the Kirkpatrick hierarchy stated above are achievable. The ideal result of an IPE programme would be to be able to measure changes at level three, organisation of care or level four, patient outcomes. Yet these are extremely difficult to evaluate with any validity as the educational process is several steps down the assumed pathway along which interprofessional education is believed to work (see figure 1 page 82). As Barr et al (1999b) point out, it is most difficult to show the effects of IPE on changes in organisational care and patient outcomes as there are many organisational constrains which might inhibit individuals freedom of action.

So level two was used and measurement of knowledge, skills and attitudes of the students was carried out to determine whether a change occurred as a result of the pilot IPE module. In order to do this new tools were constructed to measure a profession's perception of the knowledge and skills required of another profession as well as a profession's perception of the role of another. A research design was planned using quantitative and qualitative methods that would enable changes in these dependent variables to be measured. At this stage my understanding of qualitative research was rudimentary although I realised that it was important to employ both methods to enable a truer picture to emerge.

The learning outcomes of the IPE pilot module were designed to change attitudes and knowledge. Therefore the traditional university evaluation, level one in the hierarchy, would be used to demonstrate whether the learning outcomes had been met. This was measured using staff and student perception of the quality of the module. The performance of the tutors in PBL, the case studies and the group dynamics were determined as was the general perceptions of the staff and students towards the IPE module.

5.2 The rigorous evaluation

In Zwarenstein et al's (1999) systematic review of interprofessional education they concluded that IPE providers should build into their research projects both quantitative and qualitative evaluations. Although this paper was published after my study had been planned and begun, preliminary data from it was presented at a conference, reported by Boaden (1998), which was highly influential in my thinking regarding the rigorous evaluation.

The two day international conference was convened on 27th and 28th November 1997 it was entitled Interprofessional education: Does it work? Two of the keynote speakers at the conference were Sir Kenneth Calman the Chief Medical Officer and Professor Michael Orme, Director of Education and Training at the NHS executive, two key individuals who both demonstrated their support for the development of interprofessional education. But the most interesting speaker from my perspective was Dr Merrick Zwarenstein, Division Head of Health Systems Research at the Centre for Epidemiological Research in South Africa. He presented a paper on behalf of an IPE review group called "Findings from a retrospective systematic review of the effectiveness of interprofessional education".

They suggested that evaluations of IPE should take the form of randomised controlled trials. Yet there are several difficulties inherent in trying to set up such trials in an educational context.

Firstly, it is as yet unclear as to which variables affect the outcomes of interprofessional education therefore it is not possible to control for such variables with any certainty. Secondly the idea of random allocation of subjects to control and experimental groups is problematic. When using aware human beings in education it is extremely difficult to obtain a valid control group as it is likely that they would know if they were not having an interprofessional educational experience. This would bias the results, as those who were in the control group would expect not to score highly on post intervention measures. Thirdly many interprofessional education initiatives involve relatively small groups of students once randomised into control and experimental groups the numbers are likely to be so small as to make inferential statistical analysis weak.

Fourthly there is an ethical dimension to this type of educational intervention. If interprofessional education is beneficial to students' collaborative practice it may be unethical for education providers to deny them the right to join in with such educational initiatives. Finally one of the strategies that has been employed to overcome the organisational difficulties of delivering IPE at undergraduate level is to make such programmes optional. This means that the pool of students for IPE would be drawn from those who had self-selected for the programme and this may also bias the results. Another strategy was required to evaluate the IPE programme that was still considered by the research community to be rigorous. The Cochrane Collaboration discussed in the last chapter, were influential in directing me to another research design.

5.2.1 Research design: The interrupted time series with non-equivalent groups

The Effective Practice and Organisation of care (EPOC) subgroup of the Cochrane collaboration state that other methodologies such as the controlled before and after study and the interrupted time series design have sufficient rigor to produce meaningful results (Barr et al 1999b). These are quasi-experimental designs and are different from traditional experimental designs.

A 'true' experimental design studies rigorously, cause and effect relationships between variables. Cook & Campbell (1979) describe how experimental design features have been used since as far back as the seventeenth century. They state that more recently theory of experimental control through randomisation of treatment subjects has been used. This is where variables can be manipulated in order to demonstrate that one variable or group of variables, the independent variable(s), has an effect on another variable, the dependent variable. By randomly assigning subjects to experimental or control groups it is possible to extricate the effects of other variables, confounding variables, on the outcome and therefore demonstrate the relationship between independent and dependent variables.

Another type of experimentation, which is considered to be less rigorous than true experimentation (Payton 1994), but by the Cochrane Collaboration to be of equal value is the quasi-experiment. Cook and Campbell (1979) quote Stouffer (1950) and Campbell (1957) who describe quasi-experiments as those that have treatments, outcome measures and experimental units (subjects) but do not use random assignment to identify the

treatment inferred change. Pollit and Hungler (1978) also state that such experiments lack the randomisation component but go on to say that the control component or both randomisation and control components may be missing.

So the two quasi-experimental designs suggested by the Cochrane Collaboration were the before and after control and the interrupted time series. Cook and Campbell (1979) discuss the relative merits of these two designs. The key confounding factor in both are the effects of history. Factors that occur prior to establishing a control group may have an effect on the outcome measures and reduce the validity of the causal relationship between variables. The interrupted time series enables a greater degree of history to be taken into account and was therefore the one that was selected for this research.

In the interrupted time series design (Payton 1994 and Cook and Campbell 1979) the effects of the treatment are determined by taking several measures of performance or criterion measures over time both before and after treatment. There are several different types of interrupted time series and Cook and Campbell suggest that by combining the longitudinal component of the time series with the cross sectional comparability of non-equivalent group designs it may be possible to improve the quality of the design.

Subjects for control groups for each profession were sought who could be closely matched for independent variables that may have an effect on the performance measures. This would provide an interrupted time series with a non-equivalent no treatment (IPE) group design.

$$(O_1, O_2, O_3, O_4, X, O_5, O_6, O_7, O_8) \text{ experimental group}$$

$$(O_1, O_2, O_3, O_4, \quad O_5, O_6, O_7, O_8) \text{ control group}$$

$$\text{------------------------------------> time}$$

$$O = \text{performance measure}, \quad X = \text{treatment (IPE programme)}$$

Figure 2: The interrupted time series with a non-equivalent, no treatment (IPE) group design.

5.2.1.1 Non-equivalent control groups.

There were four professions involved in the pilot IPE module and control groups had to be found for each. When randomisation is not possible, as in this case, it would be usual to select subjects for a control group that were matched for specific characteristics with those in the experimental group. These characteristics would be the independent variables that are known to have an effect on the outcome measures. In this way several key variables can be excluded as having had an effect on the outcome measures. However in IPE the variables which affect the outcome are not well known.

Shaw (1994) used control groups in his evaluation of an IPE programme for those involved with learning disability but does not state how he allocated individuals to either group. He does state that he used control subjects that he matched to the experimental subjects using the same unit (workplace), grade and client ability mix presumably because he believes these might have an effect on the outcome of IPE. Yet he provides no evidence for this. As well as this problem of lack of knowledge of the independent variables involved in IPE there is also another practical problem with this type of field experiment. Absolute control of a field experiment by the researcher is not possible and therefore it is often necessary to compromise. When selecting control groups for the pilot IPE module institutions were identified which delivered similar professional programmes as the students at Salford but did not contain any formal MPE.

The occupational therapy students taking part in the module had a ready made control group as only some of the cohort had volunteered for the pilot IPE module. Those not taking part were selected as controls. Controls for the radiography, nursing and midwifery students were drawn from institutions in London, the Midlands and North of England and each had comparable programmes as the experimental group but with no formal MPE within the programme. The radiography control subjects were from one institution, the midwifery and nursing subjects were drawn from two institutions. This was to increase the sample size that was considered to be too small if it was hewn from any one institution. The nursing subjects came from both those Salford nursing students not taking part in the IPE pilot module and nursing students from another institution. Again this was intended to increase sample size.

Profesions	Experimental Group	Control group
Radiographers	30	28
Midwives	10	23
Occupational Therapists	7	26
Nurses	4	26
Total	**51**	**103**

Table 6: The numbers of subjects in control and experimental groups.

5.2.1.2 The interrupted time series

The intervention was planned for the month of February 1999 so the strategy was planned around this. Two pre-intervention and two post-intervention measures were organised. Influential in this planning was the work of Shaw 1994. His study evaluated the outcomes of an Open University Course. The course aim was:

> *"to equip students with the knowledge and skills necessary to encourage beneficial changes in the lives of mentally handicapped children and adults."*   *p43*

which puts it into Level 2 of Kirkpatrick's framework. The participants were a range of professionals, volunteers and parents involved with learning disability. The method used was a before and after intervention design with control groups. Subjects were measured before the programme, immediately after and then five months after the programme.

There was evidence of a change in perception by participants of the value of work of another organisation or profession. In some professionals there was also evidence of a change in the perception of the role of the other professions involved. This change became less pronounced five months after the programme.

This interesting finding at five months suggests that the longevity of the measurable effect of IPE might be short lived. So an eight month follow up measurement was

incorporated into the strategy to see if the pilot IPE project had effects which lasted after the end of the programme and if so whether they lasted longer then Shaw's. It was also thought that a longer-term follow up might be of value. The students on the pilot would qualify and be practising professionals at the time of the eight month measurement so several practical difficulties were anticipated including loss of subjects as they dispersed into their first professional placements.

Having considered the most appropriate research design and the non-equivalent control groups there were still several questions which needed answering before completing the research strategy. Which quantitative and qualitative measures should be used? What were the key outcome measures? Where there any valid and reliable tools published that I could use?

The development of the research strategy did not proceed in a logical and sequential order. Rather articles and research texts I had read influenced my thinking and I developed my research awareness as I went along. Triangulation had been used by several authors who used it to get at the 'truth' when researching human beings.

5.3 Triangulation

As Cohen and Manion (1994) explain triangulation was originally used by maritime navigators, military strategists and surveys to pinpoint a single spot or objective. In the social sciences it is used to map out or explain more fully the richness and complexity of human behaviour by studying it from more than one standpoint. Cohen and Manion (1994) have adapted Denzin's Typology of triangulation and identified 6 different types. One of these, methodological triangulation, was used in the evaluation of the pilot IPE module to provide a mixture of quantitative tools in the form of questionnaires and a qualitative semi-structured interview method (see chapter 6). This provided different types of data that enabled a richer and more illuminating investigation of the phenomena.

Several important articles were evaluated to identify the most appropriate questionnaires for measuring changes in professional's attitude and knowledge. These will now be reviewed and the need for the development of new tools explained.

5.3.1 Outcome measures

There are a plethora of tools that have been used to evaluate IPE and many of these have been devised by the individual researcher(s) prior to their study. Few of these have any published measure of validity and reliability. Several authors have used tools to evaluate attitudes and knowledge (Carpenter 1995), (Hewstone et al 1994), (Carpenter and Hewstone 1996), (Shaw 1994) and Parsell et al (1998). Before exploring some of these tools the phenomena of attitude will first be defined in an attempt to understand what it is that IPE evaluations are endeavouring to measure.

5.3.2 Attitude

Attitude is a complex and abstract human phenomenon which is difficult to define although Edelmann (1996) has attempted to do just that. He believes that it consists of three different aspects, a belief or cognitive component, an evaluative component and a behavioural component. In order to understand these divisions it is useful to consider the following example. A professional might know that a Bachelor of Science degree is required to become a radiographer, this is the cognitive component. This might suggest to them that radiographers have to be intelligent and highly trained people in order to do their job, this would be the evaluative component. As a result of this they might take action to try and become a radiographer, this is the behavioural component.

Attitudes held by one profession or group can have a significant effect on their behaviour towards another profession. Therefore it would appear to be a valuable phenomenon to study. Edelmann (1996) suggests that questionnaires are valuable in assessing attitude but that they only assess one aspect, the evaluative component. This supports the principle of triangulation to study complex social phenomena such as attitude so the use of both questionnaire and interviews would help to provide data of changes in attitude. Yet it must be borne in mind that the behavioural component of attitude is all-important. It might still be possible for positive changes in cognitive and evaluative components to occur and be demonstrable yet these might not be expressed behaviourally. Ideally IPE participants behaviour should be observed in practice to determine whether they are applying the changes produced in the other two attitudinal

dimensions. Post-intervention interviews with participants might go some way to providing evidence of self-reported changes in behaviour.

Shaw's (1994) tools for measuring attitudes comprised a self-constructed attitude questionnaire based upon "situational dilemmas in the workplace" (p51) and a repertory grid technique based on Kelly's (1955) personal construct theory. During the construction of his attitude questionnaire he interviewed programme participants and then "worked through" the draft questions with the participants until a final format was "agreed". This would suggest that the questionnaire had content validity (Polit & Hungler 1978 p434). However the reliability he recognises as a problem and presented no figures for this. His repertory grid included the constructs elicited from the learning disability care group. There is some debate in the literature surrounding whether constructs should be elicited from the individuals to whom they are to be applied or that constructs elicited from one group are able to be applied to another group. Fransella and Banister (1977) discuss this issue and conclude that:

> *"….there is some evidence to suggest that results using provided constructs produce meaningful results….and are significantly related to individuals' behaviour"* p107

Kelly's construct theory and the repertory grid technique provide grounding for the identification of contextual issues pertinent to the IPE group being evaluated. These issues are then used to measure change within the group after their interprofessional education experience. This theory and technique will be discussed further later in the chapter as they were thought to be a valuable way to inform and construct valid and reliable outcome measures which could be used to evaluate an IPE group.

Carpenter (1995), Hewstone et al (1994), Carpenter and Hewstone (1996) have reported the results of studies of effects of an interprofessional education programme on final year medical students and fourth year BSc nursing students and medical students and social workers. The evaluations measured changes in attitudes and self-reported knowledge of the participants. The evaluation tools included questionnaires to investigate the factors of 'breadth of life experience', 'academic quality ' and 'professional competence' as well as overall attitude to the other profession (out-group) and to their own profession (in-group). These questionnaires were constructed using pre-programme interviews. Carpenter states that a pilot study was undertaken to obtain

these measures but no details are given and there is no measure of the validity and reliability of the questionnaire used. These measures were selected as the authors believed them to represent factors that could discriminate between the two professions. For example they believed that social workers might score more highly on the breadth of life experience than the nursing group. Again this demonstrates the contextual nature of the tools which might have applicability to nurses and social workers but probably not to the four professions in the present author's study group. Also the use of just three dimensions is unlikely to be able to demonstrate the broad range of attitudinal dimensions that two professions might have of each other.

Parsell et al (1998) looked at the effects of a two-day pilot multiprofessional education course on 28 undergraduate health care professional students. There were 7 different professions represented, three of which were the same as in the present author's pilot IPE study group. They used one questionnaire before and 6 weeks after the programme. This contained 10 attitude and knowledge statements related to individual professions. A second questionnaire contained 70 statements about each profession e.g. "dentists must provide out of hours emergency treatment to all patients", "therapy radiographers are only involved in the treatment of cancer patients". Again there was no information as to the validity and reliability of the questionnaires or as to how the 70 items were selected.

The lack of published questionnaires and detail as to their validity and reliability precluded the use of any current questionnaires within the evaluation strategy of the pilot IPE module. There also appeared to be a second problem regarding the use of published tools. When analysing the questionnaires they demonstrated a need to use questions which relate to the particular profession taking part in the educational programme/course or to aspects of the programme itself. They are therefore often contextually bound. As was seen in the last chapter there are a wide range and mix of professions who take part in IPE so published questionnaires are unlikely to be able to be used widely in IPE evaluations. This might explain why there are so few published and rigorous evaluations of IPE Barr (1999b). Therefore it was necessary to devise bespoke questionnaires for the pilot IPE module and to determine the validity and reliability prior their use. Shaw's evaluation of IPE was the inspiration behind the selection of repertory grid technique for the production of a questionnaire for measuring

attitude. This will now be discussed along with the important quality measures of reliability, validity and applicability.

5.4 Repertory grid technique

Repertory grid technique was first described by George Kelly (1955) and is based upon his personal construct theory. The premise is that all men and women are scientists and that they interpret the world around them through their own ideas, philosophies and theories. People develop hypotheses, test them out, revise them and use them to make sense of the world. These interpretations of the world around us Kelly calls constructs. They are discriminations or ways of distinguishing similarity from difference. So the way a professional makes a judgement about another professional is through their own interpretation of their knowledge and experience of that professional. It may be based on inaccurate information but it is the perception by that professional and is therefore 'true' in the sense that it is used in reality by that individual to make judgements about the world as they perceive it. It is necessary to point out however that a persons constructs are not merely verbal labels they are much deeper interpretations than that. It is the meaning behind these labels that is the construct. Kelly says that it is useful to view constructs as bipolar as people confirm and negate something at the same time.

Beail (1985) discusses the applications of the repertory grid technique and states that it enables the investigator to elicit personal constructs and examine the relationship between them. It is a form of interview in which the investigator defines the focus (or elements) of the constructs and then records them presenting them often as a matrix or grid. Beail describes the purpose of the grid as follows:

> *"It is a way of standing in the shoes of others, to see the world from their point of view, to understand their situation, their concerns."* p 2

This technique was adopted to identify the perceptions that one professional has of the role of another and therefore provide a measure of the evaluative aspect of attitude (Edelmann 1996). According to Kelly (1955) there are six different ways of eliciting constructs depending upon the area of interest in social psychology. The triadic self identification form (Fransella and Banister 1977) was selected as the most appropriate for eliciting

constructs from different professional groups. This was because it enabled subjects to view their own role alongside that of others to ensure that the constructs elicited were personally relevant. It also facilitated using subjects from different professional groups that would enable a pool of constructs to be derived for the whole group.

5.4.1 The triadic self-identification method

The triadic self-identification interview consisted of presenting the subject of the interview with the title of three different professionals (the triadic elements) on separate cards one of which was their own profession. They were asked to identify in what important way are two of these professions alike that make them different from the third. Then when this construct had been given a verbal label the interviewee was asked what the opposite of this might be. These two responses were then put together to form a bipolar construct. This was placed into a matrix as the first construct or question in the role perception questionnaire. One of the professionals' titles was then swapped for another ensuring the person's own title remains and the process is repeated. There were eight professions' names used in this process which produced twenty-one triads for consideration by each subject.

5.4.2 The sample group for repertory grid interviews

This technique was used on a sample of sixteen third year students from the eight different professions present in the faculty of health and social care at Salford. These professions were midwifery, nursing, occupational therapy, physiotherapy, podiatry, prosthetics and orthotics, radiography and social work. To reduce the effects of individual bias two students were recruited from each profession. This research was carried out before it was known which professions would be taking part in the module. Therefore all professions in the faculty who were eligible to take part in the module were included.

The interviews were carried out and the constructs elicited. Reflection on the first few interviews and a return to the literature on the interview technique improved the performance of the investigator and enabled discriminations to be made of the suitable constructs. Not all constructs elicited were used in the final questionnaire. Both Fransella and Banister (1977) and Beail (1985) describe the potentially non-useful construct permutations that can be elicited. Some are for example excessively permeable i.e.

applicability is too wide, excessively impermeable i.e. applicability is too narrow or vague i.e. too general a statement. The final list of potentially usable constructs numbered thirty-one (See appendix 6).

5.4.3 Application of constructs

There is some debate in the literature as to whether it is valid to supply constructs produced by one individual or group to others (Fransella and Banister 1977). The argument being that constructs are personal and are the understanding behind the verbal label attached to them. Therefore supplied constructs may be unintelligible to a person who did not originally construe them. This would make their use in a questionnaire for a range of professions inappropriate. However Kelly states, as part of his six assumptions underlying his original Role Construct Repertory Test (in Fransella and Banister 1997 p14), that the verbal labels that attach to constructs should be communicable to others. Therefore if constructs are elicited from a comparable group the verbal labels and language of this group are likely to be representative of that group and the most commonly used constructs for that group should be meaningful to individuals within it. Therefore only final year students were selected for the construct eliciting interviews as it was considered that the language and constructs of this group would be similar to those of the multiprofessional undergraduate group for whom the questionnaire was being designed. Thereby providing a pool of constructs relevant to final year students.

5.5 The role perception questionnaire

The pool of 31 constructs was considered to be too unwieldy for a single questionnaire especially as it was to be used with several other measurement tools. Therefore to improve the utility of the questionnaire this pool of constructs was returned to a second group of healthcare professional students who were of the same number, range and academic year as those from the original construing group. Twenty items was considered to be a manageable number of constructs with which to produce the final questionnaire therefore the second group were asked to select the twenty items which they believed best described the eight different healthcare professions. The twenty most popular constructs were then used in the final questionnaire called the Role Perception Questionnaire (see appendix 7). A scale of one to ten was used to allow discrimination between the poles of each construct.

This scale was selected, as it was a simple linear scale, which was easy to interpret, and commonly used by individuals to make discriminations.

If normally distributed the data from these questionnaires would also be amenable to inferential statistical measurement. Having produced the prototype questionnaire for measuring the role perception of professions it was now necessary to assess it's validity, reliability and applicability to determine whether it could be valuable for use as part of the quantitative analysis of attitude.

5.5.1 Validity

Yorke (1985) discusses the various issues of validity of repertory grids. One of the key issues he identifies is that of the grid context. He recognises the importance of providing a clear indication of the context within which the grid data are collected. And that,

> *"one of the key determinants of the validity of the grid is the 'goodness of fit' between the grids context and its elements".*
>
> *p386*

The elements used to elicit the constructs for the role perception questionnaire were identical for each of the interviews. They were derived from the eight professions within the faculty of health and represent a large proportion of professionals practising in the health and social care contexts today. The context within which the professionals were construing was focussed by means of the same repeated instruction suggested by the triadic self-identification form. So the context was consistent which would suggest that the elicited constructs have a degree of validity.

The content of the questionnaire was derived from a defined range of health care professionals in their final year of study. They are representative of the professions for whom the questionnaire was intended. The content therefore demonstrates that the sampling is representative of the 'relevant universe' (Polit and Hungler (1978) and therefore has content validity. Polit and Hungler (1978) also state that this measure of validity is based necessarily on judgement, there being no objective measures.

5.5.2 Reliability

A one-week test re-test reliability measure was undertaken to investigate the reliability of the role perception questionnaire. Analysis was carried out using Pearson's test of correlation as the data was found to be normally distributed. The group (n=43) used for the test consisted of 1st year student radiographers and midwives who were asked to consider the role of a typical nurse when completing the questionnaire. When used for evaluation of IPE the questionnaire would be used in a similar way to assess the perception of one specific profession. The correlation coefficient obtained was (r= 0.65). Polit and Hungler (1978) state that

> *"For most purposes, reliability coefficients above 0.7 are considered satisfactory."*   *p428*

This score is on the threshold and therefore was considered acceptable for use but further research is required to improve this reliability. A larger sample size could be used to provide a more robust measure of the reliability.

5.5.3 Applicability

Repertory grid technique has been used to measure perceptions of roles of those involved in the care of clients with learning disabilities (Shaw 1994). This showed some measurable changes when applied to a range of professionals and non-professionals including parents and volunteers. However, as Beail (1985 p385) suggests the context within which the constructs are elicited needs to be specific otherwise it may lead to "..ambiguity of response" . Thus the constructs elicited from Shaw's learning disability care group might not be generalisable to a care group in another context e.g. hospital based care thus limiting the applicability of his grid.

However the constructs that have been elicited for the role perception questionnaire from the defined group of health professional is sufficiently broad that it should have applicability across the range of professions defined. These are largely hospital-based professions but also include some who will work in primary care. This supports the view that this role perception questionnaire might have wide applicability.

It may be applicable not just to students in the defined healthcare professions of this study but also to qualified members of staff from these professions. The final year students were interviewed only months before they were due to qualify. So the constructs they identified to describe the other healthcare professions might not change significantly for newly qualified staff. Further research would be required to clarify the applicability of the constructs for professionals at various times after qualification when they have been socialised into their health care contexts.

If this questionnaire was used by other IPE providers as part of their evaluation there might be other benefits. Norm tables could be built up to provide a baseline measure for each profession. This could be useful in building up a profile of how professions perceive the roles of other professions and might help when comparing scores before and after interprofessional education programmes or be useful to inform future curricula.

5.6 Measurement of knowledge and skills

In addition to the measurement of attitude using the role perception questionnaire another important outcome measure is the knowledge that one profession has about another. One of the five characteristics of successful teams (Mandy 1996) is that they are able to communicate effectively. Mandy states that the way in which disciplines understand, gain and use knowledge is important to their ability to communicate. If professions' knowledge of each other is improved this might promotes improved communication. This is particularly important for professions who's role might not be well known such as prosthetists and orthotists. In addition stereotypes can hinder successful interprofessional relations (Carpenter 1995b) and are often fuelled by ignorance. For example Pietroni (1996) reported that social workers believed nurses to be 'unimaginative' and that nurses thought social workers were 'Guardian readers'. A stereotype that emerged from the interviews with Midwives for the current research showed that they knew of the outdated occupational therapy stereotype which regards O.T's as basket weavers.

Therefore if improvements to the knowledge base of a profession could be made by interprofessional education programmes this might in turn reduce stereotyping and improve the likelihood of professions working together.

Professionals' knowledge of each other was investigated by the use of two different domains of knowledge. Firstly the subject knowledge of which a profession was required to be aware and secondly the knowledge of the skills a profession required in order to be able to carry out their role effectively. These types of outcome measure have been used by several other authors in their own contexts (Parsell et al 1998, Shaw 1994, Carpenter 1995a & b, Hewstone et al 1994).

5.6.1 The subject and skill knowledge questionnaires

The same group used for the interviews for eliciting the constructs for the role perception questionnaire were used for the production of the knowledge questionnaires. The group was asked to identify the subject knowledge and skills that each of the eight professions were required to have in order to be able to perform effectively as a professional. This produced a pooled list of descriptors of subject areas and skills. These were each returned to a similar group who were asked to place a tick next to the elements which they considered best described the eight professions. This produced a final list of 14 subject knowledge descriptors and 21 skill descriptors (see table 7).

Subject knowledge	Skill knowledge
Law	communication skills
Anatomy	be a good listener
Physiology	be empathic
pathology (including psychopathology)	able to engage with a range of people
Biomechanics	able to motivate others
welfare and benefits system	able to communicate with friends and relatives of patients/clients
technical equipment	able to make decisions
Physics	demonstrate appropriate tactile behaviour
Mathematics	demonstrate sensitivity towards others
role of other professions	be energetic
human gait	are good with their hands
research techniques	able to keep a cool head in a crisis
Drugs	able to be non-judgemental
religious and cultural beliefs	are assertive
	demonstrate a sense of humour
	demonstrate organisational skills
	demonstrate an ability to work alone
	be patient
	be innovative and creative
	demonstrate managerial skill
	demonstrate an ability to teach others

Table 7: List of subject area and skill descriptors identified as valuable when describing the multiprofessional group

Each item was married to a 10-point scale similar to the one used for the role perception questionnaire and for similar reasons.

5.6.2 Pilot study for knowledge and skill questionnaire

The questionnaires were piloted using a group of educationalists from each profession (total n = 11) and the view of the set (n = 5). The layout of the questionnaire was modified and an example of how to fill in each question given at the start of each section. The anchors were simplified to 'a little' and 'a lot' for the knowledge section and to unimportant' and 'very important' for the skills section. Several comments were made by the occupational therapy educationalists that two key areas of their work were not included in the descriptors. These were psychology and disability so they were added to the knowledge section of the questionnaire. Some biographical detail was also added. This included details of any previous multiprofessional or interprofessional education and of previous experience of working with other health professionals. This might have had a significant effect on the outcomes particularly of the control group who were reported as having no formal MPE/IPE in their current programmes.

5.8 Enthusiasm for interprofessional education

As enthusiasm of students could be considered to influence the effectiveness of learning and as there is evidence that enthusiasm of students may diminish over time (David and Smith 1987), this parameter was measured as a separate entity on the role perception questionnaire. It was anticipated that there might be a relationship between students reported enthusiasm for IPE and the effectiveness of the module. Students were asked to rate their level of enthusiasm on a linear 10-point scale.

5.9 Validity and reliability of the subject and skills knowledge questionnaires

The content of the questionnaires was derived from interviewing a group of health care professionals similar to those who would be tested with it. A pool of constructs and subject knowledge and skill descriptions was obtained from all the interviewees (n=16). The pool were then returned to the interviewees who were asked to select the items which they believed would be most applicable to a range of healthcare contexts. This grounding gives the questionnaires content validity (Polit and Hungler 1978).

In order to assess the consistency with which respondents understand and respond to all the questions a one-week test re-test reliability measure (Oppenheim 1992) was undertaken. This investigated the reliability of the knowledge and skills questionnaires as well as the enthusiasm scale. Analysis was carried out using Pearson's product moment test of correlation as the data was normally distributed. The group (n=43) used for the test consisted of 1st year radiographers and midwives who were asked to target nurses when completing the questionnaire. This revealed the following values: subject knowledge Questionnaire (r = 0.57), Skills knowledge Questionnaire (r= 0.69), Enthusiasm rating (r= 0.78).

The skills knowledge and enthusiasm scores show values close to the threshold of acceptability as stated by Polit and Hungler (1978) but the subject knowledge questionnaire is below this value. As these scores are close to or above the threshold and there was, at the time of testing these tools, only a narrow window of opportunity to evaluate this multiprofessional group it was decided to continue with the current tools and look at ways of improving them in the future. The interrupted time series required the first measurements to be taken well before the IPE module was delivered. So a pragmatic approach was taken to this as further time taken improving the tools might have prevented the study from being carried out. So the questionnaires were used in the current form.

5.10 Timing and targeting of the measurements

The questionnaires were distributed to the experimental and control groups at times before and after the module as required by the interrupted time series design. The times selected were one month and immediately prior to the module and immediately after and eight months after the intervention (see table 8). This was decided upon as these deadlines were practically achievable within the timescale of the project. The 8-month post-module follow up was influenced by Shaw's (1994) study. He chose 5 months for his follow up timing and was able to demonstrated post IPE changes in his outcome measures. These changes were smaller than immediately after his educational intervention. The group under investigation for this study was final year students who would be qualified four months after their IPE module experience. Therefore it was

decided to wait another three months after that to enable them to be able to consolidate and apply their educational experiences to the real world of professional practice, working with others in the health service. This would enable them to mix with other professions and reflect upon their IPE experience. Also if differences were demonstrated it would also be possible to compare the findings with Shaw's work.

The timing and order of the quantitative measurement and semi-structured interviews used for the 1st phase of the evaluation of the pilot IPE module are detailed below. The semi-structured interviews were conducted just before and immediately after the intervention. The purpose, content and justification for the use of these interviews are discussed in the next chapter.

December 1998	January 1999	February 1999	March 1999	October 1999
Measurement 1	Measurement 2 Semi-structured Interview (experimental group only)	IPE Module Delivery	Measurement 3 Semi-structured Interview (experimental group only)	Measurement 4

Table 8: The timing of the interrupted time series measurements and the semi-structured interviews.

5.11 Measuring the 'Target-profession'

The perceptions that were sought were those of professionals towards another professional group. This was to ensure that the measurement of students perceptions was representative of all the professions involved. For example the perception that nurses, midwives and occupational therapists had of radiographers was measured to provide a multiprofessional view of radiographers. Therefore each professional group

was divided into three and allocated one profession (called their target-profession) to offer their views about throughout the study. This meant that any individual gave their views of one profession for each of the four times they were measured (see table 9).

	December		January		March		October	
	Expt. group	Control group	Expt. Group	Control group	Expt. group	Control group	Expt. Group	Control group
Midwives	6	12	12	14	11	17	9	7
Nurses	10	2	11	22	14	26	10	13
O.T.'s	10	1	13	23	12	17	10	7
Radiographers	5	5	4	18	5	16	4	14

Table 9: The number of respondents per month in each 'target-profession' group

5.12 Data Analysis

The mean scores for the target-profession groups were obtained from the role perception, subject knowledge and skills knowledge questionnaires. These data were inspected and were found to be normally distributed so a parametric test was used. An analysis of variance (ANOVA) (Hinton 1995) was selected which demonstrates significance of differences between means. ANOVA decomposes the total variability of a set of data into two components. The variability resulting from the independent variable, in this study the intervention and the time. The variability resulting from all other sources such as individual differences, measurement unreliability etc. variation between groups is contrasted with variation within groups (Polit and Hungler 1978). This is a multivariate design and analyzes change using a 2-way between groups design with the factors (or independent variables) being the degree of intervention (control or experimental) and time (the four measurements) (See table 10).

		Intervention	
		Control	Experimental
Time	Dec.	Condition 1	Condition 2
	Jan.	Condition 3	Condition 4
	Mar.	Condition 5	Condition 6
	Oct.	Condition 7	Condition 8

Table 10: The 2-way between groups ANOVA design demonstrating factors and conditions.

The significance level selected was the commonly used 0.05 level.

The enthusiasm dimension was analysed using an analysis of variance on the scores for each individual profession. This also used a 2-way between groups design with the factors being the intervention (pre-or post-intervention) and profession (midwifery, nursing, OT & radiography). The intervention score was calculated first by combining the pre and post intervention scores. If there were a significant difference for profession a two-sample t-test would be used between each of the pairs of professions to identify the source of the difference.

5.12.1 Learning index

The data from the subject knowledge and skills knowledge questionnaires was analysed to show any significant differences between groups and over time on any questionnaire items in a similar way to the role perception questionnaire. In addition the data from these knowledge questionnaires were compared to a reference standard. The reference standard was obtained by using a sample of three tutors from each profession (two only from nursing) who completed the two knowledge questionnaires and a mean value was obtained for each item which was then compared to the students scores.

The knowledge of the subject areas and skills that are required by a given profession in order to carry out their role effectively could be described as 'known' by the particular

professionals. 'Known' in the sense that the educationalists in the area of health care have worked as members of the profession and have devised and made judgements about curricula content. Therefore using the above sample represents the considered view of knowledgeable experts and can be taken to represent a useful source of reference.

The mean student's scores for the two pre-module questionnaires and the two-post module were combined to produce a single pre-module and post-module mean score for each item. Each was then subtracted from the reference value and a weighted mean calculated. The resultant value was called the learning index. This index demonstrated whether students had moved toward or away from the reference standard after the intervention. It therefore provided a measure of the student's learning about the subject knowledge and skills knowledge required of other professionals.

This calculation was not done for the role perception questionnaire as the bi-polar constructs comprising this questionnaire are more subjective. They were designed only to measure change in perception and a judgement about the value of each for the profession a personal one.

5.13 Ethical considerations

The underpinning principle of ethics in research is that the rights of the human beings participating should be respected (Polit and Hungler 1978). When considering ethics in educational and social contexts there is, according to Cohen and Manion (1994), a balance to be struck between

> " *…the demands placed on them [*researchers*] as professional scientists in pursuit of the truth, and the subjects' rights and values potentially threatened by the research."*

Informed consent is one of the cornerstones of ethics and promotes the right of the individual to be fully informed and able to make a decision as to whether they would wish to be involved in the research. In this study all the subjects in the experimental group had been involved in pre-module preparation and were informed that they would be expected to take part in the research being built into the programme. They were also

informed of the potential benefits of such research. Apart from the radiography group they were all volunteers. They were therefore aware and willing participants and some chose not to complete questionnaires. The radiography group presented more of an ethical challenge as they were undertaking the programme as part of their BSc (Hons) Degree programme however they too were informed and given the option of partaking in the research or not. They may have felt the need to take part however as the researcher was a radiographer, was also the person who would be marking their assessment for the module and was know by them to be a stakeholder in IPE at Salford. It was therefore explained to them that they did not have to take part in the study but that it would potentially improve IPE experiences for subjects in the future. A balance had to be struck between encouraging them to participant and obtain a high response rate for the questionnaire yet still respecting their right not to take part.

The control group were recruited by other third parties and whilst I informed them that they should be volunteers I was unaware as to whether this advice was relayed to the subjects. Therefore on each questionnaire I assured the respondents that all information provided by them would be confidential and that no individual would be identified in the research. At the end of each questionnaire respondents were thanked for their contribution. Clear instructions were given to respondents as to where to return the questionnaires.

The principle of informed consent becomes apparent at the initial stage of the project when requiring access to subjects at other institutions (Cohen and Manion 1994). Permission to allow the respondents to take part was sought from key personnel in each institution through professional networks. These key personnel were programme leaders or managers of the programmes on which the desired participants were registered. They were briefed by the researcher and had the opportunity to turn down the request for involvement of their institution's students. The role of the key personnel in the research was explained to them. This role involved giving permission to allow their students to take part in the research and secondly to actively recruit them into the project. The anonymity of the institution was also assured by the researcher and only the area of the country in which they reside has been used to describe them.

In all questionnaires the names of the students was requested so that each of the four questionnaires could be linked and the data compared for each subject. This required

trust on the part of the participants and I assured them that they would not be identified. I also gave them the option of using a pseudonym for each response. This was not taken up by any respondent. After consideration of the ethical issues and discussion with the set it was not considered that ethical approval was required. This was due largely to the fact that the topic of the research was not a particularly sensitive issue and the subjects were volunteers.

5.14 Summary

This chapter has described and justified the quantitative methods used to measure the outcomes of the IPE module. Repertory grid techniques was used to produce questionnaires to measure the role perception, knowledge of the subject areas required of a professional and knowledge of the skills required of a professional. The validity and reliability of the questionnaires was established and compared favourably to others in the literature. An interrupted time series design was selected for the research method and non-equivalent control groups identified for comparison. This positivist approach was, in the view of the author at the time, the 'best' and most rigorous approach to determining whether there had been a change in the attitudes and knowledge of students as a result of the IPE module.

The knowledge and skill questionnaires were also used to calculate the learning index by comparing students views to a reference standard (staff views). The reference standard was justified and the learning index used as a measure of the degree of learning about a profession by a mixed professional group.

The chapter concluded with consideration of the ethics of the quantitative aspects of this research design. These were discussed with particular reference to the issues of consent and confidentiality. Consideration of the ethics of the qualitative aspects of the research will be within chapter 6 and 9. The next chapter, chapter 6, will describe the qualitative aspects of the phase one evaluation. It will show that when measuring complex human phenomena triangulation of quantitative data with qualitative data can provide a 'truer' perspective of the phenomena under investigation. This continues to show the development of my research skills.

Chapter 6. The qualitative methods used to triangulate with the quantitative evaluation strategy

'There was a need to use a qualitative method of data collection and to triangulate this with the quantitative data to enable the researcher to have confidence that the findings were more representative of the 'true' human experience.' This thesis p138

This short chapter will describe and defend the qualitative method of semi-structured interview selected for the phase one evaluation. The different ways chosen to analyse this data will be described and justified. Although ethical issues were considered in the last chapter the application of the principles to qualitative methods will be discussed here. There are some personal reflections on the researcher's interviewing skills and the chapter is completed with explanation of the methods used for the end of module evaluation.

6.1 Semi-structured interviews

As the complex human phenomena of attitude and perception were being studied there was a need to use a qualitative method of data collection and to triangulate this with the quantitative data to enable the researcher to have confidence that the findings were more representative of the 'true' human experience. Therefore face to face interviews were selected to gather data which represented the perceptions of the group being studied.

Before selecting the type of interviews to be undertaken the purpose of the interview was explored. There were three main aims. Firstly to explore the degree with which the contact theory variables were being applied. These being the favourable and unfavourable conditions described in Chapter 3 and 4. Secondly to elicit attitudes, perceptions and feelings of students towards the other professions involved in the module and to IPE itself. Thirdly to be able to obtain data that could be triangulated with the quantitative questionnaire data. Cormack (1996) suggests that in semi-structured interviews the interviewer invites the respondent to develop their response by asking supplementary questions. There were several questions that would need to be asked in each of the three areas but if these could be followed up with further

questioning to explore and expand on their meaning this would enhance the depth of the answers and richness of the data obtained. Hence semi-structured interviews were selected as being the most appropriate way of extracting the required data. Questions were prepared in advance to cover the range of topics under investigation (see appendix 8).

The interviews were carried out just before and immediately after the IPE module. This was designed to identify any change in attitude or knowledge between interviews. For each interview a purposive sample of the experimental group was obtained to provide students who would be able to put forward their views. Their tutors suggested who these individuals might be. Each professional group was interviewed separately so that they would not feel inhibited about expressing their views of a colleague from another profession. This decision was taken after reading Oppenheim (1992 p67) who suggests that an interviewer should allow the interviewees to express irrational ideas, hatreds or misconceptions. If the professions were combined at interview this might have affected their ability to express themselves fully, perhaps not wishing to offend members of other professions by expressing a negative view. So each profession was interviewed in their own professional group.

