

**MAINTAINING THE QUALITY OF CLINICAL
EDUCATION IN PHYSIOTHERAPY**

by

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ABSTRACT

Government demands to increase the number of physiotherapy students have led to problems in acquiring extra placements in which these students can experience their clinical education. This problem has been accentuated by difficulties with recruitment and retention of physiotherapy staff that might take on the role of clinical educator. This study uses empirical data to explore how further placements could be found without compromising the quality of the learning experiences.

Action research is used to identify current practice and areas where change may be advantageous. Perceptions are drawn from professionals and students - physiotherapy managers, clinical educators and physiotherapy students. Data collecting techniques include interviews (13 physiotherapy managers) and five questionnaires – with clinical educators (n=67 and 42) and students (n= 73, 76 and 62) as samples. All data are triangulated to justify the study findings.

The findings are framed around concepts of management and learning within clinical education. Evidence that emerged during the action research process led to two main changes. Firstly more junior grades of physiotherapy staff were included within the pool of clinical educators. Secondly a new ‘model’ of facilitating learning was established through the creation of ‘learning teams’ where both students and clinical educators worked together to share and develop knowledge. Changes meant that increased student numbers were accommodated without compromising quality. This was demonstrated through positive student evaluation of clinical placements at the end of their degree course.

The impact of accommodating students within physiotherapy settings is discussed in relation to departmental, personal and professional management. Priority could be given to improving how student learning might influence not only personal but also professional development.

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Abbreviations

ACE	Accredited Clinical Educator
CE	Clinical Educator
CPD	Continuing Professional Development
CSP	Chartered Society of Physiotherapy
EBHC	Evidence Based Health Care
EBM	Evidence Based Medicine
HEFCE	Higher Education Funding Council for England
HEI	Higher Education Institution
H&M	Honey and Mumford
HPC	Health professionals Council
NACC	National Association of Clinical Co-ordinators
NHS	National Health Service
NICE	National Institute of Health and Clinical Excellence
NSF	National Service Framework
PBL	Problem Based Learning
QAA	Quality Assurance for Higher Education
SDLRC	Self-Directed Learning Readiness Questionnaire

Chapter 1

Introduction

This thesis is an investigation into the provision of clinical education for students studying for a BSc (Hons) Physiotherapy at the University of Birmingham. The decision to explore this topic arose when as clinical co-ordinator ¹(academic member of staff responsible for clinical education placements), I needed to find more placements as student numbers rose.

Using action research methodology, interviews and questionnaires were used to elicit the perceptions and beliefs of physiotherapy managers, clinical educators and students with the aim of exploring current practice and identifying where changes to practice might result in extra provision.

The purpose of this chapter is to explore some of the background to current practice and introduce the problems that are explored within this thesis. It broaches the difficulties that higher education institutions (HEIs) are experiencing in obtaining clinical placements for undergraduate physiotherapy students, as student numbers increase. Some possible solutions requiring research are suggested that may address the accommodation of increased student numbers without compromising quality.

¹ Each HEI appoints a member of academic staff within their department to oversee the management of the clinical education component of the degree. These personnel are the clinical co-ordinators.

1:1 Curriculum and the emerging role of the clinical educator

Students embarking on a degree in physiotherapy study a curriculum that is validated by both the host HEI and the Chartered Society of Physiotherapy (CSP). The degree courses have to satisfy the validation guidelines of the CSP (CSP, 2000b). Students work within the standards of the National Health Service (NHS) and comply with its performance indicators (NHS, 2003). (Since the study was carried out validation is also carried out by the Health Professionals Council (HPC)).

A brief overview of CSP curricula, dating back to 1974, and up to 2002, reveals that there have been no changes in regards to the time required (1000 hours) for the student to undertake supervised clinical practice. If successful, and on the proviso that they are also successful in all academic modules, students are eligible to practice when they graduate. At Birmingham the 1000 hours are divided into six clinical placements. One falls in year 1, three in year 2 and two in year 3 of the degree course.

The 1974, 1984, and 1991 CSP curricula all stipulate that the student should work during their clinical placements under the guidance and supervision of a qualified physiotherapist. There is no reference to how students learn. It was not until the publication of the 1996 CSP curriculum that any reference was made to the learning process. It states that teaching and learning strategies should adopt a student-centred approach to learning (see Appendix 1).

In recognition of the importance of learning within the clinical setting the 1996 CSP curriculum also states:

learning achieved in university and clinical settings is of equal significance and should be wholly integrated.

(CSP curriculum 1996:16)

By the time the 2002 CSP Curriculum Framework was published those who supported learning in the clinical setting (the clinical educators) were provided with information that aimed to assist them in supporting, facilitating and assessing students' learning.

The document included sections on:

- awareness of the process of professional learning through which physiotherapy students progress
- information on the development of learning contracts with students
- a tool to assist in supporting, evaluating and assessing students' learning

Changes were mirrored by the development of physiotherapy education in Birmingham. Nineteen ninety two saw the first intake of undergraduate students on the honours degree in physiotherapy. Up to this date physiotherapy students on completion of their studies achieved a diploma in physiotherapy. The same year, the Queen Elizabeth School of Physiotherapy was amalgamated with the Royal Orthopaedic Hospital's School of Physiotherapy and both joined forces to offer an honours degree in physiotherapy at the University of Birmingham. This necessitated a change in the way academic staff organised the course and the way students learnt. In order to bring clinical education up to degree standard there was a need for close collaboration between academic staff based at the university and practitioners who

managed learning within clinical locations (Cross, 1992). As the assessment of clinical placements carries degree weighting and as the clinician supervising the students is responsible for assessment of clinical practice, they needed to be aware of changes in academic standards.

Before degree status was applied clinical physiotherapy staff who worked with students were called supervisors. As a supervisor, physiotherapy staff generally worked with a number of students and supervised the students' implementation of treatments. They helped students to learn through allowing them to observe their personal clinical performance. Despite checking student performance they did not necessarily assess it. They were indirectly involved in facilitating learning but academic staff visited clinical locations for teaching, learning and assessment purposes.

However, it became recognised that clinical staff were more aware of changes in clinical practice and that they should be given more responsibility for teaching students. With the 1992 conversion to a degree programme, it was felt necessary to change the term supervisor to that of educator and the term 'clinical educator' (CE) was adopted. In order to become an educator, clinicians needed to consider how adults learn (Cross 1994). As well as facilitating students' learning of clinical skills, they would now be involved in formally assessing students' performance. Furthermore, they would be required to help the students transfer knowledge learnt within the HEI into practice through discussion of theoretical principles and the expansion of sharing their own personal knowledge. The CE would provide both

formative and summative feedback. It was recognised that in adopting this role the clinician required guidance and further training.

This transition was managed through offering courses for clinical educators within the university that included learning theory, knowledge of formative and summative assessment and the introduction of learning contracts (See Appendix 2 for copy of learning contract used at Birmingham –developed by Luft and Ingham, 1969) that enabled clinical educators and students to negotiate the objectives of learning within each clinical placement. Clinical tutors (academic staff who visited students on placement) were able to assist with the management of these contracts.

The undergraduate degree programme values learning equally in both the university and during clinical placements. A core requirement for the physiotherapist is to be able to clinically reason – plan treatment through examination, diagnosis and prescription (Higgs, 1992a). Observation of good practice during clinical placements should help a student to develop good clinical reasoning skills (Higgs and Jones, 1995). Clinical educators have a key role to play in such development and it is important that students are able to learn alongside practitioners. The enhanced role of the clinician has to be considered alongside the demand for more clinical educators.

1:2 Increasing student physiotherapists

In 2000 the Department of Health published two papers spelling out the NHS plans to greatly increase the number of health care workers (DoH, 2000a; 2000b). This

expansion aimed for a 59% increase in the number of physiotherapists before the year 2009. In response, a number of HEIs increased their numbers of undergraduate students. The Chartered Society of Physiotherapy (CSP) revealed within their National Student Intake Analysis (2002) and their Equal Opportunities Reports (2003a) that the total number of undergraduate students rose from 1604 in 1998 to 2454 for the 2002 student intake, an increase of 53% over 4 years. (Numbers continued to rise up to 2007 – see 8:4).

No problems have arisen in achieving the increased student numbers as historically physiotherapy degree courses have attracted far more applicants for the degree course than there are places on offer. Despite the increased intake, entry requirements have remained static. In order to study physiotherapy at Birmingham University students need to achieve 320 tariff points (ABB at A level) or the equivalent (see Appendix 3 for full details). However, with increased numbers there were management issues to address and problems to solve. It was important to maintain a high quality of clinical education whilst accommodating this expansion.

The quality of the education provided within the physiotherapy degree programme is assessed / reviewed in a number of ways. In addition to meeting the Quality Assurance for Higher Education (QAA) standards, physiotherapy programmes also have to provide evidence that the pre-registration standards for clinical education set by the CSP have been achieved (CSP, 2000a).

In 2000, The School of Health Sciences/Physiotherapy (Birmingham) underwent QAA evaluation where the quality of teaching and learning was put under scrutiny.

Having reviewed components of clinical education, the QAA Subject Review Report (2000) stated that:

Clinical educators are well informed about the University component of the programme and there is good liaison between clinicians and academic staff. Courses for clinical educators are provided regularly by academic staff and are well attended. The clinical educators see themselves as members of the team providing this education programme for students of physiotherapy.

(QAA Subject Report 2000:8)

The QAA awarded the full 24 points to the BSc (Hons) Physiotherapy at the University of Birmingham in 2000. At that time the largest cohort of students was 60. More recently the undergraduate cohort numbers reached 100. Also the fast track MSc in physiotherapy validated from January 2005, added another 25 students needing clinical placements. All have to complete their 1000 hours of clinical experience before becoming eligible to practice. The issue was, whether with the increase in student numbers, could the quality achieved in 2000 be maintained?

1:3 Issues arising from increased student numbers

Providing the theoretical element of the degree course, within the university, requires a small number of academic staff in comparison with clinical educators. Students are, in the majority of situations, facilitated to learn in groups in most academic learning

scenarios through lectures, seminar groups, and tutorial groups. On condition that the HEI works within the CSP's Joint Validation Guidelines of a staff/student ratio of 1:12 (CSP, 2002b) a rise in student numbers would require a relatively small increase in the number of academic staff. The clinical education element, however, requires large numbers of clinical educators as traditionally students are managed either on a 1 : 1 basis (one student with one clinical educator) or within very small groups, 2:1 or 3:1 (two or three students with one clinical educator). Students also need to learn within a range of specialties and settings comprising musculoskeletal, neurological and cardio-respiratory practice and may also include, amongst others, areas such as paediatrics, mental health, women's health, burns and learning disabilities. The increased student numbers created an added burden to existing host clinical areas and existing clinical educators. Assuming the same sites were to be used, a vast increase in the number of clinical physiotherapy staff becoming clinical educators was needed to manage the students.

As a tool to address the required increase in clinical locations/specialties, the CSP said:

Anywhere a physiotherapist works is potentially suitable for a clinical education placement as a means of gaining a broad range of skills. (Validation Guidelines, 2000b:37).

This created the potential for HEIs to increase the number of locations and explore opportunities to place students within a wide variety of settings not previously used. Areas that historically had not accommodated students (private sector, prisons, sports centres) could be approached. As a result of opening up new locations, the number of

clinical educators (CEs) would increase if the physiotherapy staff within these areas added facilitation of student learning to their existing role.

However, the required national increase in both locations and CEs was not forthcoming at the speed required to accommodate the increasing student numbers. This problem was voiced at meetings of the National Association of Clinical Coordinators (NACC- a group which included an academic representative from each HEI that runs courses for physiotherapy graduates) and was highlighted by the CSP (Chadda, 2000).

Physiotherapy managers who oversee the running of physiotherapy departments have been reluctant to offer more/ any placements. They are concerned with patient throughput and some feel that accommodating students within departments is a pressure on time (Maxwell, 1995). Physiotherapists themselves have been reluctant to adopt the role of educator due to poor understanding of the role (Baldry Currens and Bithell, 2000). Existing CEs have felt under pressure to increase the number of students they supervise, through receiving requests to take on students in greater numbers or more frequently during the academic year. These problems have been acknowledged by the CSP and have resulted in the CSP highlighting priorities that the profession needs to address when organising clinical placements. They have suggested the development and use of different models of supervision, HEIs linking more closely with managers, and more research into the implementation, management and quality of clinical education (Potter, 2001).

Within her report, Potter (2001) quotes Alan Walker, the then director of education for the CSP:

Many of the problems we have in clinical education are perceptual problems. We need to persuade people that alternative models will not be a disaster.

(Potter 2001:8)

Research prior to the 2000 Department of Health plan to increase the number of health care workers (DoH, 2000a, 2000b) had shown that there was reluctance on the part of some clinicians to adopt the role of clinical educator. In 1995, Maxwell found that clinical educators considered that staff shortages, funding and service pressures discouraged physiotherapy staff from adopting the role of educator. The 57 clinical educators that were surveyed feared that there might be a resultant decrease in the departments' throughput and productivity. These views heightened, and at meetings of the National Network of Clinical Co-ordinators were commonly expressed when requests were made for clinical placements. Similar views were also heard when the author had informal conversations with clinical educators.

Physiotherapy managers have a responsibility to accommodate students within their workplace. However, it is known that some managers had difficulties in attaining this goal within a profession that is facing problems with recruitment and retention of qualified staff (Potts, 2001a; 2001b). This has led some physiotherapy managers to appear to be most concerned with staff workloads and may have led to the perception that students are too time-consuming for staff who are already over-stretched (Maxwell, 1995). Moreover, it would appear that the managers and CEs of certain

locations approach the educational experience through focusing on the overall workforce management of locations. They are concerned with patient throughput and attention has not been given to any benefits that may arise if students are part of the 'workforce'.

Facilitating students' learning is perceived by some managers to increase demands on time, and the contribution that students may bring to the service is not considered. Departments are often short staffed, and when the author made requests for some or extra placements some managers declined believing that this would create extra work. This decision was made without consultation with the staff who might have facilitated the student's learning.

It is quite understandable that, without evidence to show that it may be beneficial to have students in a department, managers do not want to take on extra students. It could be that managers have generally viewed the facilitation of student learning to have a detrimental affect on effective patient management and throughput.

Primarily, students develop the knowledge and procedures needed to manage patients in a clinical area within an academic setting. In the clinical arena students should have opportunities to develop that knowledge and build on skill acquisition. Students need good transition of knowledge from classroom to practice - good transition of academic knowledge to clinically-orientated knowledge. Being a clinical educator is a demanding role, as the educator is the person who facilitates students in this transition of knowledge. They need to plan prior to the arrival of students, carry out an induction programme and agree learning outcomes with students. Having done this they have

the role of facilitator of student's learning and need to ensure that this facilitation meets the learning outcomes of the HEI (CSP, 2003b). Consequently, it is not surprising that physiotherapy staff who manage departments were concerned about the workload of their clinical educators.

There was a need to find clinicians who are able to do this whilst maintaining quality.

1:4 Approaches to the issue

Before the numbers of physiotherapy students increased, with any significance, the DoH (2000b:17) recommended that managers should "be more flexible in how they develop services and consider how better use could be made of the individual contributions of each of the allied health professionals".

Different health care professions began to work closely within the clinical setting and were beginning to address the NHS plan (Secretary of State for Health, 2000). Through promoting partnership and co-operation at all levels, they have a combined aim to ensure a seamless service of patient-centred care. Examples include different allied health professionals organising treatment management plans together. This has meant that there are possibilities for collaboration in clinical education, as was found in a study by Prystowsky et al (2001) who explored clinical education in 13 medical schools. In practice, this has resulted in physiotherapy students increasingly being given the opportunity to spend time with other professions, including occupational therapists, doctors, nurses, speech and language therapists. This should then in theory provide opportunities for students from different health care professions to share

aspects of learning within clinical settings and mirror the increasing emergence of shared learning within academic degree programmes. [Physiotherapy students at Birmingham have some shared modules with students studying for a BSc in nursing]. Generic skills that are not profession specific can be explored within multi-disciplinary teams. Thus one possible approach to accommodating more students could be the inclusion of staff from different health care professions sharing the responsibility for clinical education.

Another approach to the problem may be found by researching the contribution that students bring to the health care provided by staff within a department. If having students within the workforce was found to have a positive effect on patient care and throughput it may persuade physiotherapy managers to encourage their staff to take on the role of clinical educator. An in-depth investigation of the management of clinical education may not only reveal ways to increase the provision of clinical education placements, whilst maintaining quality standards, but may also provide information relevant to the overall management of patient care. Assessing the contribution that students bring to a department could provide incentives for managers, who may then encourage staff to take on the clinical educator role. If research was able to reveal advantages in becoming a clinical educator then individual physiotherapists might independently seek to adopt this role.

A third approach to the problem of accommodating more physiotherapy students within clinical settings may arise if research is centred on methods of managing student numbers. This requires on-going research into the quality of clinical education when a CE supervises more than one student at a time.

Fourthly, if having students within the workforce was found to have a positive effect on learning for both students and educators it may lead to more offers of placements. This might finally lead physiotherapy managers to allow more staff to become involved in clinical education, whilst existing clinical educators may allow more junior staff working within their teams to share the role of educator.

It is important that physiotherapy managers and clinical educators adopt a positive attitude to knowledge enhancement. This is essential if the quality of learning is to be maintained at a high standard. Increased student numbers should not impinge on the quality of learning or the personal and professional development for students and qualified staff.

1:5 Quality and management issues in clinical education

All aspects of the BSc (Hons) Physiotherapy have to reach degree standard. Consequently, there is a need for academic staff and clinical educators to work under the codes of practice for academic standards. The QAA Code (2000:2) stated:

All staff need to be supported to ensure that they are competent to fulfil particular roles. Policies, procedures and practices need to be monitored and reviewed to ensure their effectiveness.

Despite this being a challenge for both academic staff and clinical educators, the policies can be easily discussed and monitored within an academic department where academic staff numbers are small; A small team works closely together and is fully aware of quality objectives. Support can be identified in staff appraisals. However, monitoring the quality of clinical education and the work of individual clinical educators is a far more diverse problem. Not only are clinical educators employed by a large number of different Trusts/employers who will have their own policies, but also the number of staff to monitor is far greater than within the academic department and difficulties arise in identifying the support required by individuals. Obstacles emerge in obtaining equality throughout all aspects of clinical education.

Before a physiotherapy student is licensed to practice they have to achieve a high standard of technical knowledge (Higgs, 1993), which is measured for quality through summative assessment during clinical placements. However, adhering to a purely technical measurement does not allow for the qualitative aspects of practice to be considered (Fish, 1991). Working Paper 10 (DoH, 1989), which is cited in an earlier study on the quality debate in clinical education by Cross (1995), introduced two models for quality:

- “Product” – where the needs of the stakeholders involved in clinical education are considered and effectiveness is measured in terms of efficiency and economy
- “Process” – where how the student learns is considered

A “product” model may be a suitable tool for measuring the quality of the management of clinical education where patient care and throughput is important. On

the other hand, the “process” model would best assess the quality of the clinical education of/for the students, given that the focus is on how the student learns.

Furthermore, as qualified staff are now required to show evidence of continuing professional development (CPD), and learning is an on-going part of this, the “process” model should be appropriate for all grades / learners. The CSP (2003c) highlights in its briefing paper on CPD the vast array of ways in which individuals can address both personal and professional development. A span of opportunities from accredited programmes of study, through to more informal methods of incidental learning with colleagues and other professions are suggested. Clinical supervision systems are also highlighted as valuable opportunities for learning. It would appear that learning is a key principle. (The importance of the “product” and “process” measures of quality are further explored in chapter 2 where relevant literature is presented).

Ensuring equitable quality of clinical education for all students during their clinical placements presents difficulties. It is important that the quality of experience between individual students and individual clinical educators is addressed. If the quality of clinical locations were taken as the sole measurement, the outcomes would be variable as staff turnover could lead to changes.

A brief look and summary of the QAA Benchmark statement: Health care programmes/Physiotherapy (2001:12) stated that the learning process can be expressed in terms of four integrated themes:

1. cognitive and conceptual – the ability to reconstruct knowledge and apply it in different situations;
2. clinical and technical - skills should be developed in both university and clinical settings;
3. social and personal context – achieved from both theoretical and practice perspectives and by exposing students to clinical practice in a wide variety of settings;
4. generic and enabling – acquisition through activity-based experience.

It was stated that a guarantee of quality will be achieved through working towards these four statements. If these are the key principles then all students should be given the best opportunities to work towards the statements.

However, it cannot be pre-supposed that high quality learning develops without a considerable degree of input and those involved in facilitating learning may require guidance to improve quality. If, after guidance clinical educators are shown to be providing students with high quality learning experiences then these could then be used as examples of good practice.

Quality standards need to be met to address both professional and educational requirements. Research that explores clinical education should help the university to aim to achieve these learning strategies.

This thesis addresses this issue through following and researching the experiences of a cohort of physiotherapy students, who have experienced learning with a number of

CEs, through the three years of their degree programme. This is combined with exploring the views of physiotherapy managers and clinical educators with the aim of evaluating, in-depth, the quality of the students' encounters. Using action research the thesis aims to examine the effects of interventions within clinical education (Cohen and Manion, 1994) and is concerned with promoting changes both for individuals and groups (Kemmis and McTaggart, 1992) where research data identifies the need for change.

1:6 Summary of chapter and research questions

The background information presented in this chapter suggests that, in order to fulfil my own role as clinical co-ordinator, I needed to look closely at the overall facilitation of clinical education. It became apparent that, in finding placements to accommodate the increased student numbers, I needed to be vigilant in ensuring that the quality of placements was maintained and that all students possessed a clinical placement profile [at the end of their three years of study] that demonstrated this.

This led to the key question:

- How to accommodate the increased number of students in clinical locations whilst maintaining quality standards?

More specifically, my research question was:

How could further placements be found without compromising the quality of the learning experience?

In addressing this question a number of sub-questions were raised:

- How do managers perceive the effects on their organisation of physiotherapy departments when there are clinical educators and students within the workplace?
- What are the affects on clinical educators when students are placed within their clinical settings?
- How do clinical educators perceive their role?
- What impact would increased student numbers have on the management of clinical education, and how might this affect student' learning and experience of clinical practice?
- What are the students' views on the quality of their clinical education and on the changes that have occurred in the management of clinical education as a result of increased student numbers?

Researching and evaluating the quality of learning within the clinical education of student physiotherapists is investigated within this thesis through considering how clinical educators develop students' learning. Evidence that reveals how the presence of students may be beneficial to overall management within a physiotherapy department is explored through interviewing physiotherapy managers, and comparing their views with those of clinical educators. Evidence displaying how students benefit the learning occurring within departments would show a "process" indication of quality. Through reflection in and on action, the methodology allows a continuum of possible change to be identified and explored, from the early stages of and throughout the study.

Chapter 2

Exploring the Literature

The purpose of this chapter is to explore literature relevant to addressing the broad scope of the research question, which may lead to further shaping of the question. Applicable literature was retrieved using a number of search databases that cover health sciences, medicine, education and management. These included; Medline, Cinahl, Embase and data bases dedicated specifically to peer reviewed journals. 'Keyword' searching was employed in order to pinpoint relevant material and further explored using 'citation indices'. This was supported by hand searching.

The literature is presented and discussed under two themes. These themes emerged after a period of reading and reviewing the literature and were considered relevant to addressing the research question. Firstly, as the research question is concerned with quality within clinical education it was considered important to search and present literature exploring constituents of quality and what may influence quality standards relating to clinical education. More specifically this exploration needed to include quality indicators within the education of physiotherapy students.

Secondly, as clinical education constitutes a third of the degree course in physiotherapy, and learning within academic and clinical settings is of equal significance (CSP, 1996), it was considered important to review the literature relating to teaching and learning for adults. It is when on clinical placement that the health care student is able to gain knowledge that is profession-specific and where, through

experience, knowledge that is embedded in practice and knowledge that transfers from case-to-case can be developed (Luntley, 2002). Clinical educators have the responsibility to facilitate student learning during placements, so an understanding of how people learn may influence such facilitation. They need to appreciate the values and challenges of learning within the workplace (Hughes, 2004)

Having undertaken some general exploration of the literature the outcomes are related to physiotherapy education, and more specifically to clinical education. The literature chapter reports research outcomes relevant to clinical education in physiotherapy, addresses some of the issues related to this study, and reveals areas where further research is needed.