The control groups were not interviewed, as the limited resources available did not allow for this. Also the main purpose of the interview was to expand upon the students experience of the IPE module and attempt to demonstrate any differences that occurred as a result of the module.

The interview group sizes varied slightly between professions and between the before and after intervention interviews. For all the interviews the number of nurses (n=4) and midwives (n=6) remained constant. However there were 6 radiographers before and 5 after the intervention, and 7 occupational therapists before and 6 after. This slight variation in composition of the interview groups might have had an effect on the group response. The individuals missing may have been key players in the group. However a large majority were present for both interviews.

6.2 The interview procedure

At the start of the interview the purpose of the meeting was made clear to the interviewees. It was explained that the interviews were intended to obtain their views of IPE and that these views would be used to evaluate the benefits and limitations of IPE. All the interviews were tape-recorded and transcripts compiled directly from the tapes. Field notes were taken during the interview to explain any contextually related factors. Many qualitative researchers commend these techniques as it enables accurate recording of the quantitative data. The context, tone of voice and other factors important in interpretation of verbal communication can be used when analysing the views of the interviewees.

6.2.1 Analysis of the interview data

The interview data was analysed in three ways. Firstly by taking the responses of students to questions regarding the professional roles of others from the pre- and post-module interviews separately. These two sets of statements describing the roles of other professions were assessed blind by educationalists from each profession for their accuracy in describing that profession. This enabled judgements to be made regarding differences in understanding within the group of the role of a profession before and after the module. The idea being that these would change as a result of their interprofessional education experience. This analysis was used to indicate whether learning had taken place about the role of each profession.

At least two educationalists from each profession were presented with these two lists of descriptive statements. They were informed that they were from student interviews before and after IPE but were unaware of which list was derived from which interview i.e. they were blind to the source of the statements. They were asked to cross out any statements that they believed to be false and to select the list that they felt best described their profession. For example the midwifery tutors viewed two lists of statements made by radiographers regarding the role of the midwife. They felt that one list better described the role of the midwife than the other.

To determine the degree of understanding by each interviewed profession the educationalists were asked to rate the difference communicated by the two lists on a simple linear scale from 1, a small difference in understanding to 10, a large difference in understanding.

Secondly, and in order to provide a comparison with the descriptive statement data above, each professional group was asked in the interview if they felt they had learned about the role of the other profession. The responses were tabulated and presented along with that of the descriptive statements. This would provide some measure of the validity of their responses as to whether they had learned about the role of other professions.

Thirdly the Contact Theory conditions were explored to identify whether the optimum conditions for contact had been established. The answers given by all the interviewees to any questions relating to the conditions were analysed by the author. Many of these were simple yes / no answers to questions related directly to the conditions but some were related to comments made in response to other questions that were considered relevant by the researcher. A written discussion, by the researcher, of the evidence from the interview data regarding which of the favourable and unfavourable conditions were present can be found in chapter 7.

6.3 Ethical considerations

Ostensibly the ethical principles that need to be adhered to in qualitative research are the same as those in quantitative research. That is to consider the morality of the research situation (McHaffie 1996) and take account of the values and beliefs of individuals and the conduct of the researcher. However when one comes to apply the principles some different ethical issues are raised and the ethical procedures that are required are different for each type of research method selected. The use of subjects for experimental and control groups and completing questionnaires was discussed in chapter 5. The ethics of the interview situation will now be explored and the practices adopted to ensure that the research was ethical are stated and explained.

The issues of confidentiality and anonymity are important when considering the ethics of a research situation (Cormack 1996). They become more important and problematic

when the researcher comes face-to-face with subjects such as in an interview situation. Subjects can be immediately identifiable by the researcher and their views can also be directly attributed. This puts the subject in a vulnerable situation. Therefore prior to the interview procedure the researcher asked for confidentiality for any comments made during the interview expressing the view that they should remain in the room. The researcher assured that any comments used in the research would not be attributable to any individual. It was thought that this would build some trust and relax participants enabling them to feel able to express themselves without concern. In addition (as stated previously) the interviews were arranged to be profession specific to reduce the constraints that might occur if a subject wished to express negative remarks about a member of another profession. All subjects for interview were invited to attend and although a purposive sample some subjects chose not to attend.

Robson (1993 p33) states ten questionable practices in social research. One of these is exposing participants to undue physical or mental stress. The interprofessional education module required students to engage in debate and discussion using problem-based learning. This involved, as with any effective education, a level of challenge and the use of the affective domain i.e. the student's emotions. Therefore implicit in the education that they have voluntarily subscribed to is a degree of mental stress. During the interviews the research asked some challenging questions, as did some of the participants of each other. However the atmosphere was very positive and there were no activities or tasks for participants to undertake therefore the degree of mental stress was greatly reduced in comparison to that induced by the normal educational process.

Interviews can become emotional experiences for participants so debriefing time was given at the end of the interviews for students to express any concerns or worries that they had about the interview or the issues raised. Interestingly no interviewees chose to use this time for any debriefing discussion. This could be because no issues were present or that they did not feel they wanted to raise them.

6.4 Interviews: some personal reflections

I had not undertaken semi structured interviews before but as part of my role as a teacher I had run discussion groups, tutorials and had carried out selection interviews.

These gave me some prior capability in working with small groups. A useful guide to interviewing was found in Denscombe (1998) and provided me with some hints and tips prior to the first interview. My behaviour during these interviews was important as I might subconsciously affect the views of the interviewees. Therefore during the interview I tried to remain uncritical and to stimulate spontaneity and encourage free flowing responses. Following Oppenheim's (1992 p67) suggestion regarding allowing interviewees to express irrational ideas, hatreds or misconceptions which could be about other professions I felt I would need to handle any such views sensitively and non-judgementally.

Denscombe (1998) asserts that there is fairly conclusive evidence to suggest that people respond differently to interviewers depending upon how they perceive them. He describes the personal identity effect of the interviewer as having a bearing on the honesty and size of the response by interviewees. In particular the sex, age and ethnic origin are suggested as important factors. The effect being that interviewees may respond in a way that they feel the interviewer would like them to respond. I was not researching a sensitive topic or one that was likely to bring out highly personal or private information. Yet I was known to them as a lecturer and the IPE co-ordinator so they probably believed that I would want the evaluation to be positive. I tried to counter this effect by saying that I wanted their honest views on IPE and that if there were problems identified their views would be able to help other students in the future to enjoy a more effective learning experience.

There is some debate in Denscombe (1998 p117) regarding the stance of the interviewer. Should the interviewer on one hand be objective and hide their own views and feelings to 'dispassionately learn from them [the participants]'. This reduces the effect of the interviewer on the responses yet if the interviewer is perceived as cold and distant this might reinforce the gulf between the two and do little to empower the interviewee. Should the interviewer show emotion and feelings, responding with feeling to engage in a more humanistic dialogue with the interviewee? I decided that I needed to show a human side but not get involved in agreeing or disagreeing with the comments made. Therefore with appropriate use of humour and neutral supporting verbal and non-verbal behaviours I tried to encourage honest and reasonably sized responses.

Once I had reflected upon my first few interviews, by replaying the tape recordings and reading the transcripts and field notes, I became more skilled and responsive to the interviewees. I found I was asking some leading questions initially and that I was sometimes not following up on cues from students. I was particularly interested in getting a consensus view and the tapes revealed that I improved on my awareness of when to ask the group if a viewpoint expressed by an individual was a consensus view.

I noted that humour was used on several occasions and included sarcasm. I was unclear as to how to interpret these comments. This will be discussed further in chapter 10 in the paragraph on accuracy, truth and credibility.

6.5 The end of module assessment methods

In addition to the evaluation previously described a traditional 'end of module' assessment was carried out. The PBL tutor (facilitator) performance was evaluated using a modified form of a PBL tutor-rating questionnaire (Dolmans et al 1994). This tool has been used before at Salford for assessment of the PBL aspects of the MPE programme (Davidson and Lucas 1997) (Mackay et al 1999). Both the tutors and the students complete the same questionnaire giving the perception of the students towards the tutor and the perception of the tutor's of their own performance. Students are asked to rate their tutors performance as insufficient, sufficient or neutral for 12 items related to their ability as a facilitator and a thirteenth item asks them to rate their overall performance (scale 1-10 with 6 being sufficient and 10 being excellent). The questionnaire also enables students to make qualitative responses. These are classified as valuable behaviours of tutors (the positive comments) and advice for tutors subsequently (the negative comments). This enables the performance of the PBL tutors to be assessed from both their own and the students perspective and for comparisons to be made. The process of tutor evaluation can also be viewed by all parties as a developmental one where tutors can receive advice on future performance.

The quality of the case studies were assessed by asking students whether their factual knowledge about professional practice had increased, whether the case studies had been realistic and if the method of presenting the case study (through written medium) had been appropriate. An open-ended question for general comments was also included. The

group dynamics was investigated using a 13-item questionnaire with groups of questions relating to teamworking, communication, learning process and group conflict. Staff also completed these same two questionnaires to provide another perspective on the evaluation. All the questionnaires used standard Likert scales measuring agreement/disagreement with a series of statements. (See appendix 9 for end of module evaluation questionnaires).

In addition to these questionnaires a nominal group technique was carried out with the staff to determine their perception of the quality of the module. The nominal group technique attempts to identify consensus and agreeable solutions among experts (Kruger 1994). This technique was therefore selected in order to identify the key issues, both positive and negative, raised by the facilitators and to obtain the consensus view of the group regarding the level of importance of each issue raised. At the end of the module the tutors and students discussed general evaluation issues which were passed on to the IPE pilot module co-ordinator.

6.6 Summary

This chapter has outlined the qualitative methods and analyses used for the phase one evaluation. The process used for the semi-structured interviews and the questions asked have been described and justified. The analysis consisted of a comparison of the students knowledge of the role of other professions before and after the interprofessional module, an analysis of the presence or absence of the favourable and unfavourable conditions from contact theory and the responses of the interviewees to whether they had learned about the role of the other professions. The ethical considerations for semi-structured interviewing have been discussed along with the personal reflection of the interviewer on their interviewing skills. Finally the end of module evaluation methods are described and explained. These included questionnaires for staff and students examining group dynamics quality of the case studies and tutor performance. The staff also undertook a nominal group technique to identify the key quality issues. The next two chapters will contain the results of the phase one evaluation.

Chapter 7 Results of phase one evaluation

"..for all professions combined in the experimental group ...in eight out of fourteen items there had been movement towards the reference value indicating learning about the role of other professions." This thesis p174

The results from the phase one quantitative and qualitative evaluations will be presented in this chapter. The quantitative evaluations consist of the statistical analysis of the role perception, subject knowledge and skill knowledge questionnaires along with the enthusiasm scale. The learning index was calculated for the subject and skills knowledge questionnaires to indicate the degree of student learning. The qualitative evaluation comprises the comparison of role statements from the semi-structured interview data, views of interviewees regarding their degree of learning about the other professions and discussion regarding the evidence for the application of the contact theory conditions.

7.1 Quantitative analysis

The mean response rate to the questionnaire for the experimental group was 71.6% and for the control group 56.1%. There were several questionnaires and data points missing from the subject knowledge and skills knowledge questionnaires so an ANOVA could not be calculated for these. Therefore pre- and post-intervention months were combined coarsening the data and a t-test applied to each of the experimental and control groups separately. This would demonstrate whether there had been a statistically significant change as a result of the intervention in the experimental group. It was not expected that there would be any differences in the control group. Only the role perception questionnaire data was amenable to ANOVA.

The 'target-professional' groups are compared throughout which comprise the perception of any three professions combined about the fourth. For example the 'target-midwives' group comprise the combined perceptions held by radiographers, occupational therapists and nurses about midwives. The only exception to this was for

the 'enthusiasm' scores that were calculated by combining the scores for each individual profession separately.

7.1.1 Role perception questionnaire

The results of the ANOVA, which demonstrated statistically significant differences, are presented in table 11. Each professional group is described separately.

7.1.1.1 Target-midwifery group

There was only one item (R8) that demonstrated a significant difference ($p \leq 0.05$) for the perceptions of those targeting midwives between the control and experimental groups. Midwives were seen by the experimental group as 'working more effectively in a team than working alone', but these differences were not significant over time.

7.1.1.2 Target-nurses group

There were two items (R10 & R14) which demonstrated highly significant differences ($p \leq 0.01$) for the perceptions of those targeting nurses between the control and experimental groups. Nurses were seen by the experimental group as 'able to deal with a wide spectrum of patient/client types' but less so than the control group. The experimental group also saw nurses as 'caring for the general wellbeing of the patient' more than the control group. Again these were not significant over time.

7.1.1.3 Target-occupational therapists group

There were three items (R12, R14 &R15) which identified significant differences between the control and experimental groups for those targeting occupational therapists. The OT's were seen by the experimental group as 'having a health education role' but less so than the control group. They were also perceived by the experimental group as 'caring for the persons well being' and 'seeking out a high degree of involvement with the patient'. These perceptions were more pronounced than the control groups. These

last two items also showed a significant difference over time. Each one gradually reduced over time. There were no significant interactions between control and experimental groups and time for these items.

7.1.1.4 Target-radiography group

There was one item (R10) that demonstrated significant difference ($p \leq 0.05$) over time for those targeting radiographers. The radiographers were perceived by the others to 'be able to deal with a wide spectrum of client types' initially. This then rose before the intervention, increased over the midpoint to register an 'ability to deal with only a narrow range of patient client types' immediately after the intervention before falling back almost to the initial levels at the last measurement. There was no significant difference between control and experimental groups and no interactions.

Target Professional group	Description of questionnaire item (range)	Difference between	Means (min 1- max 10)	Level of significance
Midwives	Work effectively in a team (1) vs. work more effectively alone (10)	Control & experimental groups	Cont. = 5.5 Expt. = 4.8	p≤ 0.05
Nurses	Able to deal with a wide spectrum of patient/client types (1) vs. able to deal with only a narrow range of patient/client types (10)	Control & experimental groups	Cont. = 2.6 Expt. = 3.4	p≤ 0.01
	Cares for the persons general wellbeing (1) vs. cares for the patient only in relation to their specific professional context (10)	Control & experimental groups	Cont. = 4.5 Expt. = 3.3	p≤ 0.01
Occupational therapists	has a health education role (1) vs. Role is unrelated to health education (10)	Control & experimental groups	Cont. = 3.1 Expt. = 4.7	p≤ 0.01
	cares for the persons general wellbeing (1) vs. cares for the patient only in relation to their specific professional context (10)	Control & experimental groups	Cont. = 4.8 Expt. = 4.5	p ≤ 0.05
		Month	Dec =5.9 Jan = 5.1 Mar = 4.1 Oct = 3.6	p ≤ 0.05
	seeks out a high degree of involvement with the patient (1) vs. maintains a low degree of involvement with the patient	Control & experimental groups	Cont. = 4.1 Expt. = 3.7	p ≤ 0.05
		Month	Dec = 5.1 Jan = 4.0 Mar = 3.5 Oct = 3.4	p ≤ 0.05
Radiographers	Able to deal with a wide spectrum of patient/client types (1) vs. able to deal with only a narrow range of patient/client types (10)	Month	Dec = 2.6 Jan = 3.5 Mar =5.1 Oct = 2.9	p ≤ 0.05

Table 11: Significant differences identified from the role perception questionnaire for control and experimental groups using an ANOVA.

7.1.2 Subject Knowledge Questionnaire

The results of the t-test which demonstrated statistically significant differences are presented by target profession in table 12. There were no significant differences for either the control or experimental group before and after the intervention for the target-radiographers or occupational therapists group. Similarly there were no differences for the experimental groups before and after the intervention for the nurses.

The target-midwives experimental group demonstrated two significant differences on the subject knowledge questionnaires. The group targeting midwives perceived that they had a high level of knowledge in 'psychology' and 'the role of other professions' before the intervention but this fell after the intervention.

The control groups for the midwives and nurses both demonstrated significant difference for before and after the time of the intervention. The target-midwives group showed three significant differences and the target-nurses group showed two.

Target Professional group	Control or experimental group	Subject knowledge questionnaire item (range = 1- 10)	Mean	T – statistic	Significance level
Midwives	Expt.	Psychology	Pre = 8.0 Post = 6.4	2.23	p ≤ 0.05
		Role of other professions	Pre = 5.3 Post = 3.4	2.4	p ≤ 0.05
	Control	Mathematics	Pre = 5.3 Post = 3.4	2.73	p ≤ 0.01
		Research techniques	Pre = 7.2 Post = 5.8	2.28	p ≤ 0.05
		Drugs	Pre = 9.0 Post = 7.6	2.86	p ≤ 0.01
Nurses	Control	Welfare and benefits system	Pre = 4.7 Post = 5.9	-2.02	p ≤ 0.05
		Role of other professions	Pre = 6.3 Post = 7.7	-2.74	p ≤ 0.01

Table 12: The Significant differences on the subject knowledge questionnaire between the control and experimental target-profession groups using a t-test.

7.1.3 Skills knowledge questionnaire

The results of the t-test which demonstrated statistically significant differences are presented by target-profession in table 13. There were no significant differences for any control group before and after the intervention. Similarly there were no differences for the experimental groups before and after the intervention for those targeting nurses or radiographers.

Differences did emerge for the target-midwives and occupational therapy experimental groups. Significant differences were found for those targeting occupational therapists for their knowledge of two skill descriptors. That of 'demonstrating appropriate tactile behaviour' was scored very high initially (mean = 8.9) and this fell after the intervention (mean = 8.0) and 'are good with their hands' also scored high initially (mean = 8.0) and fell back to a lower score after the intervention (mean = 7.0). The target-midwives

group displayed a significant difference for knowledge of the 'be empathic' skill item. This was scored as high before the intervention (mean = 8.2) and higher after (mean = 9.0).

Target Professional group	Control or experimental group	Skills knowledge questionnaire item	Mean	T – statistic	Significance level
Midwives	Expt.	'be empathic'	Pre = 8.2 Post = 9.0	-2.06	p ≤ 0.05
Occupational Therapists	Expt.	'demonstrate appropriate tactile behaviour'	Pre = 8.9 Post = 8.0	2.02	p ≤ 0.05
		'are good with their hands'	Pre = 8.0 Post = 7.0	2.04	p ≤ 0.05

Table 13: The Significant differences on the skills knowledge questionnaire between the control and experimental target-profession groups

7.1.4 The learning index

During the piloting phase it was suggested that two items were added to the subject knowledge questionnaire, disability and psychology. As time pressures were great to get the questionnaires ready for the first measurement the reference standard was completed at the same time as the piloting. Therefore the questionnaire completed by the educationalists to calculate the reference standard did not contain these two extra items which were in the final questionnaire that the subjects completed. Hence the reference standard was calculated using only the 14 original items. Only the experimental group were used for learning index calculations.

The reference values for these items were subtracted from the experimental subjects' scores before and after the intervention and a value produced for each item and each profession. A weighted mean was calculated for all professions. This was termed the learning index (see chapter 5).

7.1.4.1 Learning index for subject knowledge for all professions combined

The index for all professions combined shows that for eight of the fourteen items the post intervention scores of the experimental subjects were closer to the reference value (see Figure 3). This indicates that the experimental group had learned about the professions for these items. Five of the items were more than one unit away from the reference value and changed little indicating a mismatch between the student group and the reference value for these items. These were the subjects of law, professional roles, research, drugs, religious and cultural beliefs. Two of these subjects, research and role of other professionals, were close to two and a half units away indicating considerable lack of agreement with the reference values.

The subjects where there was greatest agreement was in the more traditional subjects such as anatomy, physiology, pathology, physics and mathematics where the agreement was within one unit.
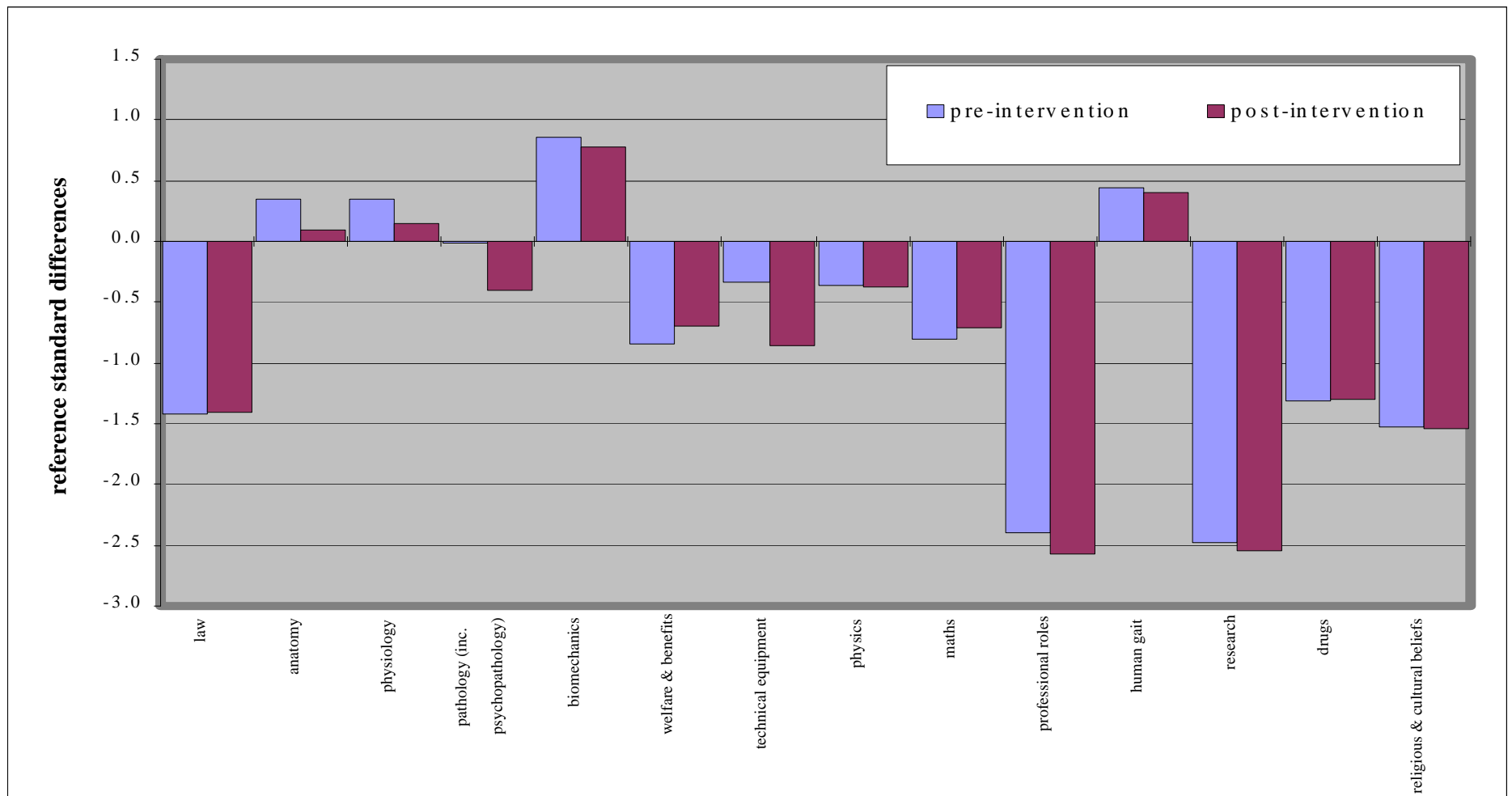
Figure 3 : The Learning Index for subject knowledge (all professions)

7.1.4.2 Learning Index for Subject knowledge for each profession

The results of the learning index for each target-profession are presented in table 14. The post intervention results for those targeting midwifery, occupational therapy and radiography show few post-intervention scores that move towards the reference standard. There are 2 for midwifery and 4 for occupational therapy and radiography. The post intervention nurses scores, however, show that 11 of the 14 items scored were closer to the reference standard after the intervention suggesting that the students learned about nurses during the intervention.

The pre-intervention occupational therapy scores were notable, as they were close to the reference standard with 11 of the 14 items less than or equal to one unit from the reference standard. This contrasted with only 5 or 6 for the other three professions.

	Midwives		Nurses		Occupational therapists		Radiographers	
Subject Knowledge	pre-intervention	post-intervention	pre-intervention	Post-intervention	Pre-intervention	post-intervention	pre-intervention	Post-intervention
Law	5.2	4.0	-2.6	-2.4	-0.9	-0.5	-0.5	-0.9
Anatomy	-1.0	-1.4	1.7	1.2	0.2	-0.1	-0.6	-0.8
Physiology	0.0	-0.3	0.2	0.0	0.4	0.4	0.7	0.3
Pathology)	-0.2	-0.9	0.7	0.4	0.2	-0.3	-1.3	-1.6
Biomechanics	0.4	0.1	0.5	0.3	0.0	0.3	2.8	2.3
Welfare & benefits	-1.5	-2.7	-3.2	-2.1	0.6	1.0	0.7	0.3
Technical equipment	-1.9	-2.3	0.0	-0.6	-0.4	-1.2	0.1	-0.2
Physics	-0.6	-1.1	0.3	0.5	0.1	-0.3	-1.8	-1.5
Maths	-1.6	-2.3	-3.4	-2.7	0.1	-0.1	1.9	2.4
Professional roles	-2.8	-4.6	-3.5	-2.6	-2.0	-2.7	-1.3	-1.5
Human gait	-2.7	-3.7	-1.2	-0.5	1.0	0.3	3.5	3.7
Research	-1.6	-2.2	-4.0	-3.2	-2.3	-2.5	-1.1	-1.7
Drugs	-1.7	-2.5	-1.3	-1.3	-1.9	-1.5	-0.3	-0.6
Religious & cultural beliefs	-0.4	-0.9	-2.5	-2.0	-0.8	-0.5	-1.8	-2.3

Table 14: The learning index for subject knowledge of each target-profession group

7.1.4.3 Learning index for skill knowledge for all professions combined

The learning index for the skills knowledge questionnaire revealed only two items out of twenty one that demonstrated a value closer to the reference value post intervention (see figure 4). These were for the items 'demonstrate a sense of humour' and 'demonstrate an ability to work alone'. All nineteen other items moved away from the reference value post-intervention. Twenty of the items were negative values indicating that the reference values produced by the educationalists were higher than the experimental subjects values.
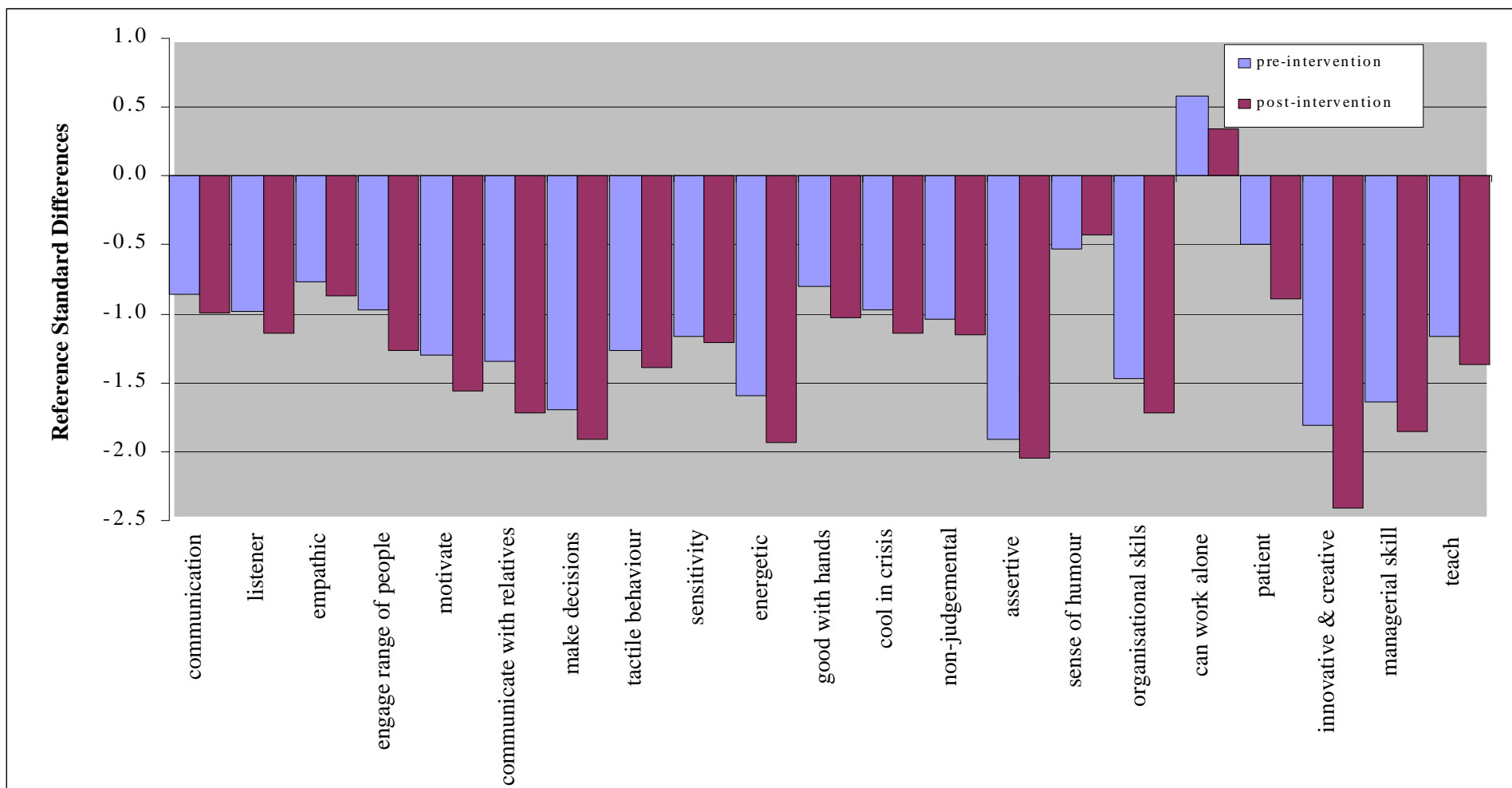
Figure 4: The Learning Index for skill knowledge (all professions)

7.1.4.4 Learning index skill knowledge for each profession

The learning index for the skills knowledge is presented in table 15. The target-midwifery group demonstrated lower post-intervention scores on eleven of the twenty one items. Indicating movement towards the reference value after the intervention. This compared to seven for the target-nurses group and only four and one for occupational therapy and radiography respectively.

Again the target-occupational therapy group scores were closer to the reference standard before the intervention. Fifteen of the twenty one items were scored one unit or less from the reference value. This compared to less than 10 items for the other target-profession groups.

Skill Knowledge	Midwives		Nurses		Occupational therapists		Radiographers	
	pre-intervention	post-intervention	pre-intervention	post-intervention	pre-intervention	post-intervention	pre-intervention	post-intervention
Communication	-1.3	-0.9	-0.7	-0.6	-0.2	-0.6	-1.8	-2.1
Listener	-1.2	-1.2	-0.9	-0.9	-0.7	-0.9	-1.4	-1.8
Empathic	-0.8	0.0	-1.0	-1.0	-0.7	-0.6	-0.5	-1.3
engage range of people	-0.2	-0.1	-1.0	-1.1	-0.7	-1.1	-1.7	-2.2
Motivate	-0.9	-0.1	-1.9	-1.9	-0.4	-0.7	-2.0	-2.7
Communicate with relatives	-1.3	-1.6	-1.0	-1.0	-1.1	-1.5	-2.2	-3.1
make decisions	-0.7	-0.3	-2.0	-2.2	-1.4	-1.7	-2.2	-2.4
tactile behaviour	-0.2	0.3	-1.8	-1.6	-1.3	-2.0	-1.0	-1.1
Sensitivity	-1.3	-0.9	-1.3	-1.2	-1.0	-1.4	-1.2	-1.1
Energetic	-1.4	-1.5	-2.3	-2.3	0.3	-0.2	-3.5	-3.6
good with hands	-1.6	-1.6	-0.9	-0.9	0.4	0.0	-2.0	-2.2
cool in crisis	-0.8	-0.4	-1.0	-0.7	-0.3	-0.7	-2.0	-2.7
non-judgemental	-0.4	-0.1	-1.2	-1.3	-0.9	-1.1	-1.3	-1.4
Assertive	-1.2	-1.4	-2.5	-2.2	-1.8	-2.4	-1.6	-1.7
sense of humour	-1.0	-0.9	0.1	0.3	0.3	0.3	-2.4	-2.2
Organisational skills	-0.7	-1.0	-1.5	-1.5	-1.1	-1.6	-2.3	-2.5
can work alone	-0.5	-0.5	2.0	2.0	0.6	0.0	-0.9	-1.5
Patient	-0.8	-1.0	-0.6	-0.9	0.4	0.2	-1.5	-2.1
innovative & creative	-1.6	-2.7	-1.8	-2.0	-1.0	-1.4	-3.1	-4.1
Managerial skill	-2.6	-1.9	-2.4	-2.3	-0.4	-0.9	-1.9	-2.3
Teach	-1.5	-1.4	-0.8	-0.7	-1.2	-2.1	-1.5	-1.5

Table 15: The learning index for the skills knowledge questionnaire for each profession

7.1.5 Enthusiasm for interprofessional education

The mean scores on the enthusiasm dimension for each profession in the experimental group is presented in table 16.

Experimental group

Profession	December	January	March	October	Total mean
Midwifery	8.5	8.3	7.0	7.3	7.8
Nursing	9.0	8.8	6.5	n/a	8.1
Occupational therapy	7.0	8.0	7.3	8.2	7.6
Radiography	5.1	4.4	4.6	5.6	4.9
Mean	**7.4**	**7.4**	**6.4**	**7.0**	**7.0**

Table 16: The mean enthusiasm scores for each individual profession in the experimental group.

The scores for the experiential group show a high mean indicating that those who took part in the IPE module were very enthusiastic about IPE. There were too few data points to calculate a useful mean for the nursing group in October. An analysis of variance for the experimental group indicated that there was a highly significant difference for profession (DF 1,142, F=19.27, p $\leq$ 0.01) with no interactions. T-tests on the means for each pair of professions revealed that the source of the difference was the radiography mean (p $\leq$ 0.01).

Figure 5 demonstrates the changes in mean enthusiasm score between professions in the experimental group. The radiography group was less enthusiastic than the other professions about interprofessional education. Immediately before the intervention they became even less enthusiastic but this improved after the intervention and was statistically significant. The other professions remained enthusiastic throughout the monitoring period although became slightly less enthusiastic after the intervention but not significantly so.
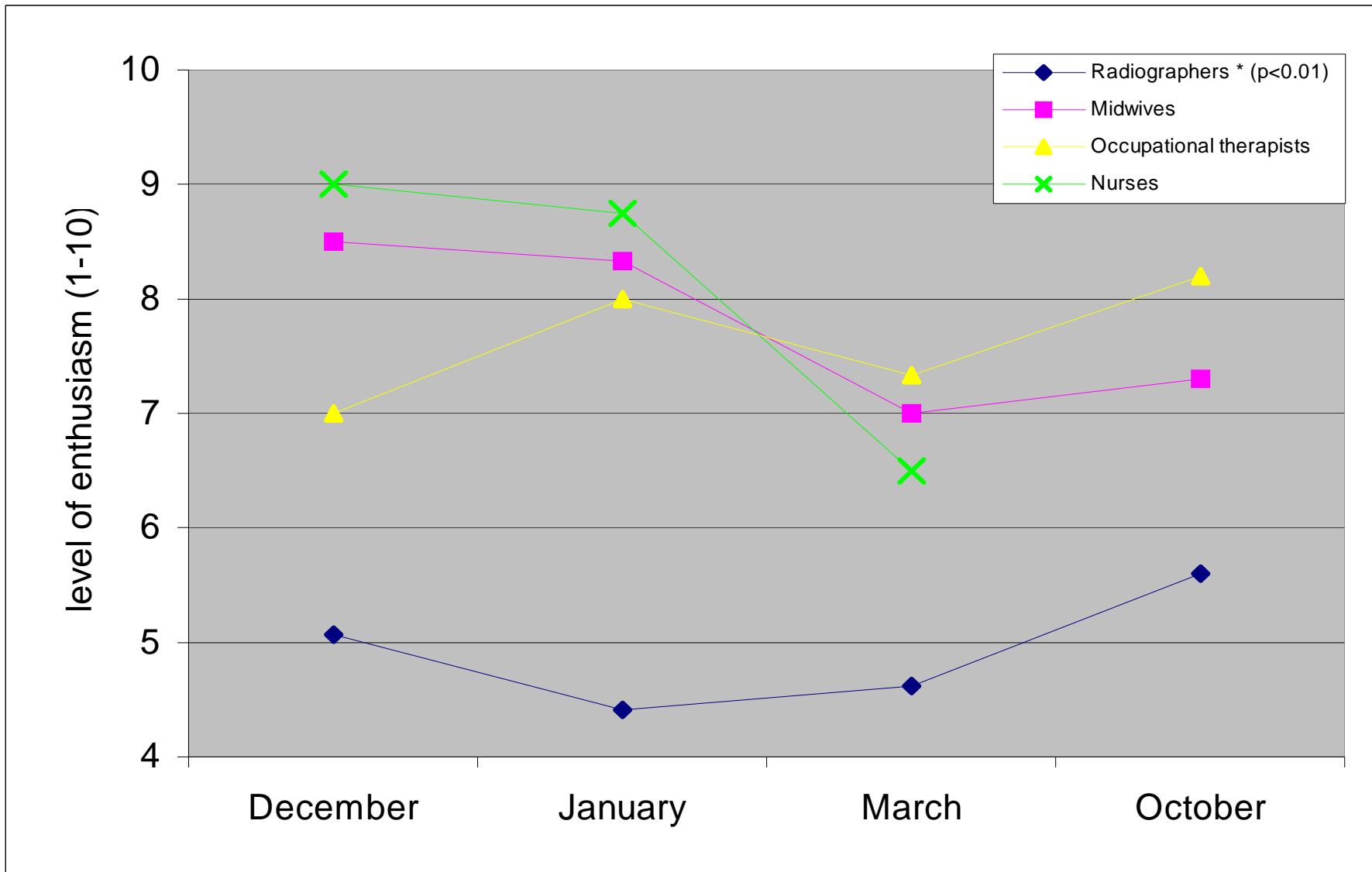
Figure 5: Enthusiasm for interprofessional education (Experimental group)

Control group

The mean scores for the control group (table 17) reveal high values that indicate that the professions were enthusiastic about interprofessional education. The analysis of variance revealed no significant differences for profession or intervention and no interactions. The mean for the whole group is similar to that of the experimental group. The lack of values for some of the control groups in December is due to the late identification of comparable groups.

Profession	December	January	March	October	Total mean
Midwifery	n/a	6.4	6.8	6.5	6.6
Nursing	7.6	7.2	7.9	7.7	7.6
Occupational therapy	7.4	6.8	6.4	7.3	7.0
Radiography	n/a	6.4	7.1	7.8	7.1
Mean	**7.5**	**6.7**	**7.1**	**7.3**	**7.1**

Table 17: The mean enthusiasm scores for each individual profession in the control group.

Figure 6 indicates the changes in enthusiasm score over the time of the measurements. There is no significant pattern emerging. The radiographer's enthusiasm increases but not significantly. There is a fairly narrow range within which the scores vary over time
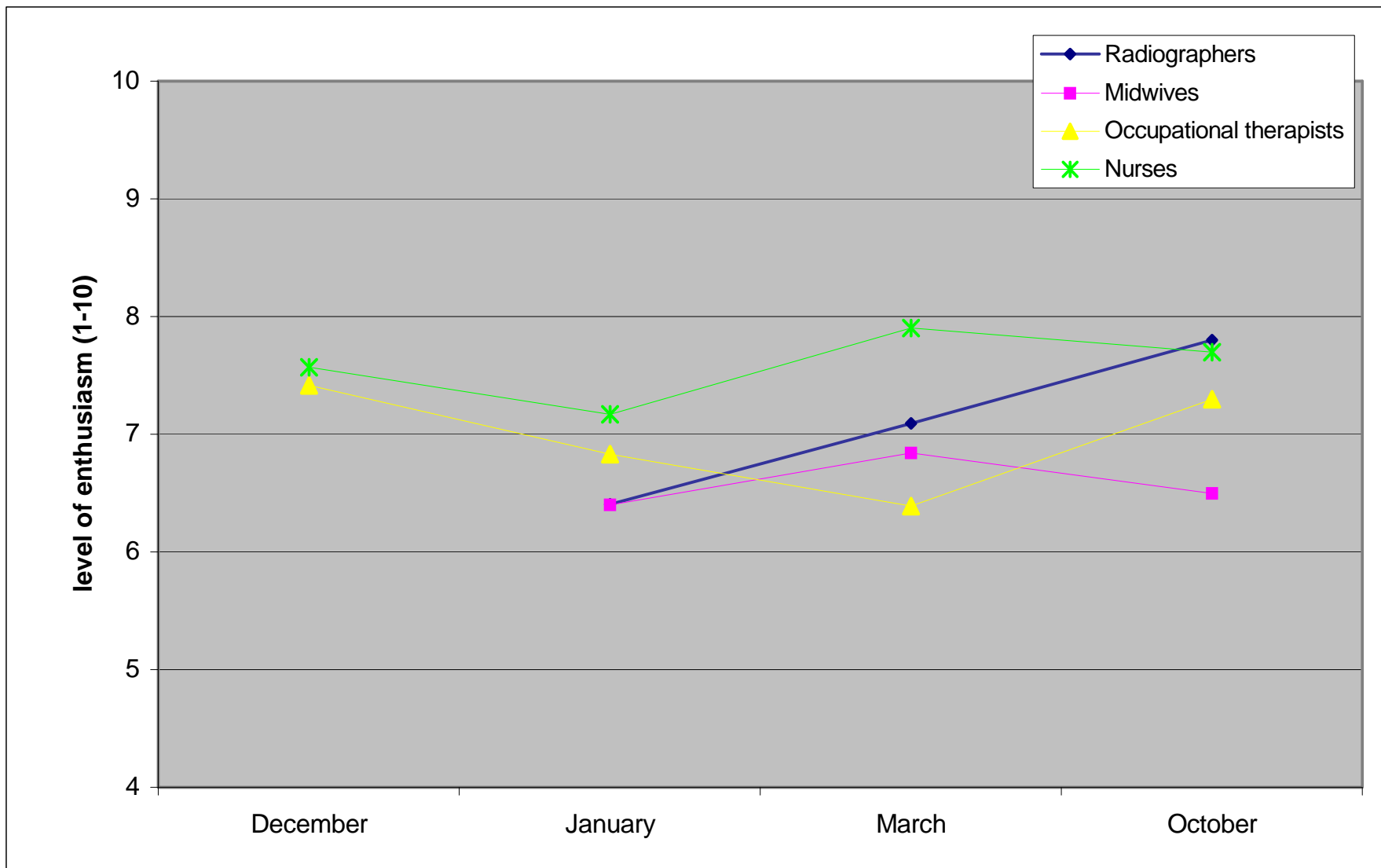
Figure 6: Enthusiasm for interprofessional education (control group)

7.2 Qualitative analysis

The pre and post-module interviews with each profession were analysed as described in chapter 6. In summary each profession had a group interview before and after the IPE module. The statements made by interviewees about professions' roles were listed out for each interviews and compared by educationalists from the respective profession. They made a judgement about whether the statements demonstrated greater understanding about the profession after the intervention. The students view as to whether they believed they had learned about the role of other professions was captured at interview.

Table 18 summarises the responses from the educators to the interview statements and the views of the interviewees to the question, Have you learned about the role of the other profession?

		Source profession			
		Midwives	**Nurses**	**Occupational therapists**	**Radiographers**
T a r g e t p r o f e s s i o n	**Midwives**		√ better informed post-module mean = 6	√ cannot judge	√ better informed post-module mean = 7.5
	Nurses	X Cannot judge		X Better informed pre-module mean = 5.5	no comment on their learning Better informed post-module mean = 4
	Occupational therapists	√ better informed post-module mean = 3	X Better informed pre-module mean = 3		√ better informed post-module mean = 6
	Radiographers	X Better informed post-module Mean = 2	√ cannot judge	√ cannot judge	

Table 18: Summary table to demonstrate the learning about others roles reported by interviewees and educationalists from each profession

Key

Students reported that they had learned about the role of the other profession -√

Students reported that they had not learned about the role of the other profession - X

Educators reported that no judgement could be made about the differences between the interviews – 'cannot judge'

Educators reported that the interviewed group was better informed about the profession after the module – 'better informed'

Educators reported mean value of the degree of difference in understanding the group had of the role of the profession – 'mean' (max = 10)

The midwifery group reported learning about the role of the occupational therapist and the independent tutors who graded the difference (mean = 3) supported this. Yet midwives did not believe that they had learned about the role of the nurse or the radiographer. However the independent tutors did believe there was evidence of learning about the radiographers role (mean = 2). No conclusions can be drawn about the nursing role as the midwives having stated that they had learned nothing about the role of the nurse did not make any statements in the post module interview to describe their role.

Nurses reported learning about the role of midwives, which was verified by the tutors (mean = 6), and the radiographers. The learning about the radiographers could not be verified as there were no clear difference observable. Nurses had mixed views about whether they had learned about occupational therapists with no consensus emerging. The tutors were clear and felt that the pre-intervention statements showed a better understanding of the role of the OT than the post module statements (mean = 3).

Occupational therapists reported that they had learned about the role of the midwife and radiographers but neither of these could be verified. There were too few statements describing the midwives role in the post module interview and no clear difference between the statements describing the radiographer's role. Yet they did not believe they had learned about the role of the nurse, and this was supported by the tutors who reported that the group had shown a greater knowledge in the pre intervention interview (mean = 5.5).

Radiographers stated that they had learned about the role of the midwife, which was verified by the tutors (mean = 7.5) and the occupational therapists, which was also verified by the tutors (mean = 6). The tutors also reported that the radiographers had learned about the role of the nurses (mean = 4) although the radiographers did not express this view.

7.3 Contact Theory Conditions

The key question to be answered under this section is, Did the IPE module promote the

conditions for successful intergroup contact as suggested by Contact Theory ? (Amir 1967 pp338)

The "favourable" and "unfavourable" conditions for intergroup contact were explored by analysing the responses given by the students in their pre and post IPE module interviews.

7.3.1 Expectations

The occupational therapy, midwifery and nursing students expressed positive expectations about the IPE module. Nurses felt that it will be

> *"able to help us understand what other disciplines do"*

and they would

> *"be able to communicate with them (other disciplines) better"*

An occupational therapy student had contact with a colleague who had enjoyed

> *"experience of a similar programme and said it was a positive experience"*

another said that IPE

> *"might make us confident around the wards"*

Midwives expected to

> *"learn about the role of others"*

and

> *"to make others aware of our role"*

The radiography group were less positive explaining that they felt pressurised by other assessments. They expressed previous negative experiences of similar module with one student saying

"People don't turn up because they think it is a waste of time"

However they did feel that it would be a better experience than previously if nurses are involved as they expressed the believe that they would benefit more form learning alongside professions that they would work with in clinical practice.

7.3.2 Status

Prior to the module the OT group felt that the status would be equal between the different professional groups and that this was the case

"Especially when people first qualify"

although they did suggest that status depended upon the setting. The radiography group had mixed feelings. Some felt that the status would be equal but others put radiographers at a higher status and some at a lower status to the other professions on the module. The nursing group felt that the status would be equal except for the fact that they were year 2 students and the others would be year 3 students. The midwifery group, however, were clear that the students

"should all be equal status as we are all experts in what we do"

One member of the group suggested a hierarchy of radiographers at the top then midwives, nurses and occupational therapists. Others disagreed with this. Group opinion would appear to be that status should be equal across the professions but that there are differences. There was no consensus about a professional hierarchy.

In the post module discussions students identified several factors that they related to differences in status. The midwifery and occupational therapy groups felt that the prior

experience of radiographers in problem-based learning gave them a greater status during the module with one OT stating

> *"I felt disadvantaged, I seemed to be on my own* (as she had no prior PBL experience)*"*

All the groups identified that the nurses being from a lower year group were at a lower status. The nurses agreed with this saying that the others

> *"level of knowledge"*

and

> *"the ease with which they talk about their subject"*

were indicators of the status difference. The occupational therapists also cited the midwives diploma course as putting them at a lower status than the others who were doing a degree. Interestingly one O.T. said that she had not been aware of this information during the module.

Status differences have emerged, here, with the students suggesting that they were related to differences in year group, prior problem-based learning experience and level of qualification. These factors mitigate against the favourable status condition of equal status and emerged from post module discussions. This indicates that the prestige or status of some of the groups was lowered as a result of the contact that is one of the unfavourable status conditions. But would these differences be sufficient to have a detrimental effect on the contact ?

7.3.3 Promotion of intergroup contact by "authority" figure and social climate

The tutors who were facilitating the sessions are the authority figures in this problem-based learning setting although in true PBL facilitation according to Mayo (1995)

> *"the tutor must surrender the seat of authority [*to the students*]"*
>
> p126

This explicit support by the tutor for the views of the group could be interpreted as encouragement by an authority figure for IPE through the process of PBL.

This module was the first experience of facilitation for some of the tutors. The ability of the tutors to promote intergroup contact is related to their performance as facilitators. The students assessed this performance in an end of module evaluation (see chapter 8 for the full results). (Some detail is reported here as it is considered relevant to the conditions being discussed.) The evaluation focused on the quality of the tutors, case studies, group dynamics and general curriculum issues. The students positively evaluated the tutor's performance, assessed using a modified version of a published questionnaire (Dolmans 1994). Seven tutors were assessed by 31 students and mean tutor score of 8.81 was obtained (scale 1 – 10 6 being sufficient and 10 being excellent). The students also provided qualitative comments on tutors' performance. Examples of the positive behaviours of tutors relating to support of intergroup contact were "open attitude to all professions" and "valuing everyone's opinions". The occupational therapy group stated that one tutor had been

> *"..very keen on (*promoting*) other professions that were not there like social work".*

There is evidence here then of support by authority figures for intergroup contact.

7.3.4 Was the contact of a casual or intimate nature?

The teaching format was problem-based learning in small groups of seven or eight. This pedagogy encourages group discussion, studying together in small groups and empowers students to contribute equally. The group size and interactive discussions promotes a group dynamic that is of a more intimate and enjoyable nature. However, the groups were rearranged after each case study. This may have made the contact more casual as students may not have seen the other group members again however the small group tutorial format was maintained. Pettigrew's (1998) friendship condition was therefore not met as the groups did not have time to form any friendship bonds as it was likely that they were together for only one case study.

7.3.4 Pleasant or rewarding?

All students were in agreement that the experience had been an enjoyable one. The radiographers, experienced at PBL, stated that they enjoyed the discussion phase but not the self-study or feedback stages. The feedback was felt to be a

> *"bit boring as some (*students*) just read out what they had found"*

This may be due to the radiographers expectations of the feedback stage. Their experience of it on their own professional programme is that the feedback is interactive. They stated "time pressures" as being the reason for not liking the self-study.

A common reason given for the enjoyment of the module was that each profession was able to find out about the others. Also that they could educate others about their own role with one OT student describing this as

> *"..a really brilliant opportunity for OT"*.

A midwifery student found the experience rewarding saying

> *"I felt it enhanced my knowledge of me, what I know about my midwifery profession"*

7.3.5 Interact in functionally important ways and develop common goals.

The students worked on case studies and collaborated to produce a "Time line". This was a jointly composed, chronological written summary of the holistic care provided for the patient/client by the professions involved in the module. This enabled the students to have a focus to their work that was similar to the joint goals they would experience in clinical practice. This was seen as positive with one OT student saying

> *"The time line was good...it gave you an idea of ..how the patient's care goes through the services."*

7.3.6 Competitive or co-operative?

The students' post-module evaluation supported the notion that the atmosphere had been a co-operative one. However there were three examples of competitiveness identified from the post-module interviews. The nurses group felt that some radiographers had been competitive but then went on to explain that this was due to them

> *"seeming aloof and to not want to bother explaining"*

This description of the radiographer's behaviour does not appear to support the notion of competitiveness. Occupational therapists and radiographers each cited a different example of an individual who had been competitive. A radiographer stated of a midwife that

> *"She thought she knew everything as she was about to qualify"*.

7.3.7 Was the contact unpleasant, involuntary or tension laden?

There were examples of this during the module and some of these will now be described. Prior to the module occupational therapy students described previous experiences on a mental health placement where there had been some conflict between the nurses and occupational therapists. Although they said that

> *"..90% of the time it* (collaborative practice) *worked well"*.

After the module occupational therapy students described conflict that had occurred between themselves and the nurses.

> *"They (*nurses*) said that everything that O.T. did they did or physio (*therapists*)'s did"*

There was also conflict related to assessment of patients/clients activities of daily living (ADL). Nurses explained that they undertook these assessments but O.T.'s also do and

the OT's felt that nurses did not do them to the same depth that O.T.'s did. Interestingly nurses did not mention this incident in their post module interview.

A midwife described a radiographer as being intimidating in one of the groups and explained how she had got herself all worked up and that she was

"..ready for her if she did it again in the next group".

However this conflict did not materialise in the subsequent meeting.

In both examples of conflict the group explained these incidents as being due to individual personalities rather than being a professional trait. An occupational therapy student saying

"yes, individuals in groups, not professional attitude it was an individual thing within each group"

So these negative incidents did not appear to be interpreted by students as an outgroup trait. Interestingly in the nursing and midwifery groups where conflict was anticipated, due to the information from colleagues in these professions, did not materialise.

The imbalance in numbers, there being more radiographers than any other profession by a ratio of three-to-one, was perceived as a problem to students and may have brought an unnecessary tension to the intergroup contact. All student groups reported that there had been domination by the radiographers in the group. Further probing revealed that the imbalance was numerical and that radiographic issues had not been covered more extensively than issues related to any other professions. However the numerical advantage was found to be intimidating by other professions. Nurses felt that this dominance varied between groups and was related to the personalities of those involved.

The prior experience of PBL by the radiographers also lead to some tension as radiographers wanted to get on with the process while other were trying to familiarise themselves with it. The radiographers were the only group summatively assessed in this module and this caused some tension within groups. This emanated from the

radiographers who expressed concern at the variable quality and effort of the work contributions from other professions.

7.4 Summary

The results of the phase one evaluation presented here have detailed the quantitative and qualitative results. The role perception questionnaire showed few statistically significant differences over time or between control and experimental groups. Occupational therapists showed the most number with 2 differences over time and three between control and experimental groups for the 21 questionnaire items. The subject and skills knowledge questionnaires showed an equally unimpressive number of questionnaire items of statistically significant difference.

The learning index for subject knowledge for all professions combined in the experimental group showed that in eight out of fourteen items there had been movement towards the reference value indicating learning about the role of other professions. When each profession was examined separately the target-nursing group appeared to have learned the most with eleven out of fourteen items moving towards the reference value indicating that professions had learned the most about nursing.

The learning index for the skills knowledge was less pronounced with only two out of twenty one items showing learning for the professions combined although the midwifery group showed movement towards the reference value on eleven of the twenty one items.

The enthusiasm for interprofessional education yielded some more clear cut results with generally high scores indicating enthusiasm from all professions for IPE with means for each profession between 4.9 and 8.1 across experimental and control groups. The radiography group showed a statistically significant difference ($p \leq 0.01$) from the other professions with a lower mean (mean = 4.9).

The qualitative data showed that each profession had learned something about the role of another professions and that apart from targeting nursing each profession had been

learned about. There was evidence from both interview data and the 'descriptive statements' comparison for this.

The contact theory conditions for favourable contact were largely achieved and the few of the unfavourable contact conditions present. The main factors which had a negative effect were the status differences, the fact that the contact was more casual than intimate and that there were some examples of conflict within the groups.

The next chapter will continue the phase one evaluation and present the results from the end of module evaluation.

Chapter 8: The end of module evaluation

".. in the absence of an overarching strategy for MPE it may not be possible for it to be widely implemented nor sustained." Pirrie (1998)

This chapter focuses on the outcomes of the 'end of module' evaluation The methods used for this are described and justified in chapter 6. This evaluation needs to be distinguished from the evaluation previously described as this one utilised the usual educational evaluation of a module at Salford. This type of evaluation is less rigorous than the previously described one and would be classified as level 1 in Kirkpatrick's (1967) hierarchy of evaluation which is based on learning outcomes. This level is described as learner's reaction to the educational programme. Consequently it focuses on curriculum issues and gauges student and staff attitudes.

This evaluation was written up at the end of the module in February 1999 in the form of a report for the faculty. This report is reproduced here from paragraph 8.2 – 8.7. The subsequent section of this chapter describes the problem of trying to disseminate the findings of this report. It shows my frustration at attempts to influence the development of a faculty strategy for MPE.

8.1 Background to IPE pilot module delivery

There were a number of difficulties encountered during the development of the Pilot IPE module that required compromises to be made in order to enable the module to be delivered. At this stage of the implementation of the pilot it was not possible for all eight professions to take part but four professions were very keen and made great effort to be involved. Three of these professions had not been involved in a formal interprofessional education module before. The module had to be offered as compulsory for one professional group (radiography), part of a package of "options" for a second (occupational therapy) and completely voluntary for the other two groups (nursing and midwifery). The assessment was compulsory for only one professional group (radiography).

The module was delivered in February 1999 over a four-week period with four professions taking part (midwifery, nursing, occupational therapy and radiography). There were a total of 51 students with 10 from the final year Diploma in Midwifery, four from the second year BSc (Hons) in nursing, 7 from the final year of the BSc (Hons) in Occupational Therapy and 30 from the BSc (Hons) in Diagnostic Radiography.

Problem based learning was selected as the teaching/learning strategy and tutors from the four professions acted as facilitators. There were 10 facilitators in total with 3 from nursing, 3 from occupational therapy 2 from radiography and 2 from midwifery. Many staff had not used this technique before therefore a half-day staff development session was organised and ran at the end of January 1999 prior to the module delivery.

The evaluation incorporated the views of the students undertaking the module, the tutors who delivered the module, the Project manager, learning support officer and the Curriculum development team (Raw data is presented in appendix 10).

8.2 Student Evaluation

These were obtained using questionnaires and through post-module group discussion with tutors (see chapter 6). The data is presented under the different themes of tutors, case studies, group dynamics and general management issues. The comments made by the students in the post module discussion are presented at the end of each theme.

8.2.1 Tutors

All tutors who delivered the module were evaluated using a modified form of the PBL tutor-rating questionnaire (Dolmans et al 1994). Seven tutors were assessed and 31 questionnaires were returned. Students were asked to rate their tutors performance as insufficient, sufficient or neutral for 12 items related to their ability as a facilitator and a thirteenth item asks them to rate their overall performance (scale 1-10 with 6 being sufficient and 10 being excellent). The mean score for performance was 8.81 with a median of 9 and a range of 6 to 10. 13 questionnaires reported tutors as sufficient in all areas and these covered 6 of the tutors. The students rated five tutors as excellent. Only

one item on one questionnaire was scored as insufficient. Figure 7 shows the range of responses given by all the students to the tutors. As can be seen the vast majority awarded eight or above to their tutor. Overall the tutors were rated highly by the students.

The questionnaire also assesses the qualitative responses from students. These were divided into valuable behaviours of tutors (the positive comments) and advice for tutors subsequently (the negative comments) The positive greatly outweighed the negative with the most common positive comments describing tutors as "empowering students to make decisions", "knowledgeable", "appeared interested" "included everyone" and "supportive". Only three comments were made which were that one tutor for one session was "to softy spoken" needed to be "more holistic" and "to focus more on the roles" of professions.
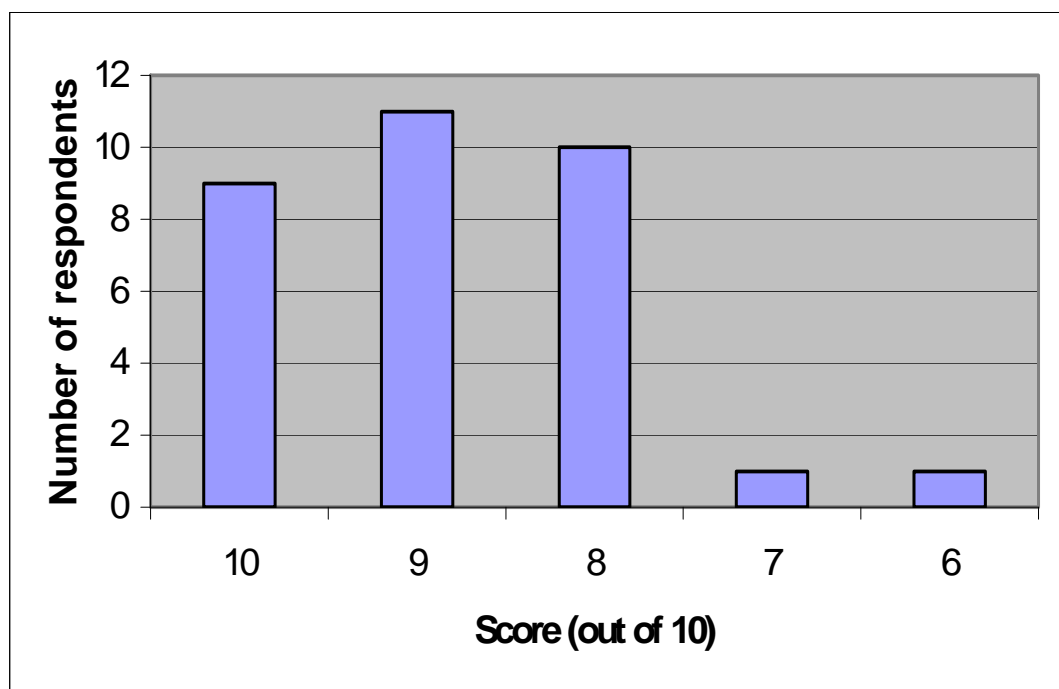
Figure 7: Student judged performance of the problem-based learning facilitators.

The comments from the student's end of module discussion supported these positive comments about the tutors. The students felt that the tutors were well briefed and that the facilitation was good. Students reported some of the negative behaviours of some

tutors. These were that one tutor had been a little "over bearing" and another to have spoken for too long at a time.

In summary students felt that the tutors performed their facilitation role well. All were rated as sufficient with 6 described as excellent. Some tutors might benefit from further staff development in facilitation skills.

8.2.3 Case studies

The quality of the case studies was evaluated by students who were asked three main questions. Firstly whether their factual knowledge had increased, secondly whether the case studies had been realistic and finally if the method of presenting the case study (through written medium) had been appropriate. An open-ended question for general comments was also included.

33 responses were obtained and the students appear to have learned a lot from the module with 74% of respondents indicating that they had increased their factual knowledge of the role of other professions. The case studies were seen as being realistic by 56% of respondents although 31% were unsure about this. From the questionnaire responses the method of presenting the case study information would seem to favour the written format with 51% opting for this. The second most favoured category was the video presentation with 20% and there were 41% of respondents suggesting that a combination of methods might be beneficial. Qualitative comments from 3 students revealed that they felt the role of some professions was not focussed upon and that the emphasis for the case studies was towards pathology. Some groups had interpreted the role as describing and explaining the types of activities they are involved with, the other professions they work with, the type of patient interactions they have. Others had described the subject matter of their profession e.g. in radiography the projections that are taken, the diagnostic methods, the types of scanning that can used.

Comments from the discussions supported the degree of learning that occurred during the module. The role of the occupational therapist was often cited as the one that students had learned most about and the role of the nurse the least about. The case studies were seen to be realistic but more information was required about the

background to some of the cases with Case Study 3 (Margaret Johnson) being identified as the most in need of further information. A benefit to presenting the case study in written format, and cited by students, was that it could be taken away and studied at a later date.

The module has facilitated student learning about the roles of other professions. Case study presentation would be favoured in written form with possible video presentation also.

8.2.5 Group Dynamics

This was evaluated by a 13-item questionnaire with groups of questions relating to teamworking, communication, learning process and group conflict. (See appendix 10 for summary)

Team work

Team working factors were scored highly by respondents who agreed that there had been integration as a team (68%), co-operation within the team (96%) and a sharing of knowledge within the team. The contributions of other group members were respected and appreciated by 93% of respondents. 71% disagreed that there had been any conflict within the group. Although 16 % thought that there had. The group discussion supports this variability with some students stating specific examples of conflict such as a "rude and unpleasant" behaviour by one student and "bossiness" by another. But these were seen as characteristics of odd individuals at the time and not professional traits.

The degree of participation of students within the groups was mixed. 53% felt that everyone had participated but 31% disagreed with this statement.
Overall there is evidence that there was teamworking within the groups and that there was a high degree of co-operation and respect among group members.

Students rated both their ability to communicate with others and to listen to others at 93%. This would appear to support the positive team working outcomes.

Learning process

Students felt that they were able to reflect (71%) within the groups and the focus groups provided an interesting example of this with one student explaining how it caused her to reflect upon her own practice as a midwife and to rethink her role.

The majority of students (53%) enjoyed the experience although there were 15% who stated that they did not. The seven steps of problem based learning were applied by the group in only 50% of cases with 15% of students stating that they were not. Interestingly a third of the group (34%) were neutral about this point which may suggest that some students were not aware of the use of the seven steps technique during the tutorial.

8.2.3 Module organisation

64% of students believed that the module had been dominated by one profession with only 12% disagreeing. There were in some groups four radiographers to one or two others professions. In all groups there was a clear numbers bias towards radiography that contributed over three times as many students to the groups as the next largest profession. The student's discussion suggested that the module had been well organised and that students knew which room to go to and which groups they were in.

In summary the group dynamics had been favourable to interprofessional working with strong evidence of teamworking and communication. The bias of numbers was seen as a negative aspect of the experience. The application of the seven stages of problem-based learning was weak in some groups. The module was perceived by students to be well organised.

8.3 General Management Issues

During the discussions with students several other issues were identified that were not part of the questionnaire evaluations and are included here.

8.3.1 Floating Professional Role

As there were a large number of radiography students in each group it was decided to introduce a floating role to avoid the sessions being dominated by radiography issues. This role required individuals to investigate the role of a profession other that their role either singly or with another professional. The student's views of this were mixed. One view expressed by several students was that this role was not a valuable one and that information about a professional's role was better explored by someone from that profession. This would enable a more in depth discussion and question and answer session to explore the role. However one student (a midwife) gave an example of how she had learned a tremendous amount by looking at the role of an OT during a case. She felt that doing this difficult task had made the role stick in her mind more than it might have done.

8.3.2 Student Facilitated Sessions

Each group had a two-hour session set aside per case study for the group to meet up and discuss the case study prior to the feedback session. Only one group reported doing this. Students stated that this was due to the pressure of time and that they spent this time working on the case study themselves.

8.3.3 Professional verification

This stage was introduced to provide some checking of the validity of the information the students were discovering and reporting back to others. Verification consisted of discussing the work with an identified member of the teaching staff from the profession it involved. Students understood the importance of this stage of the process but uptake of this support was patchy. Some students reported that a tutor had not been available at the allotted time although had said that she had not booked an appointment with the tutor concerned.

8.3.4 Attendance

The attendance of some students was poor towards the end of the four weeks over which the module ran. Students stated that this was a significant problem as students relied on each other to be able to do the work required for a session. If it was not done then a gap would appear in the information and all students would suffer a knowledge deficit. This attendance problem may have been due in part to the optional and voluntary nature of the involvement of some professional groups with the module. The student nurses were timetabled for holiday over the third and fourth week of delivery. Although two students came in during this holiday period.

8.3.5 Problem-based learning

Some students stated that this was their first experience of problem based learning and that they would benefit from having had some introductory sessions on this unfamiliar teaching/learning strategy.

8.4 Staff evaluation

Staff feedback was obtained using two evaluation techniques (see chapter 6). Firstly by questionnaire judging agreement/disagreement with statements using a standard Likert scale. These were the same questionnaires completed by the students. Secondly using a nominal group technique. The data is presented under the different themes of tutor performance, case studies and group dynamics.

8.4.1 The tutors performance.

There were 5 respondents to this questionnaire with 4 completing one questionnaire for all the groups they facilitated and one completing one questionnaire for each of the three groups they facilitated (n=7). All tutors who responded rated themselves as neutral or sufficient for 10 of the 12 questionnaire items with two items receiving insufficient responses. Of these one tutor did not feel that they were sufficient in being "well

informed about the process of PBL" and two responses indicated that tutors were not able to "prevent their own professional background from dominating".

There were four behaviours that tutors judged as being most valuable. These were:

1. Managing group dynamics.
2. Managing quiet members of the group.
3. Maintaining an atmosphere of learning/sharing/exploring.
4. Using the "crib sheet" to check professional validity.

These responses are interesting to compare to the student responses, as several issues are evident. The tutors did not rate themselves as highly as the students did with the tutor's mean rating being 6.5 and the students 8.81. The student's most valuable behaviours can be mapped directly onto those identified by the staff. The staff behaviour of "managing group dynamics" covers "empowering students", "including everyone" and "supportive" made by the students and the "managing quiet members of the group appears similar to the student comments of "included everyone".

Item three (above), the staff behaviours judged most valuable by the tutors, might well be responsible for the high rating given to them by the students. The staff did not identify any advice for themselves during subsequent periods of facilitation.

8.4.2 Case Studies

There were 4 respondents to this questionnaire. One respondent completed one questionnaire per case study and three completed one questionnaire for all case studies (n=6). The method of presenting the case studies were consistently in written format so tutors did not respond to the section of the questionnaire asking them to rate the other methods of presenting the information e.g. video. This was due to difficulties in organising, prior to the module, alternative methods of presentation.

Four respondents agreed that working on the case studies had increased their, the tutors, factual knowledge of the role of other professions with 2 remaining neutral on this. This supports the student perception that they had learned from doing the case studies and

clearly this pilot has been a learning exercise for both staff and students about the role of other professions.

Two respondents agreed that the case studies were realistic with three remaining neutral and one disagreeing. This would suggest that some further development is required to improve the case studies so that staff and students feel that they are working on "real" cases. The curriculum development team could revisit the case studies possibly in conjunction with students or clinical staff to make them appear more genuine.

8.4.3 Group Dynamics

There were seven tutors who completed this questionnaire. Five tutors returned one sheet for all three of the PBL groups they facilitated, whilst two tutors fed back one sheet for each of their three PBL groups. Therefore the total responses were eleven (n=11).

Team Working

The pattern of responses is similar to those from the students. Tutors agreed with the items relating to team working with 'integrated as a team', 'co-operation in the team' and 'sharing of knowledge' scoring highly. It was clear that students 'Respected the contribution of others' (8 out of 11 respondents) although it was less clear whether the group 'appreciated the contributions of others' with 6 agreeing but 5 neutral. The staff appear to have been more discerning in their interpretation of these two items.

The response to conflict had a similar spread as the students with 7 disagreeing that there was conflict in the group but 2 agreeing that there was. This would support the two reported incidences of conflict identified in the student discussion. Nine of the eleven tutor responses agreed that everyone in the group had participated. This was higher than the 53% of students. Only one tutor and 31% of students disagreed with this assertion.

Communication and the learning process

Eight tutors agreed that students were able to listen to others with no disagreement and six agreed that the students were able to communicate with others. However there were two respondents who disagreed about the students ability to communicate.

Tutors enjoyed the module with only one disagreeing with this. The seven stages of PBL were not always applied according to 7 out of 11, respondents only two felt that they had been.

8.4.4 Module organisation

Nine tutors agreed that one profession dominated the groups although two disagreed with this. This would suggest that some tutors are interpreting this question in terms of the numbers of professions and other in terms of the relative contributions of the professions to the material discussed in the groups.

8.4.5 The Nominal Group Technique

The nominal group technique attempts to identify consensus and agreeable solutions among experts (Kruger 1994). This technique was therefore selected in order to identify the key issues raised by the facilitators and to obtain the consensus view of the group regarding the level of importance of each issue. The results of this technique are presented below and are separated out into the positive aspects and the negative aspects of the module.

Positive Aspects of the IPE Module

These are ranked in order of significance; 1 being the most significant.

1. Widened awareness of the professional role of others.
2. Produced positive interaction between professions.
3. An effective learning environment was produced.

4. Met the need to commence IPE.

5. It was good to be involved in teaching other professional groups of students and recognise the similarities.

6. Affirming of staff teaching skills as facilitators.

7. It was a student-centred learning strategy.

8. The amount of information produced by students was impressive.

9. Increased the knowledge, or lack of, own professional role

10. Staff study day as preparation.

11. Students were keen, performed well and enjoyed the module.

12. The unexpected and unpredictable outcomes.

13. PBL allowed for interaction between students.

Negative Aspects of the IPE Module

These are ranked in order of significance; 1 being the most significant.

1. The imbalance in the numbers of professionals involved.

2. The case study focus was inappropriate.

3. The students focused on the techniques rather than their professional role.

4. Student fatigue due to conflicting course demands and timing of the module with other course requirements.

5. No contact between facilitators during different PBL groups.

6. Mixed expectations and experience regarding PBL.

7. Team working in an interactive sense didn't always work.

8. Too frequent move of groups.

9. Inappropriate room allocation.

10. A query whether this module was actually at Level III work.

11. The process did not always follow that indicated on the pre-module video.

12. Inexperience as a PBL facilitator; tutors worried about getting it right.

13. The last PBL session was emotionally charged because of the case study and this could have affected module feedback.

8.5 Module Organisers Comments

During the curriculum development process and the organisation and delivery of the module there were several issues which the Project Manager and Learning Support Officer believed to be worthy of identification and discussion. These were areas in which we felt that we would need to learn from in order to develop interprofessional education within the faculty. The following section details the main issues and suggests some possible solutions.

8.5.1 Timetables

One of the main barriers to offering this module across the faculty has been that the students on the different professional courses within the faculty are in the university at different times. This is usually due to placement needs although differences in start and end of semesters and in holiday times were contributory.

Possible solutions: A faculty wide policy might help to raise the profile of this problem and encourage course leaders as well as timetable co-ordinators to look for solutions to this. One possibility might be a more flexible approach to timetabling which uses a long thin module whereby a large number of case studies are presented possibly one a week throughout a semester and students select a specified number that they will attend according to timetable and interest.

8.5.2 Validation of professional programmes

The current curricula for undergraduate/pre-registration programmes are packed and there continues to be pressures from work force confederations (formerly regional education consortia) and professional bodies to include interprofessional education within them. The ideal time to do this would be during a re-validation however these do not occur simultaneously across programmes and this can make the introduction of a new cross-faculty module into each programme difficult to implement.

Possible solution: Ideally all professions should align their programmes so that revalidation occurs at the same time. This could be started in a small way with a date being set for final convergence and programmes could re-validate early or late until full convergence occurs. Alternatively modules might be introduced into selected programmes as they come up for re-validation. It might be possible to continue with the current "voluntary" participation although this has caused deterioration in the quality of the learning experience for students.

8.5.3 Professional mix

The case study and problem based learning format seems to be a successful framework within which to facilitate interprofessional learning. An important element to this success seems to be getting an appropriate professional mix. One that is not contrived for education purposes but one that mimics interprofessional working situations that students will find themselves in.

Possible solution: A mapping could be undertaken to identify the key points of interprofessional contact. This could then be used to specify which professions work with others the most and therefore would be best educated together. For example occupational therapists and physiotherapists. This mapping should include input from professional colleagues (perhaps on an awayday or as part of interprofessional development between a Trust and the University) as well as educationalists.

8.5.4 Professional roles

One of the common issues raised by those involved in this module was that of the role of the professional. In many groups the discussions, the learning outcomes that where formulated and the subsequent feedback were based around the techniques/procedures of the different professionals. The role of the professional has been identified as overlapping and yet different from this. An appropriate "trigger" is critical in enabling this role to be explored.

Possible solution: There could be some staff development to clarify what we as a team understand by the role of a professional e.g. holistic issues regarding medico-legal issues, responsibility, patient care, role development and boundaries. It might also be useful to investigate further "triggers" and to draw up some guidelines for students to enable them to be clear about what issues they need to be exploring in this interprofessional forum.

8.5.5 Management of Multiprofessional education.

The organisation and management of this project has been complex and very time consuming. The development and successful delivery of this module has been achieved largely through the good will and hard work of these members of staff who are committed to the philosophy of interprofessional education. No members of the team had been given any remission from teaching or research with the exception of the Learning Support Officer. If the faculty wishes to continue to develop multiprofessional education it is considered vital that a team be established which is properly resourced.

Possible solution: There would need to be a full time member of academic staff to manage the staffing, internal and external liaison, curriculum development and assessment issues. A further important role for this individual might be to stimulate and develop multiprofessional and problem-based learning research within the faculty. In addition an administrative support officer would be necessary to organise timetabling, room allocation and give general administrative support.

8.5.6 Accommodation

The number and quality of rooms provided for this pilot was barely adequate. The groups had to be reorganised, as there were too few rooms available to support the planned number of groups required by this teaching/learning strategy. The rooms were also spread over a wide geographical area, the Allerton building, the Annexe and the Brian Blatchford building, which made moving between groups time wasting overly complex and hindered staff interaction between groups. Nursing students and staff had to travel from another campus and one member of staff was prevented from facilitating one of the sessions due to car parking problems at her campus. As the number of

professional groups involved in this module increases this problem will be come even more acute and may in fact prohibit its development at Salford.

Possible solutions: In the long term all the staff and students should be brought together onto one site. In the short term it would be beneficial to have staff and students spread over fewer sites.

8.5.7 Staff interprofessional working

The staff who worked together on this module found it an enjoyable and enlightening experience and it was refreshing to see how well the staff worked as a team overcoming the many difficulties encountered with this pilot. Questionnaire responses demonstrate that both staff and students learned about the roles of other professions from this module. The staff development event held to promote the IPE module and to enable staff to experience PBL was successful and evaluated well. This was seen as a beginning and it is hoped that further events can be organised to support the development of both PBL and IPE across the faculty. Some professions were not represented well during the curriculum development process and it is hoped that the profile of IPE can be raised further to encourage other members of staff to get involved.

Possible solution: To disseminate the findings of the module more widely and promote the support for IPE that exists from the faculty, University and external bodies. For example one local consortia has stated that interprofessional education is an "inevitability" (Lancashire and South Cumbria Education Consortia 1997). This may encourage more staff to get involved.

8.5.8 The IPE Module: curriculum issues

The case study/PBL format appears to have been a successful one although there needs to be more education and training in PBL for both staff and students. The seven stages of PBL were thought to be to pedantic for our purposes and that stages two to four at times hindered the facilitation of free flowing discussion and interaction. The 7 stages of PBL could be modified and then evaluated in light of our experience combining the

second, third and fourth stages to produce a more fluid and interactive "discussion" stage.

The student facilitated and professional verification stages although potentially beneficial to the learning process were not successful and these need to be reviewed. The professional verification stage is considered to be important as it ensures that the quality of information being provided is of a high calibre. This could be addressed using a three-session model, where session two is a verification session and also raises other issues for investigation, prior to the final feedback session.

The 'Floating Professional' role was devised in order to overcome the imbalance of numbers across the professions. This imbalance was a necessary compromise in order to be able to run the module with four professions. The instigation of this role was only a short-term measure. If students study their own professional role they are more able to answer questions on professional issues arising from this work than a student from another profession.

The level at which the module is being delivered needs to be clarified. The pilot module was supported by year 2 and year 3 honours degree students as well as final year (3rd year) diploma students. The module learning outcomes and assessment need to be looked at again to determine whether the appropriate learning outcomes are being set for the desired level.

The timing of the module needs to be changed as the final semester of the final year was too difficult a time for students who are trying to complete assignments and final year research projects. The first semester of year two was thought to be the most suitable siting with the proviso of the need for a flexible timetable and appropriate group composition. Work needs to begin immediately on this issue to identify appropriate delivery times for those professions across the faculty who wish to be involved next academic year (1999/2000).

8.5.9 PBL Tutor meeting

A PBL tutor meeting should be organised during the module's delivery to aid the communication of issues and problems within the delivery team. This might also generate a more cohesive team approach.

8.5.10 Assessment

The Pilot module operated with only one professional group (radiography) being summatively assessed at the end of the module. This, along with the voluntary nature of some participants, created some tensions within the module and may have reduced the teamworking and co-operative atmosphere within the groups as some students were more motivated than others. The summative assessment set was an essay on interprofessional working all the radiography students passed the assessment with some high marks. The formative assessment was the production of a flow diagram/time line that summarised the relative contributions of the professions involved in a patient's care. Previous experience of MPE in the faculty suggests that some form of group assessment might be beneficial to students and more reflective of the learning outcomes than an essay.

Possible solutions: That the curriculum development group look at the assessment process and consider whether it is product, process or both that is being assessed and what the most appropriate assessment might be. The module could be assessed summatively for some or all participants. The use of group assessment could be explored for this module in future.