2:1 Quality in Health Care

The term quality, as applied to organisations and services, is often used in a vague manner and to some simply means that activities are designed to improve those organisations and services (Kelly et al, 2006). However, quality is a multi-faceted concept with different dimensions of quality being important to different users (Ennis and Harrington, 2001).

Within health care, the objective of defining and assessing quality has been evident for many years. Donabedian (1966) proposed that quality can be measured through observing structure, processes and outcomes. In citing the work of Eislee et al (1956) and Lembcke, (1956), he suggested that through combining outcomes derived from empirical evidence of actual practice, information from textbooks and research,

quality might be measured through the development of structured standards. Yet, despite such an edifying proposal, some of his later work (Donabedian, 1988) suggests that, before assessing quality, consideration might be given not only to the performance of practitioners but also to that of patients and how they might contribute to the health care system.

Using these suggestions, Wells et al (1989), having carried out a study into the quality of care for the detection of depressive disorders, concluded that quality could be precisely measured. However, further reiteration by Donabedian (1990) culminated in the publication of his 'seven pillars of defining quality'. These included; being efficient in the ability to care in ways that improve health whilst making improvements at the lowest costs; being effective in the realisation of health improvements; having the ability to be cost effective whilst conforming to patient preferences and social differences and demonstrating fairness in the distribution of care. Consequently, health care professionals were faced with many challenges in their quest to provide high quality care.

This led to the continuing debate into what is quality and how can it be best assessed within health care? Having conducted a roundtable discussion with participants from medicine, nursing, academia, business and consumer advocates, Chassin et al (1998) concluded that quality problems still existed. They had concerns that a major review of how health care was delivered and how clinicians were educated was needed.

Publications including the DoH NHS Performance Indicators (DoH, 2000c), the Audit Commissions Performance Measurement (2000) and the World Health Organisation

Performance Framework (2000) all indicated the need to aim at improving quality within health care. Within the UK such indicators are centred on health improvement, fair access, effective delivery of appropriate care, efficiency, patient/carer experience and health care outcomes (Ewan and Shortell, 2001).

There is a general consensus that health care providers must be quality focused when aiming for effectiveness (Feeney and Zairi, 1996). Furthermore, health care professionals are required to provide a reliable, effective service whilst finding ways to reduce cost without compromising quality (Ennis and Harrington, 2001) and need to be committed to quality management (Lin and Clousing, 1995). However, some might argue (Arah et al, 2003) that when effectiveness is considered it is often unclear how this is measured and how performance data is used to encourage improvement and ensure that health care is of high quality. Also, people see quality in health care differently depending on their involvement – be it administrator (with or without patient contact), health care professional, or health care student (Ennis and Harrington, 2001).

One aspect of effectiveness may emerge from the level of knowledge possessed by the health professionals who administer care (Davenport and Prusak, 1998) and the processes by which such knowledge is gained (Yin and Wai Ming, 1997). Leitch and Harrison (1999) believe that change is a fundamental part of quality and that, in order to gain appropriate knowledge, the process of education should consider both individual and organisational learning.

So what is quality? Scholarly view has through the years been of the opinion that the term has multiple and often muddled definitions to describe a wide variety of phenomena (Reeves and Bednar, 1994). Abbott (1955) sees it as an indication of value, Juran and Bingham (1974) as fitness for use, Crosby (1979) as a measurement of conformance and Gronroos (1983) as an indication of exceeding expectations. This multiplicity of definitions accentuates the challenge of characterising quality within health care, but differing explanations of the term can be accepted if the overall aim is to improve performance (Ennis and Harrington, 2001). What defines quality may be the process by which quality is achieved rather than the actual outcome (Klessig et al.2001).

It needs to be recognised that if the process provides a poor outcome then quality may be seen as inferior, however attention to extraneous factors (e.g. compliance, past medical history etc) may result in processes being rated high quality despite poor outcomes (Brook et al, 1996, Kerr et al, 2003). In other words, if we compare two hospitals that are managing patients with the same diagnosis but with a different demographical profile, the outcome in hospital ‘A’ may be better although processes (e.g. staff encouragement in CPD, health and safety procedures, induction of new staff) may be better at hospital ‘B’.

2:2 Assessing the quality of clinical education

Since 1997, the Quality Assurance Agency for Higher Education (QAA) had responsibility for assessing the quality of higher education in England and Wales,

with reviews of education programmes aiming to ensure that public funding is supporting education of an acceptable quality (QAA, 2000). However, the purpose of such reviews has been to ensure not only that the education is of an acceptable quality but also to provide information and insights which encourage improvements in education (QAA, 2000).

Due to the nature of educational programmes for health professionals, this review needed to assess not only education within the HEI but also within clinical locations. With this in mind the QAA (2000a) published their 'Code of practice for the assurance of academic quality in higher education: Placement learning', which highlights both the requirements for the HEI and the placement providers to work together to provide high quality learning outcomes for students. Whereas the responsibility of ensuring that 'a placement provides adequate opportunities for the intended learning outcomes' (QAA, 2000a:2) lay with the HEI, the placement provider play a role in assessing (where appropriate) the outcomes of such learning opportunities (QAA, 2000a:6). Physiotherapy learning and teaching strategies should be distinctive, and designed to integrate university and clinical work-based learning (QAA, 2002). Quality standards should be benchmarked to reveal optimal and shared goals for learners from all health care professions (DoH, 2006).

Furthermore, the Higher Education Funding Council For England (HEFCE) stated that information should be available on the internal procedures for assuring academic quality and standards (HEFCE, 2002:7). As the assessment of students' performance during their clinical placements carries degree weighting, such quality standards should be applicable to both the educational establishment and clinical placement.

However, as a significant proportion of learning (a third of the degree course in Physiotherapy in terms of hours) occurs outside the confines of the HEI, this can lead to difficulties in ensuring equity and quality of experience for all students whilst on clinical placements (Lawler and Wells, 1998). Students are placed within a variety of locations and within different health care specialties/settings. Assessing and maintaining the quality of the location is not least complicated by staff changes, which may lead to varying standards. It would therefore appear relevant to investigate interactions between students and the people directly involved in their education/learning as this might impact on the quality of the educational experience.

However, a number of elements may affect the judgements of quality and these may further complicate quality assessments. It seems that the notion of quality within clinical education concerns a number of different elements. These might include; the attributes and characteristics of students and educators, the features, property and nature of educational standards within clinical education, and the part these contribute to the management of patient care. Quality in clinical education requires partnership-working between educators and employers, particularly in the provision of high quality learning, practice experience and placements (NHS, 2000).

When assessing quality of learning it is often the outcome that is recorded whilst *how* this is achieved does not always play a part. This raises the question as to which are the 'best' methods of assessing quality. Should it be based on process data, outcome data or both (Brook et al, 1996)? Specific information can be collected and analysed to provide outcome measures tailored to address quantitative quality measures when addressing the QAA's aim to measure the quality of education. But, at the same

time, information relating to *how* these outcomes are met, (i.e. the process), is needed if we are to discover insights that encourage improvements. As Trigwell and Prosser (1991) might argue, quality measurements need to combine both quantitative and qualitative outcome measures of learning – not only what and how things are done, but why and what are the consequences of such actions.

A view given by Walshe and Freeman (2002) suggests that:

The research agenda in quality improvement needs to move away from trying to show whether it works and towards understanding how and why it works- the determinants of effectiveness.

Walshe and Freeman (2002:86)

One way of exploring this is to study and review different ways of assessing quality in health care education, which may support the views of Ennis and Harrington (2001) – that quality is seen differently by individuals depending on their involvement in health care.

Working paper 10 (DoH, 1989) introduced two models of assessing quality which provide information that could be relevant when the clinical education of students has to be considered. Firstly, it introduced the “product” model, where stakeholder needs are considered and effectiveness is measurable in terms of efficiency and economy. Working within this model, and in pursuit of efficiency within the health-care sector, quality is viewed as the provision of greatest benefit per unit cost (Palmer et al, 1999). Interventions are compared to identify if change would increase efficiency. Cost benefit analysis identifies the positive and negative implications of doing something in monetary terms. Decisions are made to identify outcome measures within an

allocated budget. However, it could be argued that, in identifying ‘best value’, the quality of the outcome is just as important as cost. Stakeholders who are working within such a product model may be concerned that clinical education could have negative cost implications for outcome measures. Without evidence, they may presume that staff involved in supervising students’ learning, for example, would reduce the time spent on patient care; patient turnover would be reduced and resources would be stretched.

When students become part of the workforce it is possible that their presence could have a negative bearing on the “product” model of measuring quality. Their mere presence may impact on the efficiency and economy within the workplace and, depending on how they are managed, could have a negative outcome. Alternatively, the impact might be positive.

Within the literature, the 1980s produced many papers that discussed how students within the workforce impacted upon the management of clinical locations in terms of cost implications (Chung et al, 1980; Hammersburg, 1982; Kling and Bulgrin, 1987; Page and Mackinnon, 1987; Rabkin, 1986). Having undertaken quantitative measurements akin to an audit, the results of these studies reported outcomes primarily focused on the cost to the facilities in accommodating students, rather than any measurements of productivity such as how students may impact on patient throughput.

Further quantitative studies measuring productivity provided conflicting results with some reporting an increase in patient throughput and others a decrease (Bristow and

Hagler, 1994; Coulsen et al, 1991; Graham et al, 1991; Leiken et al, 1983; Leiken, 1983; Lollpopolo, 1984). Examples of the influencing factors included the length of clinical placements. Graham et al (1991) showed that students on longer placements improved productivity and Bristow and Hagler (1994) that clinical placements have a positive net effect on service delivery, as staff working with students saw more patients than those without students. The Bristow and Hagler study measured the number of patients seen per day, the number of attendances per patient and treatment times. For all three indices, physiotherapy staff working with students had a positive net effect on service delivery.

Holland (1997) carried out a study to address the perception that clinical placements for physiotherapy students are costly for the provider in terms of productivity, a concern that was previously highlighted by Maxwell (1995). Through auditing the work of two teams within a physiotherapy outpatients department over a period of twenty four weeks – a Senior I physiotherapist with and without a student - the results revealed that the productivity was greater when the physiotherapist worked with students than when working alone. Interestingly, this study not only measured productivity, in terms of the number of new patients seen and the number of treatments given to each patient, but also considered the quality of interventions. Discharge outcomes and patient satisfaction were comparable for both teams (chi square value less than $p < 0.05$), though Holland did recognise the degree of subjectivity (the physiotherapist in the sample may have worked differently than other physiotherapists) that may have biased the outcomes. Though the outcomes from this sample of one study has major limitations in relation to any form of generalisation, it does shed light on working efficiency and effectiveness that warrants further research.

More recently Dillon et al (2003) undertook a study with the purpose of establishing whether or not clinicians working with students on acute inpatient rehabilitation had an effect on the productivity of patient contact. They hypothesised that clinical educators working with students would be more productive than clinicians (who were also clinical educators) working without students. After measuring productivity, over a period of four weeks, in terms of the number of patients seen daily and the level of input with these patients, they found that there was a significant difference in the two measures and that those with students were more productive. They concluded that physiotherapy students have a positive effect on productivity. However, it must be noted that the number (n=5 with students and n=6 without) within the research sample was small. Also, being an inpatient setting would mean that patient numbers would have been pre-determined. This raises some questions about the validity and generalisability of the study.

Cost efficiency and productivity, together, tend to be referred to as 'performance measurement' and, as most of this measurement is undertaken within a positivist framework, tend to focus on quantitative outcomes (Paton, 2003). The argument is that clients (patients) appreciate being seen with as little delay as possible and health management value cost savings (in terms of time spent and resources used) when caring for patients. 'Performance measurements' indicate the quality of aspects of patient throughput. Other examples of 'performance measurement' include the quality of patient turnaround from one department to another (Rapoport et al, 2003) or the time spent waiting for different investigations to be carried out (Sinreich and Marmor, 2005).

As students on clinical placements become part of the workforce and a part of the team aiming to provide quality care, they may be included when ‘performance measurements’ are made. If students are seen as detrimental when ‘performance measurements’ are made then the service providers are likely to believe that they can have a negative effect on the quality of patient care. Despite some research revealing the positive impact of students on productivity, more common informal concerns are expressed about the negative impact of students. If management concentrate purely on output performance measures this may lead to a reluctance to having students in the workplace. Huddleston (1999) found, when researching the provision of clinical placements for the professions allied to medicine, that staff at higher management levels did tend to focus on short-term costs. Yet evidence is inconclusive as to whether or not students have a positive or negative impact on performance measurement in both the short and long term.

Although outcome performance measures are important factors to consider when measuring quality, they are not the only constituents of quality and do not necessarily provide a picture of the quality for overall patient care. Within clinical education they do not fully consider the quality of the role that students may play within the caring process. These measurements alone do not necessarily lead to the best overall care for the patient and resultant outcomes and, if used as the only measurement of quality, may affect the way students perform. Neely (1998:1) believed that:

*As soon as performance measures are used as a means of control,
the people being measured begin to manage the measures
rather than performance.*

In addition Rapoport et al (2005) showed, even if service quality can be measured in terms of the quality of patient turnaround time, this often means putting aside clinical considerations. Such measurements may drive actions, but may not uncover the full spectrum of quality attributes.

Health care and health care management includes other aspects of quality beyond simple outcome measures. How students perform and are managed by clinical educators during their clinical placements can also have quality implications, including how knowledge is gained and shared. In the management of input to outcome within an organisation, how knowledge and information is dealt with may have an impact on the quality of the outcome. This, according to Hindle (2003,) is a key element in building the 'wealth' of an organisation and is most beneficial when people share knowledge of the different aspects of performance measurement.

Quality may also be revealed through looking at performance management and how input resources and processes are handled to deal with outcome objectives. More recently, research into clinical education has concentrated not only on the quantitative aspects of clinical educators and students roles in performance measurement / management, but also on the quality of care that is provided by clinicians (CEs). In these studies the "process" model (Working paper 10, DoH, 1989), (how students learn) is considered. Through the implementation of such a model, Palmer (1997) argued that measures can be used to assist the user in identifying how to improve quality. She furthermore believed that comparisons can be made in identifying how individuals reach outcomes, and that sharing of such outcomes can lead to long-term change. Through identifying what individuals do/don't do, and by providing

information that is actionable (what is being done well and what needs improvement) process measures have the potential to provide feedback on quality (Ruben et al, 2001).

Within clinical education, one way that 'process' quality may be revealed is through evaluating the role of the clinical educator, and the ways they facilitate learning (Bennett, 2001; Bennett, 2003a; Baldry-Currens & Bithell, 2000). Through qualitative exploration, using interviews and questionnaires, these studies have explored the perceived impact that physiotherapy students within the workforce have on both the general management of departments and aspects of learning that may enhance the quality of individual patient care. Baldry-Currens and Bithell (2000) concluded, after conducting focus group interviews with five pairs of physiotherapy managers and clinical educators, that there is a need for further clarity regarding the benefits and productivity of students in the workplace. The evaluation revealed that when clinical educators and students work closely together their samples of clinical educators and students (numbers not revealed) believed that they were able to both learn from and with each other, and were able to use their shared knowledge to improve patient care.

In 1996, Ladyshevsky and Barrie developed and used a Clinical Education Quality Assessment tool (CEQA) to audit the time a CE gave to patient care and the time spent teaching. It also showed, in a self-report questionnaire, qualitative perceptions of the teaching and learning experience for both students and CEs. The tool was piloted on 23 CEs and 20 physiotherapy students. Despite students needing more time to manage patients and CEs being taken away from patients to supervise students

the resultant throughput of patients was not affected as the CEs and students shared the caseload. Qualitatively, students and CEs indicated perceptions that they believed helped the teaching and learning process and that benefited both students and CEs, including orientation, feedback and self- evaluation. Through using this tool they concluded that they were able to:

measure one component of the costs and benefits of a clinical education program and provide important information for stakeholders.

(Ladyshevsky and Barrie, 1996:7)

Students and CEs indicated that they were able to share constructive clinical learning experiences that to some degree were mirrored by the outcomes of a qualitative study carried out by Van Der Hem-Stokroos et al in 2003. In this study nineteen medical students participated in focus groups. These were used to explore their understandings of what made an effective clinical learning experience. Results showed that students appreciated being involved in the learning process and that feedback was the key factor in effective learning. How students are involved in learning can have an impact on the quality of learning. Knowledge gained is used in patient care and the quality of this knowledge may impact on patient care.

A number of researchers have identified that not only is the quality of clinical education influenced by the model of supervision (1:1- one student with one educator, 2:1 – two students with one educator, and team supervision – where a team of educators share the supervision of one or more students) but also by the level of understanding that the educator has of teaching and learning. There are convincing arguments to see quality as a combination of both “product” and “process”. It is both

aspects of the productive impact of students within the workforce and the process used to manage that productivity. An example of this is revealed in two papers by Ladyshewksy (1995), and later Ladyshewsky, Barrie and Drake (1998). These studies showed that quality is enhanced if the CE is aware of different learning groupings. They compared CEs working with physiotherapy students in single or multiple numbers with both studies concluding that students working alongside peers (other students) improved both their clinical performance and clinical reasoning skills. The later study concluded that larger groupings were more productive and learning could be enhanced through peers sharing and discussing their individual learning;

*the co-operative learning experiences appeared to provide
additional educational benefits*

(Ladyshewsky, Barry and Drake, 1998:1288).

Nevertheless, having carried out a literature review into effective supervision in clinical practice settings for medical students, Kilminster and Jolly (2000) concluded a need for more research. Their review demonstrated a:

*need for more structured and methodologically sound programmes
of research into supervision in practice settings so that detailed models
of effective supervision can be developed and thereby inform practice.*

(Kilminster and Jolly, 2000: 827)

Learning may affect the quality of care and in measuring quality it is important to reveal the effectiveness of different learning methods. Further research may reveal the

quality of learning through ongoing exploration of the relationships between CEs and students and also, importantly, may expose how the management of learning leads to a provision of care that is most beneficial to the patient.

For care to be of high quality, arguably both ‘product’ and ‘process’ models of assessment should be included and the care needs to be based on best evidence (Rauk, 2003).

2:2:1 Role of evidence-based health care in quality enhancement

Health care staff should be aware of the evidence if they are to provide high quality care. In order to improve quality, changes may be needed and in the quest to provide evidence, clinicians are asking fundamental questions as to whether they are providing the most efficient and effective care (Moore and Petty, 2001). It is changes in processes and the behaviours of the people involved in such changes (be they organisational or individual) that lead to good practice.

Evidence based health care (EBHC) aims at ‘doing the right things right’ and incorporating changes into patient care research has revealed positive benefits (Muir Gray, 1997) and has emerged as an important principle in health care policy in the UK (Hunter, 2003). Originally termed ‘evidence-based medicine’ (EBM), research evidence related to this topic has been increasing on medical databases since 1992. The 2nd International Conference of Evidence Based Health Care Teachers and Developers held in Palermo, Sicily in September 2003 decided that all health care professionals should aim to deliver a service that is evidence based. To this end they

prepared a paper stating that EBHC should be the universal term, rather than Evidence Based Medicine (EBM) which some have traditionally used in the past (Dawes et al, 2004). The paper states that all health care professionals (this includes students) need the skills to learn and use EBHC and:

be able to gain, assess, apply and integrate new knowledge and have the ability to adapt to changing circumstances throughout their professional life. (Dawes et al, 2004:1).

The authors of this paper (along with 17 cited delegates from the conference, RB – the researcher- included) reached a consensus that EBHC is:

based on the best available evidence that is up to date, valid and relevant. It is informed by the values of those receiving care, draws on the experience of providing care and is applied within the context of available resources. (Dawes et al, 2004:4)

The expectations of the general public in relation to the quality of their health care have grown partly due to the availability of ever expanding literature that is easily retrievable through the internet and greater awareness of legislation and human rights (Tauber, 2006). These expectations are one of the drivers for the establishment of the National Institute for Clinical Excellence (NICE) and the National Service Frameworks (NSF). Whereas in the past quality was monitored and controlled by health care workers and managers, more recent developments have involved patients' views. Clinical efficiency and cost effectiveness are promoted with the emphasis being placed on 'evidence-based treatment and best practice' (Davies, 2006:1).

Guidelines are drawn up from evaluation of evidence based research outcomes and management choices that are cost effective. The aim is to provide the 'best' quality of care.

Literature reviewing aspects relating to evidence based health care shows the importance of evidence in providing high quality care, and in the United Kingdom is embedded in the context of clinical governance and the cost-effectiveness of health care (Hunter, 2003). Despite the emphasis of much of the work related to such care being generated and using research as the primary form of evidence, there is a growing recognition of the role and importance of 'best practice' and 'expert consensus' in decision making (Kovner et al, 2000; Thompson, 2003).

Sociological work has shown how doctors use clinical experiences to reach clinical judgement (Becker et al, 1961; Friedson, 1970) that can be used to the extent of ruling out procedures which may have been scientifically established. Furthermore, Atkinson (1981) believes that doctors are pragmatic in the way that they work and goes so far as to say that they 'rely on results rather than theory' (Atkinson, 1981:5). As a result, clinical practice and clinical decision making does not solely rely on the research evidence, but a combination of a variety of knowledge sources.

The demands for evidence are made to help inform purchasing decisions, and evidence-based policy making and service delivery are key components of modernising the NHS (Sanderson, 2002). There is a need to work towards developing a good relationship between evidence and the development of change. Yet some might argue that the degree of understanding of evidence may hinder the degree to

which health care managers incorporate such evidence into their existing values and beliefs (Hewison, 2004). He argued that within health care management:

organisational life is fragmented and made up of a complex mesh of interpersonal relationships and it is not amenable to the direct application of EBP (Hewison, 2004: 342).

Methods have to be established and knowledge needs to be gained in order to create, share and use evidence to inform policy.

However, despite the importance of evidence-based health care, time constraints can inhibit the clinician in keeping up-to-date with the latest findings. This outcome was revealed in two qualitative studies carried out by McColl et al in 1998 and Ely et al in 2002, after they had surveyed general practitioners within the UK. The doctors questioned were well aware of the need for health care to be evidence-based but, with high patient numbers and limited time to allocate to each patient, they found that spending time to investigate latest research findings was greatly hampered. With the ever increasing number of published research papers plus the number of clinical updates and protocols, it is very difficult for clinicians to find the time to both retrieve and critically evaluate a study/protocol. Throughput targets may drive them to concentrate on the 'product' rather than 'process'.

Similar findings were made by Sackett and Rosenberg (1995). Despite doctors claiming that they predominately used textbooks and journals to gain knowledge, they did in fact ask colleagues claiming that they did not have the time to keep up to date.

When students are included within the workforce, further issues may arise. There needs to be an evaluation of both their involvement in providing evidence-based health care and their ability to both learn from and contribute to the development of this evidence. However, it is noted that any changes to the processes by which knowledge is gained by physiotherapy students should fall within the professional codes of practice set out by the CSP (2000a; 2000b and 2003b).

Teaching EBHC to students is vital for them to enter a workforce that is evidence led. In order to achieve this the principles underpinning EBHC should become an implicit part of teaching. Harden and Liley (2000) believed that, as a way of helping students, a culture and environment in which teachers professional and scholarly activities work towards such principles would improve the quality of students' understanding. Health care students are encouraged to search for, and appraise, current research literature as part of their learning. Students should arrive at a clinical placement with theoretical knowledge that is up-to-date and be prepared to gain further knowledge (theoretical and practical). It is the integration of theoretical knowledge with practical experience in the clinical setting that promotes professional practice and enables the students to build high quality knowledge (Thompson and Ryan, 1996; Richardson, 1999).

Having undertaken a systematic review of literature dedicated to the implementation of evidence-based practice into undergraduate teaching, Werb and Mateur (2004) concluded that problem-based learning and evidence-based learning in a classroom environment is an effective way of introducing the principles of evidence-based health care. Students should gain an understanding of the hierarchy of evidence,

ranging from clinical experience right up to randomised controlled trials (Sackett et al, 1996) and curriculum content should be based on evidence-based patient management (Fagan and Griffiths, 2000). However, issues still arise concerning the ideal curriculum and approach, and how evidence learnt within the classroom can be integrated into high quality practice.

This integration is important. If students on clinical placements have opportunities to impart their personal knowledge of the literature then they may be able to have an impact on the quality of care that is provided. This process has been discussed by Bennett, (2003b) and Finkel et al (2003). The sharing of knowledge is seen as evolving through stages:

- a. Students add their theoretical knowledge of the literature to the arena.
- b. Students and clinical educators consider the values of clients
- c. Clinical educators add their experience
- d. All work is conducted in an evidence-based manner within the context of available resources
- e. Shared knowledge is used in patient management.