8.6 Conclusions

The pilot module has now been completed and in my view as the project leader from the results of the end of module evaluation can be considered a success. Staff and Students have enjoyed and learned about the roles of other professionals from the module. The staff have also worked in a successful interprofessional manner and overcame many difficulties to deliver this module.

It is interesting to note that several of the issues identified in this faculty have been previously identified elsewhere. In her two year qualitative study Pirrie (1998) interviewed students, course organisers and health professionals and identified the factors inhibiting multidisciplinary course development. These included the optimum balance in numbers of professionals taking part, dominance by a single professional group, accommodation and timetabling across discipline specific groups. Several of the issues we have identified as key.

She found that the development of MPE is

".…often piece meal and opportunistic."

And that

"…key individuals with strong personal commitment … play an important role in identifying opportunities and initiating course development.."

This is certainly the experience of the learning support officer and the project manager.

However Pirrie (1998) goes on to give a warning in which she states that in the absence of an overarching strategy for MPE it may not be possible for it to be widely implemented nor sustained. It is hoped that we can build on the success of this Pilot module and develop MPE within the faculty into a strong evidence based, faculty wide initiative.

There have been several lessons learned during this Pilot and we are now in a position to move forward and improve the quality and diversity of our interprofessional education. The following recommendations should help to achieve this aim.

8.7 Recommendations

8.7.1. That a full time member of academic staff be appointed to manage the development of Multiprofessional education within the faculty and that they have an identified administrative support worker.

8.7.2. That multiprofessional research within the faculty be taken forward. This would involve developing research tools for evaluation of outcomes of multiprofessional education and setting up a longitudinal study(s) to evaluate the outcomes. The evaluation of teamworking competencies could also be explored. A second strand to this work might look at research into problem-based learning issues such as evaluation of the "seven stage" process.

8.7.3. Further staff development needs to be set up to develop tutors problem-based learning skills and facilitation skills.

8.7.4. The IPE Module needs to be developed further and the subgroup of the Faculty Undergraduate Working Party needs to review the following curriculum issues.

i)   The case studies content needs to be modified possibly using input from clinical staff and/ or students.
ii)   The module focus should be changed to encourage stimulation of discussion of professional role rather than techniques/procedures.
iii)   The assessment should be evaluated and the introduction of a group assessment be considered.
iv)   That the subgroup consider the modification of the "7" stages of PBL to 4 stages.
v)   That the student facilitated and the professional verification stages be reconsidered and changes made to make them work by the time the module is next delivered.
vi)   To introduce an induction programme for students in PBL.
vii)   That a tutor meeting be set up during module delivery for discussion of delivery issues.
viii)   That the academic level at which the module is to be delivered be investigated and made appropriate to the learning outcomes.

8.7.5. That a strategy be developed to encourage course teams from all professional programmes within the faculty to introduce the IPE module into its undergraduate/pre-registration programmes.

8.7.6. That if the IPE module is to be delivered in the next academic year then the timetabling of modules needs to be organised immediately for semester 5, along with the professions who can be involved. A flexible method of timetabling for the module will need to be considered possibly along the lines of a "long thin module". This should incorporate similar numbers of students from different professional programmes. A professional mix that is relevant to each case study should be aimed for. Sufficient numbers of rooms need to be allocated for this module on one site and be identified well in advance of the module.

8.7.7. That the faculty identify ways of disseminating good practice in multiprofessional education and of learning from other initiatives at other Higher Education and Clinical Centres.

So far this chapter has presented the 'end of module' evaluation report that was written up in March 1999 from the outcomes of the IPE pilot module. It included the conclusions drawn and made the recommendations made for the future of IPE at Salford. The dissemination of this report along with my other attempts at developing IPE across the faculty will now be described. The future of IPE at an organisational and national level will be explored in chapter 12.

8.8 Dissemination of IPE across the Faculty

This report was sent to the Dean of the Faculty, the Associate Dean (teaching and learning) and the chair and members of the Faculty Undergraduate Working Party in April 1999. One of the main aims of the report was to try to stimulate the development of a strategy for interprofessional education within the faculty. In 0ctober 1999 the Undergraduate working party met for the last time due to a re-organisation taking place at Salford. There were also changes in personnel in the key positions of Dean and Associate Deans. A new group was formed to take multiprofessional education forward in the faculty. This was called the Faculty Teaching Development Group. I was asked to represent the interests of multiprofessional education on this group. It had a wider remit than the previous group. This group was to look at all issues relating to the development of teaching and learning in the faculty. As a consequence of this change the individuals

who had taken part in the Pilot IPE module and several of the key stakeholders had moved to new positions. I was therefore in a position where I had to report and disseminate what we had learned from the IPE pilot to a new audience. The amount of time that was given over to MPE in these planning meetings was now reduced as it competed with a wider agenda. No strategy for MPE in the faculty emerged despite the recommendations of the pilot IPE module report and other agendas seemed to be taking priority. The key skills initiative from the Dearing report, had been funded externally and was being implemented at Salford. Some of the content was similar to that in the first year MPE module. Communication skills, teamworking and professionalism were three examples of this.

At a meeting of the Teaching Development group on 5th April 2000 I continued to try to promote IPE in the faculty. I kept a diary of events and at this time using templates suggested by Pedler et al (1994). These encourage a dispassionate recording of What happened and responses to the situation first. Then the recording of feelings followed by thoughts and ideas and action tendencies. My diary of the meeting records:

> *"There was a full turn out and there were several people I didn't know. MPE was not discussed at the last meeting due to shortage of time so although it was no. 8 on the agenda it was discussed first. The Associate Dean (teaching and learning) initiated the discussion and the group talked about how they wanted to develop IPE. The Patient Management Skills Module* [a new second year module for OT and Physiotherapy] *and suggested other professions getting involved. The same issues came up as had done before, what is MPE/IPE? That there is enthusiasm among staff for doing it, that we need to get the objectives sorted out before continuing with it. I joined in with the discussion after a while saying that we had pockets of IPE activity across the faculty but we needed a new faculty Strategy to move the agenda forward. The Associate Dean then stated that we needed a strong faculty Steer."*

At this meeting a draft 5-year strategy for teaching and learning was presented for discussion. For the year 2003/2004 there was brief mention of a "New pattern of delivery. Significant further extension of PBL based MPE". I questioned him after the meeting about this and he said that he needed to take the issues to the faculty executive [the faculty managers] and try to get a 'top down' steer for MPE. Then we could develop a strategy. I was encouraged by this as with the bottom up approach, that I

knew existed from the pilot IPE work and other initiatives in the faculty, along with a this 'top down' approach I believed we could move MPE forward significantly.

Reflecting now upon my feelings at the meeting reveals that I was quite self-deprecating because I did not contribute a great deal and sat quietly for much of the time that MPE was being discussed. I noted feeling bad/not valuing myself/uncomfortable as I felt that I should have said and contributed more. After completing my diary the following day I felt that I should be less negative towards myself. The fact that I hadn't said much at the meeting initially also meant that I had listened to others first which was a positive trait. I also note feeling positive that a strategy would be developed.

I received a memo (10th May 2000) from the Associate Dean which was a response to a request at another meeting for a faculty steer. It described there being virtually insurmountable problems in relation to the presence of students on the site at any one time. There was a range of suggestions made including to teach IPE across various modules e.g. ethics, to use clinical practice where students worked with each other on placement, although there was no detail of how this might be organised, to invite guest speakers in to lecture to multiprofessional groups. to explore learning opportunities around multidisciplinary team meetings or to organise a range of multiprofessional pre-registration level seminars.

This encouraged me, as this was further evidence of a will to develop MPE/IPE from the top.

At the next meeting 5th July 2000 my diary records:

> *"There has been some confusion about different groups in the*
> *faculty trying to develop IPE. The Dean suggested that he didn't*
> *think it possible to just put on common module for students as*
> *the timing, accommodation and assessment issues were difficult*
> *to organise. He suggested that we could use clinical placement*
> *experience and develop this to maximise the student's*
> *interprofessional teamworking experience. Some discussion*
> *ensued which considered how we might do this. I said this was*
> *again working in pockets and that to make a real progress we*
> *needed a strategy and a strong steer like that for key skills. It*
> *was suggested that we set up a group to look at clinical*
> *placement options for IPE"*

Reflecting upon my feelings during this meeting shows that I felt I hadn't put forward my case strongly enough. I was again negative and self-critical. I describe feeling 'upset' and 'angry' and incredulous' that no strategy was discussed. I was 'amazed' and 'angry' that people were still talking about working in 'pockets'. I felt that I knew the right way forward to this problem having gained knowledge from the IPE pilot and other MPE experiences. I describe feeling frustrated and unhappy with the situation. The positive I took away from the meeting and my reflection was that there was great enthusiasm still for MPE and using the clinical environment for furthering IPE in the faculty programmes.

8.9 Summary

This chapter has presented the results from the end of module evaluation from the perspective of the students, staff and module co-ordinator. This manifest in positive comments from the students about the tutors performance scoring them at a mean of 8.81 (max = 10). The tutors also rated themselves highly but not as highly as the students. The students reported learning a lot form the module and finding the case studies realistic although some were in need of further development. The group dynamics had been favourable to interprofessional working with strong evidence of teamworking and communication. The module was well organised but the bias of numbers towards radiography and the lack of consistent application of the '7' stages of PBL were seen as negative aspects. There were some attendance problems particularly for the final session.

The staff evaluations identified the ability to manage group dynamics and managing quiet members of the group as two of the key behaviours valued by tutors. The tutors views generally concurred with the students on group dynamics and organisation of the module. The main positive issue identified by the tutors was the greater awareness of the professional role of others and the main negative one was the imbalance in the numbers of professionals involved. A range of problems were identified by the module co-ordinator and solutions suggested. There were seven recommendations made as a result of this analysis.

The chapter concluded with discussion regarding the dissemination of this information across the faculty with some personal reflections regarding the role of the author in this. The organisational perspective was also presented and the progress made up till July 2000 documented. There had been little progress in disseminating this information and developing MPE at Salford. These faculty organisational and management issues will be discussed further in chapter 12 where the future of MPE at an organisation and national level will be discussed.

Chapter 9: Discussion of phase one positivist evaluation

"The level of enthusiasm for IPE is high with a combined mean of 7 (out of possible 10) for all subjects." this thesis p209

This chapter will present a discussion of the results of the phase one evaluation. The methodology is critiqued along with the tools that were designed, tested and used during the study. There is a section on triangulation that seeks to elicit a deeper understanding of the data from the quantitative and qualitative research techniques used in the first phase. Conclusions are drawn regarding how this positivist phase has added to knowledge on IPE. This chapter also contains an exposition of my personal experiences as a manager and developer of IPE at Salford over 5 years. This seeks to present some of the key issues that need to be addressed in order to deliver IPE successfully in an academic context. Suggestions for further research are made throughout this chapter.

9.1 Questionnaire Response rate

The response rate to the questionnaire was variable with the best level of response coming from the experimental group (71.6%). This was thought largely due to them being on site to the researcher and therefore more able to be followed up if questionnaires were not returned. There were 41% of the experimental group that were volunteers therefore they might have been particularly motivated to respond. This might also have contributed to the higher experimental group response rate. The control group was largely drawn from other institutions and there was a reliance on colleagues to follow up non-respondents. The response rate from this group was disappointing at only 56.1%. As Abbot and Sapsford (1997) suggest, for postal questionnaires and self-completion questionnaires response rates of less than 50% are not uncommon. Kerlinger (1986) in Cormack (1996 p248) suggests that an 80-90% response rate should be obtained and suggests studying the characteristics of the non-respondents to find out more about them. This information could then be used to try and improve responses in subsequent research on similar groups. Lowe (1993) suggests that a response rate of below 90% is unsatisfactory although no explanation is given for this. However this

could result in the respondents being unrepresentative of the whole population. The view of Polit and Hungler (1978) however is quite different and they suggest that

> "….a response rate of 50% is probably sufficient for most purposes."

<p align="right">p348</p>

Although this statement was not supported by other contextual information which might have aided the researcher determine its appropriateness to their context. They suggest trying to discover how representative the respondents are, in terms of basic demographic characteristics to the target population. As the samples chosen were convenience samples they were not intended to be representative of the whole population of IPE students. Therefore there may be bias within the samples. However there are many difficulties in trying to select samples that are truly representative of the population. This and many other studies in the literature such as Shaw (1994), McMichael and Gilloran (1984), Carpenter (1995a&b), Parsell et al (1998), conduct their research in real life situations. This means evaluating subjects already engaged in educational programmes. Therefore it becomes extremely difficult to manipulate the samples to exclude bias. Such programmes are also run with fairly small numbers in research terms, giving small sample sizes and making each individual in the sample valuable to the research.

Lowe (1993) states ten reasons why subjects might not have responded. Many of these factors were addressed in the questionnaire design or the context with which questionnaires were used. The possible exceptions were the length of questionnaire and the perceived value of the questionnaire to the respondents. The length of the final questionnaire, which was a combination of the three used, was six sides of A4.

Parahoo (1997) also identifies a variety of reasons for low response rates including 'respondent burden' due to the pressures of being a survey participant. He notes that health professionals in particular can be prone to questionnaire fatigue. The time taken to complete the questionnaire in this study might have been a factor adversely affecting the response rate. The approximate completion time for the questionnaire of 25 minutes was required on four separate occasions over an eleven month period and may have induced questionnaire fatigue in the groups studied. Sharp and Frankel (1983) in

Parahoo (p264) suggest that respondents are happy to complete questionnaires if they see the usefulness of them. This might have been a factor in the control group who did not have any formal IPE in their educational programmes and so may not have perceived the questionnaires as valuable. It is also possible that the group who did respond were those who were particularly interested in IPE. Therefore results would be more characteristic of those individuals who are motivated by and interested in IPE.

The non-probability sampling chosen and the low response rate would preclude any generalisation of findings to the population. However this study was a pilot intended to investigate any change in those individuals who undertook the IPE module. There was no intention to claim high external validity. Nonetheless the findings are thought to be applicable to the group that was studied and as such can provide useful knowledge with which to move the interprofessional education debate forwards.

9.2 The control and experimental group differences

The questionnaires contain 20 items (role perception), 16 items (subject knowledge) and 21 items (skills knowledge) a total of 57 items. Therefore, working at the usual 5% probability level, one might expect to find approximately 1 item per questionnaire that would be significantly different between control and experimental groups by pure chance. In addition for the role perception questionnaire one would expect to find the differences in the ANOVA for the condition 'month', as this would suggest that the difference between the group means changes over time. Further analysis would enable identification of the pattern of this change which may be attributable to the IPE intervention. A change in outcome measure scores following the IPE intervention would be strong evidence for attributing the change to the intervention.

The number of statistically significant differences between the control and experimental group and over time for each profession were few. For the group targeting occupational therapists there were significant differences between two items from the role perception questionnaire and two from the skills knowledge questionnaire. This would indicate that the group targeting occupational therapists did learn about the role of the occupational therapist for these four items. Their learning was that they believed the occupational therapist 'cared for the patient only in relation to their specific professional context'

before for the IPE module but that they 'cared for the persons general well being' more after the module (p≤ 0.05). One further statistically significant difference did occur between the control and experimental groups but this was not significant over time. Also that the occupational therapist 'maintained a low degree of involvement with the patient' before the module but the group changed this view to believing that they 'seek out a high degree of involvement with the patient' after the module (p≤ 0.05). The skills differences identified by the group show that after the module they scored occupational therapists lower on the skill descriptors of 'demonstrate appropriate tactile behaviour' and 'are good with their hands'. Both at the 0.05 significance level.

For the midwifery targeting group there were no greater number of differences demonstrated on the role perception questionnaire or skills knowledge questionnaires than by chance i.e. one. However there were two statistically significant differences demonstrated on the subject knowledge questionnaire. The group targeting midwives felt that midwives needed to know a lot about 'psychology' and 'the role of other professions' before the module but this view changed after the IPE experience to lower values in each case. Similarly the nursing and radiography groups did not show any differences greater than chance.

This would suggest that there was evidence, from this statistical analysis of the questionnaires, that some demonstrable learning did take place about the role of the midwife and the occupational therapist but not of the nurse or the radiographer role. The differences were few however and only show marginal change for two of the multiprofessional groups.

9.3 Control group differences

There were statistically significant differences highlighted by the role perception questionnaire for the control and experimental groups. These differences were not related to time however, which suggests that the intervention did not have an effect on the differences. The Control and experimental group differences may have been due to previous formal IPE experiences of the experimental group. The radiography students who made up a significant proportion of the group have had previous IPE in their degree programme. This may have increased their knowledge about the roles of others

and made them more aware of the need to learn about the roles of others and therefore more open to learning about them throughout their academic and clinical education. Hence the experimental group would be better informed of the roles of others than the control group. The relatively low reliability of the questionnaire (see later) and the small and possibly biased sample size might also account for these differences.

There were differences demonstrated within the control group. The subject knowledge questionnaires completed by the control group demonstrated two significant differences for nursing and three for midwives. These differences were between the pre- and post module scores. As the control group did not experience any formal IPE at this time these differences may have occurred for several reasons.

They may be artefactual and produced as a result of an unrepresentative sample or may also be due to the low reliability of the questionnaire. Alternatively it may represent changes in the individuals perceptions of other professions as a result of factors other than formal IPE. They will have undertaken clinical practice during the course of this study and mixed with other professions. This is likely to have been a source of learning about the roles of other professions that could have affected their perceptions over the period of time of this study. The results of the 1–year follow up interviews suggest that professions develop their perception of other professionals through experiences other than formal IPE. For example experiences related by family members, by other members of their own profession and by patients have been suggested as a source of learning about the roles of other professions and teamworking.

9.4 The learning index

The index for all professions combined on the subject knowledge questionnaire showed that for eight of the fourteen items the whole multiprofessional group had moved closer to the reference standard after the intervention. This would suggest that there had been a degree of learning about other professions combined which was demonstrable using the subject knowledge questionnaires. There was greatest agreement between all professions and the reference standard for five subjects. Four of which are traditional subjects, anatomy, physiology, pathology and physics, that might indicate that the respondents to the questionnaire had a clear understanding about the degree of input

into the professions from these areas. Less agreement was shown in the areas of professional roles, research, drugs, religious and cultural beliefs. It could be argued that these areas are more open to interpretation and therefore it would be more difficult to get close agreement.

When the data for all professions combined is subdivided into each separate profession it can be seen that the source of the evidence comes mainly from the target-nursing group with eleven out of fourteen items demonstrating movement towards the reference value post module.

The target-occupational therapy group, for which there were significant differences on the role perception questionnaire, has shown that they learned little from the subject and skills questionnaires. This group had pre-intervention scores that were close to the reference value. This would indicate that they already had a good knowledge of the subject knowledge and skills required of an occupational therapist.

The learning index for skills knowledge did not show notable learning for all professions but for the target-midwifery and nursing groups there was learning demonstrable. The target-midwifery group demonstrating eleven of twenty-one items and nursing showing seven of twenty one items which showed movement towards the reference value after the module.

9.4.1 The learning index reference value

The learning index for skills and knowledge for all professions show that there are a large majority of items which show negative values for both. This would suggest that the student's responses to these items were consistently higher than those of the tutors reference standard. This might be due to the students being less discriminating than the tutors and generally marking highly for most of the items. Many student questionnaires were completed with maximum scores ringed for all items on both the skills and subject knowledge questionnaires. This could indicate that the students considered opinion was to award a maximum ten to each item or may indicate a desire to complete the questionnaire as quickly as possible with little thought.

Alternatively the reference value may not be an accurate representation of each profession. The reference value was produced using a small number of educationalists (n = 2-3) from one institution. This may have produced a narrow view of the professions and would have benefited from being a larger sample as this is likely to be more representative of the 'professions' view' than the current one. This sample should include the practitioner's perspectives too, which might be different from the educationalists. Although educationalists in health are required to maintain there links with clinical practice. Further research is suggested to develop this reference standard and the use of practitioners may help to produce a more representative reference for each profession.

Another important issue in relation to the validity of the reference values is that they are a snapshot in time. As roles in the health service and health curricula are constantly being developed and changed the knowledge, skills and role of a profession is likely to be variable. Therefore the reference value would need to be updated regularly to ensure if represents the latest professional roles.

A reference value was not calculated for the role perception questionnaire for the reasons set out in chapter 5. This was due to the subjective nature of the scales derived from the sample of professions' students. However on reflection the data from these questionnaires only provided data to demonstrate change but gave no indication as to whether the change was in an expected direction. It would have been useful to obtain the perspective of 'the profession' for each construct on the questionnaire to obtain a comparison. It is now realised that there is no absolute knowledge on the roles of professions only the perspectives of different stakeholders. Each view would have its own merits and limitations. A comparison between the views of tutors and students would have been a valuable addition to this research.

9.5 Questionnaire validity and reliability

The role perception questionnaire was found to have content validity (see chapter 5). However a more discriminating measure of validity is criteria-related validity such as concurrent or predictive (Polit and Hungler 1978). This requires some other existing tool or criteria that can be used to measure the same factor as the tool that is being

tested. However in the MPE literature studied there were no other measures found of subject knowledge, skill knowledge or role perception that could have been used for this study. There were tools found, for example Shaw (1994) and Carpenter (1995 a&b) but they were, like many of the others found, designed for use in a specific context which related to the educational programme and the profession being studied. Therefore it is suggested that further work needs to be done to develop more generic tools to measure these factors.

The test-retest reliability of the questionnaires was found to be variable (see chapter 5) with role perception (r=0.65), subject knowledge (r=0.57), skills knowledge (r=0.69). These measures were obtained using a small sample (n=43) of 1st year radiographers and midwives. Shaw (1994) states that the psychology literature suggests testing with 200 subjects to confirm reliability whereas Cohen and Manion (1994) suggest that 100 is sufficient for interpreting correlation coefficients. The use of this number of subjects was not possible in the present study. However Polit and Hungler (1978) do state that a reliability co-efficient of 0.7 should be satisfactory. And Cohen and Manion describe work done by Borg (1963 p139) which support the value of correlation between 0.65 and 0.85 for predictions. Therefore whilst the correlation co-efficient of the role perception and skills knowledge instruments suggest that they are adequate in the view of some authors the reliability thresholds need further development. It is suggested that future work could be carried out to test the reliability using a larger sample size, above 200 where possible. In addition to this there is an inherent lack of reliability in the phenomenon being measured. Trying to measure differences in knowledge and role perception may not be possible using questionnaires over time as the variability due to changes in the subject's perception may be too great.

The attitude of the subjects towards other professions is purported to be measured using the role perception questionnaire. However Edelmann (1996) believes that questionnaires will only measure the evaluative component of attitude and not the belief or behavioural components. Therefore only this narrow aspect of attitude is available for measurement in this way. This fixed view of attitude as being three discrete components I find difficult to understand. Attitude appears to be an abstract concept difficult to pin down and describe in such a specific and fixed manner.

Comparison with the other literature on IPE evaluation (discussed in chapter 3) reveals that these tools whilst having some limitations, compare favourably. Evaluations by others such as Carpenter (1995a & b), Hewstone et al (1994), Carpenter and Hewstone (1996), Parsell et al (1998) failed to report on the validity and reliability of the tools they had used. Even Shaw's (1994) excellent study which demonstrated the validity of his tools failed to provide any measure of reliability.

There is undoubtedly a need for more work to be done on the attitude and knowledge tools devised for this study and also for other valid and reliable measures to be produced.

9.6 Enthusiasm for IPE

The level of enthusiasm for IPE is high with a combined mean of 7 (out of possible 10) for all subjects. The control and experimental group demonstrate a similar level of enthusiasm indicating that whether students are doing formal IPE or not they are enthusiastic about the subject. There was a statistically significant difference in the enthusiasm levels of the experimental radiography group ($p \leq 0.01$) when compared to other professions. They were less enthusiastic than other professions with a mean of 4.9 (range 4.4 – 5.1). This may be due to a number of factors. The radiographer group was doing the module as a compulsory part of their degree programme unlike the other professions involved who were volunteers. This may have had a detrimental effect on their views of the IPE module especially as they had to complete the IPE assessment.

This comparatively lower enthusiasm for IPE by student radiographers is supported by evidence presented in a study of qualified staff by Owens et al (1999) (chapter 3). They found that qualified radiographers were one of the professions which had the lowest uptake of IPE (55%) of the 24 health professions surveyed. So this apparent lack of enthusiasm among student radiographers for interprofessional activity might also be present in qualified radiographers. This seems to suggest that the radiography profession do not value interprofessional activity.

In the control group there were no significant differences in enthusiasm score between the different professions and the radiographers mean score was similar to the group

mean. However as stated before the sample of control subjects may have been biased to include those who were particularly positively disposed towards IPE. This being the reason they completed and returned the questionnaire with those who were negatively disposed to IPE not being represented.

9.7 The qualitative analysis

The pre and post module interviews yielded some interesting results (see table 18 page 165). Two or more of the professions represented in the study reported learning about the role of the midwives, occupational therapists and radiographers yet no groups reported learning about the role of the nurse. This is not an unexpected finding as it could be argued that the role of the nurse is among the most well known in the health service. The radiographers, occupational therapists and nurses all reported learning about the role of at least two other professions although the midwives felt that they had only learned about the role of the occupational therapist.

In four of the cases this was backed up by the descriptive statements taken from the pre and post module interviews each professional group had given regarding the role of other professions. In the other three cases no judgement could be made. The use of descriptive statements at interview may have been limited by several factors. In some interviews the group did not offer many statements to describe another profession. This prevented any judgement being made to support or refute the group's assertion of learning about another profession. The group may have known more about the roles of other professions but might not have been forthcoming with their answers. Leaving some knowledge they had of other professions unsaid.

Using this method of determining the groups learning about the roles of others has merit but also some weaknesses. The interviews with the nurses and occupational therapists regarding the roles of each other showed that they did not learn about their respective roles. Yet from the compiled statements the tutors judged that each had a better understanding of the other before the IPE module. This might have been due to the group stating what they knew in the pre-module interview and then not being motivated to state much in the post-module interview as they did not think they had a great deal to say. Similarly they may not have stated something in the pre-module interview which

they did know but stated it in the post module interview. Therefore only in the case of agreement between the two measures of staff judgement of the interview data and students view of their learning about the role of another profession was a claim made that learning had taken place. This form of 'double check' adds weight to this outcome. Another factor that might have an effect on the ability to extract the knowledge of the roles of others from the interviewees is the skill of the interviewer. As I gained more experience I improved my interview technique and therefore might have been better at extracting the data from the group in the later interviews. The other effects of me as an interviewer and instrument of the research will now be discussed.

9.8 Reflexivity and the interviewer effect

This section critiquing the effect of me as the interviewer incorporates elements from the interview data presented in the following chapter too. Many of the issues discussed here are relevant to interviewing whichever paradigm they are used in. I have therefore drawn together the issues from the phase one and phase two interviews. The following issues might have been a factor in the way in which the interviewees responded to me. As I am a radiographer they may have felt unable to give honest and open answers to questions related to radiography. They may have tried to limit their criticisms of radiographers or sought to exaggerate any benefits. However, evidence from the descriptions of radiographers given in the pre-module interviews suggests otherwise. Negative comments such as

> *"They don't have a lot of understanding …when they get patients in with mental health needs"*
>
> occupational therapists pre-module

> *"They are not good communicators"*
> *"The patient comes second after the machine"*
>
> midwives pre-module

contrast with more positive comments such as

"They were obviously very clever. I mean the pathology of some of the diseases that they came up with was really good"

midwives post-module

This leads the author to think that that the interviewees were able to communicate both positive and negative attributes of the role of the radiographer and must have felt that they were in an environment that enabled them to express their views openly.

As the co-ordinator of MPE at Salford they might also have endeavoured to present their ideas and beliefs about IPE in an unduly positive or negative way. Both this and my being a radiographer was countered by stating before the interview that although I was both of these things they should not let these affect their own views. I stated that I wanted to learn from them and that they should be as open and honest as possible. This might have reduced the effect of me as the interviewer although it is acknowledged that it would be impossible to completely disregard this information. In the follow up interview the subjects had qualified and left the institution therefore I was no longer a stakeholder in their future as I was when they were students. This might also make them less likely to respond to me in a way they would see as desirable to me.

There may be other factors that have affected the way that I conducted and interpreted the interview data. Parahoo (1997) suggest that gender, age, race, clothing, language and accent are some of the factors that might affect interviewee's responses. For the issues that I was investigating, which are not particularly sensitive one, I thought it unlikely that these factors would have a great effect. There was no race, gender, clothing or language issue raised during the interviews although there was an age related one identified in the interviews described in the following chapter. The 'us and them effect' from the one-year follow-up interviews had its roots in age, linking it with poor interprofessional working (see page 244).

As the co-ordinator and designer of the IPE curriculum it might be considered that I had a vested interest in a positive evaluation of the module. As researcher too, it might be considered that I would have wished to report positive findings. However as an honest and open person I was looking, at the time of the phase one interviews, for the 'truth' (Although I now realise this is the search of a positivist) and was aware that even negative findings are important as they can help to inform others of the problems and

pitfalls in researching IPE. An awareness of the weaknesses in curriculum design would also have enabled me to make recommendations for future improvements. Therefore I approached the interpretation with a view to learning from the data and being as honest and open as possible. There may also be some factors of which I am not aware that had an effect on the qualitative research process.

In order to support the findings from the interviews it is suggested that these interviews and interpretation be repeated for a different group in a similar context using a different researcher. This would increase the confidence that the researcher has in the resultant themes.

9.9 Contact Theory Conditions

This section will discuss some of the issues surrounding the application of the Contact Theory conditions to IPE. The theory is described fully on page 68 and the application of the conditions on page 100).

The majority of favourable conditions appear to have been present. The tutors or authority figure promoted intergroup contact, this contact was of an intimate nature being in small groups and there were examples of rewarding contact expressed by students. The groups interacted in a functionally important way to produce the summary of holistic care or 'time line'. This happened at the end of every week for each PBL trigger or problem. However some favourable conditions were not entirely achieved. The status of the professions was not perceived by the students to be equal with differences in experience of problem-based learning, level of qualification and year group being cited as status differentials.

There were examples of unfavourable conditions occurring within the module. The atmosphere in the groups was reported to be co-operative with the exception of some examples of competitiveness, which were explained away by students as due to individuals rather than professional traits. The imbalance of numbers, differences in problem-based learning experience and assessment requirements led to some tension within the groups.

The evidence presented supports the suggestion that some of the contact theory conditions intended to support successful intergroup contact have been achieved. However some caution is exercised here as some of the favourable conditions have not been met or are equivocal and some of the unfavourable conditions are present. For future modules the status issues and factors which promoted intergroup tension will need to be addressed in order to encourage a more positive atmosphere for intergroup contact. Pettigrew (1998) suggests that the most important conditions are status, authority figure and common goals. The second and third of these appear to be met but there were status differentials which remained throughout. On the balance of the evidence I would judge the conditions as supporting successful group contact. However several questions still remain. In the absence of any relative value for the conditions it is difficult to judge the degree with which the conditions were met. Also the conditions that are seen as important by the groups themselves might vary. For example how important did the subjects feel that the different status factors were? Therefore the conditions that Pettigrew judges as important might vary from group to group.

9.10 Triangulation

This involves the combining of results from different research approaches, in this case questionnaires and interviews, in an attempt to explain and explore the phenomenon under investigation which are knowledge and role perception. This will enable a greater 'truth' to emerge than when looking at the phenomenon from one angle. The questionnaires from the target-professional group were compared with the section of interview data, relevant to the same target profession. This data was taken from the pre- and post-module interviews with each of the professions. Having decided upon the principle of triangulation the data from the range of sources needs to be combined in some meaningful and valid way. But how do you combine data from different sources? Particularly when these data are often from opposing research paradigms built on different philosophies. What value do you put on the different data and why?

Cohen and Manion (1994) make some suggestions for triangulating data from different sources. They give guidance for combining difference sources of qualitative methods alone but when faced with quantitative and qualitative triangulation they state that:

"The crucial factor when it comes to integrating or contrasting the data and drawing inferences from them is the researcher's own judgement."

p244

Prior to starting this PhD I would have considered the quantitative data much more important than the qualitative data. However since my awareness of other research paradigms (see chapter 10) I would now consider the data from the interviews to be of much greater significance. Along with this the other measure applied to the data when triangulating was to make a judgement about the closeness of fit of the methods employed in practice to the ideal 'textbook' method. This helps the researcher to judge the degree of confidence they have in the findings from each research method employed. In light of this I would consider the follow up interviews and the analyses of the pre-and post-module statements derived from interviews to be of greater value than the questionnaires. This is due to there being fewer methodological limitations of the interview data. The agreement of the independent educator's judgement with the IPE participants' groups' view of their learning at interview provides strong support for the value of this evidence.

The lack of more statistically significant data from the quantitative measures may be due to the small numbers obtainable in this study. This is likely to prevent any numerical differences from becoming apparent between the variation due to the differences in scores and the variability from other sources. Yet it is likely that the significant differences that emerged from this small sample are fairly robust differences. It being difficult to demonstrate differences with a small sample size. Using this knowledge I set out to combine the data and drew the following conclusions.

9.11 Conclusions

There was evidence from the role perception and skills knowledge questionnaire (tables 11 & 13) that indicated that the group targeting the occupational therapist had changed their perception of the role of an occupational therapist and of the skills they require. This was a slightly greater than chance finding. There was also evidence from the pre- and post-interview data (table 18) indicating that two of the professions, midwives and radiographers, had learned about this profession too. A midwife in the 1-year follow-up

interviews stated that she had learned 'a lot' about the role of the occupational therapist also. Although conflicting evidence is presented in the learning index section as the knowledge and skill statements made by the other professions and relating to the occupational therapy profession were close to the reference value before the IPE module. Indicating a high level of knowledge about occupational therapists prior to the IPE experience.

There was evidence from the subject knowledge questionnaire (table 12) that the group targeting midwives had changed their view about the knowledge required to be a midwife. This was a greater than chance finding. The pre and post-module interview data (table 18) supported this view with all three professions believing that they had learned about the role of the midwife. The independent educationalists concurred with these claims for two of these professions. The learning index also supports the learning by this target-midwifery group with eleven of the fourteen skill knowledge items demonstrating movement towards the reference value indicating learning about the skill requirements of the profession.

This combined data suggests that for the multiprofessional groups who targeted the midwifery and occupational therapy professions there was a difference in their knowledge and role perception after the intervention. Therefore there was some learning about the roles of these professions and this is likely to be due to the interprofessional education module. As the design of the study used a multiprofessional group to target each profession it can be concluded that all professions learned from the interprofessional experience and that the learning was demonstrable for the role of the occupational therapist and the midwife.

There has been interest in interprofessional education evaluation for over 25 years (Hassler and Klinger 1976) yet no evaluations of IPE have been found which have overtly measured the enthusiasm of participants. This has shown that in the group studied there was a high level of enthusiasm for IPE. This needs to be seen in the context of the source of this knowledge which is from a sample of volunteers.

There have been different research methods employed in the evaluation of IPE over the previous 25 years. Zwarenstein et al (1999) in their systematic review looked at thirty-three years worth of research but identified the lack of rigorous methods in evaluation of

IPE. They were judging this research from a positivist perspective. The current research has shown how the use of the positivist paradigm may be useful in furthering knowledge of IPE from one perspective so long as triangulation (Cohen and Manion 1994) is employed and research tools are developed which are valid and reliable. However the often insurmountable problems in IPE evaluation such as difficulty in identifying extraneous variables, lack of valid control groups, lack of simple cause and effect relationships in human interaction, etc may preclude the use of the positivist or post-positivist approach. In this context the use of the interpretivist paradigm may be more appropriate and attention to how knowledge can accumulate in this paradigm (Guba 1990) may make researchers more comfortable with using this paradigm(see chapter 10).

My literature search revealed a lack of published tools for the measurement of attitudes and knowledge in IPE evaluation. No other measures have been found that have addressed the issues of validity and reliability of the instruments. This study has constructed and justified the validity and reliability of three questionnaires that could be used in other similar contexts. They measure role perception, subject knowledge and skill knowledge and might have a role as part of a broad evaluation strategy. The reliability is not yet adequate and needs to be improved. The questionnaires have content validity but would benefit from being put through a more robust test of validity.

9.12 Personal reflections on the positivist work

I had undertaken the work and written up these previous chapters with very little narrative. This was because I was using the scientific 3rd person style of the positivist. The conclusions I came to were as a result of wanting to find something and trying to put a positive spin on the work. For example the outcomes from the statistical analysis were not clear-cut. Looking at them again now I am not sure whether the reason that I found little inferential statistical evidence for changes in knowledge and skills is that there was nothing there to find or that the positivist approach I took was inappropriate. The interview data and other methods of measuring the change which I used, learning index and the views of interview data by educators, helped to increase my confidence in the findings.

This was an important part of my learning journey. I have learned a great deal about positivist methods, 1st and 3rd person writing style and about the feelings a researcher has when they want to find something out from their data (this contrasts with Karl Popper's notion of Falsification see paragraph 3.7 page 73). Anecdotally it is interesting to note from those I have encountered in the research community that if you do have a study that produces no positive findings, in the sense of statistically significant outcomes to support a hypothesis, it might be difficult to get it published. Albeit that such a study would be useful for other researchers to learn from as it might inform them of a direction not to take. Revans would no doubt support this reporting of negative findings, as he believes in learning from mistakes and failures as well as successes. I have also learnt that positivist methods are not appropriate for answering many research questions. This learning and lack of clarity from the inferential statistics was part of the motivation for the new research perspective detailed in chapter 10.

9.13 Knowledge acquired from personal experience of managing IPE

The following section contains knowledge I have gained during the previous four years of involvement in IPE. In my opinion the following issues are the key ones which need to be addressed for IPE to be successfully implemented in a modern health faculty delivering a range of health professional curricula.

Higher education, like many other workplaces including the health service, industry and commerce is experiencing an increasing rate of change. This has the effect of creating a busy environment and staff with high workloads. In this context it is difficult to bring in new initiatives unless there are specific driving forces. In the absence of a faculty strategy for interprofessional education it is unlikely that it would be successfully implemented in a health faculty. Raising IPE up the agendas of staff and encouraging them to own its implementation might be possible with a faculty strategy but it would need to be driven from the top and the bottom of the university hierarchy and by key stakeholders.

The knowledge gained through experience of IPE management and organisation at Salford needs to be captured and transferred to the whole organisation. I or others involved in the IPE project left or transferred to other duties with different priorities

then this knowledge, which is valuable would be lost to the organisation. Succession planning might help to reduce the loss of such valuable organisational knowledge. If there was a long-term plan which enabled those experienced in IPE to work alongside those who were developing their skills in the subject then this knowledge could be continually passed through the organisation. Over the previous 10 years small teams of individuals have been developing a body of knowledge and experience of IPE only to leave the organisation. Lucas and Davidson (nee Hughes) who published some of Salford's experience of shared learning between 1990 – 1997 are no longer at Salford and left without any 'hand over' of knowledge about their experiences and insights. Others too have been dispersed back into the organisation after having experienced IPE as a special project e.g. the faculty undergraduate working party (see chapter 4) who worked on reducing duplication and promoting interprofessional education from 1996-1999. The personal knowledge of these individuals is now lost to the organisation. The written knowledge from such experiences e.g. reports, minutes of meetings can also be easily lost to the organisation due to a lack of the facility to catalogue or store such information. It is suggested that the library should be used to enable long-term storage and efficient retrieval of this information for future interested parties.

The competing agendas of many staff and the importance of IPE for the future (DoH NHS Plan 2000) suggest the need for leadership in the university to drive the IPE agenda forward. A core of staff with expertise in IPE issues would be ideal to enable others interested in curricula or research issues to draw upon the body of knowledge within the team.

The current organisational structures, separate directorates and schools within the faculty mitigate against interprofessional working among educational professions. Although there probably has been an increase in interprofessional activity since the last reorganisation in 1998 there is still a need to change the organisation and culture to enable staff to work across professional boundaries.

The ownership of common modules has proved to present difficulties in the past. Problems with staff attitude can arise if there is inequality in the degree of involvement of different professions. For example if the management/ownership of a module is held within one department or there is a lack of participation and commitment to

interprofessional activities by another department negative attitudes to other staff can result.

Problem-based learning is being utilised as one of the interactive teaching and learning strategies effective in delivering the IPE message (Hughes and Lucas 1997). It is also suggested by the DoH (NHS Plan 2000) as part of the modernising agenda for health curricula. This method requires staff to move away from the traditional role of knowledge giver to that of knowledge broker. This instructional method would need to be developed alongside IPE in order to enable staff to become proficient in both.