However, it is important to evaluate how students who arrive at their placements with evidence-based knowledge manage such evidence, as it has been found that once on placement they too may encounter barriers in retrieving evidence (McCall et al, 1998; Ely et al, 2002). A study by Green and Ruff (2005) was based on focus group interviews with a convenience sample of 34 student doctors. The study revealed that the students highlighted several barriers to practicing evidence-based health care on

placement, including poor facilities to access electronic information, some lack of understanding in how to retrieve and analyse 'best' evidence once there, and time constraints when they are involved in patient care. Some further difficulties could arise if the attitudes towards evidence-based learning and practice were negatively influenced by institutional cultures.

It is important that students are able to transfer their knowledge from one setting to another. However, it needs to be recognised that students are going to be concerned when going into clinical practice as they are entering a changing learning environment (Cupit, 1988), which may influence the transition of knowledge and their confidence in sharing evidence-based knowledge. How this transition is executed in physiotherapy education is explored within an in-depth literature review undertaken by Rauk in 2003. Her results found that there does not appear to be any defined theories of knowledge integration:–

No explicitly defined theories of knowledge integration were found in the literature; rather, explanations of integration and specific research on integration were embedded within the larger framework of information processing theory and research.

(Rauk, 2003:40)

She concluded, and argued, that through knowledge integration (building new knowledge through constructing connections within and between new information) skills helpful in problem-solving and the transference of knowledge will develop.

She argued that there is a need to monitor/evaluate whether or not students are able to share learning in ways that can assist this transition. Further research into whether students have opportunities to add their knowledge to the evidence base may be an indicator of quality in the management of clinical education and in the transition of theory into practice. This present research study may also consider how the facilitators of learning influence this.

2:2:2 Influence of clinical educator on the quality of learning

The 'process' model is concerned with how the student learns. In order to explore further the 'process' model of quality measurement of clinical education, with a mind kept on evidence-based practice, it seems relevant that the CE should have some understanding of teaching and learning theory. This is important as it is during clinical placements that theory consolidates into practice (Cox, Ho La and Pappachanm, 1999) and facilitating this process can be complex.

As it is the CE who facilitates the passage of student learning from theory into practice, their role is of the greatest importance in helping to achieve evidence based quality within this transition process. This is highlighted in a paper written by Boendermaker et al, (2002). They logged the quality of 18 educational encounters in vocational training for general practitioners, including issues relating to methods of retrieving evidence (e.g. observing the trainer or reading notes), types of feedback given and any follow up activities that the trainees undertook to consolidate their learning. The quality of the encounters was perceived by the trainees to be highest

when they were assisted in the transition process, through the trainer setting aside specific appointments to discuss issues and where the trainer observed the trainee. They cited Irby (1995) who argued that the encounter between trainer and trainee is a key learning moment in which the trainer can identify and address the personal learning needs of the trainee.

It may be assumed that some CEs feel intimidated in the supervision context if they have not been able to keep 'up-to-date' with current research literature. However, the CE should be confident in the growing recognition of the importance of evaluating and reflecting on their personal practice (French, 2002; Thompson, 2003) and in-depth knowledge that develops as they gain more clinical experience.

It is appropriate, therefore, for the CE to have knowledge of learning theories and how learning can be facilitated and shared. Exploring whether this understanding is perceived to be an ability that CEs have may be another means of assessing the quality of clinical education for the students within this study. More significantly as the study is concerned with the quality of clinical education, it was considered important to explore ways in which the clinical educators were using any knowledge they had of teaching and learning theories when supervising students on their clinical placements. Added to this was a desire to evaluate how the students perceived the quality of such interactions.

The literature presented within sections 2:1 to 2:1:2 has shown that the evidence is inconclusive as to whether or not students have a positive or negative influence on the provision of health care and the quality of such provision. There are cost effects

related to resources, time allocation and patient management with the literature highlighting both benefits and barriers. A key to addressing the quality of the impact of the presence of students may lie in exploring how students are managed and more importantly how they are facilitated to learn with the aim of them providing high quality health care.

2:3 Learning

Clinical teaching has been criticised for:

Its variability, lack of intellectual challenge, and haphazard nature

(Spencer, 2003:592)

This has led to a number of reviews of teaching and learning, including those of Hutchinson (2003), Jacques (2003), Kaufman (2003) and Spencer (2003) to be published in the British Medical Journal (BMJ). Spencer (2003:591) asked the question; how can a clinical teacher optimise the teaching and learning opportunities that arise in daily practice? He believed that learning within the clinical environment has a positive impact as real problems are encountered in the context of professional practice. However, he argued that teaching has to be well-planned in order to overcome some of the competing demands (time, patient throughput, administrative pressures) that have been highlighted in 2:1 and 2:1:2. Furthermore, increased planning is required to accommodate increased student numbers.

All of these authors highlight the need for an understanding of how learning occurs and Kaufman (2003) concluded that an understanding of educational theories and

principles could be helpful in bridging the gap between theory and practice and could help the clinical teacher.

*using teaching and learning methods based on
educational theories....medical educators will become effective teachers*

(Kaufman 2003:216)

An understanding of learning theory may help the clinical teacher to become more effective in facilitating learning. These researchers suggest that further research to assess the level of understanding of teaching and learning theory could lead to an indication of quality, and may help to reveal if the student/facilitator interaction could be improved.

2:3:1 Adult Learning (Andragogy)

Consideration of how to educate adults can be traced through history over many centuries, in Chinese case methods and Socratic dialogue (Knowles, 1975). However, the emergence that adult learning had unique characteristics did not formally materialise until much later. Two specific schools of thought on adult learning theory are promoted within clinical education and are described by Foley (1995).

The first is 'progressiveness', written of by Dewey (1933) and Linderman (1926) where individual freedom is important and the relationship between teacher and learner is that they learn from each other. It is argued that this active interaction will

help to develop knowledge to suit the individual through the promotion of discussion and shared reasoning in order to achieve effective action.

The second is 'individual self-actualisation', explored by Knowles (1975), Rogers (1983) and Rogers and Freiberg (1993) where personal experience plays a vital role in content of learning. Not only is personal knowledge included but also how this knowledge has altered due to personal experiences and interactions. Common to most theories of adult learning is a valuing of prior learning and experiences, treating learners with respect and valuing their differences (Collins, 2004). This can be seen in a brief review of Knowles' theory of adult learning (Knowles, 1984) that illustrates these fundamental principles and showed that adults like to:

- Know why they need to know something
- Learn experientially
- Approach learning as problem-solving
- Learn what is of immediate value
- Be self-directed in their learning

These elements suggest that in order to achieve learning in ways to suit an adult, the student must be involved in the learning process and collaborate in both the planning and implementation of teaching and learning. With opportunities to learn experientially and gain knowledge that is specific and of immediate value it is argued that this theory is well suited to clinical/workplace learning.

Adult learning (andragogy) aims to increase *self-direction* (Maslow, 1970; Rogers 1961; 1983). Some might argue (Lawson, 1979) that delegating too much responsibility for learning to the student could lead to a drop in the quality of educational standards. However, if teachers retain the responsibility for designing and defining the boundaries of what needs to be learnt and decide on non-negotiable aspects of the learning process, this worry should be alleviated.

Despite *self-directed learning* existing for many years, it was the 1960s/70s that saw the first major research into this subject (Houle, 1961; Knowles, 1975 Guglielmino, 1977). More recent work has linked self-directed learning to the autonomous learner (Gibbs, 1979; Chene, 1983; Boud, 1988; Candy, 1991; Williams, 1998) with suggestions that it can lead to an increased independence of critical thinking and decision making. However, having regarded the positive aspects of adopting these principles within adult learning, and before accepting that this is the best way for adults to learn, it is important to consider the opinions of critics of the method.

Pratt (1998:162) said that adult learning is an:

*Impermanent state of being dependent on the learner's
competence, commitment and confidence ..*

and Griffin (1983:60) that:

*.. the social functions of adult learning are reduced to the sum
of the purpose of the individual learner.*

This raises the question whether this method of learning has a detrimental effect on the quality of learning. Learning may be compromised if the learner does not accept

responsibility and play an active part in decision making (Higgs, 1988). This can be further hampered if students have a limited ability to be self-directed through previous conditioning to act passively in student/teacher interactions (Higgs, 1992c).

Sometimes resistance to handing over responsibility to the student can be difficult for some teachers and may require sustained support from management and colleagues. Gravett (2004) addressed this through using action research in a transformation process within teaching development. Her study was designed to change perceptions of practice within higher education from teacher-centred to a learner-centred approach. Through a series of workshops aimed at assisting and implementing change, teachers expressed views from:

With my old teaching, I felt in control. I directed the process.

What if students don't do the work?

(Gravett, 2004:267)

to

....if we want deep learning in our classes so that students can

apply what they learn we must....actively involve learners.

(Gravett, 2004:267)

The teachers within the research sample needed to learn about different teaching and learning theories.

The impact of self-directed learning was explored, in a prospective cohort trial by Bravata et al in 2003. In order to evaluate the depth of self-directed learning being employed by students within a curriculum for physicians, interns were randomly allocated to either an intervention group where they completed self-directed learning exercises over a period of four weeks or to a non-intervention team where they were not given any support to address self-directed learning. The results (measured through the level of questioning) revealed a short term increase ($p=0.001$) and a long term increase ($p=0.001$) in the achievement of learning goals within the intervention group. There were no changes within the non-intervention group. Due to the short period of the intervention and the follow up of just one year, long-term outcomes could not be substantiated. However, the results did show that intervention may improve some aspects of self-direction in learning.

A further study by Dornan et al (2005) explored how medical students could learn in a self-directed way when in a clinical environment. The students were used to a problem-based learning curriculum within the university so were well versed with the self-directed learning methods encouraged by the UK General Medical Council (1993). Sixty-six students were given the opportunity to use a web-based learning management system to report their learning experiences whilst on clinical placements. The results revealed that the students were active in being self-motivated to learn. However, they were most active and motivated to learn when they were given some help in both planning and organising learning. The most important revelation would appear to be that the students developed their self-direction when they were nurtured through the transition to becoming more independent learners. The level of autonomy in self-direction varied between university and clinical settings. Variations related to

the level of self-directed learning adopted within different universities and the degree of supervision deemed necessary in different clinical areas (which in some cases related to the complexity of the diagnoses being managed).

There needs to be a degree of monitoring if students are going to be more dependent on problem-based and self-directed learning and students need to be assisted in becoming self-directed learners. However, core factual knowledge combined with self-directed learning may not be enough to manage changes that emerge within practice and some more didactic teaching from those with clinical experience may be needed to help students develop knowledge to manage more complex problems (Epstein, 2004). Furthermore, students may need some formal teaching related to how they may become self-directed.

Learning within the clinical environment may be more a product of the interaction between the learner and the environment, or may be a private and individual process (Greveson and Spencer, 2005). How we learn is a complex issue and the literature appears to suggest that the different views on how best to teach students and support student-learning are numerous.

This opens up the debate not only to how the quality of learning for the individual is improved but also how they may learn when placed within a situation where others are also aiming to improve their quality of knowledge enhancement.

2:3:2 Peer and shared learning

Those dedicated to supporting the positive effects of peer learning (learning with others) would lead us to believe that this method of learning could hold the key to enhancing the quality of the learning experience. Piaget (1971) believed that co-operation between peers is likely to encourage real exchange of thought and discussion and this view further supports the opinion of Vygotsky (1962) who argued that the range of skills that can be developed with peer collaboration is greater than anything that can be attained alone. Opportunities for peer learning are abundant within an academic environment where students generally aim for the same learning outcomes. Within a clinical setting a student may not be in the position to be learning alongside a peer of equal standing (another student) so alternative strategies may need to be found.

Michelle et al (1993) cite Lord and Garfin (1986) who argued that in order to understand the term peer learning there is a need to define what is a peer and that the definition can vary according to each situation. When students learn together they are able to share knowledge with a peer of equal standing yet a student can also work with more or less experienced individuals and it is the process of sharing learning that can/will make those involved peers.

Bruffee (1993) argued that the educational benefits and advantages of peer learning depends on the degree to which tutors and students are real peers i.e. are considered as learners of equal standing. In explaining this view he identified two kinds of peer tutoring:

- a. Monitor type – where the student is used as ‘institutional manpower for prevailing institutional ends’
- b. Collaborative – where interdependence is mobilised and peer influence leads to educational ends.

The quality of learning for the individual student may embrace a collaborative stance where the educational needs of the individual are met. Within an academic environment where students learn together in numbers, peer learning can be employed through the adoption of teaching strategies that encourage this. Examples include problem-based-learning (PBL), group presentations, and seminar presentations. Within the clinical setting where traditionally physiotherapy students have been placed singularly, the opportunities for peer learning are reduced. Some would believe that this could result in an alteration in learning outcomes for individual students as they have reduced opportunities to discuss their learning with other students and to share experiences. If students who are used to peer learning with ‘equals’ within the classroom are placed within a clinical placement alone, this may impact on the quality of learning for the individual student. Would the student be able to form learning relationships with others (albeit not students) and become involved in peer learning with those others?

A move towards multiple-student clinical placements for physiotherapy students (2:1, 3:1), where peer learning can take place, does to some extent address the problems. This is argued by some with the view that this will help students manage alterations in learning practices from classroom to clinical settings and research has reviewed the quality of such arrangements. Adopting these multiple models has

shown that students appreciate the learning opportunities that arise when they have the opportunity to work with peers. This has been identified within the work of Ladyshevsky (1993; 2002; 2003) and Ladyshevsky et al (1998), on multiple models of students' supervision within clinical placements for physiotherapy students (CE working with two or more students). He defines peer learning to be where learners cooperate with each other, learn collaboratively with each other, and act as tutors and coaches within the peer group. In his 2002 study, he observed differences through researching the outcomes of students' learning when they are allocated to educators alone or as part of a group of students. The study revealed that students allocated in a group improved their clinical performance and reasoning through shared learning. He concludes that – incorporating more peer coaching in clinical education environments enhances the development of clinical competency (p17). The results also showed that reflection (the process of reviewing to describe, analyse, evaluate and inform learning) can be improved. Through reflecting both in and on practice with peers, and sharing feedback on such reflections, students are able to continue to reshape their approaches to learning and knowledge augmentation (Kaufman, 2003).

The work of other researchers within the profession, who have compared peer versus individual learning in clinical settings, (Baldry Currens, 2003; Holland, 1997; Michelle et al, 1993; Moore et al, 2003; Nemshick et al, 1996), agree with Ladyshevsky. They have also found that clinical reasoning skills (the thinking process that informs and underpins clinical practice, involving the interrogation and application of theoretical knowledge, practical skills, reflection and evaluation) can be developed in peer learning situations.

The Moore et al (2003) study (much like this study) emerged from the rationale to explore ways of maintaining or improving the standard of learning experiences for physiotherapy students in line with the demand for increasing placement numbers. They carried out a workplace investigation where eight clinical educators agreed to experience different models of supervision – 1:1, 2:1 and 3:1. Both the educators and the students were interviewed at the end of the clinical placement and the students took part in a focus group interview after the initial data analysis was completed. It was found that the learning experiences within each model, though different, were of importance and that implementation of any of the three models could provide high quality learning environments. However, students and educators highlighted the positive impact of peer learning opportunities within the multiple student models. Integration within the placement appeared to be less forthcoming in the 3:1 model though the advantages of the students being able to share experiences outweighed this disadvantage. The key to providing high quality learning was placed on good planning. The consensus of these studies appears to be that adopting multiple models of supervision, where shared learning is possible, shows greater advantages in both the facilitation of learning and the opportunities for students to improve the quality of their knowledge enhancement.

However, what may be best for the student may not be best for the clinical educator. In Australia, where a tradition is now embedded in the multiple students model, and where clinicians work with students to manage patient throughput, Stiller et al (2004) discovered some interesting perceptions from clinical educators. After analysing three hundred and forty five questionnaires completed by clinical educators, who were generally involved in team supervision and multiple students models, they found that

51% of respondents would prefer to participate in a system where the educator is wholly dedicated to clinical education and where this dedication is recognised within the overall management of patient care. In their discussion they speculated that these perceptions may have arisen as a result of clinicians needing to manage escalating service demands without extra resources and that current arrangements may be hiding the extra commitment needed by the clinicians who are also clinical educators. They may not have chosen the 'best' model of supervision for themselves and the students when learning is considered but the 'best' method to have their workload investigated and assessed (with a possibility of creating discussion related to remuneration). Also highlighted within the study is the need to undertake further research into how best to facilitate learning for physiotherapy students.

Another way of looking at clinical education for physiotherapy students would be to investigate if they are able to participate in peer learning if the peers come from other professions within health care. Two papers, Hilton and Morris (2001) and Ponzer et al (2004) report on their research into these ideas. Hilton and Morris (2001) surveyed forty three physiotherapy students. A questionnaire was completed prior to their graduation. Results showed that they had been involved in a number of learning situations where learning occurred with other health care students. These opportunities arose, for example, during case conferences and ward rounds. The opportunities were valued by the students though the paper concludes that further investigation through adopting different data-gathering procedures and a different research sample (clinical educators) would allow for triangulation to be undertaken thus adding validity to the outcomes.

Ponzer et al (2004) distributed a questionnaire to a sample of medical, nursing, occupational therapy and physiotherapy students who were experiencing interdisciplinary medical and health care education in Sweden. During clinical placements, the students were involved in multi-professional teamwork. The questionnaire was returned by nine hundred and sixty two students (78% return rate) and after analysis, their findings highlighted that the students not only gained a greater depth in understanding of their own profession but also learnt about other professions. Both of these studies concluded that students who learn within inter-professional teams find the experiences to have positive outcomes. These outcomes were further explored in a study by Rudland and Mires (2005). They questioned four consecutive years of first year medical students with the aim of identifying their perceptions of inter-professional teaching and learning with nurses. Despite the opportunities to share learning being regarded in a positive way, it was disappointing to find that the medical students in this study had poor perceptions of the academic ability, status and professional competence of the nurses. These views were pre-conceived by the medical students and not founded on outcome measures.

Not all models can be adopted in all locations. Some clinical locations are unable to accommodate multiple student numbers. A single treatment room within a GP surgery or a clinical educator who works within the community would not have the space for more than one student. Nevertheless, as research has shown, there may be opportunities for peer learning through the adoption of different allocation of peer groupings. One way of addressing such a problem within the clinical setting is to demonstrate what is/can be considered as a peer when learning is a shared experience.

Could a sole student from one profession link in with a learner from another? A physiotherapy student within a GP practice may have opportunities to work alongside a medical or nursing student. Work by Hall and Weaver (2001) concluded that interdisciplinary team members can learn closely together to optimise patient care, as each has a role in the holistic management of their clients with team members having the same aims.

Nevertheless, it is recognised that different individuals have different perceptions about learning and different beliefs about how it is best managed. A systematic review carried out by Cooper et al (2001) of inter-professional learning (students from different professions learning together) found that the largest affect on students related to them gaining an understanding of professional roles and team working. The smallest affect was the transference of learning into students' experiential practice. Hind et al (2003) explored the attitudes towards inter-professional learning by surveying 933 undergraduate health care students using a questionnaire. They concluded that there was a willingness to engage in inter-professional learning, and it appeared that inter-professional learning was most successful when introduced early within curricula. This outcome was also evident in Copper et al's 2001 review and it was evident that in most cases inter-professional learning mainly occurs earlier within academic settings. Also, results showed that who facilitate the learning process need to be aware of the principles of peer and shared learning.

Despite the benefits of peer/shared learning that is evidenced in the literature, students who are assessment-led may be unwilling to share their knowledge (Epstein, 2004). This barrier to shared learning can in part be broken down by the ways in which a

teacher/facilitator manages the learning process. If students are made aware of the advantages of sharing knowledge this may lead them to understand that shared knowledge can help with assessment (Koschmann et al, 1997).

Even with the evidence revealing the positive impact of peer learning, there is also a need to consider each individual learner. This would impact on the quality of an individual's learning and may be achieved through consideration of individual leaning styles.

2:3:3 Preferred learning styles

Most learners have an affinity with some teaching methods rather than others such as lectures, tutorial or web-based learning. However, not all possess knowledge of their personal preferred learning style. (see Appendix 4 for copy of learning styles questionnaire). In order to provide equal opportunities for all students to gain corresponding benefits from any learning opportunity it appears relevant to consider how best the individual student prefers to learn.

The proliferation of interest in learning styles has led to a number of different questionnaires being produced which, on completion, are claimed to indicate a learning style. Typing learning styles into an internet search engine will retrieve numerous web pages dedicated to this subject (for example www.gwu.edu, www.metronet.com, www.howtolearn.com)

One such questionnaire and that used for the physiotherapy students in Birmingham is that developed by Honey and Mumford (H&M) (1982) which originated from the work of Kolb (1976). The H&M Questionnaire depicts four learning styles:

- Activists – who involve themselves fully and without bias in new experiences. They tend to centre activities on themselves.
- Reflectors – who like to stand back and ponder experiences. They act on a wide picture including past as well as present observations.
- Theorists – who like to adapt and integrate observations into logical theories. They are uncomfortable with subjective judgements and lateral-thinking.
- Pragmatists – who are eager to try out ideas, theories and techniques to see if they work. They respond to problems and see opportunities as a challenge.

Work has been undertaken to identify whether or not an educator's knowledge of students' learning styles can influence the outcome of learning for the students (Langlois and Thatch, 2001; Miller, 1998). Miller discovered significant correlations between learning style elements and achievement. Some students did better having been given opportunities to be involved in self-direction whereas others excelled when they retrieved information from lectures and the outcomes related to their preferred learning style. Despite these researchers placing differing emphasis on the value of knowing a student's learning style and how this knowledge may affect performance, they appear to agree that an educator should possess an understanding of individual learning styles. Authors have suggested that knowledge of learning styles may influence student performance measurement. For example, some learning styles

may better suit written or practical examinations (Anderson, 2002; Langlois and Thatch, 2001; Miller 1998).

It may also be valuable for CEs – those responsible for facilitating learning- to know their own preferred learning style. Langlois and Thatch (2001:346) argue that:

Thoughtful self-assessment of your own learning style and identification of the preferences of learners will allow both you and the learner to stretch and expand your abilities, resulting in improved clinical and professional performance.

Work related to learning styles and conducted with medical students has looked at both academic and clinical performance. Those who conclude that a knowledge of students' learning styles has a positive effect on outcome raise a number of interesting points. In 1998, McManus et al carried out a study using two cohorts of medical students. They found that the amount of clinical experience gained by an individual did not correlate to their success in final academic examinations. It was the way in which a student learnt during their clinical placements that had a direct effect on the level of knowledge gained during that experience. This was improved when the student's preferred learning style was matched to different teaching approaches. Activists learnt best when given early opportunities to use knowledge of skills, whilst theorists and reflectors preferred different styles of questioning. This is an interesting outcome as medical students are going into a profession that includes a wide range of clinical knowledge and consideration of how an individual might best build their clinical knowledge can arguably be justified.

It is also valuable to discover whether this outcome with students crosses into professional practice. Only one paper addressing the learning styles of qualified doctors and how this might influence their learning was found. Using a questionnaire, 57 general practitioners within the Wessex area (74% response rate) were surveyed and were found to have a wide range of learning styles, which correlated to their preferred learning preferences (Lesmes-Anel et al, 2001). The authors concluded that a shared understanding and use of learning style theory may enhance professional learning throughout a career. As this raises an issue that may affect the ongoing learning for health care professionals who are bound by their codes of practice to partake in continuing professional development (CPD), they concluded that more research into the domain of learning styles is needed.

A number of researchers, in a range of health care professions, also conclude that an understanding of learning styles directly influences learning outcomes (Fang, 2002 [dentistry]: Bitran et al, 2003; Martin et al, 2000; Lynch et al, 1998 [medicine]: Lichtman et al, 2003 [midwifery]: Janing, 2001 [parademics]: and Cutts, 2003 [pharmacy]). Fang (2002), having analysed the results of a survey of students in each of the four years within a dental school, found that the information on learning styles could influence curriculum change. Lynch et al (1998) showed a statistically significant relationship between learning style and performance when evaluating the results of a multiple choice surgical subject examination undertaken by medical students (n=227). However, this significance did not carry over into the results of an examination to test clinical knowledge. What is not discussed within the paper is the method chosen to assess the clinical performance (computer-based case simulations)

and the outcomes relating to computer-based versus face-to-face examination of clinical performance.

The 2000 Martin et al's study undertook a prospective look at assessing relationships between clinical experience, learning styles and an objective structured clinical examination. They evaluated the outcomes of ninety-five male and ninety nine female medical students after their first year of having undergone clinical experience. The correlation coefficients showed that there was no association between clinical experience and performance in the examination, ($p= 0.776$). However there were strong and significant relationships between students' learning styles and their clinical experience (a self-reported score of the students' clinical activities), with those who had strategic and organised styles reporting significantly higher levels of clinical exposure. They concluded that knowledge gained during clinical experience is related to learning style.

Despite differing outcomes, the overall conclusions from these studies does conform to there being a general opinion that a knowledge of learning styles can have a positive influence on teaching styles.

Janing (2001:77) verbalises this:

The more knowledge we have about our students the greater our likelihood of success in reaching our ultimate goal of producing the best possible learning experience.

It is noted that this representation of health care professions does not include physiotherapy and this indicates a need for research into this topic.

We all develop learning styles that suit our personalities and that may be influenced by our experiences. If we encounter methods that are alien to our preference or situations that make us feel uncomfortable, this may create barriers to our learning.

Boyle et al (2003) when investigating learning styles and academic outcome found that different learning environments (when and where learning takes place) influence the precise characteristics of learning styles. In 1999, Aaron and Skakun discovered that age influenced learning styles and Miller, in 1998, that students with different learning styles responded differently when learning from a book versus a computer. There were also differences in the environment with those liking books wanting quieter environments than the students who preferred working on a computer. This is not directly matched with clinical learning environments but does have an influence on how and where students are able to reflect upon their personal clinical learning experiences.

Looking more specifically at learning preferences and professional choice, Murphy et al (2004) undertook a study where they investigated the learning preferences of dental students prior to their clinical placements and using the chi-square test, cross tabulated the results against the gender of the students and a general population sample. There was no statistical difference between gender although dental students, in the sample, were statistically different from the wider population in their preferred learning style ($p=0.033$). The dental students liked to be taught with the facilitator using strong visual presentations to facilitate their note-taking, whereas the population sample

related more strongly to listening and doing. They raised a question, would this preference change when the students went from a university setting into clinical areas?

Knowledge about students' preferred learning styles may influence their learning. After Lindquist et al (2004) had explored the values of learning experiences across a gender, age and educational background diversity sample of physiotherapy students, they suggested that educators should try to ensure a match between the learning experiences valued by individual students and their approaches to teaching.

2:3:4 Linking learning theories, preferences and styles

When teaching health care professionals within clinical environments there is a close working relationship between the learner and the facilitator of learning. A facilitator who assesses their own learning preference may be more aware of differences in learning styles. This may then lead to what Langlois and Thach (2001) term 'learner comfort', as the student is facilitated by a person who understands that there may be differences in how individuals learn, and may be more sympathetic to such differences.

A way of discussing and monitoring learning within clinical placements for the individual physiotherapy students at the University of Birmingham has been the adoption of *learning contracts*. They can be a means of encouraging interactions between educator and student in teaching and learning situations and when drawing

up the contract the student and educator have opportunities to discuss ways of learning that best suit the individual student's learning preferences.

Many health care professions now use learning contracts with success when students are placed in clinical locations (Anderson et al, 1987; Cross, 1996; Donaldson, 1992; Richardson, 1987). Through drawing up the contract, objectives can be set for an individual student; ways of achieving the objectives can be negotiated to suit the individual student's learning style preferences and the CE has opportunities to evaluate the student's commitment to self-directed learning. Students negotiate their learning objectives with their CEs and academic visitors are able to assist if necessary. Having agreed on learning outcomes the student can use the contract to self-evaluate their progress. At the end of a placement the educator is able to refer to the learning contract to evaluate how objectives have been met when producing a summative assessment of student performance.

Some research has shown that there may be an association between learning styles and self-directed learning that was presented earlier in the chapter (see 2:1:1). Two interesting papers by Linares in 1999 and O'Shea in 2003 found that there was a correlation between learners' ability and willingness to enter into self-directed learning and their preferred learning style. The Linares' paper used a Self-Directed Learning Readiness Questionnaire (SDLRS). A sample of four hundred students and faculty nurses and faculty allied health professionals were surveyed. There were no significant differences in learning styles between student and qualified staff. What was significant was that faculty staff were more self-directed than students and that

learning style preference did have an effect on self-directed learning readiness for both students and faculty members.

The O'Shea paper (2003) reports a literature review of self- directed learning in nurse education. The review highlights that there are conflicting views over the definitive concept of lifelong and self-directed learning, and that students and teachers may have different perspectives on it. Previous research has revealed that more mature students may be more self-directed. What was relevant in their findings was the recommendation that learning styles and readiness to learn should to be assessed when using self- directed learning. Also, this may have an influence on how learners deliberate on their learning.

Knowles (1984) argues that when adults learn they question what they are learning and through this 'questioning' are able to make sense of new knowledge. This questioning has become known as reflection and physiotherapy students/physiotherapists are familiar with the term '*reflective practice*'. The theoretical perspectives of reflection are highlighted by the work of Schon (1983, 1987). He differentiates between 'reflection in action' where active thinking shapes and reshapes what we are doing whilst involved in an action and, 'reflection on action' where we try to make sense of an action after the action has occurred. The level to which 'reflection in action' may occur is different depending on the time provided for reflection. Time to reflect is influenced by whether a situation to be managed is chronic or acute. Further, the 'depth' of reflection is related to the level of prior knowledge.

According to Boud et al (1985:15) reflection is ‘...*those intellectual and affective activities in which individuals engage to explore their experiences in order to lead to new understandings and appreciations*’. Despite being a clear process that is associated with individual learners, Boyd et al (1985) do not view it as an automatic process. They believe that facilitators and peers can assist and promote reflection through planned activities and indicate that facilitators should promote recollection and ensure that the learner becomes conscious of feelings associated with experiences.

Those clinical educators (as facilitators) with greater experience have the ‘tools’ to develop reflective strategies (Clouder, 2000). Students need opportunities to develop their own reflective strategies and in her paper she suggested that:

Clinical educators ..play a vital role in helping students to develop reflective skills. As powerful role models (CEs) may achieve this ...by exposing their own experiences and knowledge as they inform the decision making process during assessment and treatment sessions.

Clouder (2000:519)

Within physiotherapy, authors have discussed the impact of Schon’s views on reflective practice. This has been approached in relationship to the ways that reflection impacts on individuals’ knowledge enhancement versus knowledge gained for the profession as a whole. Some believe (Robertson, 1987) that Schon’s principles on reflection develop knowledge that is confined to the production of individual knowledge, yet others argue that if the individual documents and discusses their

reflection the process of knowledge enhancement can be passed from the individual to a wider audience (Cross, 1997; Rothstein, 1999). How this is done may have an impact on how individuals go about achieving their learning goals.

In the process of formulating goals and intentions to treat, theoretical and practical experience is needed. Physiotherapy builds its knowledge-base by linking propositional/theoretical facts and practical skills. In order to start building this knowledge, students need to be given opportunities to put theory into practice; to begin *experiential learning* in a clinical environment. If ways of sharing knowledge between clinical educators and students are further developed then there is a possibility that developments may emerge allowing those involved to improve the quality of the learning environment where both theoretical and practical insight can be developed. A process where shared learning is considered important would no doubt develop opportunities to improve the quality of the overall knowledge-base, and all those involved in the learning process should be:

Dedicated to creating the conditions necessary for high quality learning.

Nightingale and O'Neil (1994:165)

Learning within the workplace should provide opportunities for the learner to link theory and practice through clear guidance by 'experts' (Billett, 1994). This may then develop a learner who has the chance to see different choices when developing solutions to tackle different tasks and to develop strategies to reach and secure goals. In order for students to utilize learning opportunities within the clinical setting they

need to know what is expected of them and to find ways of integrating their knowledge in new settings (McAllister et al, 1997). Ways are needed to help students develop strategies that link the theoretical knowledge gained within the HEI to the clinical knowledge gained during clinical placements.

2:3:5 Linking theory and practice

With the aim for health care students to become competent clinicians they need to be on-going learners who update their knowledge, aiming for both quality and effectiveness in their practice (Curry et al, 1993). To achieve this they need to find ways of linking theory with practice, but how can they do this?

In 2003, Rauk discovered that the literature reveals no definitive theories or models for students to adopt when faced with the aim of linking theory and practice. This can often lead to added stress for the student in the transition from academic to clinical settings (Elliott, 2002; Landmark et al, 2003). However, Jerlock et al (2003) found that by developing problem-solving and reflective skills throughout a curriculum, students can develop strategies that both suit their personal learning and help build competence in knowledge transference.

Adopting the teaching strategies highlighted by Gibbs (1992) allows the educator to motivate students into achieving a level of understanding in transition of knowledge. Gibbs (1992) suggested that this involves including students in learning activities, allowing students to be involved in teaching others and highlighting aspects of

learning that allows students to develop a knowledge-base through developing relationships between new and previous knowledge. This can only be achieved by adopting “deep learning strategies” which, according to Ramsden (1992) means that students need to relate previous knowledge to new knowledge, theoretical ideas to everyday experiences and develop an ability to distinguish evidence and argument.

It appears that the literature leads to the conclusion that promoting adaptability in both teaching and learning strategies is a key to helping students in their transition from theory to practice. As the academic ‘teacher’ will not be present during the time of transition, the student needs to have personal strategies to manage the situation. It can therefore be argued that the adult learning theories – ‘progressives’ (Dewey, 1933; Lindeman, 1926), where individual freedom is valued and teacher and learner learn from one another, and ‘self-actualisation’ (Rogers, 1983; Knowles, 1975) (where the experiences of the individual are important and teaching is centred on the individual) are both appropriate for a student who has to transfer learning from the academic to the clinical setting. However, it should be recognised that individual students may work more comfortably utilising one theory or another.

Adopting strategies that best suit the individual student are important as, for overall patient management, students need to develop a number of key skills as highlighted by Jerlock et al (2003) including the development of problem-solving, reflection and decision making (CSP Curriculum Framework, 2002). If the transition of learning from classroom to clinical setting and theory into practice is to be made smooth, it is of great importance to ensure that the academic curriculum is one that considers teaching and learning that centres on facilitating students to adapt to change.

How one learns and how the process of learning is managed is important. An awareness of the theories and research that underpin learning and teaching should help structure these processes. This develops an awareness of the ways in which students evolve a level of understanding, which can be continuously modified and allows for reflection on new, personal and existing knowledge. Curricula should not concentrate on content alone but should also focus on the process of learning the content (Bottorff, 1986; Higgs, 1992b). However, both the process of learning and the content of what is learnt need consideration if the quality of learning is to benefit both learner and recipients of this learning.

What emerges in clinical education is a situation where the student is placed in a number of different learning environments with a number of different clinical educators who have an important role to play in facilitating that student's learning. Research has shown that these learning experiences are greatly valued and as Littlewood et al (2005) reported in a systematic review of over ten years 1992-2001:

*early experience (of learning in clinical practice)
has a strong formative influence that can be used
to foster a socially responsive career orientation.*

Littlewood et al (2005:390)

Through undergoing clinical experience the student learns to work within the codes of professional practice.

It is important that quality is maintained for all students and that individual CEs use their knowledge of learning when organising student learning. Making clinical staff aware of the needs of students when they first go into a clinical location can help students to adapt (Seabrook, 2004; Williamson and Webb, 2001), however, research has found that the needs of individual students are not always met.

Seabrook (2004) carried out an ethnographic study within a medical school over a period of five years. She observed curriculum meetings, teaching and assessment activities, carried out informal and semi-structured interviews with students and doctors who were supervising clinical placements and led focus groups. The results revealed that the students perceived that their individuality as learners was not respected and that they had to conform to the clinical style of their facilitator. Prior skills and experiences gained by the mature students were not recognised (six mature students out of sample of nineteen). Female students believed that they were not taken as seriously as male students and the males believed that they were questioned and assessed more vigorously (ten male and nine female students in sample).

Also, Prince et al (2005) found after surveying medical students' transition from university to clinical locations, the process of the transition needs greater care. It is not just the enthusiasm and manner of the educator and the processes by which students enter clinical placements that strengthens the clinical experience but also the quality of the learning that goes on within the environment (Ludmerer, 2004). The HEIs have a responsibility in helping CEs to achieve standards in teaching and learning and to provide some form of induction - often in the provision of courses for clinical educators.

The literature (2:2 to 2:5) has highlighted some of the complexities of learning and has shown that there are variations in the ways that individuals learn which may be adopted and adapted depending on whether students learn alone or within groups. Within physiotherapy education, the clinical educator plays the key role in facilitating clinical learning and the role has many facets.

2:4 Role of the clinical educator

The Chartered Society of Physiotherapy (CSP) in their Clinical Education Placement Guidelines (2003b) set out specific criteria for the role of the CE in facilitating learning:

- Ensure the placement meets the learning outcomes of the higher education institution.
- Enable the student(s) to take advantage of the potential experiences of the placement.
- Ensure that the patient has agreed to take part in the student(s) education.
- Provide regular feedback regarding students' performance to the student and the visiting tutor.²
- Liaise with the visiting tutor on placement management.
- Communicate effectively and share a common approach to clinical education when sharing a student with another colleague.

² The visiting tutor is the academic member of staff who visits the student(s) on placement to monitor progress.

Despite research into the role of clinical educators, Lambert and Glacken (2005) concluded in their literature review that the role of the clinical educator lacks clarity. Not only was the role of those involved in clinically educating health professionals seen as being poorly defined but also, in some areas, there was a lack of support to help clinicians adopt the role of educator. Support for clinical educators has been shown to improve learning experiences for students and has a number of benefits for the educators. These statements are supported in a study carried out by Morrison et al (2005). They conducted a randomised trial where doctors (who were involved in student education within clinical locations) were placed in either a group who had structured teacher training or a group who received no teacher training. One year later the doctors were interviewed to elicit their perceptions following their experiences as clinical educators. The group who had received teacher training were enthusiastic, learner-centred and had a good personal knowledge of teaching methods. They were motivated in the role and wanted to continue in the role. Conversely the group who had not received any teacher training were cynical in their perceptions of the role and were frustrated by the time constraints they perceived the role inflicted and had negative perceptions of students.

To help CEs in physiotherapy within the UK work towards meeting the clinical education guidelines criteria set by the CSP (2003b), HEIs have the responsibility to run courses on clinical education which make CEs aware of curricula and teaching and learning strategies (see Appendix 5 for examples). Additionally a more recent development instigated by the CSP has led to courses run by HEIs for qualified physiotherapy staff being validated to carry the title Accredited Clinical Educator (CSP, 2004). The value of such courses is influential not only for the educational

content but also for the CEs to gain an understanding of their role. Having attended these courses the clinical educator then has the responsibility of planning and implementing learning opportunities for students working within their clinical area. Clinical educators need to find ways of making appropriate links between clinical practice and clinical teaching. This can create problems and according to Wenger (1998:140):

*Exposes our experience to different forms of engagement....
.. by creating boundaries... is a process by which learning
is potentially enhanced and potentially impaired.*

Clinical educators need the ability to be both clinical practitioners and to facilitate and evaluate learning. The role requires them to observe students' practice, give tutorials, instruct students in new skills, question a student's knowledge base, and at the end of a placement have the full responsibility of summatively assessing the student (See Appendix 6 for copy of Professional Development Assessment Form used for the students from the University of Birmingham). Taking on the role of clinical educator means that a clinician is having to adapt to an extra role within their professional practice. So why should they take on the role?

2:4:1 Barriers to becoming a clinical educator

Clinical physiotherapy staff require wide-ranging, multi-faceted skills to balance the needs of clients and further promote professional development. In becoming a

clinical educator, the clinician is adding to these multi-faceted skills (Cross, 1994). It is understandable that some health care professionals do not want to add this role to their existing workload (Cross, 1994). Physiotherapy staff may choose to concentrate on gaining other skills, especially related to their particular clinical practice, which could directly influence the outcome of the clinical management of their clients.

It is feasible that some clinicians are reluctant to adopt the role of CE because the role holds little recognition (Baldry-Currens and Bithell, 2000; Edmond, 2001). Baldry-Currens and Bithell (2000) used in-depth interviews and focus group discussions with physiotherapy managers, clinical educators, recently qualified physiotherapy staff and third year students. All five CE's in the research sample were of the opinion that there should be greater acknowledgement of the importance of their role. Perceiving that the role was undervalued by others (their managers and some colleagues) appeared to introduce some uncertainty of how they valued the role themselves. Despite these views being expressed by a very small sample similar outcomes have been found in nursing. Finn et al (2000), in an exploratory study using focus groups, questionnaires and interviews as research methods, found that nurse educators at a large Australian university felt both a lack of support and identity within the role of clinical educator.

Additionally, research has identified that the support given to some health professionals who engage in clinical education is poor. Researchers in nursing (Elliott, 2002; Ferguson, 1996; Landmark et al, 2003), medicine (Murray et al, 2000), and physiotherapy (Ohman et al, 2003) agree that clinicians involved in clinical education are committed to the role but need the support of academic staff if they are

to conduct this role in a competent manner. A phenomenological study carried out by Ferguson in 1996, that involved in-depth interviews with clinical educators in nursing, found that there is a great need for preparation and ongoing support for clinical educators and that further studies are needed to explore links between student learning and clinical support.

Challis (2001:270) argues that:

Clinicians ... who have taken on an educational role, normally have to try and fit their educational development activities within a busy clinical schedule and often have conflicting pressures upon them in so far that they are aware of what needs to be done, but lack the status or confidence to introduce innovation.

2:4:2 Increasing information about the role of the clinical educator

There is a need to conduct further research into the role of the CE in order to identify what support is called for and to improve the quality of supervision. A paper by Kilminster and Jolly (2000) reviewed the literature and concluded that:

the review demonstrates the need for more structured and methodologically sound programmes of research into supervision in practice settings so that detailed models of effective supervision³

³ Supervision in this context is the same as saying clinical educator in physiotherapy. Different health care professions use the terms supervisor/educator in the same context.

can be developed and thereby inform practice.

Kilminster and Jolly (2000:827)

Increasing the research into clinical education will provide further evidence to test existing protocols and help lead to change, if and where needed. Through publication and formal presentation of findings, or indirectly, through sharing findings in informal gatherings may enhance the credibility of the CE. Adding evidence is also one way of monitoring quality.

A major influence in how clinical educators/education are/is being perceived appears to be the ways that student learning is achieved and how clinical educators go about embracing learning strategies (Challis, 2001; Elliott, 2002; Gwyer, 1993; Jette and Portney, 2003; Nahas, 1998; Paukert and Richards, 2000). Jette and Portney (2003) used a self-administered questionnaire (n=152) including a 7-point Likert scale to assess the frequency of students' use of particular behaviours. They found that differences in abilities related directly to learning within the clinical environment and that these behaviours included critical thinking, communication, interpersonal skills and professional development. The phenomenological study carried out by Nahas (1998) that used Colaizzi's method of data analysis (a data analysis model developed by Colaizzi in 1978 which follows seven steps of extracting significant phrases from the data to describe beliefs) found that the interactions (e.g. use of humour) between students and educators directly influenced the quality of the learning experience. Interestingly, Paukert and Richards (2000) identified medical students' perceptions of the characteristics of the faculty (clinical educators) who had influenced their clinical education and matched these against residents' (newly qualified doctors) perceptions

of clinical educators. It appeared that these students preferred to be taught rather than be supervised. This seems contrary to the current promotion of self-directed learning within health care education in the UK and USA and may highlight differences between how facilitators believe learning is best undertaken and how students actually wish to learn. Despite differences, what all of these researchers have found is that CEs need support in their own learning, needing courses and, often, individual support in order to facilitate high quality learning.

Clinical educators who facilitate the learning of physiotherapy students have the responsibility of providing a summative assessment of the students' performance (See Appendix 6 for copy of assessment form used at Birmingham University). Despite information on assessment strategies being included in courses for clinical educators, it is difficult to obtain parity across clinical locations and between clinical educators. Unlike within the university where assessments can be, for example, double marked and internally and externally moderated to reach comparable assessment evaluations between individual markers, it is not possible to undergo the same degree of monitoring for clinical placement assessments. CEs may be working alone and numbers of CEs far outnumber those of academic staff. To date, a number of health-professions and HEIs have developed audit tools (Dunn and Burnett, 1995; Price et al, 2000; Sand-Jecklin, 2000). However, problems still exist in reaching equity.⁴

Students have been known to disagree with the assessments made by their clinical educators. A study by Rees and Shepherd (2005), adopting focus group interviews as the research method, found that the sample of medical students and their clinical

⁴ Birmingham register assessment outcomes of individual CEs and talk to the CE if their marks generally always fall greatly outside the mean mark for the cohort. There is not an audit tool.

assessors had different views on assessment. Students with high expectations were difficult to manage if they failed to achieve their expectations and they concluded that the most important part of assessment was feedback as this enabled the students to gain a better understanding of the quality of their performance.

Continuing to research into clinical education may provide further evidence to both monitor and indicate if changes are needed to maintain good quality.

2:4:3 Maintaining quality of clinical education

Clinical education is a very important part of the undergraduate physiotherapy curriculum, and the clinical educator plays an invaluable role in facilitating students' learning within this area of knowledge enhancement. Clinical education is vital in preparing students to realise their professional role (Williams and Webb, 1994). In the academic setting, skills related to specific specialties should be discussed, demonstrated and hopefully practiced (in simulations) by students. However, it is not until students have the scope to use these skills on actual clinical cases that the knowledge behind skills can be grounded.

With the aim of giving all students the chance to develop clinical skills it appears appropriate for all clinical placements to aim to achieve similar outcomes. Yet, students report that outcomes can vary depending on locations, specialties and the level (in terms of seniority) of the clinical educator (Li, 1994; Board & Mercer, 1998; Harden et al, 1999; Remmen et al, 1999).

In 2001, Rattner et al recorded student-patient encounters for 647 third year medical students and used this to provide data on important differences between student' experiences in different specialties. Although this study provided quantitative data that logged the experiences in different clinical areas, it lacked any analysis to explain, quantify or qualify the learning that emerged from these experiences. Research by Ringsted et al in 2001 found that clinical educators with less post-graduate experience had higher expectations than those with more experience. It would seem valuable to explore what constitutes good quality learning within clinical placements.

A number of researchers have concluded that students rate the quality of placements under two specific areas, both related to the clinical educator, and these are illustrated in the research below. Firstly researchers have found that where the student/CE relationship was good, learning benefited (Paukert & Richards, 2000). Secondly, when the CE approached learning in a student-centred manner, the quality of the placement was marked highly by students. In order to elicit student nurses' perceptions (n=229) of their clinical learning environment, Dunn and Hansford (1997) looked at staff/student relationships, commitment of the clinical manager, relationships between students and patients, student satisfaction and hierarchy and rituals within the learning environment. What they found was that interpersonal relationships held the key to developing a positive learning environment. Through observations and interviews with medical students and staff, Netterstrom et al (2003) provided evidence that would optimise a student's stay on a ward. They found that the students were generally observers and that they were not benefiting from working

in partnership with their educators. They raised the question of how to change established cultures related to educating students.

Neville and French, (1991:352) argued that the ideal environment to promote learning has:

*.. relaxed and supportive atmosphere, where students
feel secure to ask questions and are supported if
they make mistakes....*

High educational standards need to be met for all students on clinical placement, and the literature within 2:3 to 2:3:3 has highlighted the importance of the role of the CE within this process. Students are experiencing a different learning environment whilst on placement and collaboration between the HEI and the workplace should be aimed at making a smooth transition as workplace learning may reveal alternative ideologies.

2:5 Workplace learning

The European Report on Quality Indicators of Lifelong Learning (2002) states three principal aims:

- a. That there should be equitable opportunities for access to quality learning.
- b. Education and training should ensure that knowledge and skills learnt should match the changing needs of occupations and workplace organisation.
- c. Learning should equip people to participate in all spheres of public life.

In order to achieve these aims the report argues that a partnership approach should be adopted between all those involved in the learning process. This partnership should address the learning needs of the individual along with the learning needs of the organisations in which learning occurs. So physiotherapy students need opportunities to learn within areas of future employment.

Learning that takes place in the daily workplace is the foundation of much life-long learning. Hager and Beckett (1998:224) argue that :

the phenomenal spectrum of daily workplace experience
– *how decision-making and judgments go to make up a*
certain practical wisdom – is showing a basis for a
new and integrated epistemology of working for practice.