The implementation of IPE is unlikely to be through common modules alone. It is more likely that a diverse range of curricula features will be employed to deliver the message of IPE (see chapter 12). Hardens (1998) taxonomy of MPE provides a wide perspective on the opportunities that might be used. These include clinically based experiences, cross professional teaching and common modules.

A change in the teaching methods to small problem based learning groups requires different resources to those required by traditional teaching methods. In particular the availability of small group tutorial rooms in sufficient numbers and of sufficient quality will be required. In addition a timetabling system that is flexible and enables large numbers of students to be divided into multiple small groups is needed.

9.14 Summary

This chapter has discussed the quantitative and qualitative research methods employed in this study and has drawn some conclusions regarding the outcome of the research. The evidence for the ability of IPE to bring about changes in attitude and knowledge of the participants in IPE has come from several sources.

The role perception, subject knowledge and skill knowledge questionnaires showed a few statistically significant differences between the control and experimental groups and over time for some professions. Although only 1 or 2 items were found which were greater than chance this is nonetheless evidence for changes in the outcome measures at the expected time. The other method of analysing the knowledge and skill data, the

learning index, showed that for several target-professions there had been a change in the scores which moved towards the reference value indicating that learning about the roles of other professions had taken place.

This was supported by the interview data that showed differences in participant's knowledge of other professions before and after the IPE intervention. Students stated that they had learned about the role of other professions and analysis of the interview data by educationalists was used to confirm this. This indicated that there had been a change in knowledge of other professions by those who engaged in the IPE process. This learning was particularly evident in the professions of occupational therapy and midwifery.

The validity and reliability of the questionnaires has been discussed and the limitations identified. Whilst there is content validity to the questionnaires there would need to be more work done to improve their validity such as employing another test at the same time as these questionnaires which would show the same outcomes, concurrent validity. The reliability of the questionnaires was found to be acceptable to some authors but more subjects should be used for another the test-retest of reliability to improve this characteristic of the questionnaires. The lack of agreement on acceptable thresholds would also need to be examined to determine the appropriate level of reliability. This work would improve the acceptability of the questionnaires to the positivist research community.

The enthusiasm that this pre-qualifying group of largely volunteer students has for IPE has, for the first time, been quantified and this shows that there is a high level of enthusiasm for IPE. Within the context of this study radiographers have been shown to have significantly less enthusiasm for IPE but this may be related to factors such as compulsory participation and assessment.

The personal experiences of the researcher have been discussed and the key learning experiences necessary for successful IPE to be delivered have been proposed. These include having an organisational strategy, leadership and an ability for the organisation to learn from the experiences of its employees and be able to pass this on to later employees. The need for interactive learning strategies and diverse methods such as the use of clinical experiences, common modules and nesting (Harden 1998) has also been

identified. These issues are discussed further in chapter 12, which will cover the future of IPE.

My personal learning about positivist research methods and my developing unease and questioning of the appropriateness of this paradigm for researching outcomes of interprofessional education were also described within this chapter.

Chapter 10. Phase two evaluation : an interpretivist approach

" paradigms can be defined by the way people answer three basic questions which are characterised by ontological (the nature of reality), epistemological (the nature of knowledge) and methodological (the way knowledge may be acquired) perspectives."

Guba 1990

In this chapter the 1-year follow up evaluation of subjects involved in the IPE module will be presented. The factors, including set discussion that led to a change in my thinking and research direction will be discussed and the methods used for the naturalistic design selected will be explained and justified. The results of the phenomenological analysis of this interview data are included and the key themes that emerged are described using a predominance of quotations from the subjects themselves. Conclusions are drawn from the data uncovered by this different paradigm and from data from both phase one and two evaluations.

10.1 Background

On the 15th December 1999 our set had a meeting that was facilitated by David Botham. We had asked for him to come and talk to us about research methods. We had some anxieties about action learning as a research method in its own right and about the value of qualitative research to the research community in general. I was at a stage in my PhD where I had completed my initial development, implementation and evaluation of the IPE module and was looking at what the next phase should be. During this meeting David talked about types of research and said that a lot of research is built on 'half truths'. He also gave examples of where scientists had moved from scientific inquiry in the natural world to naturalistic inquiry with humans in the real world. I was aware that David himself had been a metallurgist and was now committed to action learning and research. He suggested that I read a book called 'The Paradigm Dialog' by E.G. Guba (1990). Guba was a trained statistician who practised conventional inquiry for more than 25 years but was dissatisfied with using this method for 'human' inquiry.

10.2 The research paradigm debate

In his text Guba presents the outcomes of a conference on alternative paradigms in which he offers his views and the views of a number of quantitative and qualitative researchers. Reading this book had a profound effect upon me and my ideas about research. The following is a synopsis and discussion of the key aspects of this text.

Guba begins by describing how paradigms can be defined by the way people answer three basic questions which are characterised by ontological (the nature of reality), epistemological (the nature of knowledge) and methodological (the way knowledge may be acquired) perspectives. These are fundamental not only to research paradigms but also to life. For example is social reality external to individuals, the ontological debate, i.e. something imposed from outside or is it the product of an individuals consciousness. It is my belief that many people act as though it is external, as though there is one right way to be or that there is knowledge about the world already 'known' and what humans do is try to discover it. It may be due to the fact that it is easier to understand an objective reality than multiple subjective ones. This is known in philosophy as the nominalist-realist debate (Cohen and Manion 1994).

The epistemological paradigm question concerns the very basis of the form and nature of knowledge. Is knowledge hard and real and able to be communicated or is it softer, more intangible and has to be personally experienced. Bourner (2000) adds to this debate about knowledge by investigating the nature of the knowable and asks 'How do I know something?' He defines four quadrants which he suggests are different sources of knowledge (see figure 8). Introspection is the knowledge that comes from within through factors such as interpretation, inspiration, and instinct. Reason is where knowledge is gained by thinking something through and making a logical assumption. Received knowledge comes from the written or spoken word such as a lecture or information passed from one individual to another. Empiricism has its origins in the ground rules set down by Francis Bacon in the 1620's and draws upon evidence from the physical world (Bourner et al 2000).

Introspection	**Reason**
e.g. Insight, Inspiration, Instinct, Interpretation	

Consciousness

Empiricism, induction and objectivity	**Received Knowledge**
	e.g. written, spoken
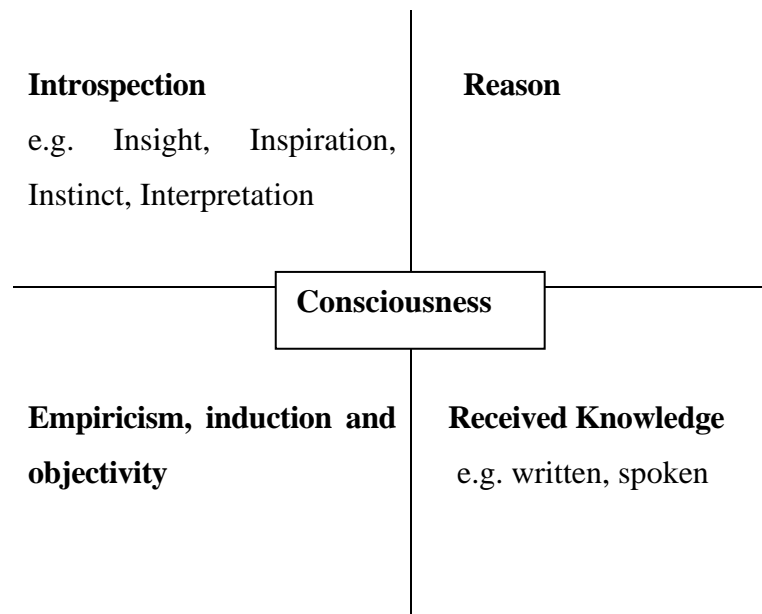
Figure 8: How do I know something? (Bourner 2000)

Bourner draws the quadrants together by stating that they need to be experienced at a conscious level to enable knowledge to be transferred. The epistemological debate, hard and real or softer and in need of personal experience, can be furthered by using Bourner's model. The Introspection and Reason quadrants suggest that humans need to experience knowledge for it to be 'known' by them. The human qualities of interpretation and reason being important ways of knowing. Therefore it may be that knowledge has no value until someone interprets it.

The third of Guba's paradigm questions relates to methodology. That is the research methods that would need to be applied to be able to uncover the knowledge appropriate to answer the research question. This is dependent upon which of the perspectives described above one takes.

Guba presents four possible paradigms Positivism, Postpositivism, Critical Realism and Constructivism, although being a Constructivist himself he does not suggest that these are definitive or unchallengable rather that they are his personal perspectives.

10.2.1 The Positivist paradigm

The positivist is ontologically a realist believing that reality exists "out there" and is driven by natural immutable laws. Knowledge of these is presented in time and context free generalisations e.g. cause effect relationships. Epistemologically there is a Dualist/objectivist stance where it is possible for the researcher to be objective and therefore their values and biases need not affect the outcome of the research. Methodologically, the experimental and manipulative approach is favoured. Questions and hypotheses are stated beforehand and are tested using observation or experiment (empirically) under carefully controlled conditions.

This is the classic paradigm of science, which Schwandt (1990) describes as about the principles and procedures of investigations of the physical world. This is an important point as the development of research on the human experience, education for example is quite different from the physical world of for example chemistry. The search for certain knowledge by the positivist leads them to ask questions such as 'how do things really work' and find out 'how things really are'. This concern for certain knowledge is called *Cartesian anxiety* (Guba 1990) after the philosophical work of Rene Descartes.

Reflecting upon the positivist paradigm I am struck by the fact that this has always underpinned my views on research and life. The notion of one reality or one way of knowing puts knowledge above people. It suggests that there is always one right answer 'out there' and that people just need to uncover the knowledge to know it. What it does not do is value individuals experience of life and their own personal theories thereby disenfranchising them.

But how has this happened? Is there an implicit positivism within society and education today? There would seem to be hegemony at work here with the hard science of positivism being seen as the dominant school of thought. In much the same way in 1730 John Harrison a carpenter had set out to solve the problem of measuring longitude at sea (Sobel 1995). At this time a prize of £20,000 (worth many millions today) had been offered to solve this problem and so help ocean going navigation. A Board was set up, the Longitude Board, to administer the prize. The board consisted largely of astronomers and scientists who believed that the answer lay in the stars. Harrison however built a clock that could measure time accurately at sea and enable the longitude

to be calculated. The astronomers and scientists were insulted by the notion of a mechanical device being able to solve the problem. Therefore they put many hurdles in Harrison's way and refused to believe that there was another way of looking at and solving what was essentially a research problem. It took Harrison 50 years and the intervention of King George III to convince them that he was right. This story demonstrates the dominance by one group or school of thought, in this case astronomy, over another. A similar dominance exists today between the positivists and those who see the weaknesses in positivism and believe in other research paradigms.

In my set during our first 2 years there were feelings that research done using qualitative research was not 'proper' research. There was a quest for 'credibility' in the qualitative research that was being done within the set. My perception is that there was also a concern about the value of action research as a method as set members described their experiences when discussing the topic with their colleagues. As I describe in chapter one, up to this point in my studies I had been an unwitting positivist.

Yet having read Guba and thought about the views of my set I began to think about positivism. One good example I found which helped me to understand what was becoming a fundamental shift in my thinking which affected my value and belief system was time. If one imagines the research question is How long is a football match? You might research this in different ways depending upon your ontological and epistemological beliefs.

If one believes that in reality there is only one 'time', that this can be measured in seconds, minutes, hours, days etc and communicated to another human being then the research method is clear. You take a watch, measure the ninety minutes add any extra time and write down that it takes 92 minutes for example. If you measured a similar lasting match again you would produce the same answer.

However if one believes that the human experience of time is what is important and that each person experiences the match differently. The research undertaken with the watch reveals only part of the story. So what is the human experience of time? To research this you would need to interact with the spectators. You might then ask individual spectators, how long did you think the match lasted for? If it produced several goals and near misses and ended in a win for their team, a supporter might feel that the match

went very quickly. The supporter of a losing team however might report having experienced an interminably long game. Also if you asked both individuals a while later they may remember the game differently.

This example contrasts the objective and measurable reality from the subjective and changeable human experiences and supports the view of those who feel that positivism has dominated the thinking and understanding of the world by many people. Yet it might be true to say that neither the objective or subjective in the example given here is right or wrong but both exist side by side. This would suggest that a pure positivist approach is incompatible with human inquiry. A modified view of positivism does exist and is described by Guba.

10.2.2 The Postpositivist paradigm

The postpositivist's ontological perspective is that of a critical realist. That one reality exists but cannot be fully grasped. It is driven by natural laws but can only be incompletely understood due to the fallibility of the human senses and intellect. Epistemologically the modified objectivist stance is believed. That is that complete objectivity is not possible but remains a 'regulatory ideal' in that the researcher should try to remain neutral (Guba 1990). Great emphasis is put on peers in the critical community and tradition to make judgements about the objectivity. The methodology selected is a modified experimental and manipulative approach that uses 'critical multiplism'. This is in essence a form of triangulation that uses the findings from a range of sources of inquiry to determine the 'truth'. Cohen and Mannion (1994) describe several different types of triangulation including data, theory and methodological triangulation. Other methodological modifications to the positivist approach are suggested. Firstly that the inquiry is undertaken in more natural settings to offset the imbalance between rigour and relevance. Secondly that more qualitative methods be used to address the imbalance between precision and richness. Thirdly that making theory the product rather than the precursor of enquiry will redress the imbalance between elegance and applicability. This last point raises an interesting question. Science places a premium on the search and use of theory and in this thesis I have sought out theoretical frameworks within which to put this IPE research. The contact theory is discussed in chapters 4, 7 & 9.

But what is theory? As I used theory to guide the processes of curriculum development and looked to find a different way of researching to add to the theory of IPE it would seem prudent to explore this question further. This will be discussed later in this chapter but to return to the research paradigms discussion first.

Guba comments on postpositivism as being the new hegemony explaining that the requirement to subject research to peers in the critical community make it virtually impossible for new paradigms to assert themselves. The next paradigm that will be presented is Constructivism. This is Guba's own preferred paradigm and one that is at the other end of the spectrum to positivism.

10.2.3 The Constructivist paradigm

The constructivist is ontologically a relativist. He or she believes that realities are a social construction, they are multiple mental constructions. They are local and specific and depend for their form on the person holding or perceiving them. There is no foundational process by which the ultimate truth or falsity of these constructions can be worked out. Epistemologically the subjectivist stance is the only one tenable as reality exists only in people's minds and can only be got at by other people. The inquirer and inquired are fused into a single entity and findings are the creation of the process of interaction between the two (Guba 1990). This means that methodologically the hermeneutic and dialectic processes are appropriate. Hermeneutics is concerned with approaches to the interpretation of the written word with an emphasis on language (Pascoe 1996). It is intended to uncover the variety of constructions that may exist. Dialectics is the juxtaposing of opposing or contradictory viewpoints in an attempt to resolve the conflict between them. Hence individual constructions are elicited and refined hermeneutically and compared and contrasted dialectically, with the aim of generating one (or a few) constructions on which there is substantial consensus.

Having been exposed to this powerful broadening experience I began to consider how being a constructivist might affect the way one looked at life, learning and research. Several questions arose in my mind, Is it possible that all these paradigms could exist side by side? What effect would believing different paradigms have on those engaged in

action learning? If researchers today have not experienced knowledge of these paradigms are they 'unwitting positivists'?

On considering the first question and hearing David Botham describe research as a 'leap of faith' it occurred to me that there are parallels with religion and these paradigms. Each religion has a different ontology, its own body of knowledge and quite different underpinning beliefs. Yet they all exist side by side in the real world and have people who believe in them. It is possible to observe elements of mistrust between religions and evangelically each might attempt to persuade others that theirs is the one true religion. Yet there is no logical reasoning process that can be used to persuade one to value any particular religion above any other. The key factor is a deeply personal one, that of 'faith'. This perspective on research paradigms might help to understand how they exist side by side but not which one to choose. Considering the relationship between action learning and the paradigms might help this.

My interpretation of action learning is that it is about learning with other people in a set. It is about listening to them valuing them and helping them to grow. One way in which it does this is through the valuing of their knowledge and perspective and through discussion leading them and one's self to new personal insights. If one believes in there being one 'truth', positivism, one might take the view that a fellow action learner is far away from being able to discover this 'truth' being a non-expert in the subject matter and could not add to it. However taking a constructivist approach where there are multiple realities each individual's contribution to the process of action learning is important, as their perspective is unique and therefore intrinsically valuable to the process.

The effect of this paradigm awareness on my research was to change the way that I undertook the phase two evaluation. At this point I decided to follow naturalistic or interpretivist inquiry for the follow up evaluation of the IPE module for several reasons. Firstly having had my eyes open to the positivist paradigm in which I was operating I realised it was not an appropriate way to continue. My thinking was that as I was looking at beliefs, attitudes and values and the effect of education upon these, I was essentially looking at the different realities of those subjects engaged in the IPE. The knowledge or the 'truth' I was seeking was within the consciousness of individuals. Therefore I needed to employ a qualitative methodology using myself as the research

instrument to uncover these realities. Secondly for the follow-up evaluation the practical situation prevented me from trying to triangulate questionnaire data with a qualitative method as the study groups had now qualified and dissipated into clinical practice. Therefore the likelihood of getting sufficient numbers of original subjects was minimal.

Finally as I began reading about the constructivist paradigm, which was the one that I began to favour, I realised that I would need to use new and complex methods. Guba recommends hermeneutics and dialectal analysis but it soon became clear to me that my knowledge in this area was inadequate and it was going to take longer to become proficient at these methods than I had time available. Therefore I chose to look into the interpretivist paradigm.

At a meeting of the set on 2nd February 2000 I was presenting an update on the project and my plan for the phase two evaluation (see Appendix 11). This consisted of purely qualitative methodology. The following is a quote from my reflective diary:

> *"I was surprised at the response. The set were amazed and appeared exasperated as I explained that I was going to be looking at a more naturalistic qualitative technique possibly a constructivist approach. They said that was what they had suggested I do eighteen months to two years ago. I do remember saying that you cannot evaluate outcomes without using a quantitative positivist approach. Nancy said that she was ready to "take me round the corner and duff me up" because, partly as a result of my input to the set, she had spent months worrying about whether the qualitative work she was doing was 'credible'. Hilary asked me whether I was asking a different question now. After thinking, I agreed that I was asking the same question ' Has the IPE module been effective?' but I was answering it in a different way than before.*
>
> *What surprised me most was that the set was so 'gobsmacked' that I had moved to this approach. I felt that it had been a natural progression."*

At this time I also wrote

> *"For health service research which incorporates people, their perspectives, feelings, values and beliefs it is important and necessary to use a qualitative element to the study. This ensures a richness of data and will make sure that you are researching the whole rather than a selected portion of the human experience."*

The set asked if they had had an effect on my changed perspective and I believe that they had influenced me but that the main catalyst had been Guba's 'The Paradigm Dialog'.

I have asked myself why this text was so influential in my thinking in comparison to the views of the set members. I think this was due to my need for certain knowledge at that time and the belief that most 'valuable' knowledge came from books and journals. This would support the position I took as an 'unwitting positivist'. Yet after reading this text I feel that I now value human interaction and learning through this method than I did beforehand.

This experience also showed me the power of my thinking on the set. My narrow but committed perspective on positivist research had clearly had a significant effect on others in the set. Maybe I was guilty of dominating the set with a positivist perspective.

The next exploration before embarking on the phase two evaluation of the research was to expand on my understanding of qualitative research methods and to select an appropriate method for the phase two evaluation.

10.3 The interpretivist paradigm

Parahoo (1997) describes the interpretivist paradigm, as a blanket term for a collection of approaches broadly called qualitative. He subdivides this paradigm into ethnography, grounded theory and phenomenology. These were each investigated to identify the most appropriate approach for the interpretation of student experiences in relation to IPE.

Ethnography relies on the collection of data in the natural environment. The behaviour of individuals is influenced or mediated by the culture in which they live. Therefore it is necessary to study human behaviours in the context in which they occur and one cannot take them out of that context as the two are interrelated. It has its roots in cultural anthropology. The current study aimed to determine whether students had changed their attitude to others and was not involved with investigating the effect of the cultural context on the participants. Nor were the students being studied in their natural

environment as a learning environment alien to many of them was being set up to change their attitudes.

Strauss & Corbin (1990) in Parahoo (1997) state that:

> *"A grounded theory is one that is inductively derived from the study of the phenomenon it represents. ...one does not begin with a theory, then prove it. Rather one begins with an area of study and what is relevant to that area is allowed to emerge."*

The benefits of this approach are that it allows researchers to "start afresh" and not be influenced by current knowledge. This allows an opening up to new theories and insights, which are grounded in the 'real world'. Some theory is not based on empirical study. The purpose of grounded theory is to generate hypotheses and theories. Yet I had already generated hypotheses and was interested in testing it rather than in deriving theory. So my search continued and I investigated the phenomenological approach.

10.3.1 Phenomenology

Phenomenology is a science that has its roots in philosophy. Streubert and Carpenter (1995) state that the purpose of phenomenology is to describe particular phenomena as the lived experience. They highlighted the difficulty in defining phenomenology quoting Spiegelberger (1975) and Merleau-Ponty (1962) stating that

> *"..to this day, the question 'What is phenomenology?' has not yet been answered."*
>
> *p30*

Phenomenology was developed at the beginning of the 20th century and has been described by Streubert and Carpenter (1995) as having three phases, preparatory, German and French. During the first phase the concept of intentionality was the primary focus. During the second Husserl and Heidegger were the prominent leaders. They developed the concepts of essences – elements of the ideal or 'true' meaning of something; Intuiting – accurate interpretation of what is meant in the description of phenomena under investigation and phenomenological reduction – a suspension of

beliefs, assumptions and bias about the phenomena under investigation (also known as bracketing).

The final phase developed the concepts of embodiment and being-in-the-world. They are premised on the belief that all acts are constructed on foundations of perception or awareness of some phenomenon. Parahoo (1997) simply explains phenomenology as about trying to investigate consciousness as experienced by the subject. It focuses on individuals' interpretation of their experiences and the ways in which they express themselves. Unlike ethnography, which looks at people's behaviour in relation to their cultural and social environments, it focuses on describing how the individual experiences phenomena.

The current IPE study is interested in the way students interpret their experiences of the educational intervention. The reality of the outcome of the intervention is how the students interpret their experience. If it has been effective they will have changed their perceptions and attitudes to others and this might affect their behaviour. As Cohen and Manion (1994) assert, the phenomenologist

> *"...sees behaviour as determined by the phenomena of experience rather than by external, objective and physically described reality."*
>
> p292

If in the desired direction this behavioural change might achieve the aim of IPE, that of promoting collaborative practice. Therefore phenomenology would appear to be an appropriate method to use to shed light on the effect of the IPE on the students perceptions and attitude. Data collection in the interpretivist paradigm is usually carried out using an interview process. This data can then be analysed phenomenologically.

10.4 Phase Two evaluation: the group Interview

As I have moved to a more naturalistic inquiry stance and following the guidance by Webb (1992) who makes the case for writing up qualitative research in the first person. I will use this grammatical stance for this next section.

A selection of twelve subjects who took part in the IPE module were invited back for a follow up group interview. The selection process consisted of a purposive sample of individuals whom I believed would be able to communicate their experiences well as had been demonstrated during the previous interviews. As they were now qualified and working I felt I needed to provide an incentive to encourage them to return to Salford for interview. Therefore I offered to pay their travelling expenses and a small honorarium. Eight interviewees stated their intention to take part but not all of the invited group was able to attend. The final group consisted of five volunteers. All the professions were represented with one from radiography, nursing, and occupational therapy and two from midwifery.

The interview took place in an evening for one hour and was preceded by a buffet where participants chatted informally before the interview began. This was intended to reacquaint the group and develop the group dynamics prior to the start of the interview. The interview plan and questions can be found in appendix 12. I was conscious of the effect that I as the interviewer might have on the group so I introduced the session by telling the group to try and ignore the fact that I was a radiographer and IPE co-ordinator, as they knew me to be. Although I recognise that this degree of objectivity was an aspiration rather than an achievable position. I also informed them that my brief was as a researcher to listen to their views and to learn from them. I asked them to try to be open and honest as I was interested in their 'true' beliefs and ideas. The rest of the interview was carried out in a similar manner to the previous ones undertaken for the phase one evaluation.

I felt I had developed my interviewing ability and would now have the opportunity to improve even more so I felt more relaxed and comfortable with this interview. I felt that I had already improved my interviewing technique in several areas. My ability to ask open and non-leading questions had improved partly as a result of being more relaxed in the interview. My ability to write field notes had improved and I noted down several issues during this final interview e.g. noting someone shaking head in disapproval, noting humour types such as sarcasm, or laughter from a funny experience, a time when the whole group became animated when the 'Us and Them' proposition (see paragraph on anti interprofessional culture page 244) was put forward. I also felt I had a better sense of when to probe someone for a more in depth answer or explanation.

There were however still some unresolved issues. I found it difficult to do all the different aspects of the interview together e.g. take field notes, observe group dynamics, listen to answers, follow-up with further questions. I would have benefited from having a second interviewer to assist with these elements. They would also have been useful to help interpret some of the humour. For example did one of the interviewees mean what they said when they made a joke about 'OT's being basket weavers'?

10.4.1 Purpose and content of the interview

The purpose of this interview was to explore several aspects related to IPE and IPW. This inclusion of their interprofessional working experiences was intended to broaden out the research and look at the relationship between interprofessional education and the interprofessional teamworking environment that the IPE subjects had moved into. As the context of their work was important to their ability to express the teamworking skills (Barr 1999a) their understanding of interprofessional team working was explored through asking whether they had experienced any examples of poor interprofessional team working and what the causes of this might have been

Had their IPE experiences had an effect on their practice? was a key question that would enable a longer-term follow-up to the previous work. I was also interested in how they felt towards IPE as their high levels of enthusiasm, as demonstrated in the results of the phase one evaluation, were considered to have an effect on the efficacy of the interprofessional education. As there were some unexpected findings from the quantitative work on the control group the sources of knowledge individuals drew upon when building perceptions of another professional was also explored. All these questions were decided upon after considering the results of the first phase evaluation.

10.4.2 Analysis of the interview data

The interview data was analysed using the direct experience of interviewees at face value, a phenomenological approach, as suggested in the guidelines of Hycner (1985). Hycner who has taught and researched using phenomenology has developed these guidelines (In Cohen and Manion p292) over a number of years. His 15 guidelines

(appendix 13) were selected for the analysis as they are set out in an easy to understand style with a worked through example. Guideline 11, which concerns returning to the participants with the themes for a second interview, was not undertaken. This was due to the limitations of time and the difficulty in getting the same group interviewees together again after the post intervention interview as they qualified and dispersed nationally and internationally shortly after the analysis of the interviews. However the set was used to interpret and discuss the results which would help to widen the perspective on the analysis yet still use the views of those working within the health field who were familiar with the health service context.

These interview data were used to identify key themes that provided an insight into the perceptions that one profession had of the IPE module, of IPE and of interprofessional working. The results are presented using as much as possible the literal words of the participants. This provided some illuminating descriptions of professions and could be used to both inform professions as to how others perceive them and to steer curriculum design for future IPE.

As I had used several interview questions whose focus was different I followed the guidance in Ely et al (1991) and organised the data into thinking units initially (Hycner calls these units of general meaning). These are broadly framed sorting files. They can be abstract or more specific to the study in question. I selected the following which are specific to my study. They are the main categories I used to construct the interview.

1. Interpretation of Inter Professional Working
2. Effect of IPE module on students
3. Poor interprofessional working
      Examples
      Causes
4. Views of IPE
5. Building perceptions of other professionals

Reading Ely (1991) helped considerably with the practical interpretation as there were several worked examples from different qualitative researchers in this text. Hycner's guideline no 6 describes 'training independent judges to verify units of meaning'. The judges were the other set members some of whom had experience of selecting themes

from texts before. Therefore both my procedure, using Hycner's guidelines, and the sets "common sense" approach similar to that suggested by Hinojosa (in Ely p146) were used to derive themes from my categories (or clusters of meaning Hycner). A sample of the categories identified and the themes that were derived from them can be found in appendix 14 and relates to the effect of the module on practice.

10.5 The themes

A broad view of the interviews taken at the time of the analysis revealed that there were three distinct areas discussed. The questions although aimed at separating out specific issues did not have that effect on the interviewees. They discussed the areas in general and there was a cross fertilisation of ideas between the supposedly distinct areas. Therefore the three areas analysed were interprofessional working, the effect of the IPE module on the students and views of IPE.

10.5.1 Interprofessional working

There was a consensus about the definition of interprofessional working. It was about understanding the roles of others and working with them for the benefit of the patient

> " ..everybody's roles working together for the good of the patient."

radiographer

There was a feeling that the newer professionals were more aware of the roles of other professionals than those who had been working in the NHS for a period of time.

> "..people who've worked in the NHS for a long time don't even consider that these roles exist sometimes."

midwife

It was accepted that professions work together to differing degrees with examples of OT and midwifery working with a large number of other professions and radiographers

working with only a few. But there was a benefit seen in having a basic understanding of the roles of others even if the profession works minimally with others.

There were many examples of poor interprofessional working given and several themes emerged from this.

Communication breakdown

There was lack of communication between professions this was in verbal and written form. Midwifery described situations where they contacted a radiography department to book a scan but the perspective on the degree of urgency differed in each profession's department. There were examples of where OT's and GP's, nurses and physio's along with midwives and health visitors had not communicated their intentions to the other professions in the team which had resulted in duplication of effort. The midwife described the care of a maternity client she had visited.

> *"..I didn't need to go because the health visitor had been [the day] before, when I was there the GP rolled up for a courtesy visit"*

> *"..and probably when she needed one of us there was no one there..."*

Problems with written communication revealed around the recording of professionally relevant information in patients notes. There was a range of systems and rules described for recording such information each of which was different. Some professions had there own notes some used shared notes but the medical notes were described as being separate. This was explained by Waters (2000) who stated at an Interprofessional Conference that the professions write notes in different ways for

> *"..reasons that relate to history, tribal thinking, power play and simple reluctance to change.."*

The interviewees described one mental health Trust that had a computerised system for all professions but kept separate medical notes. Some professionals did not fill in the paperwork as they were supposed to.

> *"..even the doctor writes in a separate set of notes so you know there's no sort of continuity of care there is there at all."*
>
> midwife

A difficult context for IPW to occur

The context of the IPW was seen as important and the staff shortages, busy departments with high workloads meant that many professions had little time to spend on anything but the basic aspects of their own role. When they were pressured like this the stress produced was often passed on to other professions when a poor teamworking encounter was experienced.

> *"..we have that pressure so we're offloading that onto the scan department"*
>
> midwife

> *"[stress]It kind of gets pushed down the chain doesn't it?*
>
> nurse

A lack of co-ordination of services

There was poor co-ordination of services too which lead to communication problems often professions reverted to a uniprofessional focus. There was a lack of collegiate working towards one goal and a lack of knowledge of the working practices of other departments leading to repeated and escalating communication problems.

> *"..we call ourselves the MDT .. but there's no umbrella system"*
>
> nurse

It was suggested that there was a need for networking as this would help professionals to discover information about what is going on. This would help to counteract the culture of division and of being in separate departments.

> *"If you're not the sort of person that takes time and goes out of your way to actually go [*to other departments*] and talk to*

> *everybody and get to know everybody then you just don't get to*
> *find things out do you or they don't know what you're up to?"*

<div align="right">occupational therapist</div>

Concern was expressed by the midwife that she had to refer patients on to other services but that she was unsure as to which was the most appropriate service.

IPE continues

During the participants exchanges about written communication in the interview I observed interprofessional learning continuing to happen. The practice of writing in notes with different coloured pens for different professions and the legal implications of this was discussed along with the meaning of the acronym MDT and even after the interview the midwife asked the OT about an aspect of her role as an OT.

10.5.2 Effect of module on practice

The interviewees described the effect of the interprofessional education module on aspects of their practice. The following themes, presented as headings, were derived from the data.

The development of an awareness of the roles of others

IPE had developed in them an awareness of the roles of others and a need to find out those roles that were not known.

> *"You don't think your job's more important then the job that*
> *their doing because you appreciate them and their importance*
> *in a professional capacity.."*

<div align="right">radiographer</div>

The occupational therapists explained that being aware of others roles might help her in her practice she described the following.

> *"..before I might have thought well there's nothing I could do I've done my job I can't do anything else. Now I would think well I could try ringing these [professionals] and seeing what input they could give me for this patients care .."*

<div align="right">occupational therapists</div>

The midwife described the affect of this increased awareness of professional roles.

> *" Yes there's like more of an openness between me and other professions."*

<div align="right">Midwife</div>

The role of the occupational therapist

The occupational therapist described some of the work that she does that her work colleagues did not understand then a midwife said:

> *"I didn't know what an OT did before we did this [*IPE module*]."*

When asked about their views of interprofessional education the midwife stated that she had learned a lot about the role of the occupational therapist.

> *"The biggest things I remember is one of the OT's in one of the little groups that we did said, 'well people think we're just here to learn old people how to make cups of tea without scalding themselves' and I thought well yes, I did think of her before we did that [*module*] and I learnt a lot that really showed me that I was wrong what I thought about OT's."*

The development of interpersonal skills

The group stated that they had improved their interpersonal skills as a result of the module. They described an increase in confidence, openness and feeling more relaxed

with other professions. They explained how the effect of the personality of a professional was important on their ability to work with other professions successfully. These were better at communicating and networking than previously.

> " ..it makes you more relaxed and confident…just ..give people the respect that they're due…"
>
> occupational therapist

Improved interprofessional working

The improvements they felt they had made to their interprofessional working were their increased role awareness and they felt the need now to exchange information with other professionals. The radiographer stated that

> " when we've got a ward patient coming down on a bed and then we say can you send them down on a trolley and they come down on a bed and then we cannot x-ray them because the bed won't go up high enough to transfer them [to the x-ray table] and I think it would help if people had more of an understanding of why we say put them [patients] on a trolley."
>
> radiographer

> "..that's all you need really to just be aware that there are other sort of professionals out there that need"
>
> nurse

There was a greater professional openness, respect for others, and a valuing of others. The focussing on teamwork had made them feel more like part of a team. The occupational therapist described a search for organisational information about the patient that she might not have done previously.

An anti-interprofessional culture

The interviewees described an anti-interprofessional working culture in the health and social services particularly with regard to a divide between new and longer qualified

professionals. When this was first mentioned my field notes recorded that the group became animated at this suggestion.

> " ...in a hospital there is sometimes, occasionally a sort of us and them kind of atmosphere"
>
> occupational therapist

> "..the ones that have been there a long time have this us and them whereas the newer qualified staff or the newer, you know 4 or 5 years qualified, tend not to have that they can get on with auxiliaries they can get on with doctors they can get on with everybody but the older ones they sometimes look at you if you talk to a doctor and you know "you don't talk to the doctors like that".."
>
> midwife

The longer qualified staff were mentioned as being in positions of influence e.g. student assessor and of passing on stereotypical information about other professions.
The need for interprofessional education was suggested as being to counteract the effect of the anti-interprofessional culture.

> "[the us and them atmosphere].. its kind of indoctrinated in the hospital so you need some sort of like opposing force to stop this.."
>
> nurse

The 'us and them' culture described was linked to the awareness of the roles of others by newly qualified staff but this may not be sustainable for a very long period of time. The roles of health professionals will rapidly change over the next few years as the workforce is reorganised and role boundaries are moved as roles are redefined (The NHS Plan). Therefore there will be a constant need for continuing professional development of staff in order to reduce the likelihood of this 'us and them' culture remaining. There was evidence of this boundary modification among the new staff with a suggestion by a midwife that roles undertaken by nurses might be carried out by a physiotherapists.

> "Or the physio(therapist)s could help you wash the lady?"

There appeared to be a contradiction in the way that qualified professionals are valued by the newly qualified staff. The shadowing of established staff seemed to be valued as the interviewees described learning about their profession from them. Yet the stereotypical information the established staff was passing on was recognised by the newly qualified staff and criticised.

There was division and a lack of collegiate working within the service and staff described their frustrations when interprofessional working goes wrong. When this happened staff appeared to revert to a uniprofessional way of working. They would carryout the work within their own professional sphere and then not take responsibility for multiprofessional activity. Comments such as *"We've done our best"* demonstrate this reverting to uniprofessionalism.

The lack of communication and teamworking between the professions was seen as due to low staffing levels and high workloads and was escalating.

10.5.3 Views of IPE

The IPE module was seen as enjoyable by one of the midwives and enabled students to learn about the role of others. There were several positive features of the learning described by the interviewees.

The positive features

Midwives saw having an OT and a nurse as a beneficial mix of professions for them. The ability to discuss roles was seen as advantageous. This was contrasted with the educational principle of 'joint lectures' and was seen to be necessary.

> *"Obviously there's a bit of shared knowledge base between us but if we were all taught that together without the opportunity to sort of discuss how we would be using that information differently and discussing the roles I think that could just make the whole thing a lot more confusing…"*

> occupational therapist

There was an interesting debate about the issue of whether the IPE should involve individuals in learning with professions who they will not be working with or would rarely work with in the health service. The radiographer stated, during the early part of the discussion about this, that:

> *"While I do appreciate that it is good for us to learn about other roles, the basic knowledge, and it is good for people in other roles to learn about our job, of a basic amount, we don't come into contact with people enough for it to make a difference…"*

She went on:

> *"…although I'm glad that I know about the other roles and it does make a bit of a difference in how I see people in other roles, I don't come into contact with them.*

This was supported shortly after with the following comment, related to the packed undergraduate curriculum:

> *"…I've got to think of it as worthwhile me spending how many hours a week studying it at that point in the course.."*

When the group was asked later if they thought doing IPE with a profession they might not work was beneficial. They all agreed that they thought it was.

The radiographer concluded this part of the debate by saying:

> *" Yes, I still think it is relevant even though I don't tend to work with the people, you've got more respect and it does break down barriers and its not us against them its everybody working together because you know what people do you know that they've got a valid role as you have,.."*

The group commented about the need for the professions to share a one-goal vision. The midwife at the end of the interview stated:

> *"You just need to get people to see that we're all working together just for one goal really which is get the patient independent again and healthy as much as possible."*

There were several negative features about the IPE learning experience.

The negative features

The learning experience was seen as biased towards radiography as they dominated the groups through their numbers. The group believed that there should be equal status of students going into IPE. The mix of second year nursing students and other students in their third year was seen as problematic. The nurse stated that

> *" ...just because we were in the second year I think we felt our knowledge base was a lot less and the questions that were asked to us ..we didn't have as much of an insight as we felt we should have done because we weren't as far in our training."*

The nurse then stated how hard he had found it and was supported by the midwife who said:

> *"You did very well."*

Some of the case studies used as triggers during the problem-based learning sessions were not seen by some as being realistic and credible as it was thought that it was difficult to find a problem that would be relevant to all the professions. The case would need to be contrived in order to find a situation where there was a role for each profession.

The timing of IPE

The group discussed the issues of the most appropriate timing for IPE. The options that were considered were undergraduate, postgraduate and both. It was stated that

> *"You have to have a clear skills and knowledge base and [be clear about] your own role before you start trying to look at other peoples."*   occupational therapist

There was general agreement that it is beneficial at pre-qualification level. In addition as a response to the problem of poor interprofessional working by some qualified members of staff it was suggested that IPE might be delivered at post-qualifying level. This might be as part of their continuing professional development. However it was thought that there were many practical problems with this. One was getting people to attend, with a radiographer explaining that:

"its not feasible with the pressures of work that we all have.."

There was also concern about whether it would reach the people whom would benefit most. The radiographer again saying:

"I think there'd be a reluctance in the people who probably need it the most whereas its people who don't need it who say yes..."

Building perceptions of other professionals

The group considered that they had built up their perception of the role of other professionals from a range of sources. The occupational therapist had learned about others through fieldwork education and spending time with other professions in her clinical practice. Other members of their own profession had influenced some and some stated that the views of patients had been a factor. A professional's own family was also a source of knowledge. This element was not explored much further due to a shortage of time.

The results from the phenomenological analysis have been illuminating and as I will explain shortly go far beyond that which could be uncovered by positivist methods. There are still issues of methodology in the interpretivist paradigm to be considered and the next four sections provide a critique of these methods.