This idea of an integrated epistemology of working for practice is further explored in a later paper (Beckett and Hager, 2000). Workplace education, they explain, emerges from a set of specific experiences, which are features of life experience itself:

- a. the contingent (rather than exclusively formal, sustained and systematic studies)
- b. the practical (rather than exclusively the theoretical)
- c. the process (rather than exclusively the product)
- d. the particular (rather than the exclusively universal)
- e. the affective and the social domains (rather than exclusively the cognitive domain)

Consequently, knowledge that is embedded and embodied within individuals needs to be managed in ways that facilitate context-specific understanding to emerge (Nonaka and Takeuchi, 1995). Learning should consider the importance of developing skills and competencies that complement the outcomes desirable within working environments (Askham, 1997). For work-based learning to be effective it must be within the learner's capabilities (Gibbs, 1992).

Understanding learning in the workplace is complex and includes the need to interpret a full range of events that occur in the setting (Marsick, 1988). Given the importance of workplace learning and continuing professional development within physiotherapy, the argument made by McCormack (2006) that ongoing evaluation is needed to inform future directions is well founded. Furthermore, as Walshe and Freeman (2002) argue such evaluations would be effective in identifying areas for quality improvements.

Students studying for a health care profession are generally taught within both the academic and working environment. Good relationships between the academic and workplace are needed to ensure high quality and continuity of learning methods. However the ways in which knowledge is gained is different in the two environments. A paper by Stavenga de Jong et al (2006) argues that learning approaches are generally context specific. They contend that learning in the academic environment is biased towards students learning to memorise verbal information whereas work-based learning centres on the gathering of experiential knowledge. Having collected data from 266 students in vocational education programmes (nursing and engineering) the results revealed that information was memorised within the academic environment

through the adoption of passive reception, active reproduction and active reconstruction of knowledge. Memory played a far lesser role within the workplace and here knowledge was gained through doing, guided learning (through following instructions) and reflection of experience. Their conclusion highlights the need for more in-depth studies into their context specific outcomes.

This paper may be critiqued for not discussing in any depth the relationship between learning in an academic and workplace environment and there is no consideration of how the methods used to facilitate learning were adopted. This could have included a discussion of theory into practice and how clear guidance improves the link (Billett, 1994); how sharing knowledge makes students more comfortable in the transition of knowledge (Rauk, 2003) and how the facilitator plays an important role (Irby, 1995; Boendermaker, 2002). The study was carried out in the Netherlands where teaching and learning methods may vary from those adopted in the UK.

Government argues that education should be responsive to the skills and knowledge required by employees (Dearing, 1997). This requires collaboration between academic and workplace environments. This has posed some difficulties within health care education due to changes in the structuring of teaching over the past few decades. In the first half of the twentieth century, teaching and learning was executed within the workplace and the same people taught both theory and practice. This changed as a result of the requirement to develop more scientific knowledge. Rather than addressing clinical demands, education became more driven by academic learning (Herdman, 1995). Students appeared more driven by learning than service

demands (Peterson and Schaffer, 2001). Teaching within the two environments became secular and fragmented (Lee, 1996).

More recently, evidence-based health care has developed the need to better relate theory to practice (Boud, 1993). This has led to some arguing that academic teachers should maintain clinical competence in order to help students make the links between theory and practice (Heath, 2002). Other methods include the development of closer collaboration between academic and clinical staff when developing curricula. Negotiations between different learning environments should recognise the importance of all personnel remembering that they are learners for life (Walker, 1998) and that quality relies on organisation and the ability to change where change is deemed relevant (O'Brien, 2001).

Work-based learning is a means of developing competence (Flanagan et al, 2000) where the student can make links between academic and clinical learning and knowledge can be transferred from one environment to another. This can be facilitated through the drawing up of learning contracts (Cross, 1996, 1997). However, Billett (2004) maintains that as learning environments workplaces allow not only for the negotiated transference of knowledge but also opportunities for an individual to participate in workplace activities and interactions which may be central to the development of independence.

Different authors have suggested that benefits arising from learning in the workplace are developed in a variety of ways. According to Trentin (2001), the learner profits from approaches including trial and error, problem sharing and solving and informal

contacts with peers, much of which might occur without any conceptual framework for learning support. Other methods may be more formalised culminating from a more structured form of facilitated learning (Collis and Winnips, 2002).

According to Hager (1998) significant learning can develop within the workplace when the workers place a high value on the satisfaction they gain from their work. Learning should be seen as ever developing, with all those involved being required to share their understanding of teaching and learning principles. The aim of workplace learning is possibly summed up in a quote from Jarvinen and Poikela (2001:283):

The goal of learning is an improvement to the performance of the employee, the team and the whole organisation, the development of a sense of community in the work organisation and support for the employee's personal development and mastery of his or her own life.

Through promoting lifelong learning, and as an integral part of this the value of workplace learning, practice can be developed within both undergraduate and postgraduate learning (Chapman, 2006). The quality of learning is related to understanding learning theory. How those who supervise learning use this understanding can have a direct influence in motivating student and employee learning (Hughes, 2004).

2:6 Summary of chapter

It is evident that ongoing research is needed to explore aspects of clinical education. Some of the issues have been highlighted within this chapter.

Chapter 2 has discussed how clinical education is managed within physiotherapy education, and the quality standards that are required and need to be met to address both professional and educational standards.

The content of the chapter was selected to address the study questions (see 1:6) and to focus on aspects of literature that are relevant to support a study that explores the quality of clinical education.

Exploring how managers and clinical educators perceive the effects on the management of physiotherapy departments, when students are incorporated into the workforce, has revealed both negative and positive beliefs. Research centred on cost and productivity implications showed that the impact of students working with clinical educators is inconclusive though there is more that concludes that these combinations are as productive as clinical educators working alone. Further research may add evidence to the existing pool of literature.

The literature has shown that accommodating students is perceived as being time-consuming and detrimental to the day-to-day management of patient throughput. An aim of this study is to explore whether accommodating students provides any benefits that could counteract the perceived disadvantages of time-commitment. This information may be of value to both managers and clinical educators. It may be valuable to managers when organising their workforce initiatives. This information focuses on the 'product' model of quality measurement (DoH, 1989) - the efficiency and economic effectiveness.

Evidence has been put forward that shows that the role of the clinical educator is held in little regard. This is problematic especially as the profession has experienced difficulties in encouraging physiotherapy staff to take on the role. However, there is a lack of research evidence into clinical education in physiotherapy. Through the exploration of the characteristics of CEs (see sub question in 1:6) and their abilities, it may be possible to provide evidence to share with other physiotherapy staff who, depending on the outcomes of the study, might subsequently choose to explore the possibility of adopting the role.

Clinical educators are required to manage and facilitate clinical education and depending on how they perform, will have a direct influence on the learning experience. Having reviewed literature related to addressing issues of the ideal clinical placement, knowledge of teaching and learning appeared central to the notion of high quality. The literature has exposed some of the complexities of adult learning and suggested that clinicians need assistance in gaining an understanding of both the theory and management of adult learning in order to facilitate high quality learning within clinical education. Some of the key issues identified within the literature include theory/practice transition, peer and self-directed learning, and the development of reflective practice. It has also revealed that structuring a learning experience to suit the individual learner is important and that knowledge and understanding of preferred learning styles may have some impact on the quality of learning. With the study aiming to address quality issues within clinical education, a review of literature associated with teaching and learning was deemed essential. The 'good' CE facilitates learning through incorporating strategies to help students learn and is able to articulate the theoretical principles that underlie their practice.

Researching how existing CEs manage learning may provide evidence indicative of the quality of facilitation of learning in the clinical settings used by Birmingham students. This addresses the ‘process’ model of quality measurement (DoH, 1989) through exploring how learning is considered.

Clinical education refers to students learning within the community where they will practice and when McCormick and Paechter (1999) discussed learning they said:

*rather than learning by replicating the performances of others
or by acquiring knowledge transmitted in instruction, we suggest
that learning occurs through centripetal participation in
the learning ...(students being able to share their knowledge)*

McCormick and Paechter (1999:25)

Students are able to bring their knowledge of current research to the clinical area. There is a gap in research information related to this, which supports a decision to explore this aspect of clinical education within this study. As all students have an individual personal knowledge-base, it appears important to explore how students share and add knowledge to clinical practice.

The literature has revealed that learning is enhanced when students feel ‘comfortable’ within the learning environment. Exploration of the views of students can identify what they consider to be effective learning, how this is initiated/shared with the CE and how they perceive the quality of the learning experience.

It has been expressed that learning within both the academic and clinical environments is of equal importance (CSP, 1996) and according to Billett (2004:313)

The qualities of experiences afforded by either educational institutions or workplaces shape the potential richness of the learning outcomes.

To look at quality within clinical education it is suggested that a study, which explores the product/process debate and the didactic interplay of process and product, is appropriate. Furthermore, a study that explores and monitors educational procedures may identify and evaluate the quality of an educational programme (Ramsden, 1991).

In conclusion then, this chapter has shown that clinical education impacts not only on the students but also on those involved in the management and implementation of the educational process as well as those who receive care. Gaps in the literature, which if further explored, could lead to quality enhancing changes, have been identified.

The research methodology for the study was chosen with the aim of involving representatives from the organisers, facilitators and recipients of clinical education. This promotes 'ownership' of any changes that may emerge from the research and provides evidence, which could be valuable for colleagues who work in similar situations.

Chapter 3

Methodology

Methodology signifies:

an argument to connect the choice and practice of particular methods to the way that the problem is conceived and the utility and limitations of the outcome.

Schratz and Walker (1995:12)

3:1 Introduction

The purpose of this chapter is to discuss the methodological issues relevant to undertaking the research for this thesis. The main intention of the research has been to explore quality issues relating to clinical education and thereby to raise awareness of current practice and inform future development of clinical education within the wider physiotherapy curriculum. Central to this intention was the aim to focus the investigations around the quality of clinical education.

The study was practitioner-based, in that it derives from and seeks to inform professional educators and the students who are the future practitioners. The author's own background is from the same professional background as the "practitioners" which has arguably been important in both relating to the research subjects and in undertaking such an investigation. This background includes ten years as a clinical educator and supervisor of other physiotherapists who shared this role, and more

recently a university lecturer with a major role in both preparing students for clinical education and organising clinical placements.

As noted in Chapter 1, the study arose from an institutional need to increase the number of clinical placements for physiotherapy students. There was no funding for the study (internal or external), hence there were no external factors, eg funders which could influence the design of the research (Scott and Usher, 1999).

In developing the focus of the research on clinical education within physiotherapy, three groups were identified as essential informants. These were managers of clinical locations who employ clinical educators, clinical educators themselves, and students. A fundamental principle in shaping the research was to have equal respect for both professionals and students as informants and receptors of the research information.

It is recognised that considerations of how clients might contribute to the health care system plays a role in assessing quality (Donabedian, 1988). However, within the confines of this study it was considered appropriate to address quality through investigating the process of education within health care (Leitch and Harrison, 1999) and therefore clients were not involved.

During the study student numbers increased year on year and this obviously was not in any way under the researchers control. The structured increase in student numbers did however assist in implementing change identified from the research. I addressed issues that arose directly as a result of this increase, whilst aiming to maintain the

quality of clinical education experiences for all students. It more importantly helped me to reach the decision to adopt action research as a methodology (discussed in 3:3).

In order to address the research question, the study had two specific aims:

- A. To describe, gain an understanding and critically assess the quality of existing clinical education and explore how quality is affected by the organisation of clinical education.
- B. To identify and consider the implications of changes within the organisation of clinical education that emerge from the data and the implications of such changes on the quality of clinical education.

3:2 Underlying philosophy

The philosophical underpinning of research methodology encompasses a synthesis of ontology (questions and assumptions concerning the nature of being human and located in the natural world) and epistemology (concerning the nature of knowledge and an exploration of questions - is it true, false, subjective, objective, valuable etc.). Acknowledgment of discordant positions in regard to ontology and epistemology need to be identified as this may lead to differing views of the same social phenomena. Importantly, a researcher needs to be aware of their personal position in regard to ontology and epistemology as this will affect the research process (Cohen and Manion, 1994).

Ontology has been seen as concerning what exists; what is the nature of the world and what is reality (Usher, 1996). This raises two questions. Firstly, what constitutes objectivity (objectivism): that objects have an existence independent of the knower. Secondly, what may be perceived (constructivism): that social phenomena are continually being created and individuals play a role in the construction of social reality (Cohen and Manion, 1994). Epistemology, on the other hand, is concerned with distinguishing different kinds and degrees of knowledge and how we reach that point of knowing. Knowledge develops through acquired knowledge or experience or a combination of both new and previous knowledge.

Issues of interpretation within a research project can be related to the epistemological and ontological assumptions on which the study is founded whereby ‘ontology and epistemology refers to the researcher’s beliefs in the form and the nature of reality, truth and knowledge’ (Mantzoukas, 2004).

Murray and Lawrence (2000) explain the links between methodology, ontology and epistemology:

methodology or the total process of a research enquiry will reflect a fusion in the researcher’s mind of what he or she thinks is the essence of human nature with ideas on the tangibility and origins of knowledge, and the appropriateness of data gathering techniques applied. Ontological assumptions will give rise to epistemological assumptions, which have methodological implications for the particular techniques of data collection.

Murray and Lawrence (2000:124)

Ontological and epistemological considerations are related to debate about different research paradigms. The positivist approach (positivism) sees the world as objective where phenomena are lawful and orderly, knowledge concerns facts and validity is measurable. This approach is generally seen as applying a scientific model to the study of the real world and Pring (2000) sees positivism as referring to accounts that are studied in a clear, systematic manner with an understanding of the sciences. This approach would be appropriate if the researcher sees ontology as one reality with the epistemological view of knowledge being purely objective and generally would require a quantitative methodology. The researcher working in a positivist tradition assumes the role of an objective analyst working within a highly structured methodology, to provide generalisable and quantifiable data to statistically analyse. The assumption is to regard the researcher as independent of, and not affecting, the research subject.

Positivism has historically been seen as the governing paradigm within evaluation research, seeking to make objective assessments of specific goals (St Leger et al, 1992). Therefore, within this thesis, one might argue that if a positivist approach were adopted, the quality of clinical education would be judged using outcome measures of clinical education experiences, such as assessments. Such an example is seen in the work of Price et al (2000) who used a research audit process to evaluate the clinical experience of radiography students. They designed the audit tool to evaluate delivery of clinical education against identified standards and criteria and the results enabled them to discriminate between acceptable and unacceptable standards. But this specific objective goal management can be challenged.

Downing (2005) argued that even in a strictly quantitative evaluation of performance, human raters are vulnerable to external influences that may influence outcomes. He questioned the validity of such structures despite generalisability theory (Brennan, 2001) offering methods to estimate various sources of rater error through using statistical analysis. Downing (2005) questioned the impracticality of such designs in the real world and centres this specifically on complexities within medical education.

Mantzoukas (2004:997) concluded that:

Nothing other than the truth, the reality and the laws of nature and society in an objective, value free, and precise manner can be represented in positivistic research, thus negating and eradicating any possibility of representing individuals, be they participants and /or researchers.

It can be argued, therefore, that in order to uncover the views of individual representation some form of subjectivity is required. Only those who choose to approach and treat the social world of natural phenomena as being hard, real or external to the individual will adopt the positivist approach (Cohen et al, 2000).

Taking into consideration the nature and complexity of the questions that are addressed within this thesis, it is contended that a purely positivist approach would not explore the subjectivity of the investigation that is referred to in Manzoukas' quote (2004:997). Also, being practitioner-based, a positivist approach would not allow for the investigation of a concept in which an understanding of knowledge is socially constructed. The positive approach would measure clinical education as a

‘product’ more in terms of efficiency and economy – rather than allowing for the study to explore social interaction – the ‘process’ within clinical education. Adherence to a positivistic model for this thesis would result in a loss of the qualitative aspects of clinical education. Adoption of a purely quantitative method could measure educational significance (e.g. the level of an outcome) but would not consider the interactive variables- e.g. how an outcome is reached (Barrow, 1984; Delamont and Hamilton, 1984).

For this study there was a need to consider the perceptions of different subject groups and ontological beliefs were multiple, taking into account socially constructed realities. The physiotherapy managers and clinical educators had varying degrees of history and experience and within that, varying personal ontological and epistemological conceptions. For this reason an interpretive approach appeared more suitable as theories and concepts could arise from the enquiry, could be generated rather than be tested.

The interpretive approach lays the emphasis on the subjective meanings of those that are being researched. It does not follow the idealised model of scientific research but adopts social research, where knowledge is:

concerned not with generalisation, prediction and control

but with interpretation, meaning and illumination. (Usher, 1996:18)

Epistemologically there is recognition of interaction between researcher and participants, a sharing of knowledge. Values are made explicit and findings are

created from within the investigation through adopting primarily a qualitative approach to research.

It is too simplistic to assume that one approach is better than another or to assume that research generally falls into one ‘camp’ or another. Importance lies in adopting the best method to answer the research inquiry. As this study was concerned with the quality of a process, adopting a more interpretive approach appeared to allow the study to capture “*the details of the situation to understand the reality or perhaps a reality working behind them*” (Remenyi, et al, 1998:35).

Traditionally, methodological strategies have been divided into quantitative and qualitative, with research methods identified with and to these particular methodological parameters. Since the 1970s authors have argued that the divide between the two methodologies is less transparent (Bryman, 1988; Hammersley, 1992; Rist, 1977; Smith and Heshusius, 1986) and they say that the same methods may fall within both methodologies. However, Crotty (1998) would argue that the positions of positivism and interpretivism cannot be contained within one study as differences exist in how we see the world and what is contrived as reality and knowledge. In contrast, others have different views and suggest that by becoming more pragmatic and through adapting a methodology one can be led to a synthesis of beliefs achieved through combining methods (Tashakkari and Teddlie, 1998).

Like Crotty (1998), the view of Guba and Lincoln (1988) is that methodology is directly linked to the epistemological and ontological assumptions of a research paradigm and that research methodologies cannot be mixed. This view is however

challenged by Patton (1988). He believed that different methods are appropriate in different situations and that there should be an element of choice where paradigms are not fixed and rigid. He went so far as to say that:

The notion of competing paradigms incorrectly implies only two research options and that there are no logical reasons why qualitative and quantitative approaches cannot be used together.

Patton (1998:117)

In research literature quantitative versus qualitative methodologies have been conventionally set one against the other with them occupying opposing epistemological positions (Pawson and Tiley, 1997). However, according to Cresswell (1994:176) “*a false dichotomy exists between qualitative and quantitative approaches ... researchers should make the most efficient use of both approaches in understanding social phenomena*”.

There has nevertheless been some argument regarding the usage of different methodologies in educational research. In 1998, Tooley and Derby, having undertaken a review of 264 articles published in four journals concluded that educational research relied too much on a weak form of qualitative methods and too little on quantitative methods. Yet in defence of this outcome, Gorard, Rushford and Taylor (2004), after carrying out an extensive consultation exercise involving interviewing key stakeholders, a survey of the educational research community and a review of the ‘best’ educational research literature, concluded that work has been widely published from both quantitative and qualitative studies. Rather than deciding that one method is superior to the other or concluding that there is a lack or

proliferation of a particular form, they put forward the suggestion that it is the quality of all research methodologies that leads to the best evidence.

Further consideration of the methodology employed in this study led to the acceptance that both quantitative and qualitative information was important. This meant the adoption of two methods of exploration. A deductive exploration to provide some quantitative statistics on the profile of some aspects of clinical education that could be measured against the findings of other studies and, an inductive exploration to understand what was going on – how, why and the perceptions of the subjects. This is believed by Easterby–Smith, Thorpe and Lowe (1991) to be a way of gaining a knowledge of different research traditions and the researcher can adapt a research design to cater for constraints that may arise from practical difficulties such as limited data or working with minimal prior knowledge of a subject.

The methodological approach adopted for this study needed to address quality within clinical education. It is argued, by Frye et al (2000), that adopting a purely quantitative method may reveal a picture of the success of the clinical education programme in, for example, terms of grades but it would create a situation where certain subjective variables could not be defined. Also it may be difficult to assess important features of physiotherapy education such as learning processes. Including qualitative data is useful in identifying problems, processes and innovations. Frye et al (2000:2) concluded that:

Adoption of both quantitative and qualitative evaluation methods is useful to adequately address the multifaceted needs of a comprehensive evaluation of a curriculum.

One contribution to this debate has been put forward by Susman and Evered (1978) who argued that when humans are participants then values can not be eliminated even within a positivist paradigm. Their solution was action research using mixed methods. This approach was adopted in the design of this study as a problem involving people, tasks and procedures was identified and it allowed co-operative working towards change at a local level (Holly and Whitehead, 1986, Cohen et al, 2000).

Schon (1995:31) saw an approach to action research as being:

a practitioner's reflection on knowing and reflection in action that can give rise to actionable theory.

Despite differing views and beliefs of various methodologies, Barnett (2000:68) believed that all that can be offered by any researcher, no matter what is their adopted methodology, are:

tentative responses, possible readings and suggested ideas for action and intervention.

Barnett (2000:68)

3:3 Action Research

Arising from the work of Lewin (1948), action research addresses an enquiry through a cyclical or spiral path to discovery, planning and evaluation of activities. It is based on a range of collaborative, problem-solving relationships between the researcher and those being researched with the aim of both solving a problem and generating new

knowledge (Coghlan and Brannick, 2001). It seemed to be ideally suited to this research. The cyclical/spiral path involves exploring the literature and diagnosing a problem, planning, gathering data, taking action and then fact finding about the results of the action in order to plan and take further action (Dickens and Watkins, 1999; Lewin 1973). The process is ongoing and involves problem identification, investigations, analysis and suggested action throughout a period of negotiation between researcher and those being researched. Due to this ongoing process, the opportunities for knowledge enhancement can be achieved through different stages of knowledge gathering, which were identified by Heron in 1981. These include experiential knowledge retrieved from an encounter; practical knowledge from doing and presentational knowledge which involves putting gained knowledge into action.

In its origins, action research may be criticised as the researcher could be seen to be the one instigating change and the researched, implementing change (Baskerville and Wood-Harper, 1996). This may be so if the researched are not aware of any need to change. Further critique of action research comes from, among others, Adelman (1989), who is of the belief that action research within education is inward-looking and of poor quality and Atkinson and Delamont (1985), who condemn it as having an atheoretical position. However, despite there being some poor examples of action research within education, this in itself should not weaken it as a research design if it is appropriate to address a research question.

There is also reproach between how Cohen and Manion (1985, 1989) saw action research as a 'style' of research that is situational, collaborative, participatory, self-evaluative, lacking in critique and reflection and, the interpretations of Carr and

Kemmis (1986) and Kemmis (1993) who saw action research as being concerned with improvement of practice which is brought about by the building of substantial theory through critique and reflection. Whereas Cohen and Manion (1985:208-9) believe action research is:

a method which is dedicated to adding to the practitioner

functional knowledge of the phenomena he(sic) deals with

The emphasis is on precise knowledge for a particular situation and purpose.

Kemmis (1993:179) stated that action research is:

an embodiment of democratic principles in research.....

collaboratively to develop critiques of social conditions

which sustain dependence, inequality or exploitation in any

research enterprise in particular or in the social world in general.

The late 1970s' saw a resurgence of the belief that action research was a way of addressing practitioners' problems. This, according to Sanford (1991) and Stenhouse (1979), provided some credence for its adoption by academic researchers. These views are more recently explored by Styhre et al (2003) who considered that action researchers may actively pursue an involvement in organisational matters that have consequences on research findings. The research sample may be more inclined to participate in the research if the outcomes may be directly related to their own practice.

As the researcher, I believed that the meaning of action research given by Kemmis, (1993:179), where democratic principles of collaboration are upheld, would enable an emphasis to be placed on the importance of all parties (all research subjects) being

involved in the research process that may lead to change. Also, as researcher I would have direct contact with the physiotherapy managers and clinical educators when arranging and managing clinical placements through my role as clinical co-ordinator. In relation to the students, not only did I arrange their placements but I was also one of their university lecturers. This close contact would allow for close collaboration throughout the research process. This was further supported by the sharing of data with the samples.

Additionally, I held the belief that action research was a design that would allow the enquiry to gain an understanding of theory and practice and explore boundaries between educators and students. Action research was a way of exploring the beliefs of practitioners beyond the aspects of current practice that had become embedded in traditional patterns in the ways clinical education had previously been managed. It could be based on a collaborative problem-solving relationship between the researcher and those being researched, with the aim of both solving a problem and generating new knowledge (Coghlan and Brannick, 2001).

In order to fully justify the choice of adopting action research it was important to explore the philosophy relating to this methodology. Rorty (1979; 1998; 1999) cited in Reason (2003), has written widely on the philosophical underpinning of research, and in a review of this work and through having conversations with him Reason (2003) reflected on his humanistic philosophical views. Reason (2003:120) shares a belief with Rorty that the researcher should be concerned with truth and justice. Whereas Reason (2003:120) said that Rorty's pragmatic philosophical view is that it is not possible to bring both truth and justice together in one language (hence he has

an incongruous view) action research does attempt to bring them both together. Action research concerns doing things with people and as action researchers are not philosophers but are scholar-practitioners, Reason (2003:120) said that in order to combine truth and justice “*we may wish to extend the notion of irony to include self questioning awareness*”. The researcher needs to reflect upon and question their own beliefs alongside the data that may emerge from the research.

With this in mind it was important that my own background in clinical education should not impact on the study. I had previously been a clinical educator for many years and had experienced different models of facilitating learning. I would have certain epistemological perceptions of clinical education and it was important that any interpretation of research data should not be influenced by personal views.

According to Carr and Kemmis (1986:206), “*In the action research process, reflection and action are held in dialectical tension, each informing the other through a process of planned change, monitoring reflection and modification*”. This requires an ongoing system of collecting research data, feedback, analysis, action and further planning in a cyclical or spiral pattern leading from the initial problem to suggestions for change. As new information is gathered and analysed it may become apparent that further information needs to be obtained from another research sample.

The sample sizes may be different during subsequent stages of the study - which leads to the question of how that data will be collected. The spiral path to discovery, which is adopted in action research, allows for multiple research methods to be included within a methodology and to adapt the sample sizes to fit the data collecting method. Methods can be chosen for their appropriateness in helping to explore

emerging themes. For this reason a number of research methods are used within this study and justification for the adoption of particular methods is further explained later in the chapter and within the research findings.

3:4 Ethics

Action research involves a close relationship between researcher and research participants and due to this close relationship it was important to be diligent when considering the ethical principles to be adhered to when carrying out the study.

In any research project the ethical implications, and the psychological consequences for participants, should be considered (British Psychological Society, 2000). The British Educational Research Association's Ethical Guidelines (2002), in recognising the diverse research philosophies within the profession and the multi-disciplinary community involved in such research, offered a set of principles that are subject to review as practice into educational research evolves. Due to the close relationship between researcher and participants, ethical considerations in action research need to go beyond the usual concerns of consent, confidentiality and respect for the participants (Robson, 1995).

Elliott (1991) wrote that the cyclical/spiral system of data-gathering in action research means that theories are not validated independently and then applied to practice, but are validated through practice. It is not a situation where one gains ethical approval to undertake a singular study, but a process where the ethics of consent, privacy rights, research independence and ownership of data are ongoing throughout the study.

Although this study was not initiated by the participants, it led to some direct and indirect benefits for the research sample and future practitioners/students. In this case it is suggested that the decision to embark on the study was ethically sound (Guillemin and Gillam, 2004) as it could prove advantageous for the participants.

Table 1 illustrates how ethical principles were considered in this project. The table is adapted from The British Educational Research Association's Educational Ethical Guidelines mentioned above, Kemmis and McTaggart (1981:43-4) and Robson (1995:29-35).

(See Appendix 7 for copy of ethical approval from the School of Education, University of Birmingham for the study. At the time of embarking on the study the School of Education did not require such approval so the documents in Appendix 12 are retrospective. Since undertaking this study the rules governing ethical approval involving staff within the NHS have changed. Further approval from the NHS ethical committee within the departments who employ the staff would now be needed).

Table 1. Ethical principles considered in this study

Ethical Principle/what may be requested	What should be considered	How this was managed within the project
Overall protocol	The need for ethical approval before research begins.	The study was given retrospective consent within the University. (see appendix 12 for consent confirmation)
Maintaining confidentiality	Data Protection Act Right to privacy.	Throughout the study research subjects were guaranteed confidentiality. Interviewees were given this in both written and verbal form. Questionnaires were identified by numbers only, which were attached after completion. Sealed boxes were provided for the collection of student questionnaires. Copies of letters are shown in Appendix 8.
Voluntary informed consent	Inform research subjects of the aims and protocol of the study.	Written and or verbal information was given to all research subjects. All research subjects took part in the study voluntarily. Consent was confirmed in them agreeing to be interviewed or fill in questionnaires. Throughout the study subjects could request to withdraw (Subjects did not sign consent forms – consent was assumed on agreement to participate).
Involving participants	Use participants to shape the form of future work.	Through discussing stages within the research and gaining agreement from research subjects to use the information they supplied to shape subsequent investigations within the study.
Right to report work	Maintain anonymity, make research subjects aware of the relevance of their accounts.	All research subjects were made aware that the results from the study might be shared with others. Some of the work was either published or presented at conferences during the course of the study.

3:5 Validity and Reliability

Action research describes events within a particular context and therefore does not create explicit generalisations. What it does do is seek to provide a truthful account of a specific situation through exposing issues relating to that situation. The results of this exposure may be seen to have potential benefits for others in similar situations.

The term validity (that any research instrument must measure what it is meant to measure) is the closest most researchers come to claiming truth. To be deemed true, the data shown must demonstrate what the researcher claims it shows. Reliability, defined as ‘the degree of consistency between two measures of the same thing’ (Black, 1993), is needed if one is to produce high validity. A high degree of both is ideal but more error will be present if reliability is high and validity is low. The value of research is often appreciated when conclusions assumed to be true for a sample can be extended and assumed true for the ‘population’. To achieve reliability the researcher needs to ask questions; were the methods used doing what they were supposed to do? Have informants provided full access to the researcher? Will the results be repeated or similar if applied to another setting? Was data analysis honest? Validity requires independent knowledge of the ‘true’ value of the entity being measured and if lacking will falsify or bias the relationship among variables. Reliability does not presuppose validity and, if lacking within quantitative research, will camouflage relationships among variables. In qualitative research Brock-Utne (1996) argues that the researcher strives to record multiple interpretations and, rather than referring to reliability, chooses the term ‘dependability’ which Guba and Lincoln

(1988) believe will emerge if there is triangulation of data and close collaboration with respondents.

Being able to draw valid conclusions from any research project is clearly of great importance. The extent to which results can be generalised will depend largely on the degree of internal and external validity. The results should accurately describe the phenomena researched and should be plausible and credible.

Within qualitative research, internal validity evolves from linking the level of a claim with the degree of evidence and clarifying explanations of emerging theory (Hammersley, 1992). Schofield (1993) suggested that external validity in this methodology comes from a clear, detailed and in-depth description of results so that others can decide the extent to which the findings are generalisable to other situations. Research design may choose to optimise internal or external validity but bias towards the one will produce a reduction in the validity of the other. Problems with external validity are faced in population, time and environment so it is important to assess how validity can be generalised.

According to Kirk and Miller (1986, 29-30) three basic errors relating to validity may occur whilst undertaking qualitative research – seeing relationships where they do not exist, rejecting information when it may be correct, and asking the wrong questions. In order to produce valid outcomes there is a need to produce close relationships between what the researcher concludes from the data and the actual perceptions, interpretations and beliefs of the research sample.

The design of research establishes the level of internal validity and therefore a differing degree of “truthfulness”. Choosing one method over another should depend on which process would provide the most valid answers.

This study needed to show that validity and reliability were considered no matter whether it was a single or a group study. Within a single interview, it can be argued that problems at an empirical level for external validity can be substituted by a considerable degree of generalisability at a theoretical level. Group studies (interviews with managers and questionnaires to clinical educators and students) provide more transferable results (Bithell, 1994; Robertson, Lee, 1994; Sim 1995).

Within interviews the most practical way of achieving greater validity is to minimise the introduction of bias by the interviewer, interviewee and content of questions (Cohen et al, 2000). Different authors relate the degree of reliability to the structure of the interview. Silverman (1993) argued that a highly-structured interview controls reliability and Oppenheim (1992) suggested that changes in the wording, content and emphasis of questions can undermine reliability. They both, on the other hand, argue that the importance of more open-ended interviews (as used in this study) reveal the uniqueness of the sample interviewed. Reliability and validity of questionnaires may be affected if the sample is too small as this can distort and, in some cases, prohibit statistical analysis of data (Morrison, 1993).

Further debate centres on the degree of anonymity within interviews and questionnaires. Cohen et al (2000) argued that the anonymity of Questionnaires encourages greater honesty that improves reliability. The interview can be more

reliable in sorting out misunderstandings identified by the interviewee that can hamper the poorly-structured questionnaire.

Thus in aiming for generalisability, the collaborative nature of action research (some collaboration between researcher and those being researched) aims at achieving understandings that:

are not simply technical, of how to achieve a given end most

effectively and efficiently, but of how to act rightly and appropriately

in a given situation.

Scott and Usher (1996: 116)

Some concerns on how validity and reliability can be seen to be justified, when measurements appear from within quantitative research within the interpretive paradigm, cannot always be clearly defined. Different writers have suggested alternative ways of assessing the quality of research within the interpretive paradigm. Works by Guba and Lincoln (1989 and 1994) put forward alternative criteria for evaluating qualitative research where trustworthiness and authenticity are the criteria to be met. They propose that within trustworthiness the researcher can aim for credibility - which parallels internal validity (involving good practice and sharing findings); transferability - which parallels external validity (involving in-depth descriptions); dependability - which parallels reliability (involving keeping records of all phases of the research process) and confirmability -which parallels objectivity (ensuring that the researcher has not allowed their personal values to influence the research outcomes). In order to make qualitative research authentic, they believe that the research process should allow for views and beliefs to be exposed, leading to a

better understanding of the perspectives of others and hopefully information that will encourage others to change.

As the author of this project, it is important to point out that I had a close involvement with the research topic (responsible for obtaining more clinical placements for students) which some might argue could **bias** results. Any research variable can become a bias, for example the gender of the researcher in a study on equal opportunities. Some bias is irrelevant or so small that it can be ignored. Research should not lose the understanding that it is a human activity and “all personal values and passions can not be relinquished” (Solomon, 1976).

Throughout the study the aim was to develop and acknowledge the importance of interpreting data through a personal perspective where subjectivity and objectivity are in constant interplay, where the nature of the evidence is considered (ontology) and an exploration of the responses is questioned i.e. are they true, subjective, objective (epistemology). Consequently, it is hoped that the rigour (the methodological soundness of the study) is maintained and that the argument is congruent with the research approach (Watson and Girard, 2004). To address issues of bias, validity and reliability this study uses triangulation with the aim of minimising the chance of error. Through the use of multiple but independent methods, triangulation should act as a means of minimising error through counterbalancing strengths from one research method to another (Abrahamson, 1983; Sim 1996).

Table 2 illustrates some of the threats to validity and reliability experienced within this study.

Table 2 Threats to validity and reliability

Threats to validity	Relevance to this study	Threats to reliability	Relevance to this study
<ul style="list-style-type: none"> • If the subjects within a research project believe that the information they give may disadvantage them: they may not tell the “truth”. • Subjects may drop out of a research project. • Subjects may feel threatened by the “environment in which they work”. They may want to remain loyal and will not give individual views. • Subjects may misinterpret the information needed. 	<ul style="list-style-type: none"> • Subjects may not have wanted to give answers that could lead to an alteration in their work pattern. Also there could have been ‘power relationships’ between myself as researcher and my knowledge of the students. • Response rates were good. The design minimised “drop outs” • Managers may have given an organisation view during interviews. (They need to work within set targets). • Questionnaires were piloted to minimise misunderstanding. During completion of student Questionnaires I was available to address any questions and confusions. 	<ul style="list-style-type: none"> • Responses could be what a subject believes you want them to say rather than what they believe (subject bias). • Researcher can “lead” respondents (researcher error). • Errors in interpreting replies (researcher bias). 	<ul style="list-style-type: none"> • Managers and students may have wanted to maintain a good working relationship (may not have expressed views that they truly believed) • Questions could have been compiled to “lead” respondents. However, piloting was used to check for leading questions. • Needed rigorous analysis. However, there is no escape from the subjective element.

3:6 Sampling

The most important factor in choosing the sample is to select the best sample to address the research question. Cohen and Manion (1989) referred to two general methods of sampling:

- a. Probability sampling – where the criteria used to choose respondents is known and sampling may be systematic or stratified.
- b. Non-probability sampling - where the criteria are unknown and the researcher uses his/her judgement for a particular purpose. (Sometimes referred to as purposive sampling).

In probability sampling it is generally possible to specify that any person from a selected group may be included within the sample. They may be selected randomly, systematically or in clusters.

The aim of this study was to assess the quality of an educational issue for a distinct group of practitioners (physiotherapy managers, clinical educators and students). The decision was made to use purposive sampling in order to find out information about these specific groups. I used my judgement to select the samples and to satisfy the specific needs of the study. The sampling method suited action research as emerging themes could be further investigated within the group of practitioners/students.

Table 3 lists the advantages of this form of sampling specific to this project and derives in part from the work of Robson, (1995:174-175) and Saunders et al (2000: 174-175).

Table 3 Purposive samples and relevance to project

What purposive sample allows	Relevance to this project
Enables the researcher to use their judgement to select a sample that will answer the research question.	Able to select a cohort of students to research. Could question managers and clinical educators who work specifically with this cohort.
Assists in meeting objectives.	Helped in managing time. May have resulted in good response rates.
Often gives relevant and informative replies.	Samples were aware of specific problems. Samples could help solve problems.
Findings from this type of sample can often direct the researcher to other samples.	Suited action research.

According to Kerlinger (1989), there is no guarantee that even a random selection will be representative, but it is recognised that there is a greater likelihood that a random selection will provide a more representative sample than one that is purposely selected. One might therefore ask whether or not the method of purposive sampling provides information that can be demonstrated to be truthful if tested on a randomly selected sample. Random selection does eliminate bias to the greatest degree possible but there will always be some degree of sampling error no matter which method is chosen.

Choosing a sampling technique is dependent on the feasibility of collecting data and depends largely on being the best method to address the study aims. If the researcher is adopting a positivist stance aiming to produce generalisations that can be related to the population as a whole then the argument for probability sampling is justified. However, this study aimed at exploring issues within a specific population and purposive sampling suited this. The samples represented managers, CEs and students within a specific geographical area and do not represent the wider population. The samples may however be representations of similar samples within other areas (Cohen et al, 2000).

Having decided to use purposive sampling, Table 4 shows how different methods within that system were used in different areas of the study.

Table 4. Types of purposive sampling and relevance to this study

Types of purposive sampling	Relevance to this project
<u>Extreme case</u> sample (Unique)	Using this method of sampling allowed for the views of a respondent with no previous experience of clinical education to be gained.
<u>Homogenous</u> sampling (Group in which sample members are similar)	This allowed the views of a group of students to be studied in depth (following a cohort through their degree course).
<u>Heterogeneous</u> sampling (Allows key themes to be observed. Patterns that emerge are likely to be of a particular interest)	This allowed the views of practitioners to emerge (managers and clinical educators). The managers were all physiotherapists by profession.

Derived from Patton (1990)

3:6:1 Recruitment of samples for study

At the time of starting this study more than 90% of clinical education placements for physiotherapy students, from The University of Birmingham, were offered in locations managed by 13 physiotherapy managers. This number was considered to be manageable to interview so all were included in the research sample. The managers were approached initially by phone and asked if they would be prepared to be included in the sample. A letter explaining the study was then sent to the managers (see Appendix 8). As it was recognised that gaining access to managers can be difficult, due to their work commitments, it was agreed that interviews would take place within their place of work and the time of the interviews was agreed after discussion between interviewer and interviewee (Martin, 1975). All were very willing to take part in the study and were ensured anonymity.

A purposive sample of physiotherapy staff including clinical educators and physiotherapists of all grades was used for the first two questionnaires. The first questionnaire (see Appendix 9a) was posted to all clinical educators who were facilitating learning for a cohort of students during one clinical placement. The sample for questionnaire 2 (see Appendix 9b) was drawn from within existing locations where CEs worked and questionnaires were distributed in numbers that were proportional to the number of physiotherapy staff employed within a particular site. The sample included both existing CEs and physiotherapy staff who, up to the time when the questionnaire was administered had not taken on this role. Questionnaires were accompanied by a covering letter that laid out the intentions of the questionnaire and ethical considerations (see Appendix 10), and the sample was supplied with a stamped addressed envelope to encourage response.

A purposive sample consisting of one whole cohort of physiotherapy students was selected to complete questionnaires 3-5 (see Appendix 11a, 11b, and 11c). The questionnaires were distributed and completed in a classroom situation on three separate occasions during the three years of their study. Care was taken not to coerce the students into filling out the questionnaires and a sealed box was supplied into which completed questionnaires could be posted. All students received a letter explaining the aims of the study and details of ethical consideration relating to confidentiality, anonymity and possible sharing of data (See Appendix 12).

I elicited data from a cohort of students and groups of managers and educators, and initially the aim was to provide data specific to the samples. Nevertheless, the information that arose from the study raises questions that could provide evidence for

others working in similar circumstances. (more information on sampling for the study is included within the presentation of results – chapters 4, 5 and 6)

3:7 Methods of enquiry/data collection

This study employed two distinct data gathering methods: interviews and questionnaires.

3:7:1 Interviewing

According to Scott and Usher (1996) interviews form a dominant data collection method within educational settings, as they are ideal for exploring and describing the views and beliefs of the interviewee.

It was suggested, as far back as 1957 by Kahn and Cannell, that the interview is a purposeful discussion between two or more people. Interviews are a commonly used approach to enquiry and may be regarded as a straightforward and non-problematic way of finding things out (Robson, 1995). Interviews may differ in format. At one end of the spectrum the interview can be highly structured. Here, the format is a standardised or identical set of questions and is one where the interview has been carefully prepared with the questions being piloted and refined before implementation. At the opposite end is the unstructured interview (sometimes referred to as in-depth) where it is the interviewee who is given the opportunity to talk freely about the events, behaviours and beliefs within the topic being researched

(Saunders et al, 2000). Falling between these two approaches to interviewing is the semi-structured interview where, despite the interviewer having particular themes to explore and questions to ask, the order and emphasis of the questioning can alter depending on the flow of the conversation and the information that the interviewee provides (Saunders et al, 2000). The semi-structured interview allows for the subjectivity of the responses from an individual to be incorporated within the overall picture, through response and discussion. Issues that may not have been within the original framework of the aims of the interview may arise and be considered relevant and worthwhile to the study.

Robson (1995:42) stated that the interview is helpful as a means to ‘find out what is happening and to seek new insights’ and, according to Tuckman (1972), enables many needs to be explored – finding out information and knowledge and individuals values, preferences, attitudes and beliefs. Qualitative research may use unstructured and semi-structured interviews, and in both cases the interviewee is able to enter into conversation. However, depending on the format, the development of that conversation will differ.

For this study it was felt that semi-structured interviews would provide an in-depth exploration of the research subject. As the researcher, a fine balance had to be made between being able to reconstruct questions for the individual interviewee whilst ensuring that the research questions were addressed. Also, some degree of control was necessary in deciding whether or not issues raised by the managers might be relevant to the study.

3:7:2 Organisational issues and interview technique

Interviewing the managers

The most effective way to learn how to interview is by doing it (Roulston et al, 2003), so prior to embarking on the semi-structured interviews a number of simulated situations were practised (both in private and with the assistance of a colleague).

Physiotherapy managers (n=13) were interviewed, on a one-to-one basis, at the start of the research journey (see Figure A). Interviewing the managers enabled a detailed exploration of current practice relating to the supply of clinical placements for physiotherapy students from The University of Birmingham. The managers were approached directly - initially by phone, and then by letter (see Appendix 8). Gaining access to the physiotherapy managers and getting their informed consent to be interviewed proved trouble-free. All were aware of the problems that were emerging with increased student numbers and were pleased to give information that may possibly help in future management.

The nature of semi-structured interviews means that dialogue is ideally recorded through note-taking or tape-recording the discussion (Robson, 1995). Recording an interview means that the interviewer is able to concentrate on what is being said and have an accurate record. The task of note taking can be arduous, yet through practice (in a simulated situation) can be perfected and in some situations may make the interviewee more comfortable. (See Appendix 13 for interview schedule)

All interviewees were asked if they would agree to being recorded and all were comfortable with this. This verbal response was taken as an agreement of consent. Data was also gathered through note-taking.

The semi-structured interviews were carried out using the guidelines suggested by Smith, (1995). This involved starting interviews with a general question to encourage the interviewee to talk about the subject. If the respondent had difficulties then prompts were added e.g. ‘why do you believe that?’. Questions and answers were approached both generally and specifically with the aim of conducting a fairly seamless discussion.

Interviewer etiquette and technique is a learnt process, and it is important to understand that data gathered can be directly influenced by the manner in which the interview process is conducted (Robson, 1995). Interviewer technique plays a pivotal role in the success of the meeting between interviewer and interviewee. Murray and Lawrence (2000:121) offer guidelines that consider many important issues that can enhance the quality of interviews. These guidelines were useful in both preparing and carrying out the semi-structured interviews within this study, and examples of their usefulness are listed below using some of the directions given by Murray and Lawrence (2000:121).

- ‘Prior to the interview engage the respondent in casual small talk to establish a rapport’. (Despite building up a rapport, this familiarity could have been a barrier as some of the interviewees were keen to continue in a casual manner. As the interviewer I needed to take some ‘control’ whilst ensuring that the interviewees

felt both comfortable and that their professional stance was equal to my own. I knew many of the interviewees, therefore it was easy to enter into casual small talk).

- ‘Assure the interviewee that all information will be kept confidential’. (All interviewees were made fully aware of the research aims and ensured that anonymity would be preserved).
- ‘Avoid cross-examination: pause after each answer and then carefully follow up if necessary’. (No replies were cross examined. Nevertheless some prompts were used including. “why do you say that?”, “ is that the case in all circumstances?”).
- ‘Do not contradict or argue with the respondent’s views’. (Replies were accepted as said).
- ‘Allow for threatening situations – pass over or change the subject if the interviewee looks uncomfortable’. (I believe I was sensitive to respondents’ replies and feelings and no confrontational issues arose).
- ‘Beware !! the leading question i.e. questions that lead the respondent to consider that one reply would be better than another’. (It was unnecessary to lead – this was due mainly to the fact that interviewees had some knowledge of the general research topic. However, as I was known to many of the interviewees, this could have led to some untruthfulness or ambiguity in their responses as they may have said what they thought I wanted to hear).

Murray and Lawrence (2000:117) stated that interviews possibly ‘represent the most respectable data gathering technique in qualitative approaches to social and educational research’ and that questionnaires are ‘shallower by comparison’. However, the respectability of data gathering for this study was maintained through

the adoption of multiple data gathering and questionnaires, and interviews offered methods for triangulation and suited stages in the action research specific to the questions being asked.

3:7:3 Questionnaires

Questionnaires were used during varying stages of the study (see Figure A) to seek the views of both clinical educators and students. These views related to the identification of the characteristics, abilities and beliefs of CEs and students; their views on the methods used within clinical education, perceptions about quality of the supervision being given, and an evaluation of students' experiences during clinical placements.

As with interviews, questionnaires can be constructed in different ways using different types of questions and are compiled depending on the nature of the information you wish to record. Closed questions provide lists, categories, scales, numbers, grids (Bell, 1999) and allow a researcher to obtain factual and descriptive data about a group. Open-ended questions allow for exploration - to obtain the views and perceptions of the respondents. Gathering factual, descriptive and explanatory data can be achieved through the compilation of what is referred to as a semi-structured questionnaire (Cohen, Manion and Morrison, 2000). These contain both closed and open questions and sometimes Likert scale responses to statements.

According to, amongst others, Robson (1995) and Saunders et al (2000), questionnaires work best with closed questions where the researcher can be confident that the questions will be interpreted the same way by all correspondents and likely

responses are known. Saunders et al (2000) believe that the questionnaire is not good for exploratory research as a large number of open-ended questions would be required.

Nevertheless, within this project it is argued that the exploratory nature of the research question could be addressed using questionnaires, which contained both closed and open questions and blank boxes where further comments could be added. Respondents were given opportunities to add extra comments, with the proviso that comments were related to the aims of the questionnaire. All questionnaires were piloted prior to distribution to research subjects to gauge that the descriptive and explanatory information vital for the exploratory nature of this project could be retrieved.

The piloting involved discussion with colleagues and academic supervisor, and completion of questionnaires by five physiotherapists and five physiotherapy students who would not be part of the study sample. They were asked to refrain from discussing the questionnaire with peers who might be in the research sample. Piloting was found valuable in exposing redundant questions that would not have added relevant information and in the ordering of questions to promote response rate.