10.6 Accuracy, truth and credibility

The lack of ability to return the themes derived from the one-year follow-up interview to the interviewees is considered a limitation of this final qualitative evaluation. This process aids the accuracy and credibility of the researchers interpretation as the subjects have the opportunity to agree or disagree with the findings. As Lincoln and Guba (1985) explain, in Ely (1991)

> *"Credibility is a trustworthiness criterion that is satisfied when source respondents [like people who provided the information] agree to honour the reconstructions; that fact should also satisfy the consumer."*
>
> Ely (1991) p 165

However the themes were derived using the action learning set and involved discussion of the units of meaning and categories prior to determining the themes. It is suggested that this open process aided the accuracy and credibility of the interpretation process. It is possible that if more time and opportunities had been available then more themes could have been derived from the data. The length of the interviews and the range of different questions that needed addressing may have precluded greater depth being achieved. It is suggested that future interviews might take one of the topic areas and explore it to a greater depth than was possible here.

All interviews were tape recorded and transcribed and where there was difficulty in understanding what was said the interviewer returned to the tape recordings in an attempt to translate the spoken word. The use of field notes and the ability to return to the tape recording improved the interpretation process. One unresolved issue was how to interpret some types of humour. During one interview a midwife joked that she thought OT's were merely basket weavers. This might have been a throwaway comment intended to amuse her colleagues and not worthy of any detailed analysis. Yet it may have been the use of humour to cover up a belief that she held, knew was inappropriate, and was embarrassed about sharing. One-to-one contact with an individual after the interview might help to clarify the meaning of such a comment and could be undertaken in the future. Although this might still not get at the 'truth' behind this form of communication, was it a belief of the interviewee or a throwaway comment? There is another important issue that needs to be mentioned in relation to the principle of 'truth'.

How do I know that the interviewees are telling me the truth in their responses to my questions?

This may be evaluated by looking for elaboration in response where interviewees have answered a question with much greater depth than was suggested in the question. On page 10 of the transcript of the one-year follow-up interview in response to the question about the effects of the module on their practice, there are 7 different answers given to the question. This would suggest that the respondents have gone on to develop their own thoughts and ideas on the effects of the module. In addition the respondents shared their insights into real life situations which were not immediately suggested by my questions. It is believed that this type of elaboration and ability to find real examples from their practice mitigates against falsehood.

Another limitation in this qualitative method for the follow-up interview was the inability, for practical reasons discussed in chapter 8, of getting all the students from each profession back for a follow up interview 1-year on. These interviews might then have provided more data that would have enabled more themes to emerge. They would also have provided a more accurate representation of the views of the whole IPE Pilot group. Nonetheless the one group interviewed did contain representation from each profession enabling all professional views to potentially emerge in the themes. The use of a purposive sample for this interview also aided the information gathering process. The students who were selected had been able previously to effectively communicate their beliefs and ideas as well as those of their professional group. This would have provided a high degree of accurate and representative information about each profession. The interviewer continually reflected back the views expressed by individuals to the group in an attempt to establish greater consensus.

The qualitative data was derived from interviews I undertook and interpreted along with my action learning set. Therefore the findings might not be representative of other professions engaged in IPE. The situation in which they were derived being unique. However it is likely that some of the themes and the behaviours described by this group, who are mainly third year undergraduate midwives, nurses, occupational therapists and radiographers, would be similar to others in a similar context.

10.7 Some conclusions from the one-year follow up interviews

The interviewees expressed the view that they had learned about the roles of other professions from the module. However they went further than describing any changes in knowledge, skills or role perceptions to other effects that the module had had on them. They felt that the module had developed in them an awareness that other roles exist of which they know very little and that they should find out more about them.

Their interpersonal skills had improved such as confidence and feeling more relaxed with other professions. They were also able to describe and elaborate on where IPE had improved their ability to work interprofessionally suggesting that they now had a greater respect for the roles of others and more professional openness. This extra data that was not being expressly sought is a great strength of the qualitative approach. It has yielded richer data than could have been obtained from the phase one interviews and questionnaires. The phase one interviews were more focussed and I was attempting to get the interviewees to answer several short questions thus limiting their responses.

The effect of the module on the interviewee's professional practice has been that they report it to have affected their behaviour. Examples include the seeking out of information about others roles in order to help a patient, more openness in the interaction with other professions and improved communication and networking. Therefore the outcomes from the pilot IPE could be classified according to Kirkpatrick (1967) as level three outcomes (see chapter 3 page 81) because there was transfer of learning from the education to the work environment. It indicates that the interviewees have applied their skills and attitudinal change to their practice.

Shaw's (1994) findings of a change in perception by participants of the value of the work of others and a change in the perception of the role of others have also been found in this study. However Shaw used a largely quantitative approach for his judgements regarding change and supplemented them with qualitative comments.

An anti-interprofessional culture was described by the group and was explained by stating that professionals, who had been qualified for a number of years, 4-5 was suggested, were poorer at working interprofessionally than the more recently qualified staff. The growing emphasis on interprofessional education in health professional

curricula in recent years (WHO 1988, DoH-The NHS Plan 2000, Salford health curriculum since 1990) might be having an effect on these newer qualified health professionals. The effect of being aware of the roles of others is reported by the group in this study as having a positive effect on their ability to work interprofessionally. There are implications for IPE in general here and as suggested by one interviewee maybe IPE is needed to counteract the effect of the culture of poor interprofessional working that they suggest exists in the health service.

Owens et al (1999) concluded that many of the post-qualifying opportunities for MPE, that were identified in his survey of 24 health professionals over 3 NHS Trusts, were not related to teambuilding issues or collaborative practice but to updating clinical and managerial issues. If this is representative of the picture nationally it may be that the post-qualifying MPE is not being effective as it is not focussing on the issues which relate to improving collaborative practice. More work would need to be done to improve the quality of and promote these post-qualifying opportunities. There is also a need to promote the message of IPE as opposed to MPE. That is that the education should be designed to promote collaborative practice and not just be about teaching two or more professions together in a classroom. From Owens et al's study this message still does not seem to be getting across yet appears to be much needed.

In the follow-up interview the participants expressed the view that IPE should be part of the undergraduate curriculum. They believed that it would be best undertaken when students have a professional identity and a knowledge base from which to discuss practice issues with other professions. This would suggest the late second or third year of a degree programme. However this could also describe post qualification courses and a view was also expressed regarding the need for IPE at this stage to counteract the poor interprofessional working of some qualified professionals.

This concurs with Pirrie's (1998) and Hardens (1998) findings that also suggested that IPE would have greatest impact if delivered post-qualification. The interviewees also emphasised the need for the IPE participants to be able to discuss the practice issues. Barr (1996) also believes that interactive learning methods are appropriate for delivery of IPE. Pirrie (1998) reported that pre-registration MPE was often presented in didactic large group format. If this continues to be the case then that would preclude what the

students see as beneficial discussion. Therefore it is recommended that one of the effective ways to deliver IPE is in interactive small group format.

10.8 Conclusions from phase one and two data

The conclusion from all the data suggests that those who took part in this interprofessional education experience have had their knowledge and attitude to others changed. Whilst claiming that this research demonstrates a change in participants knowledge and attitude to other professions this needs to be interpreted from the perspective of the paradigms from which the philosophy, method and hence knowledge came from.

The knowledge derived from the post-positivist methods, interrupted time series and questionnaires, provides some support for the hypothesis that attitudes and knowledge are changed as a result of interprofessional education. From the positivist/post-positivist perspective there are several problems that prevent this from being externally applicable. The quantitative data had a low degree of external validity, as the numbers were small and the sample likely to be biased due to both the low response rate and that the sample was representative of those interested and motivated towards IPE.

The knowledge derived from the interpretivist methods, interviews and phenomenological analysis, needs to be viewed in a different way. As Greene (1990) says:

> *"… interpretivist knowledge resembles more context-specific working hypotheses than generalisable propositions warranting certainty or even probability."*
>
> p235

The findings are often not related to *a priori* theory but are context-specific and may be linked with prior knowledge about expectations of the outcomes of interprofessional education.

Therefore the findings from this study from the interpretivist perspective are stated after consideration of the context. The context is that the group experienced the interprofessional education, using a problem-based learning environment designed with the conditions for successful contact within the contact theory. The group have described some of their learning about other professions and the effect of the interprofessional learning experience on their clinical practice. Therefore the IPE pilot module did have an effect on those who experienced it. In this paradigm the evaluation is not intended to be comprehensive but demonstrates some of the benefits that can be obtained from IPE within the stated context.

This raises the question How is knowledge accumulated in this paradigm? This is done through what Greene (1990) calls the concept of transferability. This is where the researcher provides sufficient description of the context for others to judge whether the findings are applicable to their given situation. Unlike the post-positivist perspective, which tries to draw conclusions and make law like statements that have predictability, the interpretivist perspective enables the researcher to conclude that there were positive findings from the group studied which have applicability to other similar contexts.

It is suggested that to increase the confidence the researcher has in these findings the study should be repeated in a similar context by a different interviewer with a different group. Findings that can be replicated in this way would improve the robustness of the claim to have produced new knowledge in the evaluation of interprofessional education.

Some evidence exists in the literature for the theory that interprofessional education can change the attitudes and knowledge of professions towards each other in a favourable direction (Carpenter 1995 a & b) (Carpenter and Hewstone 1996), (Shaw 1994), (Hewstone et al 1994). The current study adds further supporting data to this growing body of evidence.

There is also some evidence in the current study, from the one-year follow up interview, to support the idea that IPE can bring about a change in behaviour. Barr et al's (1999a) more inclusive literature review provided evidence of support for behavioural change as a result of IPE. This was at Kirkpatrick's (1967) outcome level three.

This same interview data also supports the idea that this behavioural change can promote improved interprofessional working. This is the implicit causal pathway (see chapter 3) along which interprofessional education might function. That is that IPE changes knowledge, beliefs and values in a direction that leads to changes in professional behaviour. This then leads to improved teamworking and ultimately to improvements in care and outcomes of practice for the patient

10.9 Summary

This chapter has demonstrated the factors that influenced my learning in research paradigms and how this has influenced my thinking more broadly. The influence of the set and Guba on phase two is, I think, clear and the naturalistic enquiry method that I used in the follow up evaluation is described and justified. The outcomes of the phenomenological analysis are presented largely in the form of quotations from the participants in the research, the IPE students as is usual in this type of analysis. There were several key themes that emerged. The factors, which have a detrimental effect on interprofessional working, were felt to be issues such as communication breakdown and an anti-interprofessional culture. The positive effect of the module on the students interprofessional working was noted such as awareness of the roles of others and an interpersonal skills. The views of the group towards interprofessional education consisted of both the positive, they felt that the professions they had learned with had been beneficial to them and negative, with a dominant effect being perceived by the predominance of radiographers in the groups. The most appropriate timing of IPE was considered to be undergraduate and post qualification continuing professional development level.

In this chapter the different ways of accumulating knowledge have been discussed and the conclusions drawn from this research by the reader will differ depending upon the research paradigm they favour. Those steeped in the positivist/post-positivist paradigm would consider the statistical evidence presented here to be sufficient to conclude that IPE has had some effect on the knowledge and attitudes of the professions in the study towards one another. An interpretivist/naturalistic enquirer is likely to look at the qualitative data and conclude that in this context, for these research participants and this researcher a change in knowledge and attitude has been demonstrated. There has also

been a demonstrable effect on the teamworking behaviour of the IPE module participants. The caveat being that it would need to be repeated in a similar context with different participants and a different researcher to increase confidence in these findings and for them to be more widely accepted.

Chapter 11. How has action learning made a difference?

"I found the set both soothing and cathartic yet invigorating and exciting."

This thesis p258

11.1 Introduction

This chapter will reflect on the process of action learning I have experienced and will offer my thoughts on how it has changed me. I will discuss the interpersonal, thinking and research skills that I have developed and explain how action learning has helped my research. I will then provide a short critique of action learning and examine the two inquiry-based educational processes of action learning and problem-based learning.

I have been action learning for four years and although we have lost a few set members I have been in the same set with the same set advisor for all that time. Initially and at the interim assessment my understanding of action learning and what it meant for me was limited. I was not sure about what it was doing for me. I was trying to understand the 'Botham and Morris Action Learning Triangle' which describes the linkages between the set, work and information. How was I to apply this? What did 'P' programme knowledge and 'Q' questioning insight really mean? I was focusing on the theory at the start of the action learning process and in order to try to understand action learning more fully I tried to find concrete examples in practice. I was unable to do this so found the process daunting. I held the view at that time that the literature was extremely important and that the set and work less so. I was sceptical of the value of the set other than as a discussion group which is how I initially viewed it. I felt the set discussion lacked rigour as none of us was an expert in the subject area of the set's range of projects Therefore I thought that the potential for learning was minimal. I thought that to get something out of this process I needed to concentrate on the research skills that I would be able to pick up from others.

Reflecting back now I believe the first year of our set involved 'working in the dark'. From our set discussions it appears that none of us knew whether we were action learning or not. Did action learning only happen in the set or did it go on outside? Was

one question we grappled with. Yet we were developing a strong bond and addressing issues that we might not have addressed if, for example, we had been set up simply as a tutorial or discussion group. One of these issues was our interpersonal skill development.

11.2 Interpersonal skill development.

The set was made up of like-minded individuals who had a desire to learn and develop personally and professionally. The set soon became a unique place for learning. It was unique because there was high disclosure after our initial 'getting to know you' stage. We created an atmosphere that was supportive yet challenging.

Supportive in that we would, in general, think before responding to someone and try to give feedback in a constructive way. We knew when someone was going through a difficult time with their project or personal life as we knew each other well and could respond with greater sensitivity at those times. There were many times when we doubted ourselves and the value of our projects and the stress and anxiety we felt about this was demonstrable. Yet during set meetings the positive was stressed during an individuals 'air time' and suggestions made to help and enable them to find ways forward.

The set was challenging in that we would ask each other difficult and sometimes penetrating questions that made us stop and think. We vacillated from gentle questioning to what was bordering on interrogation. This gave the set an edge, made it unpredictable. As any good teacher will know it is important to get the balance right between support and challenge in order to provide facilitating conditions for learning. I believe that the set provided a balanced diet for learning.

My colleagues have described how they find the set a haven, a place of sustenance, one stating that she needed to come out from her practice environment and into the set for some 'brain food'. I found the set both soothing and cathartic yet invigorating and exciting.

Eventually the familiarity within the set led me to expand my perspective on a problem by thinking about how another set member might come at this problem. There was a degree of predictability about the style of questions that some set members would ask. This had the effect of broadening out ones own perspective as you think how would this colleague look at this problem or how would that colleague? Yet set members could still ask those insightful and unexpected questions.

The effect of using action learning and particularly the interaction during set meetings has led me to believe that I have developed in several different ways.

I have developed a trust and reliance on other people. I am now more trusting and aware of other peoples views and am much more likely to seek them out. This has in part been effected by having experienced advice and suggestions from the set which have proven beneficial. This has also changed the way that I view colleagues. I am more trusting now of the information that they might give me. I am more likely to listen to their opinion and believe that they have something valuable to offer.

I have become more confident in my own thoughts and ideas on various subjects and feel more comfortable in putting these forward. Part of this confidence has come from the feedback within the set. The set communicate well with each other and let each other know when someone has made a thought provoking comment or asked a penetrating and therefore often helpful question. This helps to make explicit the individuals contribution to another's learning and builds confidence. Many of these positively valued contributions are not what might be described as subject knowledge contributions. They are usually more to do with process. Being able to ask generic questions of people about their learning, and require them to explain it in terms that a non-expert can understand, is a valuable and powerful skill that action learning has developed in me.

11.3 The affective domain

Feelings and the emotions which underpin much of human behaviour have not usually been overtly discussed in the work situations in health and education that I have encountered in the last 22 years. Although humour has often been used to communicate

emotion but indirectly, making it sometimes difficult to understand others emotions. Our set has both formally and informally discussed emotional issues and this has had some valuable results. One such formal consideration was at a set meeting on the 12th April 2000.

Ely et al (1991) in their book, Doing Qualitative Research, presents the perspectives of a number of qualitative researchers and qualitative research approaches. Chapter Four by Teri Friedman (p107) focuses on Feelings and asks the question Is qualitative research for you? At the end of this chapter Ely writes a postscript and suggests that it is important that we know about ourselves in order to answer this question. She goes on to pose several questions which she believes help to develop this self-awareness. I took these questions to the set and suggested that as we were all working partly or wholly in the qualitative paradigm this might be of benefit to us all. The set agreed and we wrote out our individual answers and then shared them in the set. The questions were What happens characteristically when you are challenged? Upset? Satisfied?; What level of personal imperfection, doubt and unfinished business can you live with? and What brings feelings of accomplishment?

As might be expected this was an emotionally charged meeting and everyone appeared to respond openly and honestly. The most striking finding for me was that although there were many individual differences in our answers there was such a lot of common ground. When challenged many people back down and doubt what they have said. Conflict was not liked and was often shied away from. There was a desire to be able to think spontaneously and be able to respond to the challenge but this often did not occur. After reflection the answers often came but the immediate moment to respond had gone.

The set reflected upon these responses and thought out how we might improve the situation. We recommended that we should not take the challenge personally but should externalise and objectify it. For example seeing a challenging question posed by a colleague at work as unrelated to oneself but applicable to the specific situation.

When upset the common response was to hide feelings not to show anger or upset and to try and carry on as normal. There was also a general discomfort with unfinished business and a desire to be valued by colleagues.

This demonstrated to me the many similarities between human beings and that for the future if a situation promotes certain feelings in me it is likely that others are feeling the same. This might help to understand ones own and others motivations and behaviours. Armed with this knowledge and the knowledge that they might be feeling something else, I now feel better able to understand and allow for the behaviours of others This is likely to promote improved communication skills and get to a deeper level of understanding of colleagues than I had previously.

11.4 How do others see me?

An important skill to being able to communicate well with others is to be able to see the way that others see you. Only then can one respond effectively to them and in a way that will enable the purpose of the communication to be realised and fulfilled. The reflecting back by other set members on issues that I presented to the set enabled me to gain a fuller understanding of the way that I am interpreted or misinterpreted. An excellent example of this occurred during the set meeting on 2nd February 2000, and is described in chapter 10 (page 231). At this meeting I presented my newly broadened perspective on research methodology which encompassed qualitative methods. I also suggested using interviews and phenomenological analysis in my follow up Pilot IPE evaluation. The strength of feeling of others in the group towards my change in perspective was staggering. Even during a recent set discussion 6th July 2001 where we were revisiting my change in research perspective, there were still strong feelings voiced. I had argued very strongly against qualitative methods, more strongly than I had realised. The set had been influenced by my narrow view and this had led to much defensiveness of qualitative methods by others. The set has enabled me to realise the importance of obtaining continual feedback from colleagues in order to judge how people perceive me.

11.5 How has action learning affected my research skills?

Through debate and discussion with colleagues each undertaking different research projects in different fields I have had the opportunity to be exposed to and contribute to a range of different research approaches. This has had a broadening effect on my research perspective. One set member was implementing clinical governance in a

Community Trust. This required an action research approach using the European Framework for Quality Management (EFQM) model and a qualitative approach using interviews. At the start of this project she did not know how to implement clinical governance which had just been put forward by the Department of Health as a way of placing quality at the heart of everything that is done in the health service. This was a real world problem which was complex, involved organisational change, had no given solution and was therefore perfectly suited to action learning. When the set first considered this problem I was considering it as just a 'management issue' which was not amenable to research. I was still thinking in a positivist, experimental way and not believing anything outside of this was research. After contributing to the project through the set I realised after some time that the approach she was taking was well suited to answering this particular problem. Each step of the process was subject to critique by colleagues, literature was used to help inform the development. A questioning approach was taken as the project progressed. For example, the Trust staff was surveyed to identify their views of clinical governance and a sample was interviewed. This enabled the discovery of staff expectations and understanding of clinical governance which was 'new knowledge' in the sense that it was not known beforehand. This informed the next step in the process of implementing clinical governance.

The literature that my colleague was exposed to supplied her with the possible models that she could use to take the project forward to implementation. These approaches were again subject to scrutiny by the set and after a period of time the proposed model emerged in the mind of my colleague. This was a potent way of thinking about the best way forward in a situation that was an unknown. At the same time personal issues such as how could she influence the Trust employees? Was she choosing the 'right' method ? Was she going to be able to carryout this task? So the set also contributed to her personal development at this difficult challenging time. Through this project and this approach I began to realise the power of action learning as a research method in its own right. That for particular research problems it empowered individuals to progress in a thoughtful and considered manner. It also developed the individual enabling them to progress and grow as a researcher.

The development of my own project shows how I have grown as a researcher. When setting out on this programme at the Revans Institute one of my objectives was to enhance my research skills. I have done this through interaction with the set, literature

and through my project. The following have been my key learning points in research over the lifetime of this programme.

11.5.1 The value of broad-based inquiry

There is a great benefit to having an open questioning approach to research unconstrained by research paradigms or subject boundaries. This enables the research to move forward in stages and be open to change and redirection. It enables one to focus on a particular problem in the real world and set out to find a solution to it using whatever methods are appropriate.

I have become aware that my previous view of 'the literature' was badly flawed. I perceived it as the ultimate knowledge, the place where 'true' new knowledge resided. I am now at a point where I am able to critically appraise a wide range of knowledge sources e.g. peer reviewed journal articles, journalistic articles, received knowledge, intuitive comments from colleagues, and judge their value by their quality and the context from which they came. Through my wider perspective of research approaches I am able to see that in current research there is hegemony at work with positivism and post-positivism being valued by a large section of the research community above other research paradigms. That is not to criticise or devalue the positivist or post-positivist approach, only to say that I can now recognise and make a reasoned judgement as to whether it is being applied to an appropriate research problem and when it's relevance is questionable.

I have learned a range of new research methods from my investigations into interprofessional education and through the work of others in the set. I have developed my knowledge of quasi-experimental methods such as the interrupted time series which provides measures of phenomena over time and can show the effect of the independent variable on the dependent variable but cannot take away the effects of history. That the use of control groups whilst necessary in a positivist experimental approach present major difficulties of selection as well as value in a complex real world situation. I have acquired an interest and a confidence to try new research methods and subject them to critique.

11.5.2 The philosophy of inquiry

Another area where the set has had a major input, along with the literature, is to my increased knowledge of the philosophical underpinning of research. I have become aware of the range of research paradigms that currently exist, positivism, post-positivism, critical theory and Constructivism and that they can be viewed through a hierarchical framework. This framework characterises the paradigms using ontology (the nature of reality), epistemology (the nature of knowledge) and methodology (the ways of acquiring the new knowledge). I currently have the view that these paradigms are not unlike different religions as no one paradigm can be deemed as the 'right' one, there being no overarching mechanism for judging the superiority of any. The researcher chooses one, sometimes by default, as representing the most likely way of providing an answer to the research question. However the context and complex nature of phenomena often mean that the research can end up providing a partial truth or one perspective on the reality.

The opening up to me of qualitative approaches has been another major learning point in my research skill development. I have acquired skills in interviewing and being the instrument of the research. There is a strong link here, I believe, with my increased trust of others. When interviewing and interpreting interview data there is a need to trust the views of the participants. This was not something I would have felt comfortable with prior to my action learning programme. I have experienced the interpretation of interview data using a phenomenological approach. I have also developed other ways of interpreting the interview data in the context of interprofessional education. I can recognise that there are strengths and weakness to these approaches.

The multidimensional nature of phenomena related to human activity such as attitude and learning and the lack of clear cause and effect relationships in social and educational contexts has made me realise that a broad approach is necessary to research these areas. Ultimately no approach can be comprehensive but each might provide some illumination from a particular perspective.

I am interested in developing these skills further and also learning about other methods in qualitative research. In particular I am interested in learning about the hermeneutic and dialectic methods within the constructivist paradigm. The statement that 'the

researcher is the instrument of the research' has taken on greater meaning for me as I have developed my knowledge of the qualitative paradigm. This aspect of qualitative research I found empowering and confidence building. As I have developed and am still developing my qualitative skills I am realising that not only is it possible to make a contribution to the research as a participant, as opposed to the objectivist approach, but in certain circumstances it is highly desirable. To interpret the written or spoken word of others developing themes and creating new knowledge is not just a research skill but a proficiency that is vital to developing as a person. It has enabled me to obtain a wider perspective and to listen and learn about other's perspectives on the world at work and at home. This has improved the way that I understand and communicate with others.

11.5.3 The value of questions

Action learning has cultivated within me a more questioning and open approach to research. Previously I looked at research at essentially a methodological level whereas now I take a broader questioning approach and see questions as valuable tools. Asking the right questions is often the key to good research as once you have asked the right question answering it is a more straightforward procedural activity. I recognise this from the set meetings and the reflective ability I have developed. In the set if a question is asked which one had not previously considered this is noted down and praised. Eventually this encourages you to look widely at a problem and develop an awareness that nothing is what it seems to be and there are always different ways of looking at the same phenomena. As a result of my development in research methods and this questioning approach I am now a researcher who is better able to approach a research problem in an open and inquiring manner and begin to look for an appropriate research method, quantitative or qualitative, for the particular research question.

Another effect of valuing questioning has been a greater tolerance of uncertainty. I am now more comfortable with unanswered questions and new questions. I do not see them as I used to which was as a weakness because I didn't know the answer. As in the set, I now see questions as positive valuable signposts as to where to go next. I believe that having many unanswered questions in your brain is evidence of an inquiring mind.

11.5.3 Theory: a new personal perspective

The place of theory and knowledge was the subject of several set meetings. I had seen theory as an essentially fix entity. It was something written down as irrefutable laws and created or developed by top intellectuals. The set discussion and my reading of educational research methods (particularly Cohen and Mannion 1994), astrophysics (Hawking 1988), research methods for social scientists in the real world (such as Robson 1993) and other research methods texts made me realise that theory is only tentative. It can at any time be changed as new research is carried out which suggests that previous theory was not appropriate or that a new understanding has emerged. The discovery of the grounded theory (Glaser and Strauss 1967) approach was an important factor in my understanding of theory. The notion that one could derive theory from data acquired in a real life setting was quite new. It showed me how theory can be derived inductively rather than deductively and that it does not need to be build on previous theory but can be used to begin new theories from current data. I have developed an awareness of knowledge accumulation in the positivist and constructivist paradigms. This has aided my understanding of how to interpret the outcomes of research. Whether to take a research study in the positivist tradition as supporting a theory, being inconsistent with it or providing evidence that is interesting but of insufficient validity and reliability to take any of the former positions. Research in the constructivist tradition is context and time bound so research from this tradition would need to follow the methodological rules such as credibility, accuracy, reflexivity and contextualisation. It may or may not be informed by existing knowledge and with the knowledge that this type of research is not intended to be comprehensive but evocative would enable me to then make a judgement about its quality. The findings of such a study would be compared to other studies to see if patterns are emerging.

11.6 How has action learning influenced the development and testing of the module?

During the development phase of the interprofessional education module I required quite different skills to when I was planning and carrying out the evaluation. I had to develop my influencing skills to persuade a team of people to get involved in the project. They needed to contribute to the curriculum development, delivery and

evaluation of IPE in the context of a busy, stressful and often disparate health faculty, where there is tremendous competition for colleague's time and energy. I needed to be able to be energetic, confident and approachable to discuss problems with others and to deal with the many problems that were encountered in a rational and logically manner. Having the set there to support me and discuss many of the problems that came up sustained me during this difficult period. The problems I encountered were ones that were common to many set members and were able to be managed effectively by the set and potential solutions proposed.

Whilst planning for the evaluation of the module I had the opportunity to test out some of my ideas in the set and to obtain new ideas and fresh common sense approaches to evaluation. The environment within the set encouraged me to be able to put forward my views without fear of failure. The work environment is not always a place amenable to being able to make mistakes. It is similar to the health service in many ways which seeks to apportion blame and punish mistakes. This can be seen in the large increase in the litigation cases and the spiralling legal costs born by the health service. The department of health is trying to change this culture and encourage health workers to report near misses and to see them as positive learning experiences.
This encouragement in the set to try out new ideas helps to stimulate innovation and novel approaches to research and learning.

The aim of my project was to evaluate interprofessional education. However in order to do this there were several other pieces of the jigsaw that needed to be in place. A team of people was required to work on the project, a research approach and new research tools were required. Barriers to the development of an interprofessional education module had to be identified and overcome, a number of student volunteers needed to be recruited. If any of these had not been done successfully it would not have been possible to evaluate the research. This is typical of a real world problem multifaceted and interdependent. Action learning enables the researcher to work on all of these problems as well as the main focus of the research. I would not have been able to attempt to answer the main research question does interprofessional education change the attitudes and knowledge of participants? without answering the other questions such as How can I influence a team of people to develop an IPE module? or How do I obtain a group of students to take part in the pilot IPE module? first. So action learning enabled me to

function in the real world and apply powerful inquiry to a series of diverse research problems.

The set also provided help on a practical level in that I could use my colleagues as a group skilled in interpretation of qualitative data to help with my analysis. This was something that other set members did and it provided a powerful source of learning about interpretation of interview data. Different perspectives were applied by colleagues to the data and I believe that themes emerged which were greater than those that any individual would have been able to see. This was both valuable for our data interpretation as well as our learning about different ways of looking at the data.

The set provided a forum for thinking about the development and testing of the IPE module. It also provided a way of breaking down the problem into smaller problems and considering which aspects could be dealt with by the set or the literature or other expertise e.g. statistical support. This encourages one to look at a problem analytically and break it down into separate parts. The solutions to the many research sub-problems might need to come from diverse sources and are likely to be across subject and paradigmatic boundaries.

11.7 How did my thinking change during the action learning process?

My thinking when starting action learning was that there was one reality and that one truth existed. This hindered my progress in the set as I was searching for unequivocal knowledge as Guba (1990) puts it 'Cartesian anxiety'. Named after Descartes and his search for certain knowledge. I was only interested in certainties and I believed that you got that form of knowledge from research papers and texts. This caused me to be happy to contribute to the set but not comfortable with learning from other peoples views, particularly as these views were from peers and not a 'knowledge authority'. The set advisor whom I expected to be the 'knowledge authority' giving out this guaranteed quality knowledge and telling us what to do did not, of course, fulfil this role. My discomfort with action learning continued for several months until I began to realise that as I could contribute to others projects through questioning so others could contribute to my project. This helped me to look from a variety of perspectives. It also helped me to realise what the set can and cannot do.

11.7.1 The common sense approach

My thinking now has reverted back to the common sense approach that I had when I was much younger. I had tended not to use the common sense approach much as I did not trust my own judgement but sought literature and the wise counsel of 'experts' for answers. This might be due in part to my experiences as a radiographer where the doctor was the recognised expert and as it is easier to take the path of least resistance one would often defer to him/her as the knowledge expert. This abdication of responsibility may also have been due to a gradual separation of knowledge from 'the person' through my educational experiences. In my view there has been too great a focus on cramming knowledge in to people at the expense of developing the person. My common sense approach has been rediscovered partly through work in the set. The asking of simple basic questions of others in the set has been very rewarding and encouraged me to use both this human ability in combination with other sources of knowledge as and when appropriate.

My thinking about the value of other human faculties was influenced by Bourner's (2000) model of knowledge sources where he asks How do we know what we know? and identifies four quadrants of sources of knowledge. The introspection quadrant he places, and presumably values, alongside other more recognised sources such as empirical study. Initially in the set and now at work I have begun to use my intuition, common sense, insight and other human senses again and this has been rewarding and important in my improved ability to communicate with others. Interestingly these human attributes are valued in qualitative research (Ely 1991) but not recognised as valuable in the objectivity of quantitative research (Guba 1990).

11.7.2 Sharpening the saw

My thinking about my work ethic has also changed as I have encountered barriers to my development over the last four years. I have realised the importance of ensuring that I am in the right frame of mind to be able to think and act in appropriate ways. This means looking after myself. For example keeping my energy levels up, taking a break, spending time renewing. Covey (1992) calls this 'sharpening the saw' and puts it at the heart of the ability to perform at a high level. As I have become more humanistic I have

recognised the importance of looking after myself in order to be able to perform to my potential. My previous work ethic was positive in that it enabled me to drive myself on when feeling uncomfortable but often left me unable to make considered judgements for reasons such as being too tired or stressed to apply myself to them.

The projects that each set member set out with were ostensibly quite diverse, implementation of clinical governance, assessing the experience of student nurses on overseas placements, promoting and measuring the patients experience and evaluating interprofessional education. Initially I thought that there would be little overlap between these topics other than the health service or higher education. Yet there were a large number of issues that we identified as generic and which we each were able to take part in and potentially learn from. Issues such as influencing others, interpretation of qualitative data, the search for research credibility, personal issues such as stress and confidence, organisational barriers and features of modern life like accelerating change and high workloads were common to much of our set discussions. This helped me to realise that although the contexts may be different many of the problems that need to be solved are similar. This was congruent with our common emotional responses to the questions of Ely (1998). This strengthened my view that there are many similarities between human beings and that sometimes the differences are perceived to be greater than they might actually be.

This led me to think about the context of the health service draw the following conclusion. Many people who have not discovered the importance of 'sharpening the saw' could be making decisions and interacting with others in the health service while tired, stressed and not able to cope with the demands of the situation.

The constant critical reflection in the set and within the individual has provided me with an ability to stand to the side and observe myself thinking and feeling and acting in response to various stimuli. Another way of explaining it is that I have a helicopter view of what I am doing both at the time and after I have done it. This is what David Botham called meta-cognition. It has at times enabled me to be able to understand how and why I am behaving and thinking in a particular way. This is a valuable extra tool to inquiry such as during an interview or when communicating with a colleague but is also a valuable skill for life.

Reflecting upon the many facets of my learning I am still acutely aware of how little I know. I have uncovered the depth of my ignorance in some areas, which has shown me how far I have come in five years but has also shown how little I know about the world. Yet I am positive because and do not let that thought engulf me as I have acquired important learning skills and a self-awareness that should enable me to continue to learn and develop at a significant rate.

11.8 The role of the action learning set advisor

No description of the experience in learning I have gained from the set would be complete without some analysis of the effect of the set advisor on my action learning. I believe the set advisor has had a vital role in the set throughout its life. At the start of the process when we were confused and unsure about what action learning was we were offered a common sense approach. 'Just get on and start doing something do not get hung up on thinking about action learning theory'. This was a valuable and supportive start to our learning. We got on with the 'action' and later we reflected on what we had been doing and found we were engaged in the process. The degree of intervention of the set advisor has been interesting and a learning experience for me as I facilitate problem-based learning groups in undergraduate programmes and some action learning groups in a postgraduate programme. In order to engage in action learning set members needed to make their own contributions to the set discussions. Our set advisor provided minimal intervention in many meetings and let us take the leading role. He would wait until we had made out contributions before making his. This was valuable experience as we felt relaxed and able to contribute our 'true' ideas and thoughts on a subject before hearing what he had to say.

The set went through a difficult time during the autumn of 1999 and felt that we were not making good use of our time nor were focussed on our action learning. We wanted to be a bit more business like and limit people to a certain amount of 'air time' so asked the set advisor to manage the time during the set meetings. This required him to take a more interventional approach which he did. This was a quite different role to the previous one yet was required at that time and made a considerable difference to the effectiveness of the meetings.

There was a tendency during set meetings to get focussed in to the minutiae of ones project or learning. The ability of the set advisor to present a broad view of the world has been extremely valuable to my learning. His ability to consider a problem and be expansive relating it to a number of different areas crossing subject boundaries and to deal with real life has been a factor which has contributed to my ability to do this (see earlier in the chapter).

There were times when each of us hit a 'brick wall' and did not know what to do next. The set advisor was able to show us an objective and analytical approach to overcoming these barriers. This is something that the set also developed an ability to do. There have been several occasions when I have had difficulty in progressing but, particularly in the later stages of my action learning, I have developed an ability to question myself about the alternatives in an analytical manner. This skill I believe has developed as a result of the approach of the set advisor and set at these difficult times. This ability to take a back seat, to intervene, to bring in real life examples from a wide range of areas such as policing, engineering, management, mountain rescue combined with a common sense approach has had a significant effect on my learning and influenced the way I facilitate. In summary the facilitator had become a role model.

11.9 A short critique of action learning

I have found action learning to be a valuable personal and professional development method. Yet as with all research there should be some critique of the process in order to enable weaknesses to be identified and for the process to move forward and develop. My experience of action learning as a teacher and as a participant is that it develops the whole person over time. As discussed in chapter one my view of education is that it should develop the person as well as provide them with knowledge and skills. In short it should prepare them for the real world. In action learning it is difficult to identify which personal developments have been due to the action learning process and which are due to other factors. For example my change in the way that I look after myself, the 'sharpen the saw' principle, has occurred during the four years of being involved in the action learning process. This might have occurred even if I had not been on this action learning programme but occurred as a result of the natural maturing process where one becomes more reflective and philosophical as one gets older.

The set is central to the learning so if there are problems with the management or running of the set, this can severely restrict the learning of members of the set. For example the set may not work well together and if the dynamics are not effective the set may end up with too challenging or too supportive an environment. My own set went through a period, in my view, of being too supportive. There seemed to be little in the way of outcomes to meetings and when reporting back little work had taken place between meeting. Alternatively there may be conflict in the set which might distract from project development although may be a potent learning experience too and some sets in the Revans Institute have, according to our facilitator, had to be disbanded. From an educational management perspective there is an issue here about the equity of the educational process between learners in different sets. As each set will vary in the degree to which it facilitates learning each individual will have a different learning experience. It could therefore be argued that some learners may be disadvantaged i.e. not be learning as much, if they are in a less effective set.

As I have explained above I have found the set a potent learning environment which has had a powerful effect on me. The regular meetings, intense stimulation and the unique relationships formed have led to the following concern. Does action learning build a reliance on being a member of a set? I would not want my set to stop meeting and would wish to now use the set to help me learn about the next work or research issues that I will be undertaking. However at the end of the programme it is likely that the set will disband. I would be keen to set up and be part of another set to fill the gap left by the demise of the first one. This would suggest that action learning is potentially an addictive process building a need for individuals to have input from a set. If this is not present how will the individual react to this? They might loose their ability to learn as effectively as they did with the support of the set. Alternatively have they developed the skills of effective learning and are now ready to leave the nurturing environment of the set and become a more autonomous learner.

So far my personal experiences of action learning have been discussed in the context in which I experienced my learning. I will now consider how action learning relates to other contexts. As an educationalist involved with course development and problem-based learning I thought it would be valuable to explore how action learning relates to problem-based learning and how it might relate to the process of course development.

11.10 How does action learning relate to problem-based learning?

Problem-based learning began at McMaster University Hamilton, Ontario, Canada in 1960's *(Berkson 1993)*. It was used in medical education initially and then developed within other professions such as law, architecture, engineering, the police and social work *(Marks-Maran & Thomas in Glen & Wilkie 2000)*. It is currently being adopted as the learning method for health curricula in the subjects allied to medicine e.g. occupational therapy, radiography. Nursing and midwifery are also applying it as a result of encouragement by the Making a Difference (DOH 1999) policy document. It was initially defined in medical education as

> *"An instructional method characterised by the use of patient problems as a context for students to learn problem-solving skills and acquire knowledge about the basic and clinical sciences."*
>
> (Albanese and Mitchell 1993)

However the 'problems', now called triggers by many in health education as problems is thought to be a pejorative term, can be from any context e.g. problems faced by police officers, architects. The knowledge acquired can be in the basic and clinical sciences but can equally cover other subject areas applicable to the context in which it is being used.

Action learning and problem-based learning share much common ground. Both involve small group work and an inquiring and problem solving approach. There is a need for teamworking and the group builds up interdependency as their learning is affected by others in the group. In action learning this is implicit as set members learn from one another by receiving feedback and being guided in the right direction. In PBL the group members might each be required to contribute some unique information related to a sub problem that only they have acquired the knowledge for. Thereby if they do not do this work others in the group will have their learning restricted.

Both learning methods do not encourage contact with the literature prior to group discussion of the problem. The purpose of this according to work in the field of cognitive psychology is to activate prior knowledge which then facilitates the

subsequent processing of new information (Norman and Schmidt 1992). In other words, discussing the problem and thinking about it with the knowledge that you have at the time of meeting the problem provide a linkage between prior and new knowledge.