Table 5 illustrates how the questionnaires were administered and collected and why this method was chosen.

Table 5 Administration of questionnaires and reason for choice

Administration	Reasons for choice	Limitations to consider
Postal questionnaire to clinical educators (Questionnaires 1 and 2). Questionnaires were posted to Clinical Educators with a covering letter and a self addressed / stamped envelope was supplied with the aim of encouraging them to respond. Each Questionnaire had an identification number to check non respondents- (deVaus, 1996)	<ul style="list-style-type: none"> • Ability to canvass a large number of “suitable” respondents • Ability to ensure that all respondents receive the same information about the aims of the questionnaire • Improved response rate 	<ul style="list-style-type: none"> • Responses could be contaminated if respondents entered into any form of discussion. • You do not know if the targeted subjects answered the Questionnaires.
Students completed questionnaires in the classroom.	<ul style="list-style-type: none"> • As researcher I was able to observe that no discussion took place. • The captive audience led to a good response rate. Students were not put under any pressure to respond. 	<ul style="list-style-type: none"> • Delivery and completion of questionnaires ensured non-contamination.

As the researcher, I was aware that there can never be a guarantee that it is the recipient who has completed the questionnaires that were posted. In the pursuit of minimising the possibility of contamination, covering letters were posted with the questionnaires to clinical educators asking respondents to refrain from discussing the questionnaire with others and a request to reply in person. (See Appendix 10 for copies of covering letters).

Depending on the quality of the questionnaire, and the questions asked, the researcher hoped to get responses as to who, what, why (explanatory and descriptive) and how what is found supports or undermines particular explanations (explanations of the views and beliefs of the individual), or what would be the consequences of change (applied research).

When embarking on a research project not only must the research rationale be justified in terms of methodology but also the methods chosen (the instruments by which data are collected) should observe constraints of available time and resources (Robson 1995). This was the primary reason for what some readers may believe is an over reliance on questionnaires to gather data within the study. However, as the questionnaires were completed by three different research samples and as the results from the questionnaires were triangulated, the value of this approach to data collection is in some measure justified.

For this study, using action research (where both qualitative and quantitative information is gathered) interviews and questionnaires were believed to be the most appropriate methods to gain both factual and subjective information. This aim was furthermore supported through adopting semi-structured processes when constructing questionnaires and planning interviews. Also, questionnaires matched the philosophy of the research as none of the data gathering was so structured as to be positivistic in approach (Gill and Johnson, 1997).

Further information on the questionnaires used within this project is covered in the results chapter (chapters 5-7), and copies of questionnaires can be found in Appendix 9a, 9b, 11a, 11b and 11c)

3:8 Triangulation

The research methods employed within this study were designed to explore the research questions and serve the purpose of triangulation. Triangulation according to Denzin (1970) is a way in which a researcher can explore the complexity of issues that arise within questions, through the adoption of approaching questions in different ways. He suggests that this can be done by using multiple and different sources (informants), methods, investigators and theories. Within Denzin's 1970 work, four forms of triangulation were identified that, if adopted, may demonstrate validity:

- Data triangulation (gathering data through times, situations, variety of people).
- Investigator triangulation (use of more than one researcher to gather data).
- Theoretical triangulation (use of more than one theoretical position in interpreting data).
- Methodological triangulation (use of more than one method for gathering data)

However, triangulation is not without its critics. Bryman (1992) suggested that some research questions might be addressed adequately through the use of a single method, and that research which combines methods should not, in all circumstances, be regarded as superior to single method research. His view puts into question the understanding that triangulation should overcome the intrinsic bias of single method, single observer or single theory studies (Denzin, 1989). Silverman (1993) suggested that data triangulation assumes a position of superiority claiming advantages over and beyond a single data source. Patton (1980) questioned the consistency of multiple

data sources and Kuizel and Like (1991) questioned both the efficiency of interpretation from different sources, especially if the researcher is untrained in different research methods.

In drawing a distinction between those who value triangulation with differing viewpoints, Sim and Sharp (1998) suggested that when aiming for credibility, the researcher would be well advised to approach the use of triangulation with caution.

According to Robson (1995:404) triangulation enhances the credibility of the study. Triangulation was viewed as an integral and important element within this research. In its literal sense, triangulation is a technique of physical measurement where several markers may be taken in order to pinpoint a single objective (Smith, 1975). However, within social sciences, triangulation attempts to explain more fully the complexities of human behaviour by making use of both quantitative and qualitative data (Campbell and Fiske, 1959). When triangulation is used in interpretive research, different viewpoints may emerge from single/multiple data collecting methods and the more that methods contrast with each other (e.g. the outcomes of interviews corresponding with the outcomes of questionnaires) the greater the confidence should be about the findings (Cohen et al, 2000).

Within this study, triangulation was used and comparisons made between:

- Interviews with physiotherapy managers (data triangulation).
- Questionnaires with clinical educators (data triangulation).
- Comparison of views of existing CEs and physiotherapy staff who do not adopt the role. (data triangulation)

- Views of managers versus CEs (data and methodological triangulation)
- Questionnaires with physiotherapy students (data triangulation)
- Views of managers versus CEs versus students (data and methodological triangulation)

The study considers different populations and utilises two distinct research methods with the aim of developing a multi-faceted approach to collecting a great deal of information. In gathering information by using different methods, the study's goal was to increase confidence in the validity of the data. Triangulation is not merely aimed at validation, but, as Olsen (2004) suggests is used to increase the depth and breadth of understanding.

3:9 From data collection to data analysis

Irrespective of whether the data collected in a study is quantitative or qualitative, the main task is to address the research question/s and in a manner that ensures trustworthiness (Robson, 1995).

The researcher should approach an investigation with an open mind, and any personal values of the researcher (which may be relevant to the project) should be disclosed.

It has been important throughout the presentation of results to make this explicit.

To improve the rigour of data gathering for this study the principles referred to by Coghlan and Brannick (2001 25:26) were adopted:

- Engaging in steps of data gathering and ensuring that the data is relevant to the study

- Reflecting on personal assumptions to become familiar with the data that was exposed (this was promoted through using reflective notes/diary)
- Assessing the data to confirm and contradict interpretations
- Challenging the outcomes. (within this study this took the form of eliciting the views of different samples and then triangulating the results)

Data collection and analysis within action research is an ongoing process that requires the researcher to return to, and interpret, information. It not only reveals information that is relevant to a particular stage within the research process, but also helps with revealing what information would be valuable to retrieve during subsequent stages.

Throughout this study reflective notes were kept, within a diary, and were used to assist with emerging ideas and to build an understanding. Reflecting on personal assumptions promoted the depth of familiarity with the data that was exposed (Coghlan and Brannick, 2001). The use of reflection, both in and on action, uses the capacity to identify issues and problems that are salient to the context of the study (Leitch and Day, 2000.) Interpretation of data always involves multiple meanings, and interpretations made by the researcher can be influenced by personal history (Patton, 1990). As I had spent many years being a CE and as I am now a lecturer, it is inevitable that I have personal views on clinical education. These ‘self-memos’ allowed me to make a record of ideas about different aspects of the study, and focused the mind on the importance of not inputting meaning within text that was not there. They do not form part of the results but were however helpful in the management of data collection. (see extract from reflective diary in Appendix 14)

Reflection was an integral part of the data analysis. It adopted the premise suggested by Hall (1996) that, within action research, reflexivity allows the construction of knowledge, through combining the experiences of all participants and the researchers views, which may be theory-laden. Theory does not hold precedence over views of participants.

3:10 Data analysis

Within data analysis close interpretation and synthesis is required. Although approaches to data analysis vary, the aim is for a corresponding degree of rigour in both quantitative and qualitative data analysis.

‘The central requirement in analysis is clear thinking on the part of the analyst’ (Robson, 1995:374). He believed that a systematic approach to data analysis will minimise human error. In order to achieve this, a structured process was used for the data analysis. Investigations carried out for the study produced both qualitative and quantitative data to be analysed. Distinctions between qualitative and quantitative data are presented in Table 6, which is produced from the work of Saunders et al (2000:12).

Table 6: **Distinctions between quantitative and qualitative data.**

Quantitative data	Qualitative data
<ul style="list-style-type: none"> • Based on meanings derived from numbers. • Collection of numerical and standardised data. • Analysis conducted through the use of diagrams and statistics. 	<ul style="list-style-type: none"> • Based on meanings expressed through words. • Collection of non-standardised data that requires classification into categories. • Analysis through conceptualisation.

The quantitative data was analysed to provide descriptive statistical data. Qualitative data was analysed following a series of steps which Bartlett and Payne (1995) suggested fall into different phases. (Further explanation is covered in section 3:9:1).

- Collecting data (interviews and questionnaires)
- Transcribing data (from tape, notes and responses to questionnaires)
- Developing categories/themes (from transcripts of interviews and open-ended questions in questionnaires)
- Saturating categories/themes (more in-depth analysis of categories)
- Axial coding (looking at relationships between categories)
- Integrating theory (discussing findings against existing theory)
- Filling in the gaps (making suggestions for further research).

However, it is important to note that these steps need not be adhered to rigidly, and that the steps can be altered in regards to order and the time spent on each step. What is important is that evaluation of the work produced is sufficiently analytical and that those who view the outcomes can relate to them (Glaser and Strauss, 1967; Strauss and Corbin, 1990).

3:10:1 Analysis of interviews and questionnaires

Analysis was done both manually and through the utilisation of MS Excel or SPSS. Manual analysis of the earlier stages of the study promoted my learning of the analysis process (Webb, 1999), and reduced doubts related to the validity of technological analysis (Coffey et al, 1996; Murphy et al, 1998;).

3:10:1:1 Interviews

The major content of the interviews provided qualitative data, which required interpretation rather than providing accurate representations as seen in numerical/positivist tradition. All interviews were recorded and notes were taken. Data from the interviews with managers was transcribed verbatim into word-processed documents before coding and developing categories. (See Appendix 13 for interview schedule).

In the pursuit of developing theory, making constant comparisons was important (Glaser and Strauss, 1967). The aim was to discern conceptual similarities, refine categories and discover patterns. The interview manuscripts were carefully scrutinised in order to identify the main themes and categories within the data. Through adopting the principles set out by Strauss and Corbin (1998), microanalysis was undertaken to produce 'open' and 'axial' codes, in order to identify emergent categories and develop interconnections through the exploration of patterns and clusters of information (Miles and Huberman, 1994). Further 'selective' coding then established core categories.

As coding is a subjective activity, because the researcher decides what information to include or exclude, it was important to maintain a focus. This was achieved through adopting the guided process set out by Miles and Huberman (1994):

- The transcripts were scrutinised for frequencies (themes, pieces of data, words).
- Patterns emerged from repeated themes
- Intuition was used to reach conclusions.

- Data was clustered into categories.
- Data was reduced by connecting data with theory.
- An effort was made to identify numerically those who supported or refuted the key themes that emerged.

The steps taken in analysis of the interviews is summarised below:

- a. Comparisons were made within a single interview. This involved open coding to summarise the core of the interview with the aim of developing categories of understanding. This coding resulted in a summary of the interview.
- b. Comparisons between interviews of group of managers. This concerned axial coding and formulated comparisons between interviews resulting in patterns and expansion of codes.

(see Appendix 15 for example of coding).

Descriptive statistics from the interviews is presented within the results generally in the form of tables.

3:10:1:2 Questionnaires

Before the questionnaires were analysed they were hand checked, to identify where responses made by respondents may lead to the questionnaire being eliminated from the sample (Cohen et al, 2000). From the whole study only two questionnaires were eliminated due to non-completion. These questionnaires were returned blank.

The two questionnaires from the clinical educators and the three questionnaires from the physiotherapy students all contained open and closed questions (See Appendix 9a, 9b, 11a, 11b and 11c for copies of questionnaires).

The closed questions were analysed to provide descriptive statistics. (See appendix 16 for examples of frequencies. They provided nominal data that was analysed for frequencies and measures of central tendency and variability. To elicit potential associations between responses the non-parametric statistical test – Chi Square – was employed.

The process of analysis with the open questions within the questionnaires was similar to that of the interview data. Coding was undertaken manually, then entered onto SPSS for further analysis. The process involved the following actions:

- Themes were generated from a review of all written responses. This involved the reading and re-reading of content, and a summary of the main responses being drawn out.
- A colleague repeated this process with a sample of the questionnaires to verify themes.
- The ‘codes’ were assigned a numeric value.
- Responses to questions were manually coded on the questionnaires. The responses to some questions included several codes.
- Data was then inputted onto SPSS. As some questions included several codes, each code was assigned as a variable and responses were given as yes/no.

3:11 Weaknesses within methodology

I had been a clinical educator for many years and had thoroughly enjoyed that role. Within this I had my own perceptions of what made a good clinical educator and how this role could be best managed. However, I could not let my personal views of the role be known. Also, being involved in teaching and learning I could not allow my experience to influence data gathering and analysis. Yet I accept that, to some degree, there will always be some tension between the epistemological assumptions of a researcher and the researched population, and it was not possible or desirable to become fully detached.

Some might regard the methodology adopted for the study as a major weakness. Much criticism has been laid on action research as a methodology and Adelman (1989) believed it to be inward-looking, ahistorical and of poor quality. Nonetheless, Fullen (1982) believed that it can lead to some understanding of what should and should not be done when seeking to implement change, and an exploration of how change is managed through exploration of data is both useful and interesting (Coghlan and Brannick, 2001). Furthermore, through participant involvement (to varying degrees), action research may lead to change through enabling of a systematic, collaborative and pragmatic approach to be used (Donche and Van Petergen, 2004).

Weaknesses within the methods adopted have been highlighted within the chapter, including the truthfulness of answers (which may have been influenced by the respondents knowing myself as researcher) and an inability to know if postal

questionnaires were completed by the respondent. However, these weaknesses, having been stated, are open.

3:12 Reflections / Summary

A significant amount of research in education within the UK is qualitative. This position has, in recent years been criticised by Hargreaves, (1996) and Tooley (1998), with the implications that quantitative research is seen to be key in providing evidence-based practice and generalisability. These views are held despite Gorard et al (2004) revealing that within the educational journals published in 2003, 47% used quantitative methods alone.

The adoption of the methodology for this study, which would come under the umbrella of qualitative (although some quantitative methods and analysis are employed), can be justified through its intentions. The main aim of this study was concerned with the quality of clinical education for a specific group. Triangulation of data has been an important element. Generalisability lies within a readers' interpretations of the results and the applicability to their circumstances.

Within the literature there appears to be a number of distinct themes that are common within action research. These can be matched against the study aims and give justification to the methodology adopted for the study.

- a. Action research manages change (Cunningham, 1995; Easterby-Smith, Thorpe and Lowe, 1991). Change was needed in order to accommodate increased student numbers.

- b. There is collaboration between researcher and those researched (Carr and Kemmis, 1986; Eden and Huxham, 1996). There was a close working relationship between myself as researcher (lecturer and Clinical Co-ordinator), and those researched (my students, the managers who offer me clinical placements and the clinical educators who facilitate student learning within clinical settings).
- c. The researcher is part of the organisation in which the research and change processes are taking place (Reason, 1988; Zuber-Skerett, 1996). The findings are of relevance and value for both the researcher and the research sample.

The following quote signifies the ethos behind choosing action research:

Action research aims at improvement in three areas: first the improvement of a practice, second the improvement of the understanding of the practice by its practitioners; and third, the improvement of the situation in which the practice takes place.

Carr and Kemmis (1986:165)

According to Lincoln and Cannella (2004:176):

Educational researchers have won for themselves a mature and sophisticated multiparadigmatic social context and the freedom to engage in research using a variety of models and methods.

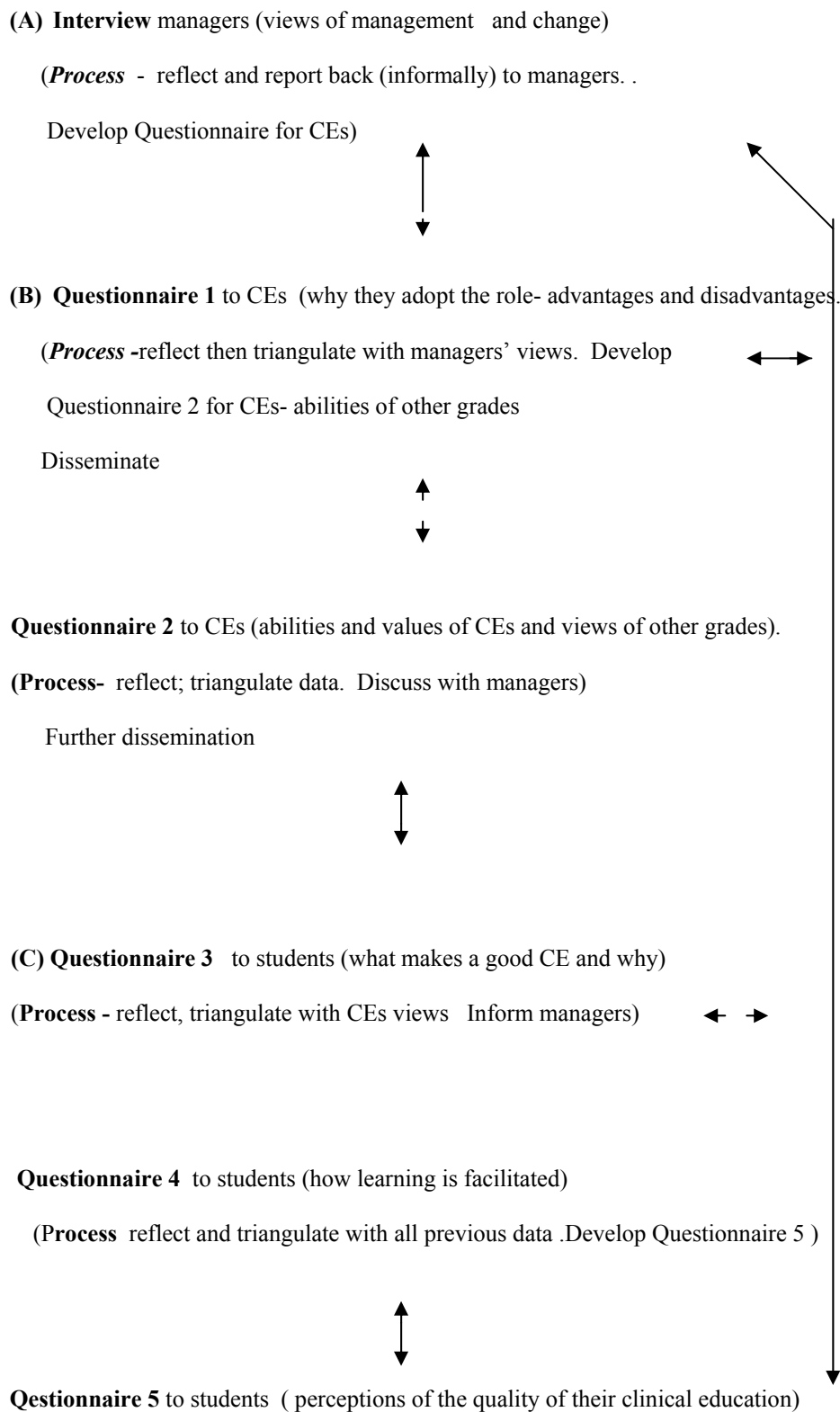
The analysed findings from the study are presented in chapters 4, 5 and 6 along with initial discussion. These chapters show the results from sequential data within the action research process. They also report how analysis was undertaken and how

outcomes were shared with the professional community involved with the research throughout (rather than at the end). Reflection and the sharing of information after each stage, helped create consequent stages of the research and development of change. The discussion is further developed in chapter 7, taking into consideration triangulation of all data analysis. In its literal sense, triangulation is a technique of physical measurement where several markers may be taken in order to pinpoint a single objective (Smith, 1975). However, within social sciences, triangulation attempts to explain more fully the complexities of human behaviour by making use of both quantitative and qualitative data (Campbell and Fiske, 1959). When triangulation is used in interpretive research different viewpoints may emerge from single/multiple data collecting methods, and the more that methods contrast with each other (e.g. the outcomes of interviews corresponding with the outcomes of questionnaires) the greater should be the confidence about the findings (Cohen et al, 2000).

All stages can be seen in Figure A on page 143 (a representative illustration of the research journey). Phases within the study developed when travelling through a number of data analysing sequences that involved diagnosing, planning action, taking action, reflecting and evaluating action issues. At each step the information gathered from the practitioners was interpreted with the aim of reaching a representation of their views and beliefs, and analysis to justify the findings.

Through adoption of this method, the researcher was able to plan a model of enquiry that could move from an initial idea to new and emerging ideas through data gathering, reflection, and implementation.

Figure A. The research journey



<u>Actions</u>
Student numbers increasing - 48 - 60
Student numbers increasing - 60-86
Involvement of more junior grades.
Development of a team approach

Arrows indicate triangulation.

Chapter 4

Results of interviews and Questionnaires 1 and 2

4:1 Managers' interviews

At the start of the research journey the problem was to find enough clinical placements to accommodate the rising student intake. It was felt that the physiotherapy managers would have information relating to the current provision of high quality clinical education for physiotherapy students from The University of Birmingham. Additionally, they might be able to highlight possible barriers to accommodating students as they were closely linked to provision. For these reasons they became the first research sample. These interviews explored both the impact of having students within their place of work and the managers' views on employing clinical educators within their workforce.

As the physiotherapy managers also worked closely with the university, this close collaboration fitted well into action research. Their role in clinical education had multiple factors-

- They received the requests from the university to accommodate students.
- They were the line managers to the clinical educators.
- They were responsible for the overall day-to-day management of the clinical locations (which in some cases involved managing the budget for the department).
- They were my contact person when clinical education provision needed to be discussed.

- They appeared to be the decision makers in cancelling placements e.g. would cancel if CE was sick.
- They would also cancel placements if they felt the workload within the department was too high to 'take on' students. This could happen despite the Chartered Society of Physiotherapy Clinical Education Placement Guidelines stating

The manager is responsible for ensuring that alternative arrangements are made in the event of the clinical educators' absence. (CSP 2003:5)

Before embarking on this initial stage of the research I was aware that the managers knew about rising student numbers. This had been published nationally in CSP correspondence and was a topic for discussion at local managers meetings. I had given an informal presentation to this group on issues relating to increased student numbers. At the time of the presentation there were 48 students within each of years two and three and the first year cohort of students had risen to 60. Informal (not recorded) verbal feedback from that meeting led me to believe that the managers had concerns about how these increased numbers would be managed within clinical settings.

At the time of starting this study, more than 90% of clinical education placements for physiotherapy students, (from The University of Birmingham), were offered in locations managed by 13 physiotherapy managers. This number was considered to be manageable to interview, so all were included in the research sample. As it was recognised that gaining access to managers can be difficult due to their work

commitments, it was agreed that interviews would take place within their place of work and the time of the interviews was agreed after discussion between interviewer and interviewee (Martin, 1975). The interviews took place in the managers offices and lasted on average one hour.

Semi-structured interviews were undertaken with the 13 managers to explore their views on having CEs in their workforce. Additionally the interviews sought their views on accommodating more students within their departments. Through choosing a semi-structured approach to interviewing it was felt that there was scope both to explore and modify lines of enquiry and react to interesting responses (Robson, 1995).

The interviews explored core topics that had arisen from the informal feedback to the presentation I had given at the managers meeting.

4:1:1 Interview findings

The results are presented with direct reference to the issues that were explored within the interviews. They explore issues relating to the beliefs and perceptions of the managers regarding the impact of accommodating students within their place of work, and their perceptions of how this may influence the work of physiotherapy staff who take on the role of clinical educator. The tables contain the categories that emerged after data analysis and coding.

➤ Are there advantages in having clinical educators as part of the workforce?

The managers' views fell into specific categories. The two main themes were: recruitment and profile of staff (1) and the effects on CPD and mutual learning (2) and these are represented in Table 7.