Some debate exists around the ideal group size in PBL (Hughes and Lucas 1997) but in the PBL at Salford group sizes of 6-9 have been found effective. Action learning group sizes of approximately 6-8 have been used at the Revans Institute. The group size is an important feature of creating the right group dynamic. If the group were too large the contribution of individuals would be reduced. Therefore it might take longer to form relationships in the group and the informal and intimate atmosphere, valuable in both settings, would be lost. One of the benefits of small group work is that an informal atmosphere can be created and, in my experience, this encourages informal discussion thereby enabling people to fully engage with each other.

The learning material that individuals work on in both educational contexts is similar. They both use problems as the source of learning and questions and answers as the method of acquiring new knowledge. Yet in PBL the problems are designed before hand and focus the students towards a predetermined syllabus which will enable them to acquire a specific set of skills, knowledge and a way of thinking like a professional in their chosen field. In AL the initial aim or problem might be known in advance but this may change course during the programme. It is determined by the individual, according to their own particular needs, so does not follow a predetermined path. The ultimate aim of action learning appears to be to produce the generic skills required for an inquiring mind. So PBL has a narrower focus than AL specifying the knowledge, skills and thinking of an individual.

It is useful here to use Revans's (1978) description of the conditions for action learning to further explain the different skills that may be being acquired in PBL and AL. These conditions state that the action learner should be able to tackle 'familiar problems in familiar settings', 'unfamiliar problems in familiar settings', 'familiar problems in unfamiliar settings', and 'unfamiliar problems in unfamiliar settings'.

PBL is discussed here in the context of health education but this could be transferable to other professional contexts. The PBL educated professional should be able to tackle 'familiar problems in a familiar setting'. In the normal context of their work

environment they are able to work and think like a member of the profession in which they have been trained. If they acquire a new position at a different place of work, but still within the same profession, they should be able to tackle 'familiar tasks in an unfamiliar setting'. Through transferable skills they should be able to use the knowledge that that have for example about a piece of equipment or a technique and apply it to the new work environment. This is because of the similarities in the work contexts of a health professional. However they are unlikely to be able to progress beyond these two levels.

AL attempts to 'develop the general capacity to pose fertile questions in conditions of ignorance, risk and confusion' this enables the action learner to perform at the first two levels described above but to progress further. If the action learner is placed in a familiar setting but is given an unfamiliar task or in an unfamiliar setting with an unfamiliar task they should be able to apply the inquiring skills they have learned. They should be able to ask the 'right' questions in order to be able to work effectively on a problem.

The types of problems that are worked on in both educational contexts are real world problems. In PBL the problems or scenarios are designed to mimic the real life situations that a practioner might encounter in their professional clinical practice. By changing the problems periodically the changing context of work can be represented within the educational curriculum. In AL the problems worked upon are also from real life but are not necessarily limited to the 'normal' challenges of a persons sphere of work. Revans would probably define the problems presented in PBL as puzzles because an answer usually exists even though that answer may be difficult to find. AL, in contrast, works on problems to which different courses of action are possible and equally valid but the discussion of these courses of action leads to personal development. Thus enabling the action learner to see the value of the different courses of action.

Although there is an argument here that says that because of the increasing complexity of the work of a professional in health care, different professionals might pursue different courses of action each equally valid but based on their professional judgement. In other words each professional might advocate a different course of action to a problem and be able to justify it. PBL would be more likely to encourage a course of

action to be learned than to promote the personal development which would lead the professional to develop an original course of action.

These arguments seem to show that AL is a more potent learning method than PBL. However the one seemingly insurmountable problem in trying to apply AL to professional practice education at a pre-qualifying level is the need for practitioners to learn prescribed attitudes, knowledge, skills and acquire specific competencies in order to be able to satisfy the requirements of the regulating professional body. This need to keep to a specified curriculum would make AL difficult to implement for pre-qualifying practitioner education.

11.11 Summary

This chapter has discussed action learning and its role in my project and personal development. It has discussed how AL changed the way that I perceive myself and others making me more trusting and better able to work effectively with colleagues. It has done this in part by enabling discussion of thoughts and emotions in the safe nurturing environment of the action learning set. The research skills I have gained enable me to take a broad inquiring approach to research crossing the artificial subject and discipline boundaries. It has developed my knowledge of research paradigms and has opened up qualitative research processes to me. I have developed my interviewing and interpretation skills and have acquired a new understanding of the place of theory and how knowledge can be accumulation in different research paradigms.

Action learning and the set have provided me with the tools and the support to carryout this research project successfully. I have described how I have changed the way that I think eschewing 'Cartesian anxiety' for a more common sense approach to the search for new and yes, uncertain knowledge. My personal development has brought me to a point where I realise the importance of 'sharpening the saw', of working on my emotions and my thinking and keeping myself able to work effectively. Other skills I have developed are as a facilitator. This has been from observing and appreciating the performance of my set advisor in developing others.

I have offered a short critique of action learning identifying the importance of having a set that works, the possible lack of equal educational experience across sets. Another potential problem has been that experience of the unique nature of an action learning sets can develop a continuing need to be in a set. This could be detrimental, as participants may not be able to be in a set for the rest of their life but may have developed a reliance on them.

Finally I have compared action learning to problem-based learning finding some common features such as group size, the need for teamworking and participants interdependency. Problem solving skills are common to both approaches and learning with real life problems seems to promote the aim of education in preparing people for the real world. The importance of using prior knowledge when greeting a new problem or challenge is also a feature of both.

The main difference appears to be that action learning enables the participants to function at Revans's two highest levels which are to work with 'unfamiliar tasks in familiar settings' and work with 'unfamiliar tasks in unfamiliar settings'. Problem-based learning only appears to enable participants work at the first two levels.

Chapter 12. The future of Interprofessional education

"IPE is designed to foster teamworking skills in clinical practice so what better place to educate health professional students than in the workplace." This thesis p297

12.1 introduction

This chapter will consider the future of IPE in the context of the NHS and the Faculty of Health and Social Care at Salford University. It will also offer some insight into the likely direction and form of interprofessional education in wider contexts. A lot has been learned about the evaluation of IPE so the research barriers that have been identified will be discussed and some suggestions proposed for future research into interprofessional education. Finally some questions are posed in relation to IPE that still remain to be answered.

12.2 The political imperative

During a set meeting in November 2000 the set were discussing the impact of research on the way that people live their lives. How would our research make a difference? We were brain storming the various government policy reports and public enquiry reports, which follow major problems with the health and social services. Our discussion focussed on the impact of published research that had been peer reviewed on changing and shaping practice. We could think of few examples where dramatic change had resulted from a piece of research. Yet there were many government policy documents or enquiry reports that have had a disproportionate effect on changes in the health and social care sectors. These policies were often not evidence-based. For example there is currently little evidence to suggest that interprofessional education improves collaboration between professions and patient care (see chapter 3). Therefore if action were based solely on evidence then IPE should not be implemented across the sector at this time. The political imperative however is that it should happen and policy documents require higher education institutions to demonstrate that they are delivering MPE in their curricula.

Forman and Nyatanga (1999) provide a list going back to 1962 of forty three government reports and pieces of legislation that have attempted to promote inter-disciplinary co-operation. The poor interprofessional teamworking still going on in the NHS (see chapter 2) suggests that in this area of government policy there has been little significant change in 40 years. This list demonstrates that the focus for the legislation has been within the Health and Social care sectors but this might be about to change with the planned far-reaching reforms of health education.

12.3 The modernising agenda

The current most significant political policy document in the NHS is the NHS plan (2000) (as discussed briefly in chapter 2). It sets out ten 'core principles' which will reform the NHS and set new targets. One such target is to change the training and development of staff and the government are investing £140 million pounds by 2003/04 to fund this. Radical reforms of health curricula are being proposed and further policy documents aimed at the nursing and allied health professions have now been released to provide greater detail on how this will occur. The new model of nurse education and training was contained in the Making a Difference (Dept. of Health 1999) document. Which puts interprofessional education and common curricula high up on the agenda.

The equivalent document for the allied health professions is called Meeting the Challenge (2000). This document promotes interprofessional education and training as central to the ability of allied health professionals to deliver the targets set out in the NHS plan (2000). The fourth chapter of meeting the Challenge makes explicit the need for students to gain practice experience throughout their training. In order to meet the planned increase in the number of allied health professionals the document promotes the use of simulated clinical experience in skills labs that it believes

> '..present ideal opportunities for shared learning with other professions.'
>
> *p25*

This is interesting on several levels. Firstly it demonstrates the use of 'shared learning' terminology which is not fully understood by many and has no agreed definition. If the CAIPE adopted definition (CAIPE 1996) is used then shared learning is similar to

multiprofessional education, i.e. teaching professionals together rather than interprofessional education which aims to promote collaborative practice. Secondly it provides no evidence as to whether there is benefit for health professionals to learn clinical skills together. My experience has been that the technical skills that skills labs can develop are different for different professions. There may be some sharing of clinical skills for those involved in extending their professional roles but this form of education is likely to be multiprofessional rather than interprofessional. Finally this call for skills laboratories seems to be more rhetoric than substance calling for what sounds like a good idea without any explanation of what this term means or offering any underpinning evidence base to justify its use.

There are however several firm commitments to the development of interprofessional education and some suggested detail to shape the proposed changes. The document states (p26) that there should be

> *'joint training in communication skills, and NHS principles and organisation, as a prerequisite to qualification.'*

This commits to the placement of IPE in the pre-registration/undergraduate programmes. This I believe is a positive development. As discussed previously (chapter 3) there are arguments for and against IPE at pre- or post-registration level. The view of the students in my study at 1 year after their programme and my own considered view is that this the right timing for IPE. Another proposed feature of the health curricula reforms does not look so beneficial for collaborative practice. The suggestion is that

> *"a new common foundation learning programme to enable students and qualified health professionals to switch careers and training paths more easily."*   p27

The example given is that of the common first year for doctors, nurses, diagnostic and therapeutic radiographers, physiotherapists and scientists run by Kingston University and St George's Hospital medical school. The evidence presented in the document to support this is anecdotal with positive comments being made by the chief executive of Kingston NHS Trust and a student and lecturer from the programme. This lack of substantial evidence is probably due to the link between interprofessional education in the first year of a programme and improved collaborative practice having not been

established in the research to date. This leads to the thought that there may be other purposes to this type of reorganised curricula. Meeting the Challenge also plans to reduce the attrition rates from health education programmes. Programmes organised with a common foundation year make it possible for students to be able to change programme to a more desirable professional programme part way through their training rather than being lost to the health service altogether. Thus reducing attrition rates. Other benefits might include economies of scale if students are taught together multiprofessionally rather than interprofessionally. Further evaluation of common first years would be required to determine whether this would improve collaboration between professions.

The topics suggested for joint training might be interpreted as including teamworking skills and the roles of other professions. If this is the case it could be argued that this reform is likely to be extremely beneficial to those training to be allied health professionals so long as it is positioned at a point in the course where the students have developed a professional identity. They would then be able to discuss the role of their profession in the care of patients effectively.

The reshaping of the education and training for allied health professions represents a considerable challenge, as the reforms are wide-ranging and applicable across all professional NHS staff. The government has recognised that this is a major undertaking and has established a new Education and Training Division in the NHS executive to manage this process. This coupled with the workforce plans in the NHS plan (2000) suggests that there is now organisational infrastructure to provide leadership and direction to these changes.

12.3.1 A strategic approach to continuing professional development?

The lack of effective formal interprofessional education at post-qualification level, as suggest by the work of Owens et al (1999), has been recognised in Meeting the Challenge (2000). The document quotes work done by the NHS Careers Development Initiative for the Professions Allied to Medicine in April 1998. It states that much continuing professional development (CPD) has been

> *"informal, uni-disciplinary, unaccredited and not tied into organisational requirements"*   *p34*

It promises a more strategic approach to CPD and an increase in resources over the next three years. It offers the work of South Yorkshire Education and Training Consortium which has a CPD strategy which includes multiprofessional networks within and between Trusts and regular shared learning initiatives for specific care groups and funding for multiprofessional education at local level. The difference between the shared learning and multiprofessional education is unclear but the increase in resources and focus on getting people to learn together is likely to help build more positive interprofessional relationships.

12.3.2 The rapid expansion of the role of the professional

These changes to the health service and curricula with the clear focus on interprofessional developments, if they do have the effect of improving collaborative practice, will be much needed. The traditional roles of professionals are likely to become even more blurred over the next few years. As Lord Hunt, the Parliamentary Under Secretary of State for health laid out in his foreword to Meeting the Challenge he wants a situation where

> *"...patients are treated quickly by people with the right skills, rather than having to wait to be seen by someone with a particular professional background."*   *p3*

There will continue to be an expansion of roles for many professions within the health service. Already we have seen nurse practitioners prescribing drugs, radiographers reporting on radiographs and podiatrists performing foot surgery. There are also changes to the traditional workforce hierarchy being proposed with one radiography workforce model, the four-tier structure, being piloted in radiotherapy at Sheffield Hallam University suggesting that there will be generic health care assistants, assistant practitioners, practitioners and consultant practitioners.

This will create a varied and dynamic workforce which will make interprofessional working more difficult as professions need to be able to understand the roles of others

particularly at local level in order to be able to work effectively with them. This rapid rate of change to a profession's traditional duties and responsibilities will make it difficult for those professionals who work together 'at the coal face' to know what other professionals do and therefore make it difficult to be able to work effectively together. This will present a major test of the effectiveness of interprofessional education.

The Department of health clearly sees multiprofessional education as integral to their modernising plans. A document recently published by the Department is the Investment and Reform for NHS Staff (2001) which proposes to take the NHS plan forward. In it the expansion of healthcare student numbers is made explicit and (paragraph 6.13, page 41) states

> *"As we expand training places for nurses and Allied health Professionals we shall expect universities to put multiprofessional training at the top of their agenda and will place particular emphasis on this when commissioning new programmes. And we want to see students learning together in clinical practice placements.."*

This is the clear, strong message coming through from the government to universities regarding multiprofessional and interprofessional education. I will now examine the local response to these political drives and show how Salford is responding to this call.

12.4 The future of MPE in the Faculty of Health and Social Care

As described in chapter 8 (para 8.8) there appeared to be no concrete outcome to the faculty pilot IPE module report and the strategy discussions at the Faculty Teaching Development group. Although there was a statement from the faculty group suggesting that we develop MPE using PBL there was still no strong steer from the faculty executive. The details on the planned teaching development for 2003/2004 were not being discussed and it seemed a long way off.

At the last meeting of the Teaching Development Group 25th June 2001 an extract of the faculty business plan containing the objectives for teaching and learning was tabled. This was a more detailed version of the daft 5-year plan that had been presented on the

5th April 2001. The document contains the teaching and learning objectives for the faculty. Section 2 relates to multidisciplinary education (see figure 9).

	Objective	Action required	actioned by	Time scale	Targets/ performance measures	Review date	Link to the university strategy/ goal
2.	**Multidisciplinary Education**						
2.1	To take forward the interprofessional learning agenda, the formation of four strategic groups who report to the faculty Teaching Development Group: - Curriculum Group - Fieldwork/clinical placement group - Research Group – to undertake research and promote best practice - Enterprise group – to set up seminars etc	To develop a strategy that meets the future needs of health and Social care providers Formation of groups – membership to be determined by faculty Teaching Development Group	Dean and Associate Dean (Teaching) Associate Dean (Teaching)	Dec 2001 June 2001	Develop strategic plan with targets that can be operationalised Progress reports from Groups – proposals for consideration to be submitted to faculty Executive Planned conference/ seminar	July 2001 July 2001 July 2001	Goal 1 – Cii Goal 1 – Ci
2.2	All programmes will include interprofessional learning in both curricular and fieldwork/clinical placement environment which is assessed and contributes to their final award	Review of interprofessional learning activity in programmes; ensure all programmes due for review/revalidation embrace philosophy and activities	Associate Dean (Teaching), Associate heads	2001 - 2002	All programmes evidence interprofessional education and potential for further developments/opportunities	2001	Goal 1 – F
2.3	A sound research base in interprofessional education will have been established and good practice is shared	Promotion of research and interprofessional learning	Ass. Deans Teaching & research	2005	Research projects and publications	2001	Goal 1 – Gi
2.4	Links with the Associate Dean (Clinical) will have been consolidated, & working collaboratively we will be at the forefront of developing curriculum activities which meet the needs of our stakeholders & the I.P. agenda	Establish good working links and potential for development in Teaching and learning activities	Associate Dean (Teaching)	Ongoing	Proposals for initiatives involving Salford Trusts (fieldwork MPE)	2001	Goal 1 – A iv

Figure 9: Extract from the faculty business plan – objectives for teaching and learning in relation to multidisciplinary education

This sets out the MPE plans of the faculty over the next 5 years and is the first strategy for MPE that I have seen at faculty level since starting at Salford in 1992. The strategy has many benefits to it and some weaknesses.

12.4.1 The strengths and weaknesses of the faculty MPE strategy

There seems to be some different terminology being used to describe MPE. The multiprofessional section is called multidisciplinary education. This was not dissimilar to an older term, still known to a few members of the faculty, before it was called shared learning, multiprofessional education, health professional studies or interprofessional education. Is this an attempt to re-launch this type of education with a new term to try to distance itself from the previous iterations? Thus attempting to leave behind the negative connotation staff placed on previous versions of MPE or is this adding to the confusion of terms. Yet the term interprofessional education is used exclusively throughout the rest of the strategy. Is this term being used because it is understood and is now to be focused to Barr's (1996) definition of promoting collaborative practice?

There is no mention of getting the staff to work together collaboratively. One of the outcomes from my personal learning having developed IPE is that it is important to get the professions in the faculty to work interprofessionally first. Only then can you develop and deliver a successful MPE programme. It might have been beneficial to specify that the faculty will encourage interprofessional working among staff and make some suggestions as to how this might be achieved.

The drive for multiprofessional education is now firmly embedded in the faculty teaching and learning strategy and organisational structure. This will prevent it from being seen as an extra to professional education and more as an integral part of it. However there was no mention of any additional funding to support this proposed increase in work. Without the ability to fund more staff to work on these new initiatives it is unlikely that there will be significant and timely developments. This same problem also affects the research proposals in the strategy. The strategy does not make clear who will be taking part in this research nor how it will be funded.

The call for the establishment of a 'sound research base' in the faculty by 2005 seems rather ambitious particularly when the current international evidence base is weak (Zwarenstein et al 1999) and there are calls for further research in this area.

Generally the strategy lacks any specific targets and hard outcome measures and indeed one of the performance measures requests the development of targets that can be operationalised. This would indicate that there is still much to do to flesh out these plans.

The Groups established to move the IPE agenda forward in four areas look very promising and giving each a separate focus of activity should improve effectiveness. The same problem arises here as with the embedding of MPE in teaching and learning and research. If staff are attempting to contribute to groups and continue with all their current activities then this is likely to severely limit the amount of time and energy they can input to the groups. No suggestion is made as to how the individual groups, which have potential for significant overlap, will communicate between each other.

A measure of the commitment of the faculty to IPE, and also to the political imperative driving this agenda (see earlier in this chapter), is the assertion that 'all programmes will include interprofessional learning' in both academic and clinical environments and will summatively assess it. This is likely to be the key statement in this strategy to driving IPE into curricula. The timescale for this is very tight with only one academic year to go. Yet there are already several pockets of activity and schools could already demonstrate within their programmes where students obtain some underpinning or explicit interprofessional education. The faculty commitment continues suggesting that it 'will be at the forefront of developing curriculum activities which meet the needs of our stakeholders'. This is a positive bold plan but as yet there is no explanation as to how this might be done nor whether significant funding would be made available to achieve it.

Nonetheless the future of IPE at Salford looks very positive with the new interprofessional working groups being established currently to develop IPE and plans for interprofessional research activity.

By November 2001 few of the four groups had met and no tangible progress had been made. The associate dean (teaching and learning) in an attempt to move the work forward has now combined the four groups and has asked me to lead the new combined group. Following discussion with her we have set the group a new task. That is to undertake a detailed mapping exercise to identify which professions work with which other professions in health and social care. Once this has been established this could be used to inform future IPE collaborations.

Further developments have recently occurred which might promote the interprofessional agenda still further. The Meeting the Challenge policy document promised reform of health curricula and provided some indicators as to how this might be taken forward. A system for implementing these changes was proposed by the NHSE in May 2001. The NHSE wrote to all Higher Education Institutions delivering health education programmes, with an offer to bid for becoming a 'First wave' site for the modernisation of pre-registration education for physiotherapy, occupational therapy, radiography (Diagnostic and Therapeutic) and chiropody/podiatry. The institution would need to demonstrate that they were implementing or piloting specific elements of the modernisation programme and were offered financial support to enable this to happen.

The School of Health Care Professions within the Faculty of Health at Salford University have identified a team, produce a bid and won a contract to become one of the first wave sites for this new curriculum. The curriculum is designed to educate students to become assistant practitioners within the proposed new four-tier career structure suggested in the Meeting the Challenge document.

The faculty has called for a sound research base to be developed and set up the initial research group to enable this to happen. As the new leader of the combined MPE group which will include the research group initially I will be contributing to the development of this research agenda. Through my action learning and

interprofessional education experiences I have learned a great deal about researching interprofessional education and will be attempting to drive forward this work using the following key learning points. These I have divided into research barriers, which the group will need to overcome and how I would research IPE in the future.

12.5 The research barriers in IPE

How will IPE research be funded? Who will do the research? If current teaching staff want to get involved how will the tension between research and teaching be managed? What tools and methods should be employed? How do we develop a national/ international reputation? These are some of the questions that would need to be addressed before making progress with the IPE research agenda. The following paragraphs begin to look at some of these issues and, in some cases, point towards some possible solutions.

Educational research, such as interprofessional education, is not valued by the Research Assessment Exercise which makes a judgement on the quality of research output every four years and allocates funding to those it considers worthy. Therefore significant funding through the funding bodies for future research in this area is unlikely. There will therefore be a need to look to other funding sources to finance IPE research. This may come from workforce confederations, health charities or other outside bodies but this will be a major challenge to developing a significance IPE research strand. The newly formed Institute for Learning and Teaching has announced the availability of funding for teaching research. This might prove a fruitful source for MPE research. Financial support for research is vital for the following reason. There is a tension in higher education between research and teaching but this has become an acute problem in health education. The income to the Faculty of Health and Social Care comes mainly from teaching contracts with the health service. In order to deliver these contracts effectively and to the standard required staff carry heavy teaching loads over an extended academic year. This extended year is in comparison to non-vocational programmes. This commitment often reduces the amount of time and energy members of staff have to undertake research. This is a similar argument as to why new teaching developments have difficulty in getting started. Without external

funding to buy out the time of teaching staff to support IPE research it is unlikely that it could develop to a significant level. This search for funding will be the first major challenge to the IPE research group.

IPE research is in its infancy so as well as problems with funding, research output tends to be published in journals with low citation indices. Therefore when attempting to develop a research track record that would help to promote career development this area of research is being seen as a poor relation in the research hierarchy. This is likely to reduce the attractiveness of the area to an up-and-coming researcher as it might hinder their career development. This could have an effect on attracting significant numbers of researchers and inhibit the development of a strong IPE research group.

Whilst the development of IPE research at Salford is important this should not be undertaken in isolation. The research group will need to network with other institutions and build the reputation of IPE at Salford. The national organisation The Centre for the Advancement of Interprofessional Education (CAIPE) was aware of the interprofessional activity that had been going on at Salford with a former member of staff at Salford being on its editorial board. This networking needs to be re-established so that Salford can collaborate with other centres to develop joint research. This would help to improve the quality of the research and through sharing of experiences and ideas develop a coherent approach to IPE evaluation in different contexts. As a result common tools and methods could be established.

Further developments in November 2001 have led to my being asked by the Dean of the faculty to become the faculty representative on Centre for the Advancement of Interprofessional Education (CAIPE). This is the national organisation which has funded research, run conferences and publishes a journal to develop IPE. I intend to use the people skills I have acquired during my action learning to re-establish and expand these networks.

A positive way of developing both the IPE research and the curriculum development in the faculty would be to use action learning. Three sets could be set up initially to focus on the three key areas, these being research, curriculum development and

clinical developments. Membership of these groups would involve members of staff from different directorates and schools in the faculty. This would enable staff to get to know each other better than they currently do and collectively look at how the problems presented by the work environment and IPE might be solved. Working in this way would enable the perspectives of different staff from across the faculty to be combined to produce a powerful way of progressing IPE. There would need to be some facilitation of sets and thought would need to be given to who might be able to do this. The use of action learning sets would also be a valuable way of improving interprofessional working among the staff.

12.6 How would I research IPE in the future?

Following my research there are several recommendations I would make to improve the research in future IPE evaluations. This could be categorised into developments of the current work looking at measurement of attitude and knowledge, and further avenues which might be explored in the evaluation of wider IPE outcomes.

12.6.1 Development of the current research

In order to further our understanding of interprofessional education it would be beneficial to use different research paradigms with their different methods. This would enable a variety of perspectives or 'truths' to be explored and would help to illuminate the subject in different ways. The post-positivist paradigm as was used in this research, can be used but triangulation would need to be a feature of the work to provide a number of different viewpoints. For example use of a questionnaire alone would provide weak evidence for the creation of new IPE knowledge.

The phenomenon being researched, in this case attitude and knowledge of the roles of other professions is clearly not compatible with a traditional randomised controlled trial, the gold standard in positivist research, for a number of reasons. The two main ones being that firstly the phenomenon is not heterogeneous through time. This introduces a lack of reliability in the variable to be measured and makes measurement

extremely difficult. Secondly too little is known about the factors that affect the attitudes and beliefs that underpin interprofessional behaviour. The current study has shown some of the factors outside formal IPE that might do this. So the methods that might be employed would be quasi-experimental methods, action research and qualitative research.

12.6.2 The measurement tools

The knowledge, skills and role perception questionnaires might be used as part of a broad evaluation but would need to be improved for future use. This could be done if the size of each questionnaire is reduced and the items made more applicable to the group to be studied. This would be achieved if the group to be evaluated selected for example 10 items they believed to be the most pertinent to their context.

The reliability of the questionnaire was adequate according to some researchers (see paragraph 9.5) but could be improved by using more than 100 subjects to calculate the test-retest reliability co-efficient. The threshold of acceptability should also be raised and Borg's (1963 p 139 - in Cohen and Manion 1994) 0.85 level should be aimed for. The validity too could be improved by looking for other methods of measuring the same phenomena and undertaking a concurrent validity test. The questions on the role perception questionnaire could be used during an interview to enable a closer triangulation of responses and a greater depth of understanding to be gained from each question.

The response rate to the questionnaires should be improved. This could be done by building into future research a stage whereby the characteristics of non-responders could be looked at and methods put in place to improve responses providing a more representative sample.

The reference values used when calculating the learning index would be useful for future research as they provide a baseline for comparison of student's opinions. The current reference values would need to be improved increasing their validity as a measure of a profession's viewpoint. Widening the professional practioner input as well as increasing the number of educationalists taking part in the process might be

used to do this. This should be reviewed on a regular basis, as the perspectives are likely to change over time. In addition to the subject and skills knowledge reference values it would also be valuable to calculate one for the role perception questionnaire for the reasons outlined in Chapter 10.

In addition to questionnaires that pass the validity and reliability tests it would be important in the future to interview IPE participants and use qualitative methods. It was evident in this thesis that most of the useful data obtained came from the one-year follow-up interviews. This was because it provided evidence of teamworking and changed attitudes to other professions. Therefore any future research looking for teamworking or educational change could usefully use qualitative interviews as part of research strategy.

The application of the contact theory may have created facilitating conditions for IPE. Further work on curriculum design could be done to promote the favourable and reduce the unfavourable conditions as stated in the contact theory. The study identified several key conditions that were not conducive to successful contact. In future studies equal status of participants should be promoted by methods such as ensuring the group are of the same year of study, providing a more equitable experience of PBL and using groups who are studying for the same level of qualification. The factors that produced tension should be avoided such as differences in assessment practice and an unequal balance of numbers of professionals within the groups. The factors that affect competitiveness should be reduced and those that engender co-operation promoted.

The follow up interview carried out to evaluate the views of IPE participants one year on could be repeated for a different group. It would be advantageous to use a different researcher to carry them out and interpret them using a phenomenological approach. This would enable a comparison to be made with the themes from the current study and may provide further evidence for the effects of IPE on participants

12.6.3 Evaluation of wider IPE outcomes

The implicit pathway along which IPE is proposed to work would need to be further evaluated. Longitudinal studies monitoring students as they progress from pre-registration IPE out into clinical practice would be required. A range of research approaches might then be utilised to measure each of the steps. Once in practice professional's teamworking ability could be explored. Use of validated teamworking questionnaires or observation of teamworking behaviours in different contexts could be undertaken. Ultimately patient care would need to be examined to see if benefits in the other stages are being translated into improved patient care.

As suggested by Barr (1996) work could be undertaken to develop interprofessional competencies. The benchmarking of academic and practioner standards has now been completed for 11 subjects for the health care professions. The statements were drafted by groups that included academics, practitioners and representatives of the health care professional and statutory regulatory bodies. (The Quality Assurance Agency August 2001) These statements could be used to inform these interprofessional competencies. They make explicit the shared basis on which the education and training of health care professionals rests.

As suggested above to develop IPE research it would be necessary to set up a team of researchers interested in IPE and create a range of strategies appropriate to the different types of IPE being delivered. Whatever strategy is employed it will be necessary to look at IPE research with the action learning perspective gained. That is to look at the real world problems presented and be prepared to search outside a particular subject area or area of expertise to seek out appropriate ways of solving them.

It is likely when evaluating different forms of IPE for example clinically based IPE or common modules based at the university, different methods would need to be employed to evaluate them. The forms that IPE might take in the future will now be described but first the rationale for diversity in IPE explained.

12.7 What form might IPE take in the future?

This study developed and evaluated a final year, common, interprofessional education module that used problem-based learning for its teaching and learning strategy and realistic case scenarios as triggers. The contact theory was selected as the underpinning theory applicable to the health professional context, the favourable conditions were promoted and the unfavourable ones reduced so as to facilitate successful contact. This was found to be a form of IPE that could change the knowledge, attitudes and behaviour of participants, yet there were several problems identified with this configuration in the context of higher education. In order to advance IPE it is clear that in the future this form alone will not be sufficient to meet the needs of all health professions. One of the main reasons for this is the limitation imposed by the organisation of higher education. From my experience of MPE at Salford I have learned that it is simply too difficult to get students together at the same time to learn the same thing. This view is also supported by work carried out by Pirrie (1998). Lack of congruent timetabling and common validation times, different programme organisation and lack of suitable accommodation being just four major problems encountered.

The differing interprofessional education needs of each profession should also be given consideration. This varies according to such factors as the other professions that are likely to be encountered in the course of their work. A radiographer for example might work predominantly with doctors and nurses yet an occupational therapists might be required to work with physiotherapists, doctors, nurses, midwives and health visitors. The context of their work is also an important feature. The working practices in the community would be quite different to those in a hospital. If IPE were applied in a range of contexts it is postulated that the goal of IPE, teamworking and improved patient care, would be more likely to be achieved. A diverse range of educational methods is therefore suggested as the future of IPE. The possible future form of IPE will now be discussed along with some of the issues that are likely to have to be addressed.

12.7.1 Shared modules

Shared modules in pre-registration programmes might continue to be used but these could be more focussed to the specific need of the professional group. For example professions who work together on particular aspects of care e.g. elderly, rehabilitation or in different contexts e.g. primary care, GP practices, secondary care might usefully learn together. The focus for their learning might be to enable them to jointly work on projects, which they will be working together on when qualified. This would build knowledge of the roles of other professions and facilitate working on relevant problems which students might perceive as valuable to their professional learning.

Harden's (1998) taxonomy which describes 'the steps in MPE' provides a useful reference for the diverse range of MPE that could be employed. For example the 'Nesting' that he outlines is being applied to a number of professional programmes. Professionals external to and different from the professional programme are contributing to aspects of the curriculum. Whilst this type alone is unlikely to induce major change in students attitudes it may contribute to the process and support a general philosophy running through a programme.

The pressure to maximise common content in IPE was highlighted by Barr (1996). He also noted the difficulties inherent in attempting to do this. Nonetheless common content is being developed in Higher Education as a result of the Key Skills agenda which resulted from recommendations in the Dearing Report (1997). Communication skills and teamworking skills, for example, are being introduced to curricula not just in health but other higher education programmes. The way this is being piloted and implemented for some professional programmes in the Health faculty is for common modules with common content to be introduced in the first year of programmes. This is likely to remain and be developed further as a feature of health curricula as it fulfils the aims of two separately driven high priority initiatives namely IPE from the NHS and Key Skills from higher education.

12.7.2 Clinical interprofessional education

IPE is designed to foster teamworking skills in clinical practice so what better place to educate health professional students than in the workplace. Clinically based IPE is

likely to develop significantly over the next few years. The DoH documents: the NHS plan (2000), Meeting the Challenge (2000) and Making a Difference (1999) are all advocating an increase in the number of practice placements and the need for them to be used in more innovative ways. The problems that have been experienced with common modules taking place in the university is likely to make educators look elsewhere for the educational experiences. There may also be a benefit to qualified staff if students are learning about how to work interprofessionally along side them. This might encourage staff to focus on the teamworking skills and develop their own. This might help to address the 'us and them' problem that emerged as a key theme from the one-year follow-up interviews.

The form of clinically based IPE might follow several different paths. The interprofessional experiences of students could be gained through working alongside practitioners in a teamworking practice environment. Early experiences with this were reported by a team from Bournemouth University (Mercer et al 2000) at an interprofessional education conference. They had used a continuous quality improvement (CQI) methodology and placed pre-qualification students in mental health and community children's services. The students were introduced to a Plan/Do/Study/Act cycle and then undertook a placement in a team. Because the project required participation in a group and common CQI language this reduced some of the barriers created by their own professional languages. The Bournemouth team reported positive changes in practice in interprofessional understanding and in valuing the role of users and carers. There were however some problems identified with the support structures necessary in the clinical environment particularly the intensive staff resource requirement. The need for higher education centres to co-ordinate placement schedules was also identified as a difficulty. The team is continuing to move this pilot project into their mainstream educational programmes.

12.7.3 Where are the medics?

Salford, like many other health faculties in the UK, does not have a medical school attached. This means that medical staff are often not included in interprofessional initiatives for logistical reasons. If IPE is to be effective then the whole workforce

will need to engage with the interprofessional ethos. The use of practice placements might encourage the participation of qualified medical staff in the process but as Waters (2000) suggests, interprofessional understanding should be developed from the beginning of their training. He gives Imperial College as an example where medical students and other professions use a PBL approach and review patient care. St George's Medical school and Kingston University are also offered in Meeting the Challenge (DoH 2000) as an exemplar of IPE that includes medical staff. One of the guarantees in interprofessional working is that the doctor is someone who all professions will encounter during the course of their work as a health professional. This would suggest that finding a way of including the medical profession in undergraduate IPE is an important goal. Taking this a stage further it could be argued that there is little value in IPE programmes which do not at some stage, involve the personnel who are pivotal to teamworking in healthcare, the doctor.

To increase the opportunities and accessibility of students to IPE and encourage medical participation, a series of short one-day workshops and conferences could be offered on a range of topic areas relevant to professional practice. One such workshop, held for all health professions in the Faculty of Health and Social Care at Salford in November 2000, focussed for a whole day on Clinical Governance. This provided an occasion for professional groups to mix in a small group format to discuss this new initiative and the impact it might have on their future practice. It was regarded as successful, but required rescheduling of timetables and inclusion of extra student contact time in already packed curricula. There will be a need for curriculum planners to develop innovative ideas to improve the effectiveness of curricula activities to enable students to be fully prepared for their work as professions upon qualification.

12.7.4 Post qualification IPE

The literature contains many examples (Perkins et al 1994, Kane 1977, Poulton et al 1999, Shaw 1994, Owens et al 1999) of post-graduate and post-registration level interprofessional activities. The rate of change in the health service which is bringing about the blurring of professional roles, re-organisation of services, the development

of new services and the modernisation of health curricula is likely to create a dynamic and changing environment for the health professional to work in. Therefore being aware of the need for interprofessional working and knowing about the roles of others upon qualification is unlikely to be sufficient to sustain a professional's ability to work interprofessionally over many years. It is likely to be a professional requirement that they update their knowledge and skills on a regular basis as a result of the new amendment to the Health Act 1999 (CPSM 2001) which is due to make CPD compulsory. So it is anticipated that there will be an increased need for post-qualification and postgraduate IPE to enable practitioners to discharge their professional responsibility and work effectively with others.

12.7.5 'Built in' evaluation of IPE

The systematic review of the literature on effectiveness of interprofessional education by Zwarenstein et al (1999) found that although there were many papers identified too few were of sufficient quality to be included in their systematic review. They call for the need to increase the number of evaluations written up and to improve the quality of the written work. In light of this it is suggested that IPE should have an evaluation strategy built in to the programme and curriculum planners should prioritise the writing up of the evaluation after the programme has been delivered. This might require liaison with research active colleagues and an interprofessional approach to the writing and ownership of the publication.

12.8 What questions still remain?

As well as answering several research questions on IPE there are several others that remain unanswered. There were also some new questions that came to light during this research.

Having put forward a possible causal pathway for IPE - Do the stages suggested in the causal pathway explain the effect of IPE? Or is another mechanism at work.

The debate regarding which research paradigm is appropriate for evaluating IPE has been explored in this thesis. This leads to the question - Is there a need for qualitative studies of outcomes of IPE to be more highly regarded by the research community than at present? If so how can qualitative researchers address this problem.

In light of the difficulties identified in using an experimental approach in IPE - How valuable is the positivist or post-positivist paradigm when evaluating educational outcomes?

Interprofessional teamworking should involve behaviour which will ultimately encourage improved outcomes for the patient. Even if a professional has a negative attitude towards another if they can continue to behave in a professional manner teamworking may still be possible. Therefore rather than look for changes in attitude and knowledge might it be more productive to measure behaviour which promotes successful team working?

The use of triangulation using different research methods was found to lack any recognised and rigorous procedure so – what methods can be developed to triangulate quantitative and qualitative research? How do you decide on the degree of weighting of each method?

Curriculum planners are being encouraged by their funding bodies to look at clinical IPE. How might this environment be utilised in IPE and what forms of clinical IPE might be effective for which professions? This is likely to lead to new ways of evaluating IPE What methods currently used might be applied in this new context and what new methods would need to be devised?
What is the value of IPE without medical participation?

The contact theory has been shown to have contributed to the effectiveness of this IPE programme but are their other theoretical constructs more appropriate to IPE than the contact theory? And which of the contact theory conditions are more important to achieve success?

Appendices

Appendix 1. The proposed PhD project

Interprofessional Education in the Advancement of Collaborative Practice

Background:

There is currently an undergraduate multi-professional education programme delivered by problem-based learning running in the Faculty of Health, Care & Social Work Studies. Some limited programme evaluations (Davidson & Lucas 1997) Mackay, Lee-Gow & Hogg 1997) have found it to be fairly successful in its current form.

The faculty has seven departments; nursing, podiatry, midwifery, radiography, rehabilitation (physio, O.T. & P&O), social work, health sciences but only three of these departments are involved in MPE.

The key aims of the programme are built around team building and developing effective communication and co-operation between and within professions. So the inclusion of other departments' students in the programme could increase the value of the programme for all the participant professions and improve their collaborative practice skills. It would also enable a thorough evaluation of the outcomes of the programme, which would add to the growing body of evidence surrounding the value of this form of education.

Aim: To identify the value of interprofessional education in the development of collaborative practice

Objectives:

1.to improve the current MPE programme through

      i)   increasing the number of professions taking part

      ii)   improving the assessment strategy

      iii)   utilising all three of the modules (one in each year) that were designed

for delivery of the MPE programme

2. to develop a strategy to measure the elements that contribute to a student's ability to undertake successful collaborative practice.

? measure attitudes and perceptions of students towards other professions (Shaw I 1994 p44)? team working skills ? personality traits ? collaborative competencies (Barr 1996)

3. undertake a longitudinal study, which will apply the strategy to the students from the different professional groups participating in the MPE programme. Follow the cohort of students through their training period and into their first few years of practice.

4. Identify a control group who have not undertaken MPE and apply the same strategy to them. This could be at another institution.

5. compare the differences between the two groups

Potential problems

- influencing the other professions in the faculty to take part
- re-organisation and change within the faculty's programmes
- whether this is too broad a project and I need to focus it down to specific professions that currently come into contact with radiographers e.g. nursing, physiotherapy or should I assume that there will be more interaction between all professions in the future NHS and try to include more of them
- I do not currently know what elements I am investigating nor do I know of a strategy that I could employ
- obtaining the resources and help from another institution to provide a control group
- timescale, is there enough time to follow a cohort through into practice? 5 years

What do I what from the set?

- motivation, regular contact

- challenge, to force me to explain what I mean

- setting of biweekly targets

Action Plan

1. Show this to Prof Bowker (Dean of Faculty), Mrs Williams (Head of Department) & the set for comments

2. begin literature search to identify methods of evaluating "collaborative competencies" or " attitudes & perceptions"

3. devise a plan to incorporate other professions into the MPE programme

References

Barr H., (1996) Ends and Means in Interprofessional Education:towards a Typography, <u>Education for Health</u>, Vol 9, No. 3, pp 341-352.
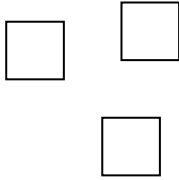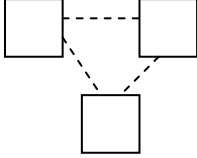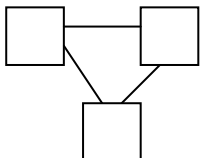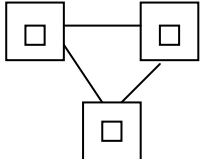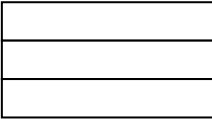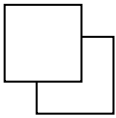
Davidson L., & Lucas J. (1997) An evaluation of Problem-based learning in the Multiprofessional education curriculum for the Health Professions, <u>Journal of Interprofessional Care</u>, vol 11, No. 1 pp 77 - 88

Mackay S, Lee-Gow D & Hogg P. (1997) An evaluation of Three years experience of Using Problem Based Learning for Delivery of the MPE programme at Salford University, Conference Papers of the International Conference on Project Work In University Studies, Roskilde University, Denmark, ISBN 87-7349-364-3

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Appendix 2: The steps in multiprofessional education (Harden 1998)

Isolation

each profession organises its own teaching and is unaware of what is taught or learned in other professions

Awareness

teachers are aware of what is covered by other professions but no formal contact with regard to conceptualisation, planning or implementation of teaching programme

Consultation

Consultation about teaching programmes between teachers from different professions

Nesting

Aspects relating to the work of other professions are included in otherwise uniprofessional courses

Temporal co-ordination

Timetable arranged so that two or more professions can be scheduled for the same learning experience, e.g. a lecture but little formal interaction during the session

Sharing

Two professions plan and implement joint teaching, with interaction between the professions in one part of a course. The remainder of the course has a uniprofessional focus

The steps in multiprofessional education (continued)

Correlation
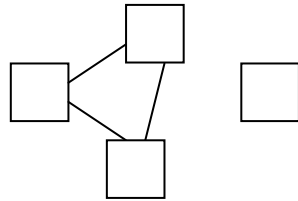
Sessions are scheduled in the programme for multiprofessional consideration of topics in an otherwise uniprofessional course

Complimentary
Programme
(mixed programme)
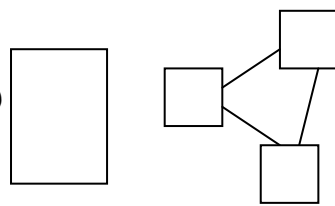
Multiprofessional teaching runs alongside uniprofessional teaching

Multiprofessional
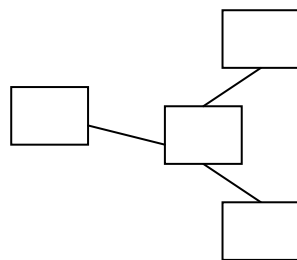
The emphasis in the course is on multiprofessional education. Each profession looks at themes from the perspective of its own profession

Interprofessional
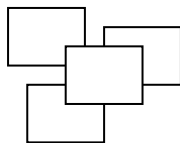
Each profession looks at the subject from the perspective of its own and other professions

Transprofessional
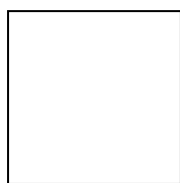
The multiprofessional education is based on the experience of the real world which provides a filter for the students' learning

Appendix 3 : email communication from T.S.Pettigrew

----- Original Message -----

From: "Thomas Pettigrew" <pettigr@cats.ucsc.edu>

To: "Stuart Mackay" <smnw37521@blueyonder.co.uk>

Sent: 11 April 2001 23:18

Subject: Re: your article on Intergroup Contact Theory

 I'll send you that review plus several other contact papers of mine (one
is a meta-analysis of the studies done on the theory. Allport, my teacher and
mentor, called it an hypothesis because it was just forming and he was a
koest[sic] man. I've just recently promoted it to a theory! I agree with you -
I think it now has expanded to the point where it is a full-blown
theory. I'll mail it this week...tfp

Appendix 4:Interprofessional Education - pilot module specification

Rationale

This module is designed to bring together a multi-professional team of students to learn together to work together.

Aims

1. To enable students to experience working in a multidisciplinary team.
2. To provide students with an understanding of the knowledge, skills and roles of other health and social care professionals.
3. To dispel professional stereotypes and promote teamworking skills

Learning Outcomes

The student will be able to:

1. identify and discuss the similarities and differences in the knowledge, skills and roles of the health and social care professionals involved in the programme;
2. discuss cases and formulate goals with other team members;
3. respect the contribution of other health and social care professionals;
4. recognise areas of work that are unique to a profession and those that may overlap with another profession;
5. recognise the importance of the co-ordination of skills in areas where professional boundaries overlap or are indistinct;
6. demonstrate an ability to problem solve
7. appreciate that health and social care professionals need to adopt an holistic approach in their problem solving.

Content

The module is based around case studies, which forms the main learning material.

Several case studies have been formulated by a multiprofessional team, which cover a range of real life patient issues. The case studies are based around a single "family" and details of the background; social and medical circumstances of a family member are presented for discussion to a multiprofessional group of final year students. (See case studies later)

Teaching and Learning

A problem-based learning format will be used to deliver the module. The PBL format was introduced into the Salford M.P.E. curriculum in 1994 from The University of Limburg at Maastricht and follows a recognised seven stage process.

This student centred methodology is highly interactive and encourages students to learn from and about each other. It also stimulates the development of independent learning skills and promotes the concept of lifelong learning. The students work in several small tutorial groups focussing on one case study at a time. The purpose of the case study is to stimulate students into identifying the role of both their own and other professions in the multi-disciplinary care of a patient/client. Each case runs over a two-week period and is broken down into four stages: case introduction; group directed study sessions; professional verification; and team feedback and discussion.

1. Case Introduction

The case study is introduced to the students either through written material, video material or actors. These cases are then discussed using the first five stages of the P.B.L. process in a tutor-facilitated session. This session takes approximately 1.5 hrs and students clarify what they already know and what they need to investigate further. This session culminates in the group identifying their learning objectives for the case.

2. Group Directed Study Session.

The group meets together to study the learning objectives from the previous session and

discuss the case further. This is a student-facilitated session. In addition to this a student may study specified areas on an individual basis.

3. Professional Verification

Having studied the set objectives students need to ensure that the knowledge they have gained is valid and current. Therefore they meet with a tutor from their own profession who has the expertise required to verify the profession specific information they have acquired.

4. Team Feedback and Discussion

This is a second tutor facilitated session where the group meets together to discuss the multi-disciplinary care for the patient/client in the case study. Students present their own profession specific contribution to the case and listen to those of others. At the end of the session students discuss the case again and produce a flow chart summarising the roles of the multi-disciplinary team in the care episode.

Teaching hours

contact hours - tutor facilitated   – 12 hrs
contact hours - student facilitated   – 6 hrs
private study hours   – 12 hrs
Total learning hours   **30 hrs**

The notional timetable (see later) will be operationalised once professions' timetables have been analysed and mutually convenient delivery times agreed.

Assessment

This comprises a group and individually written assessment. The group assessment is the production of a flow chart produced in the feedback session which provides a holistic view of the multi-disciplinary care episode. The individual assessment is the production

of a written report of the role of the multi-disciplinary team in the care of the patient/client. It is subdivided into the individual's profession specific role which would contribute one third of the final report. The role of the other health care professionals which would contribute two thirds.

This report should contain justification of the application of theory to practice, an evaluation of the practice problems presented, and a critique of the benefits and limitations of multiprofessional working. The length of the final written report should be 2,000 words.

Case studies

Meet the Johnson Family: Mr and Mrs Johnson and their three children Paul, Gillian and Margaret.

<u>Mrs Jean Johnson</u>

Mrs Jean Johnson is a 62-year-old woman with osteoporosis. She lives with her husband John who is disabled and relies on her to care for him. Jean has been getting more and more confused during the previous few months and fell down stairs this morning. She was taken to hospital where she presented with hip pain, foreshortening and internal rotation of her right leg.

<u>Mr John Johnson</u>

Mr John Johnson is a 67-year-old man with angina intermittent claudication. He is unable to walk more than a few yards and is currently confined to a wheelchair. His condition has worsened over the previous few months and his doctor has suggested some diagnostic tests. He has ischaemia of his right foot and complains of suffering from bouts of depression and being unable to cope.

<u>Mr Paul Johnson</u>

Paul Johnson is a 38 year-old man he is unemployed, single and lives on his own. He has had behavioural problems since he was at school and has had admissions to his local psychiatric unit on several occasions after unexplained violent behaviour. Recently he has been involved in criminal activity, burglary and shoplifting, and is currently on bail awaiting his court case. The previous night Paul attempted suicide by jumping out of a second storey window. He has been admitted to hospital with head, back and foot injuries.

Mrs Gillian Smith (Nee Johnson)

Gillian is a 28 year old married woman with two children, Justin aged 5 and Norman 8. She is six months pregnant and currently has a part time job as a school secretary during term time that she is anxious not to loose. She has recently been diagnosed with rheumatoid arthritis following acute inflammation of her knee, wrist, and the smaller joints and her hands. Her husband works long hours and is frequently away from home for several days in the week. They rely on her contribution to the domestic finances in order to pay the mortgage.

Mrs Margaret Patel (Nee Johnson)

Margaret is a 32-year-old woman with one child, called Saimah, who has a neural tube defect and is confined to a wheelchair. Margaret is now pregnant with her second child and is concerned over the possibility of having a second child with the same condition. Her husband is an accountant and a strict Muslim. He has stated his opposition to a termination.

Discuss the role of the multi-disciplinary team in the care of these patients/clients?

Notional timetable

An introductory session will be held at the beginning of week one to explain the principles and practice of problem-based learning. In the first two week student will study a single case to become familiar with the teaching learning format of this module and to enable them to achieve the depth required. In the second two-week block students

are expected to be able to complete two cases.

Each student will take part in three case studies overall and will be in a different group each time. This will ensure that students mix with a range of different individuals from a given profession. This supports the principles of successful intergroup contact (the contact hypothesis Amir 1967) which identifies the importance of mixing with more than one member of another professional group.

Block 1

Week 1   Week 2

Introduction to Module & P.B.L. 1.5 hrs Case introduction (1) 1.5 hrs		Group Directed Study Session 3 hrs		Professional verification 1 hr		Team Feedback & Discussion 3 hrs

Block 2

Week 3   Week 4

Case introduction (2) 1.5 hrs		Group Directed Study Session 1.5 hrs		Professional verification 1 hr		Team Feedback & Discussion 1.5 hrs

Case introduction (3) 1.5 hrs		Group Directed Study Session 1.5 hrs		Professional verification 1 hr		Team Feedback & Discussion 1.5 hrs

Appendix 5: Interprofessional Education Road Show

Why do I.P.E.?

- future employers want it

- (e.g. Primary care groups, Trusts, Health Authority, N.H.S, Government, professional bodies)

- develops teamworking skills

- gives you the opportunity to improve patient care

- move towards a "seamless service" in health & social care

- reduce conflict and stereotyping

- promote collaborative practice

What does it entail?

- working in small interprofessional groups (4/5)

- case study based education using problem-based learning

- 1 day a week (equivalent) in Feb 99

- taking part in the evaluation

- giving your views of your experience

- filling out some questionnaires

- taking part in assessment optional

What are the benefits for me?

- put interprofessional working on your C.V.

- make you more employable

- improve collaborative practice and ultimately patient care

- help future students in the faculty

- opportunity to learn about other professions

If you are interested?

let me know now ! or by Monday 23rd November Stuart Mackay

telephone -x 52157email - S.Mackay@radiography.salford.ac.uk

Appendix 6: The pool of potentially usable bi-polar role constructs

(elicited from students of eight healthcare professions)

1	Has a specific role which involves little collaboration with others	vs	Collaborates considerably with others
2	Medical focus to the work	vs	social focus to their work
3	Has an holistic view of the patient	vs	only concerned with their own practice related problem
4	Builds a deep relationship with the patient	vs	has a more superficial relationship with the patient
5	Has a multi-faceted role	vs	has a specific focused role
6	Communicates with many professionals	vs	Communicates with few other professionals
7	Works autonomously	vs	has their practice directed or supervised by another professional
8	Have an objective medical perspective	vs	have a subjective social perspective
9	Possess good interpersonal skills with an individual patient	vs	Demonstrate good interpersonal skills within a group situation
10	Does not possess skills to deal with a psychiatric problem	vs	possess skills which enable them to deal with a psychiatric problem
11	Work effectively in a team	vs	work more effectively alone
12	Has the ability to refer a patient to another professional	vs	works with the patient within their own professional field of knowledge
13	Has a sporty image	vs	Non-sporty more intellectual image
14	Has a strong political awareness	vs	Uninterested in political issues
15	Able to deal with a wide spectrum of patient/client types	vs	able to deal with only a narrow range of patient/client types
16	Tend to work in isolation	vs	tend to work in a team
17	Has a health education role	vs	role is unrelated to health education
18	Requires a high level of technical skill	vs	Requires a high level of intellectual skills
19	Acts as superior to other professionals	vs	Treats other professionals as colleagues
20	Cares for the persons general wellbeing	vs	Cares for the patient only in relation to their specific professional context
21	Considers their role as of secondary importance to doctors	vs	Considers their role of equal importance to doctors
22	Seeks out a high degree of involvement with the patient	vs	Maintains a low degree of involvement with the patient
23	Are generally outgoing and confident professionals	vs	are generally shy and introverted professionals

- 317 -

24	Demonstrate a sense of humour when undertaking their role	vs	Demonstrate a serious attitude when undertaking their role
25	Tend to be introverted and lack "get up and go"	vs	tend to be energetic and enthusiastic about their work
26	Has a caring role and people skills	vs	has a technical role
27	Are highly regarded by the general public	vs	have a low esteem in the eyes of the general public
28	Have a broad range of life experiences	vs	little practical experience of life
29	Role is clear and transparent to other professionals	vs	mystic among other professionals about what the role involves
30	Exude a high degree of professionalism	vs	do not appear to consider their professional image
31	Has a high opinion of their own profession	vs	values their own and other professions

Appendix 7: The role perception questionnaire.

1	has a specific role which involves little collaboration with others	1 2 3 4 5 6 7 8 9 10	Collaborates considerably with others
2	medical focus to the work	1 2 3 4 5 6 7 8 9 10	Social focus to their work
3	builds a deep relationship with the patient	1 2 3 4 5 6 7 8 9 10	Has a more superficial relationship with the patient
4	communicates with many professionals	1 2 3 4 5 6 7 8 9 10	Communicates with few other professionals
5	works autonomously	1 2 3 4 5 6 7 8 9 10	Has their practice directed or supervised by another professional
6	have an objective medical perspective	1 2 3 4 5 6 7 8 9 10	Have a subjective social perspective
7	possess good interpersonal skills with an individual patient	1 2 3 4 5 6 7 8 9 10	Demonstrates good interpersonal skills within a group situation
8	work effectively in a team	1 2 3 4 5 6 7 8 9 10	work more effectively alone
9	has the ability to refer a patient to another professional	1 2 3 4 5 6 7 8 9 10	works with the patient within their own professional field of knowledge
10	able to deal with a wide spectrum of patient/client types	1 2 3 4 5 6 7 8 9 10	Able to deal with only a narrow range of patient/client types
11	tend to work in isolation	1 2 3 4 5 6 7 8 9 10	Tend to work in a team
12	has a health education role	1 2 3 4 5 6 7 8 9 10	Role is unrelated to health education
13	requires a high level of technical skill	1 2 3 4 5 6 7 8 9 10	Requires a high level of intellectual skills
14	cares for the persons general wellbeing	1 2 3 4 5 6 7 8 9 10	Cares for the patient only in relation to their specific professional context
15	seeks out a high degree of involvement with the patient	1 2 3 4 5 6 7 8 9 10	maintains a low degree of involvement with the patient

16	demonstrate a sense of humour when undertaking their role	1	2	3	4	5	6	7	8	9	10	Demonstrate a serious attitude when undertaking their role
17	has a caring role and people skills	1	2	3	4	5	6	7	8	9	10	Has a technical role
18	role is clear and transparent to other professionals	1	2	3	4	5	6	7	8	9	10	mystic among other professionals about what the role involves
19	exude a high degree of professionalism	1	2	3	4	5	6	7	8	9	10	Do not appear to consider their professional image
20	has a high opinion of their own profession	1	2	3	4	5	6	7	8	9	10	Values their own and other professions

Appendix 8: Semi-structured Group Interviews

Pre- and post-module

Pre-module evaluation questions

What do you think of IPE?

Contact hypothesis

1. Do you believe that the professions are of equal status?

2 Do you anticipate that the atmosphere will be co-operative or competitive?

3 What are your expectations of the module? Are they positive or negative?

4 Do you think you will enjoy the experience

5 Do you think there will be dominance by one profession?

Perceived Module experience

1 What do you perceive will be the benefits of doing this module?

2 What do you perceive will be the weaknesses of doing this module?

3 What are the positive attributes of a :-

nurse, OT, Radiographer, Midwife

4 What are the negative attributes of a:-

Nurse, OT, Radiographer, midwife

Post -module evaluation

From your experiences on the module:-

1 What were the positive aspects

2 What were the negative aspects

3. How would you improve the module?

4. Have you learned anything about the role of the radiographer/midwife/nurse/OT?

What? Has it changed you view of radiographers/midwives/nurses/OT's?

Contact hypothesis

1. Did you perceive the participants to be of equal status?

2. Was the atmosphere co-operative or competitive?

3. Did you enjoy the experience?

4. Was there dominance by one profession?

What are your views now of interprofessional education?

Appendix 9: The 'end of module' evaluation questionnaires

1. Tutor's perception of their group's ability to meet the objectives of Interprofessional Education (For tutor to complete)

Name of Module: Interprofessional Education

Name of Tutor:

Tutorial Group Name

Indicate your perception of your group's ability by answering the following statements.

Please specify your answer as -

(1) Completely Disagree, (2) Disagree, (3) Neutral, (4) Agree, (5) Completely Agree

1.   The group members interacted as part of a team.

       1   2   3   4   5

2.   There was co-operation between group members.

       1   2   3   4   5

3.   Members shared their knowledge with others.

       1   2   3   4   5

4.   Members values appeared to be appreciated by other members.

       1   2   3   4   5

5.   Group members communicated well to other members.

       1   2   3   4   5

6.   Group members appeared to listen to other members.

       1   2   3   4   5

7.   The group were able to reflect on knowledge/experience.

       1   2   3   4   5

8.   The contribution of group members was respected by the other members.

       1   2   3   4   5

2. Students perception of the groups ability to meet the objectives of Interprofessional Education (For students to complete)

Name of Module: Interprofessional education

Student from which profession:

Tutorial Group Name:

Indicate your perception to the following statements. Please specify your answer as -

(1) Completely disagree, (2) Disagree, (3) Neutral, (4) Agree, (5) Completely agree.

1.   We integrated as a team.

      1   2   3   4   5

2.   I co-operated within the team.

      1   2   3   4   5

3.   I shared my knowledge with the team.

      1   2   3   4   5

4.   I appreciated the contribution of other members.

      1   2   3   4   5

5.   I was able to communicate to other members.

      1   2   3   4   5

6.   I listened to the group members.

      1   2   3   4   5

7.   Working in a group enabled me to reflect on knowledge.

      1   2   3   4   5

8.   I respected the other group members contribution.

      1   2   3   4   5

3. GROUP FUNCTIONING (to be answered by students and tutor)

Module IPE:

Student of which profession

Name of Tutor:

Tutorial Group Name:

Indicate your perception of the quality of functioning of your tutorial group by stating whether you -

(1) Completely disagree, (2) Disagree, (3) Neutral, (4) Agree, (5) Completely Agree, with each statement.

1.   The group systematically applied the `7' steps working through the problem.

      1   2   3   4   5

2.   Everyone in the group participated.

      1   2   3   4   5

3.   The atmosphere was agreeable and non threatening.

      1   2   3   4   5

4.   There was conflict which we overcame.

      1   2   3   4   5

5.   The group were co-operative rather than competitive.

      1   2   3   4   5

6.   Tutorials were enjoyable.

      1   2   3   4   5

Out of the 4 tutorials for IPE I attended -

0   1   2   3   4

4. ANALYSING THE QUALITY OF THE CASE STUDIES

Name of Module: IPE

Name of Tutor:

Tutorial Group Name

Indicate the qualify of the working problem by specifying your answer to each question with either -

(1) Completely disagree, (2) Disagree, (3) Neutral, (4) Agree, (5) Completely Agree.

Learning Output:

1.   Working on these cases increased my factual knowledge.

        1   2   3   4   5

2.   I am satisfied with the learning output of these problems.

        1   2   3   4   5

Clarity of Goal:

3.   The cases were formulated so that it was clear which learning objectives should be undertaken.

        1   2   3   4   5

4.   The statements to be followed in each case were clear.

        1   2   3   4   5

Openness:

5.   The cases had many different dimensions.

        1   2   3   4   5

6.   The cases allowed for in depth study.

        1   2   3   4   5

Concreteness:

7.   I was able to clearly imagine the situation, event or phenomena described in the cases.

        1   2   3   4   5

8.   These cases a description of realistic phenomena.

        1   2   3   4   5

Familiarity:

9.   I am aware of cases like these.

        1   2   3   4   5

10.   The issues in the cases were new to me.

        1   2   3   4   5

Prior Knowledge:

11.   My knowledge of the topic of these cases was insufficient.

        1   2   3   4   5

12.   I considered these cases difficult.

        1   2   3   4   5

Intrinsic Interest:

13.   I considered these cases interesting.

        1   2   3   4   5

14.   I have enjoyed learning from these cases .

        1   2   3   4   5

Time on Task:

15.   How much time did you spend on self-directed learning activities for each case ?

                        hrs   mins   hrs   mins   hrs   mins

        Case 1 _____ Case 2 _____   Case 3 _____

Learning Objectives:

16.   How many learning objectives did you formulate for each Case

        Case 1 ………..Case 2……..…..   Case 3………………

5. TUTOR RATING SCALE (to be answered by students and tutors)

Name of Tutor: ……………….
Student of which profession:
The tutor was absent ……..times   The tutor arranged a deputy ……… times
The tutor was late ………. times
Indicate whether your tutor demonstrated the behaviour specified below in an:
(1) insufficient, (2) neutral, or (3) sufficient way.

       (*   indicates that this statement is not applicable, since students themselves initiated this activity and an intervention of the tutor was not necessary).

		Sufficient	neutral	Insufficient	not applic.
1.	The tutor demonstrates to be well-informed about the process of problem-based learning.	1	2	3	*
2.	The tutor stimulates all students to participate actively in the tutorial group process.	1	2	3	*
3.	The tutor stimulates a careful analysis of the problems	1	2	3	*
4.	The tutor stimulates the generation of specific learning issues useful for self study.	1	2	3	*
5.	The tutor stimulates an extensive reporting on information collected during self-study.	1	2	3	*
6.	The tutor stimulates evaluation of the tutorial group process.	1	2	3	*
7.	The tutor has an understanding of the subject matter covered in the course.	1	2	3	*
8.	The tutor assists students in distinguishing main issues from minor issues.	1	2	3	*
9.	The tutor uses his or her expert knowledge appropriately	1	2	3	*
10.	The tutor contributes towards a better understanding of the subject matter.	1	2	3	*

11. The tutor gives an impression of being
    motivated.   1   2   3   *

12. The tutor shows interest in our learning
    Activities during the course.   1   2   3   *

13. The tutor shows commitment with respect
    to group functioning.   1   2   3   *

14. Give an overall judgement of the performance of the tutor
    (scale 1 - 10, 6 is "sufficient", 10 is "excellent")   …………….

15. Which behaviour of the tutor did you judge as most valuable?

16. Which advice would you give your tutor during the subsequent periods of tutoring?

Tutor rating scale comments by students: Valuable behaviours

number of similar responses in brackets

Listened to group members

Supportive (2)

Encouraging

Conducted session in a logical manner

Down to earth

Kept us focussed

Knowledgeable (4)

Appeared interested (3)

Problem solving ability

Clarifying

Guidance (2)

Knowledge of other professions (2)

Empowering students to make decisions (5)

Includes everyone (3)

Promoting a positive atmosphere (2)

Having a positive attitude

Values everyone's opinions

Open attitude to all professions

Advice to tutors subsequently

Focus more on the roles of professions

Be more holistic

Don't be so softly spoken

Student Evaluation of the Quality of Case Studies

Number of responses =33

Raw data

	disagree	Neutral	Agree
increase in factual knowledge	4	4	23
case studies realistic?	5	10	18
actor	18	9	3
video	14	10	6
audio	20	11	0
written	4	11	16
combination	5	13	13

Percentages

	disagree	Neutral	Agree
increase in factual knowledge	12.9%	12.9%	74.2%
case studies realistic?	15.6%	31.3%	56.3%
Actor	60.0%	30.0%	10.0%
Video	46.7%	33.3%	20.0%
Audio	64.5%	35.5%	0.0%
Written	12.9%	35.5%	51.6%
Combination	16.1%	41.9%	41.9%

Student Evaluation of Group Dynamics

Number of responses 32

raw scores					
question topic	question no.	disagree	neutral	Agree	Theme
integrated as a team	1	5	5	22	teamworking
co-operated within the team	2	1	0	30	teamworking
shared knowledge with the team	3	0	0	32	teamworking
appreciated contributions of others	4	0	2	30	teamworking
communicated with others	5	0	2	30	communication
listened to others	6	0	2	29	communication
enabled me to reflect	7	2	7	22	learning process
respected contribution of others	8	1	1	30	teamworking
there was conflict	9	22	4	5	teamworking
applied 7steps PBL	10	5	11	16	learning process
degree of participation	11	10	5	17	teamworking
enjoyment	12	5	10	17	learning process
dominated by one profession	13	4	7	20	organisation

percentages					
question topic	question number	disagree	neutral	Agree	Theme
integrated as a team	1	15.6%	15.6%	68.8%	teamworking
co-operated within the team	2	3.2%	0.0%	96.8%	teamworking
shared knowledge with the team	3	0.0%	0.0%	100.0%	teamworking
appreciated contributions of others	4	0.0%	6.3%	93.8%	teamworking
communicated with others	5	0.0%	6.3%	93.8%	communication
listened to others	6	0.0%	6.5%	93.5%	communication
enabled me to reflect	7	6.5%	22.6%	71.0%	learning process
respected contribution of others	8	3.1%	3.1%	93.8%	teamworking
there was conflict	9	71.0%	12.9%	16.1%	teamworking
applied 7steps PBL	10	15.6%	34.4%	50.0%	learning process
degree of participation	11	31.3%	15.6%	53.1%	teamworking
enjoyment	12	15.6%	31.3%	53.1%	learning process
dominated by one profession	13	12.9%	22.6%	64.5%	organisation

Tutor Evaluations of the Tutors Performance

Number of responses = 7

questions	number of responses				
	Insufficient	neutral	sufficient	not applicable	
1	1	3	3		
2	0	3	4		
3	0	2	4		
4	0	0	4	3	
5	0	3	4		
6	0	3	4		
7	2	3	2		
8	0	5	2		
9	0	3	4		
10	0	2	5		
11	0	1	3		
12	0	3	4	3	
overall score	5	6	7	8	9	10
	1	1	1	1		
	Mean = 6.5				

Tutor Evaluation of the Group Dynamics

raw scores					
question topic	question no.	disagree	neutral	Agree	Theme
integrated as a team	1	0	2	9	teamworking
co-operated within the team	2	0	4	7	teamworking
shared knowledge with the team	3	0	2	9	teamworking
appreciated contributions of others	4	0	5	6	teamworking
communicated with others	5	2	3	6	communication
listened to others	6	0	3	8	communication
enabled me to reflect	7	0	3	8	learning process
respected contribution of others	8	0	3	8	teamworking
there was conflict	9	7	2	2	teamworking
applied 7steps PBL	10	7	2	2	learning process
degree of participation	11	1	1	9	teamworking
enjoyment	12	1	2	8	learning process
dominated by one profession	13	2	0	9	organisation

Appendix 11: Presentation of final project aims to the set

What are the personal development issues I want to address?

- Confidence & belief in oneself

- Positive thinking & stress management

- Speed of thought and response

- Influencing style

- Writing style

Where is my project now?

Oct 1997 aims

- To develop current MPE programme

- to evaluate the experience

- Carryout a longitudinal study

- To improve my research skills

IPE module

- developed and run

- Many barriers to its successful implementation

- New Faculty Teaching and Development Group

- Future uncertain

IPE evaluation

- almost complete

- Qualitative evidence for changes in knowledge and attitudes

- Little quantitative evidence

- Two articles to be written up

Research plan

- Plan to follow up subjects and do group interview
- ? did IPE module benefit them
- ? evidence of poor IP working
- ? New research paradigm Constructivist
- New methodology

4. Patient client perspective

Evidence of poor IP working would inform IPE

So patient/client perspective to be investigated

5. Action plan

6. Support from work

7. Write up thesis September – December 2000

Appendix 12: Phase two group interviews: 1 year follow up

Interview plan and questions

Introduction

- Welcome and thank you

- Labels for names

- Confidentiality & anonymity

- Note taking & audio-recording for accurate record

- Transcript and themes sent out to each for comments (?addresses correct)

- ignore that I am a radiographer or IPE co-ordinator

- my brief as a researcher is to learn from you

- be honest - I am interested in your true ideas, and beliefs

Start recording

- The time is……..

- Purpose of the meeting

    - Explore your views of interprofessional working and education

Main questions

  - Since you have qualified what experiences have you had of interprofessional teamworking?

  - What do you understand by the term interprofessional team working?

  - Have you experienced any examples of poor interprofessional team working?

  - What do you think were the causes of this?

  - What do you understand by the term interprofessional education?

  - What effect did the interprofessional education module have on you?

  - Is IPE of value?

Monitoring

What consensus is emerging?

Prompts probes and checks

Read between the lines

Appendix 13: Guidelines for the phenomenological analysis of interview data

1. Transcription

2. Bracketing and phenomenological reduction

3. Listening to the interview for a sense of the whole

4. Delineating units of meaning

5. Delineating units of meaning relevant to the research question

6. Training independent judges to verify the units of relevant meaning

7. Eliminating redundancies

8. Clustering units of relevant meaning

9. Determining themes from the clusters

10. Writing a summary of each individual interview

11. Return to the participant with the summary and themes, conducting a second interview

12. Modifying the themes and summary

13. Identifying general and unique themes for all interviews

14. Contextualisation of themes

Composite summary

(Hycner 1985)

Sample of categories and themes from: Effect of module on practice (Q2)

Initial categories

GRA - generic role awareness

RPI – required professional information

ES – equal status

HP – holistic perspective

PnP

CoC – co-ordination of care between professionals

Confident about roles

Confident to ask about roles

Relaxed

S.M – social mixing

PO - Professional openness

Us and them culture

Awareness of culture of "us & them"

PP – awareness of professional prejudice

Not changed what radiographer does

Awareness of the need for information exchange

Organisational information about the patient

Understanding and valuing others

Contradiction of radiographer not working with others

Feeling of being part of a team

Social mixing helps to break down professional barriers

Not making assumptions about roles of others

Categories identified by action learning set (3.5.00)

- Awareness of professional roles

- Collegiate working (not frightened of other disciplines, more relaxed and comfortable)

- Socialisation to maintain the status quo in the working environment/indoctrination by current workers and culture

- Importance of what other people do

- Networking

- Need to understand the role of others

- Expect others to understand your role yet this is probably impossible with the rate of change of professionals role

  - young people have wider training yet they will be out of date soon

- fears

  - do not want to approach other professionals because it is believed they are to busy to be

  - natural social groupings and hierarchy causing clicks in the ward

- professionals do not do what they are supposed to do e.g. experienced qualified midwife focusing on physical at the expense of the psychological, but Why?

- Contradiction in the way that qualified professionals are valued e.g. shadowing to learn from them is valued yet the stereotypical information they pass on is identified and criticised

Themes

Anti-interprofessional working culture in the health and social care services (?cultural divide between new and longer qualified professionals)- us and them culture, it's the personality not the professional,
Radiographer contradiction do/do not work with others
Development of awareness of roles of others and need to find out those not known
Development of interpersonal skills – confidence, openness, relaxed, effect of personality of others, communication, networking
Improved interprofessional working – role awareness, need to exchange information, professional openness, status and respect for others, valuing others, feeling part of a team, search for organisational information about the patient

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Interprofessional education: An action learning approach to the development and evaluation of a pilot project at undergraduate level. – Stuart J. Mackay

Epilogue - July 2002

Having described my learning journey in this thesis, the time has come to reflect on those experiences and to highlight my learning. The learning achieved might best be described as eclectic, as it covers a wide range of different domains including interpersonal development, research skills, broader perspectives on research philosophy, developing a questioning approach, communicating with different audiences, comfort with the unknown and influencing others. Much of this learning is described throughout the thesis but the impact has become clearer upon completion of the work.

The best place to start is my personal development as it is fundamental to my learning and development from professional training as a radiographer to my current educational position. I feel I have improved my ability to communicate with others. I have developed my influencing skills and feel more confident in trying to bring about change than before. I have altered the way that I think. I am more reflective now and am able to spend time considering a wide range of factors before coming to a decision. I have used different reflective tools and now have a greater ability to learn from experience. One reason for this is that action learning forced me to engage with the unknown, to work in a situation of 'risk and confusion' and to spend time trying to find a way forward. Having experienced this I now feel more comfortable in this type of situation and am able to think through it.

I have a different view of reality now, or more accurately, I see that there are different realities and that other people inhabit these different realities. To communicate well with people you need to step in to their world and see it from their point of view. This gives you a greater understanding of others. I feel better able to make decisions now that are based on evidence and am comfortable that this evidence may be from

sources other than 'the literature'. I am aware that spending too long cogitating or not making a decision can be worse than making no decision at all.

When communicating with others the work I have done in this thesis has helped me to become more objective and to try not to take criticism personally. Whilst at the same time I listen to people when they provide me with feedback particularly in set meetings. This has helped me to find out how others see me and enabled me to change and improve.

I am of the view that the notion of emotional intelligence put forward by Daniel Goleman (1996) is an important one for human communication and achievement. In order to be able to manage people well and to develop and get on in life you need to have skills such as perseverance, motivation, self-awareness, emotional awareness, optimism and confidence. These are areas that action learning has brought to my consciousness enabling me to recognise them and use and advance them.

What would I do differently next time? How have I changed as a person? How would I research interprofessional education now? What have I learned about action learning? These questions can help to demonstrate some further outcomes to my learning.

I have been involved in IPE development for several years and have learned about change in general and specifically about bringing in a new IPE development. Change can be uncomfortable for people and in a busy working situation many people see change as more work. Their initial response is often to rebel against it but I have discovered that it is possible to get past this and to bring about successful change. One way to bring about change in a higher education context it to secure the support from both faculty/university managers and from grass roots staff. This top down and bottom up approach is a powerful one. If you have one without the other the chances of success reduce.

There is also a need for 'champions of the cause'. These are people who are committed to bringing about change and trying to influence others to accept it. This influencing may occur during formal meetings but should also happen informally. As

a champion of IPE I raised the profile of this aspect of change through methods such as informal discussion with colleagues, publishing journalistic style articles in university or faculty magazines, getting myself known for IPE. In short I took on the role of a change agent.

Another aspect of my learning has occurred during the writing up the thesis. I learned from my set but I continued to learn and develop whilst writing and thinking about what to write and for whom I was writing. I began by wanting to have the whole thesis completed very quickly and spent many of the early days driving myself on to write as much as possible on any given day. I soon learned that I produce better work by taking my time and being more patient. Some days nothing of value ended up on the paper on other days I wrote many pages that required little modification on subsequent reading. I learned to motivate myself when writing up and used to set myself a target of writing an average of 1,000 words a day. This I found was achievable and provided the motivation for me on a daily basis. There were many more good days than bad using this method and I thank Professor Mike Pedlar in the Revans Institute for suggesting this 1,000 word threshold. I have developed an ability to express myself through academic writing and have a confidence to now publish from my thesis. I intend to share my learning with different audiences and have already had an article accepted with some revision in a peer reviewed journal and have plans for other publications. The audiences I am currently writing for are my fellow radiographers, who as a profession have little knowledge of IPE nor of its value or role in a radiographic context, and colleagues engaged in IPE research. This targeted writing I would not have considered doing prior to the PhD.

I have learned about research and research paradigms. One of the most profound pieces of learning for me has been the linking of research methodology to research philosophy. I realised that up to this point I have been looking at research methods in a narrow way. Once I discovered that it was possible to look at the ontological and epistemological underpinning of research paradigms and that there were different ways of answering a research question I felt able to look outside the narrow view I had previously held. This has led to my having a much wider perspective on research methods and realising that even through there are different research paradigms there is no over arching framework with which to make the judgement as to the 'best' one or

the most appropriate one to follow. Consequently I am more comfortable knowing that different people will perform research in different ways.

My investigations with my set into 'theory' have broadened my understanding of knowledge. My previous view of theory was that it was fixed, produced in the form of law-like statements from which one should not deviate and that it was developed by ''top scientific researchers''. I am now much more aware of how theory is developed and used and that all knowledge is tentative. It could at any time need to be redefined as new knowledge is created. I am more comfortable with the notion of a grounded theory approach to developing new modern theories. In a similar way I have learned about knowledge building and development and that knowledge created using different research paradigms is accumulated in different ways.

What would I do differently now?

To further the cause of IPE I would continue to be a change agent but would look at developing a wide range of different IPE initiatives which could be used by different programmes to further the aim of interprofessional education. This being to enable health and social care staff to work better together in clinical practice and improve the care to patients. One of these options would be to use the real clinical situation to inculcate the IPE philosophy. I am also aware that my interpretation of IPE may not be the same as the interpretation of others. Although in the literature I have read the IPE model I have used is shared by others, there are alternative models and perspectives which may be equally valuable.

I would now build up and use personal and professional networking with colleagues to help to influence their uptake of IPE. As a programme leader I would use my position to gain access to those who can influence change from their position in the organisation. This might be other programme leaders or key players in the faculty management structure. I would find out who are the allies to such development and who needs to be persuaded to this view. I would also market IPE more strongly and get myself and other champions of the cause better known in the organisation.

I would now be much more comfortable using interviews with IPE participants to answer research questions such as, what have you learned about IPE? What effect has it had on you? As I have improved my interviewing and interpretation skills I would be better at encouraging interviewees to express themselves and in interpreting those views.

The questionnaires I compiled for the evaluation of IPE need some further work done on them to improve reliability and validity but may still be of value in combination with other methods. The target audience for such research would need to be clearly identified as some researchers and journals would require research questions to be answered in a form they were familiar and comfortable with. For example it is unlikely that a piece of pure qualitative research would be published in a medical journal, although they might accept mixed methods work.

Other approaches to evaluating interprofessional education could be to observe professional teamworking behaviours and to explore with professionals the motivations for these behaviours. There are published benchmarking statements for many professions that specify the competencies they are expected to have. These competencies could be analysed and the interprofessional competencies selected out. This could provide a useful benchmark with which to compare professionals' behaviour. Alternatively a grounded theory approach could be taken where the behaviours of successful teams are investigated and the behaviours which promoted good teamworking could then be identified.

Action learning has enabled me to learn and develop in a wide range of different areas. I have developed my self-awareness, research and IPE. It has been such a profound experience that it has changed the way I think and has enabled me to see the world in a variety of different ways and from the perspective of others. Action learning has facilitated my learning and has enabled me to move from a positivist radiographer to an educator with a broadened perspective of teaching, learning and research.

This personal development and the IPE work I have undertaken has enabled me to influence colleagues who are engaged in health education and to further the

development of IPE in both the school and faculty. It has also added to the momentum of IPE research and development in the IPE research community.