Table 7 Advantages of clinical educators: managers' views

View		Number (n=13)
Has a positive effect on recruitment	(1)	13
Helps future staff to see that students are accommodated	(1)	12
Raises the profile of the department	(1)	10
A good way of getting students interested in specific specialties	(1)	7
Provides another 'pair of hands'	(1)	2
Fits in well with continuing professional development	(2)	12
Students bring new ideas and thoughts	(2)	9
The CE has to keep up to date	(2)	9
Enables the clinical educator to develop skills in teaching and learning	(2)	9
Encourages the educator to be reflective	(2)	8
Provides a mutual learning environment	(2)	8
Gives the educator another challenge	(2)	4

Key:
 (1) = Recruitment and profile of staff
 (2) = Effects on CDP and mutual learning

It can be seen that all of the managers (n=13) identified the positive effect students have on the recruitment of staff. Twelve managers believed that accommodating students had a positive effect on attracting future staff. One manager commented:

*Clinical educators tend to raise the profile of the department
and this is often seen as a positive aspect expressed during interviews
for new staff.* (Manager 4)

and another:

*Having students in the departments may mean that they will
apply to work here* (Manager 7)

Specifically raising the profile of the department, by having clinical educators within the workforce, was considered advantageous by 10 of the 13 managers.

In areas where it can be difficult to recruit staff to specialties, some managers (n=7) believed that having students may give them insight that could encourage future interest:

It is sometimes difficult to get staff interested in for example, womens' health and if there is a CE in that area then they may encourage students to think about entering that area in the future.

(Manager 2)

A high number (n=12) believed that clinical educators within the department promoted continuing professional development (CPD), and nine managers referred to the need for clinical educators to keep up to date and develop new skills:

Clinical educators are concerned with keeping up- to- date in order to help students learn. (Manager 7)

If the CE has to teach students then they tend to want to learn about methods to do this. (Manager 10)

To a lesser degree some managers referred to mutual learning:

Students can bring new ideas of current theory. (Manager 2)

The students are able to show us what is being taught at the university.

(Manager 4)

Four managers saw CEs as having another challenge (though this can only be ratified as a belief of the manager without gaining the views of the CEs) and two managers did not express their views directly to the value of the CE but to the extra ‘staff’ they would add to the workforce if they had students. They were of the opinion that in some instances having students could compensate for a deficit in qualified staff numbers.

Managers were then questioned about any disadvantages they perceived from having CEs within their departments.

- Are there disadvantages in having clinical educators as part of the workforce?

Table 8 Disadvantages of clinical educators: managers’ views

View	Number n=13
There is added work for the educator	7
Junior staff can be disadvantaged if students take priority	2
Treatment by a student may need a patient to attend more sessions than when treated by a qualified member of staff	2
Accommodating students does not increase throughput with the 1:1 model	1
Organisational problems ; especially if working with part time staff	1
Difficulties if one has a poor student	1

In comparison with Table 7, Table 8 shows that the managers identified far fewer disadvantages. Just over half of the managers (n=7) believed that the clinical educators had an increased workload and this was by far the main disadvantage.

It is good to have CEs in the department but I think that their workload can increase. (Manager 5)

The staff who are CEs always seem to be busier when they have students. (Manager 2)

I think that CEs can be pressed for time when managing their caseload. (Manager 11)

Only a minority of managers (n=2 or n=1) gave other disadvantages generally relating to patient throughput and organisational difficulties. Two managers believed that junior physiotherapy staff may be disadvantaged in their post-graduate learning if the CE made the student their priority.

With the advantages greatly outweighing the disadvantages it lead to the question of accommodating more students.

➤ Would it be beneficial or detrimental if you accommodated more students?

Twelve of the 13 managers said it would be advantageous and the reasons they gave are shown in Table 9. One manager believed that the clinical locations that she managed could not accommodate more students due to space restrictions and made no further comment.

Table 9 Advantages of accommodating more students : managers' views

Reason	Number (n=12)
Would assist with recruitment	12
Would help with retention of staff in the long run	7
Would provide more staff to replace those entering more diverse areas of patient care (e.g. staff manning clinics)	3

The managers believed that more students would have a positive effect on recruitment and retention of staff and encourage staff to move into what some believe are less attractive areas. These views mirrored the most frequent responses to the advantages of having CEs within a department (Table 7). Reflecting on this response highlighted some concerns about the quality of placing more students within a clinical area as

none of the managers gave any views that related to learning (as was revealed in an earlier question - Table 7).

Three of the managers believed that students might temporarily help to replace staff working outside physiotherapy specific areas. These physiotherapists were still counted in workforce allocation but their time was spent in e.g. running out patient clinics alongside medical practitioners. It was recognised that the level of input would be less than that of the qualified member of staff and one manager related this to quality:

Sometimes we are grateful to have students as they can fill in for staff shortages but I do realise that this may be seen as us dampening down on quality and some patients may feel hard done by. (Manager 4)

If managers were to accommodate more students, did they perceive any problems with current management of clinical education that might hinder this?

- Do the managers perceive any problem within the current management of clinical education?

Table 10 Any problems in the current management of clinical education

Reason	Number (n=13)
Lack of staff	7
No problems	6

The seven managers who regarded the lack of staff as being a problem showed that this was generally due to staff vacancies. One manager also mentioned that sick leave could be a problem. Almost half of the managers (n=6) did not see any problems in the current management of clinical education being able to accommodate more

students. They were confident in the procedures adopted to manage clinical education and they felt that this was enhanced through both liaising with the university and the abilities of their CEs.

We try to manage but if I could get more staff problems might disappear. (Manager 4)

Things can be going well but sudden sick leave can cause a number of problems (Manager 7)

We seem to manage it well and if we have any problems we know that we can get in touch with the university. (Manager 5)

These views led to exploring which of their staff should/could be a clinical educator.

➤ Which of your staff do you believe should/could be a clinical educator?

Table 11 Who should/could be clinical educators: managers' views

Reason	Number (n=13)
Only Senior I staff or above	10
Have no opinion	3

The majority of managers (n=10) thought that it was only appropriate to have CEs working at Senior I grade or above as they thought lower grades would not be able to facilitate students' learning. They believed that the quality of supervision would be lowered if physiotherapy staff working at lower grades were involved and they perceived more junior grades did not have the knowledge to supervise students. Four of the managers were very apprehensive to leave students with Senior II staff.

I feel very apprehensive if I have to leave a student with Senior II staff if the Senior I is absent, and I only 'ask' Senior I staff to act as clinical educators. (Manager 4)

Only the Senior I staff know anything about teaching and learning. They have a lot of clinical experience and this is necessary when they are teaching students. (Manager 1)

I will only allow my Senior I staff to be clinical educators. Any lower grades do not have the experience as they are still learning. (Manager 10)

The Senior Is are used to teaching as they have to teach the Senior II and Junior staff. (Manager 7)

4:1:2 Overview of the results of managers' interviews

Results from a delphi study carried out by Maxwell in 1995, which looked at problems associated with clinical education for physiotherapy students, found that the respondents (chartered physiotherapists involved in the clinical education of physiotherapy students) had concerns regarding staffing for this purpose. Respondents felt that universities were admitting too many students and that, as staff numbers within clinical locations were cut, the students were producing an added burden for clinicians. This led to cancellation of placements. This problem was

augmented by problems with recruitment and retention of physiotherapy staff (Potts, 2001 a,b).

The results of the interviews in this study provide some evidence that can be discussed along with these authors' work. Table 7 reveals that the managers interviewed unanimously felt that clinical educators within the workforce have a positive effect on recruitment and did not see it as a problem as highlighted by Potts (2001, a,b). More importantly they thought that accommodating more students (Table 9) would both help with recruitment and retention of staff. However, half were in agreement with Maxwell (1995) as they believed that accommodating students added work for the educator (Table 8) and that if there was a lack of staff this may also increase work and time pressures. Despite this view they were still ready to take on more students.

In 2000 Baldry-Currens and Bithell interviewed five physiotherapy managers and their results revealed that the role of clinical educator was given little recognition amongst managers. They were more concerned with the performance of their physiotherapy staff in patient care and throughput within their place of work, rather than the role they might play in preparing future staff for practice within the profession. They include a quote of one of the managers:

*My responsibility isn't to the profession, it is to the authority
that are paying me, who want their patients treated with good
physiotherapy care...but that's not me as a physiotherapist, that's
me as the manager of a service.* (Baldry-Currens and Bithell, 2000:648)

An overview of Table 8 (disadvantages of CEs in clinical location) reaches similar conclusions. The managers appear to be viewing clinical education/educators as a 'product' - the DoH 1989 model of assessing quality where stakeholder needs are considered and effectiveness is measurable in terms of efficiency and economy. Although just one manager mentioned patient throughput as being disadvantaged other perceptions could lead to the same outcome. CEs with an added workload of facilitating students may take longer to manage patient care. Also with less time to assist junior staff, the juniors may also take longer to manage their caseload. These disadvantages were illustrated in a quote from one of the managers:

It is all well and good having students in the department but when management is pushing for targets and when I have staff shortages then students have to play second fiddle.

(Manager 1)

Some of the advantages in having CEs in a clinical location (Table 7) may also be regarded as 'product' – 'positive effect on recruitment', 'raises profile of department', 'provides another pair of hands'. The positive response to accommodating more students (Table 9) only provided managerial advantages i.e. recruitment, retention and replacement of staff.

However, unlike in the work of Baldrey-Currens and Bithell (2000), closer examination of Table 7 (advantages of CEs) shows responses related to the 'process' as well as the 'product' model of measuring quality (DoH, 1989). This model includes the importance of learning within quality measures and may be seen as

advantageous to both personal and continuing professional development (CPD).

Words related to teaching and learning appear within the responses–

- Students bring new ideas and thoughts.
- Clinical educator has to keep up-to-date.
- Clinical educator can develop skills in teaching and learning.
- Encourages reflection.
- Mutual learning environment.

One manager said:

All physios need to be taking part in CPD and I suppose clinical education is a good way to do that. (Manager 7)

Others commented:

The clinical educators need to keep up with the students so they have to keep up to date. (Manager 2)

Sometimes the students know things that are new because they read research papers. (Manager 13)

We have some staff here who seem to be interested in looking for the evidence behind what they do and it is those staff who I tend to think will be clinical educators. (Manager 4)

(The results were shared with the managers and with the professional community through a poster presentation at the peer reviewed CSP Congress - see Appendix 17)

The analysis of the interviews with managers raised questions for further exploration. These are set out in the next section.

4:1:3 Questions that arose from the analysis of the interviews

1. The managers believed that CEs helped with recruitment and retention - do CEs have the same views?
2. Managers believed that CEs promoted CPD/teaching and learning - were the CEs aware that managers had these views? do the CEs have similar views?
3. Managers believed that advantages outweigh the disadvantages - was this view being passed onto physiotherapy staff? How did CEs rate the advantages versus the disadvantages?
4. Managers believed that only Senior 1 staff could be a CE. - do CEs agree?
5. Managers perceive staff shortages to be problematic in managing clinical education- does this affect the offer of placements from CEs?

In order to explore these questions, CEs needed to become participants. With the managers' knowledge, a questionnaire posted to CEs became the next stage in the action research.

4:2 Questionnaire (1) to Clinical Educators

At the time when it was decided to explore the views of CEs, two cohorts of physiotherapy students (48 students in each cohort) were undergoing clinical

education (second and third year students). Their learning was being facilitated using a 1:1 model (one student with one CE) by 96 CEs. The method adopted for this stage of the study was a postal questionnaire. This method provided a way to seek the views of a large number of CEs and the time needed to interview them would have been too great. A questionnaire (see Appendix 9a) was composed with open and closed questions and administered procedurally in the way described in 3:4:2

A covering letter laid out the intentions of the questionnaire and respondents were supplied with a stamped, addressed envelope to encourage response. Questionnaires were returned by 64% (n=67) of the sample within three weeks of posting which, according to Saunders et al (2000) relates to a high response rate and a time lapse for returns well short of the eight weeks that is common for postal questionnaires. All questionnaires were fully completed by each respondent. It is however recognised that there can be no guarantee that questions were actually answered by the respondent.

Closed questions were analysed manually to provide descriptive statistics. The open questions from individual questionnaires were coded and then refined to produce categories that arose from the views of all respondents.

4:2:1 Results of closed questions

Responses were received from six male and sixty one female clinical educators, which corresponded in percentages to the number of each gender who accommodated students from The University of Birmingham.

Descriptive statistics are presented in Tables 12 to 16.

- How long have you been qualified as a Chartered Physiotherapist?

Table 12 Years qualified as Chartered Physiotherapist (n=67)

Years qualified	<5yrs	5-10yrs	11-15yrs	16-20yrs	20+ years
Number of CEs	4	15	22	23	3

A large percentage – 71% (n=48) of clinical educators had been qualified for over 10 years. With this number of years since qualification it is hypothesised that most would have reached Senior I level.

- How many years experience do you have in supervising physiotherapy students ?

Table 13 - Years supervising students (n=67)

Years as CE	< 5 years	5 – 10 years	11-15 years	15+ years
Number of CEs	11	7	48	1

A large number of CEs (n=49) had been interacting with students for over 10 years. This meant that they would have been involved in the transition of physiotherapy education from diploma to degree level, and will have made the change from clinical supervisor to clinical educator (Cross, 1994).

- What grade are you working at?

Table 14 - Grade of the CE

Grade	Number (n = 67)
Junior	0
Senior II	5
Senior I	49
Superintendent IV	2
Superintendent III	7
Superintendent II	2
Clinical Specialist	2

Seventy two percent (n=49) of clinical educators were working at Senior I level. Ninety three percent of clinical educators (n=62) were working at Senior I level and above. Two of the clinical educators (those at Superintendent II level) were also the managers of their clinical location. The five CEs working at Senior II level were in the group qualified for less than five years and hence involved with students for less than five years (Tables 12 and 13).

➤ What is your specialty?

Table 15 - Specialties represented by sample

Specialty	Number (n=67)
Neurology	13
Out-patients (secondary care)	13
Health care of Elderly	8
Community out-patients (primary care)	8
Respiratory care	7
Paediatrics	6
Orthopaedics	6
Mental Health	3
Womens' Health	2
Learning Disabilities	1

When the questionnaire was administered, the curriculum required students to gain experience in either a core subject - out-patients, neurology, orthopaedics, health care of elderly, respiratory care or an optional specialty – including paediatrics, womens' health, mental health, and learning disabilities. (During the course of their degree students have six clinical placements and gain experience in each of the core subjects and an optional specialty). Due to the nature of patients requiring physiotherapy input, the largest number of physiotherapy staff work in out-patients and it is easiest to obtain placements in this area. Respiratory care experience is the most difficult core area to fill, and this may be directly related to a specialty-specific problem with recruitment and retention of staff within cardiorespiratory care (Roskell and Cross, 2003). The data in Table 15 reflects this.

- From the list below, which has influenced you in becoming a clinical educator?

Table 16 Main influence

Reason	Number (n=67)
I like interacting with students	48
My manager has directed me to the role	9
The role has been imposed on me	4
It may prove advantageous to my career advancement	4
My contract includes this as a condition of employment	2

Nearly three-quarters (n=48) of clinical educators indicated that they adopted the role because they liked interacting with students. A weakness of the questionnaire is evident in this question as respondents were not able to give an alternative reason. Those who felt they had the role imposed on them were working at Senior I level and the two who indicated it to be part of their contract were clinical specialists.

4:2:2 Results of open questions

- What do you believe are the advantages and disadvantages of being a clinical educator?

The responses were analysed, coded and produced eight categories for the advantages and six for the disadvantages.

Table 17 Benefits of being a Clinical Educator

Benefits of being a Clinical Educator	Number (n=67)
A - Improves personal knowledge	46 (69%)
B - Improves teaching skills	25 (37%)
C - Good for CPD	19 (28%)
D - Promotes joint learning	16 (24%)
E - Helps attract future staff	13 (19%)
F - Promotes specialties	9 (13%)
G - Encourages reflective practice	9 (13%)

The highest number of views were concerned with the personal learning for the CE, and this was often related to the CE improving their personal knowledge in order to teach. (See A, B, C and G in Table 17)

Makes you update knowledge in order to teach students. (3 years qualified)

Challenges my teaching skills. (12 years qualified)

Makes me keep my knowledge base up to date and makes me think and question more over my assessments and management of patients. (4 years qualified)

Increases my confidence in teaching and helps me improve my own professional development. (7 years qualified)

Increases your own professional development. (2 years qualified)

These views were held across the range of grades and specialties (Tables 14 and 15). The same spread was seen when the beliefs indicated an opportunity for joint learning. (See D in Table 17)

It can be a two-way process as the students and educator can learn together. (3 years qualified)

Allows for joint and co-operative learning. (6 years qualified)

The interaction with students who have ideas and enthusiasm is good for joint learning. (12 years qualified)

You learn from students. (2 years qualified)

I learn a lot from students and can combine their knowledge with mine.

(28 years qualified)

No relationship to the placement locations is given as this could threaten anonymity.

Some threat to anonymity is present within the next result as the numbers are small.

Views relating to attracting future staff and promoting specialties came from within the 'optional placements' primary care and locations in more rural settings. (See E and F in Table 17)

May help to generate an interest in this area. (Womens' Health)

Encourages students to aim for a specific field. (Paediatrics)

Opportunity to present my specialty and hoping that the student will leave wanting to experience more. (Paediatrics)

Makes students aware of our location and hopefully encourages recruitment. (Placement in secondary care, but in rural location)

We might get lucky and attract staff. (Community placement)

Four of the male CEs only gave views relating to their personal knowledge enhancement. The other two also mentioned shared learning and said-

The student can be effective in promoting discussion and evaluation of treatments.

Students mean that you can work as a partnership...promoting reflective practice and sharing ideas.

Table 18 Perceived disadvantages of being a Clinical Educator.

Disadvantages of being a Clinical Educator	Number (n=64)
Time consuming	51 (80%)
Difficulties in managing caseload	30 (47%)
Stressful	7 (11%)
Difficult to arrange annual leave and courses	3 (5%)
Slows down progression of treatment	2 (3%)
Specialist placements need a lot of supervision	2 (3%)

Three of the CEs did not give any views on the disadvantages. Of the 80% (n=51) who said that it was time consuming, 47% (n=28) said that time was only a disadvantage at the beginning of a placement.

It means that you have to work longer days as students often want to discuss things after patients have left. (Senior 1)

You do not have time to take a break as you have to spend the time preparing for or assessing the students. (Senior 1)

Once the placement is up and running time pressure becomes less of an issue.

(Superintendent IV)

Seven identified stress as disadvantageous. The reasons relating to stress were linked to general management of caseload and other duties –

If you are called to a meeting you have to organise what the student can do in your absence and this can cause stress.

(Superintendent II)

When you have to lead a team you can get stressed and having a student as well can make this worse.

(Superintendent III)

It was the more senior grades who reported stress. It is speculated that this may be due to the amount of additional management duties they have on top of their clinical load.

Another open question asked the CEs to say what they considered important in being a good clinical educator. The replies were individually coded and resulted in 47 different answers. These were then collapsed into five categories. These results also led to the production of another questionnaire - Questionnaire 2 (see Appendix 7b) which formed the next stage of the action research spiral. The results of this question in Questionnaire 1 and those from Questionnaire 2 are presented and discussed in 4:3.

At this stage, and as part of the action research process, the findings were shared with three clinical educators who discussed areas that could form part of the next spiral of investigation.

4:2:3 Responses to questions raised in 4:1:4

As with the results from the interviews with the managers the advantages were seen by the clinical educators to outweigh the disadvantages.

1. Do the clinical educators have the same views as expressed by all of the managers in regards to recruitment and retention of physiotherapy staff?

All managers interviewed believed that clinical educators had a positive effect on staff recruitment (Table 7). This unanimous result could reflect a strategic view as the managers are concerned with overall management of clinical locations. This does not necessarily have any indication of the quality of any recruitment. Nineteen percent (n=13) of the clinical educators also identified this as a benefit and agreed with the managers that their role helped to attract future staff (Table 17). However, Table 17 shows the main advantage perceived by the CEs was the opportunity to improve their personal knowledge

2. What are the views of the clinical educators and the managers in relationship to the promotion of CPD and teaching and learning skills?

Whereas the managers gave higher importance to CPD than the CEs, 69% (Table 7) as compared to 28% (Table 17), the clinical educators placed the same importance on aspects of improving their personal knowledge – both 69% (Tables 7 and 17). Some of this difference may be due to the terminology they used. In 69% of cases the managers believed that being a CE improved a physiotherapist's teaching skills, with the CEs agreeing but with a smaller percentage of 37%. Representatives from both

groups were of the belief (61% of managers and 24% of CEs) that the role of the CE enhanced shared learning and reflection. It is noted that in comparing a small number of managers with a larger number of CEs, and using different data gathering methods, percentage differences can be problematic.

3. How did the clinical educators rate the advantages of being a CE against the disadvantages of being a CE in comparison with the physiotherapy managers?

The advantages are represented in examples 1 and 2 above. Time emerged as the most relevant disadvantage for both groups. The managers (54%) and CEs (80%) expressed this as the greatest concern. (Tables 8 and 18).

4. Were the CEs working at the grade indicated by the physiotherapy managers as being most appropriate to adopt the role of clinical educator?

Sixty two of the sixty seven clinical educators who responded to Questionnaire 1 were working at grades that the managers believed were best to take on the role of clinical educator (Senior I level and above). (Tables 11 and 14).

Despite not directly asking the managers and CEs about quality, it could be hypothesised that they believed the more senior grades, having greater experience, would provide the highest quality clinical education.

4:2:4 Further comparisons of results

As listed above, triangulation of the results from the interviews (managers) and Questionnaire 1 (clinical educators) revealed that both managers and clinical educators found that the advantages of employing/being a clinical educator outweighed the disadvantages with a number of reasons given in Tables 7 and 17. Elements of clinical education were perceived as advantageous not only for students but also for individual educators and the profession as a whole.

The views of both groups fell into three specific categories:

- Personal development
- Shared learning
- Promotion of the profession

These are discussed in turn.

Personal development

Firstly, both subject groups identified positive benefits for the personal development of the CE centred around knowledge enhancement. These included improvements of personal knowledge (69% of clinical educators, 69% of managers) and teaching skills of the educator (37% of clinical educators, 69% of managers), and enhancement of his/her continued professional development (28% of clinical educators, 92% of managers). Interestingly, despite the fact that the clinical educators were interested in knowledge enhancement that could be derived from the role, this was concentrated more on personal than professional development. The managers gave a greater

indication of how they believed this knowledge enhancement could be useful for professional development. It is suggested that improved knowledge leads to improved quality.

Shared learning

The results showed that 62% of managers believed that clinical educators not only possessed the skills to promote individual learning, but were additionally able to share this with students, providing a mutual learning environment. A total of 28% of clinical educators considered that they would gain from being able to promote joint learning.

At the time when interviews were conducted and Questionnaire 1 was processed, over 95% of the clinical educators were supervising students on a 1:1 basis. From this it can be speculated that learning was being shared between the educator and the student. This meant that, though there may have been some sharing of learning, this was not between student peers and therefore there were few or no opportunities for the students to share learning, which has been shown to improve the quality of assessment (Koschmannel et al, 1997).

Promotion of the profession

Both managers and educators believed that clinical educators play an important role in promoting the profession. Almost all of the managers regarded students within the department as a positive, and 77% believed that it raised the department's profile. All of the managers believed that CEs have a positive effect on recruitment, and 24% of the clinical educators specifically indicated that their role was helpful in attracting

future staff. (Without further questioning it is not known whether the other CEs agree/disagree with this)

The views on the quality of clinical education are discussed under the categories introduced in Working Paper 10 (DoH, 1989) where two models of quality are introduced – ‘product’ and ‘process’.

In regard to ‘product’ (DoH, 1989), where the needs of the stakeholders involved in clinical education are considered and effectiveness (quality) is measured in terms of efficiency and economy, both managers and CEs believed that students enhance the profile of departments and that they have a positive effect on both recruitment and retention of physiotherapy staff. However, and unsurprisingly, analysis indicated that there is a disadvantage to ‘product’ as both managers and CEs considered that time management was a problem. The results produced similar outcomes with 54% of managers believing that facilitating students’ learning added to the workload of CEs which, in mathematical terms, could equate to extra time commitment. The managers viewed this as having departmental consequences – relating to organisational problems in working patterns, patient throughput and staff development.

When you are pushed for time and there are patients waiting we need to ensure that all our qualified staff are up to speed. The CE may be tending to spend more time with the students than the newly qualified staff, and this can be a concern when patient targets have to be met. (Quote from manager 2)

The views of the CEs contrasted with the managers, as 76% of CEs believed that their role was time consuming. The disadvantage produced by time commitment was related to individual work management, and personal stress.

These results support the work of Maxwell (1995) and reveal that the CEs and managers within the location at the time of data collection still considered students to be an added burden in relation to the management of departmental and personal work schedules.

However, the CEs were all supervising students on a 1:1 (one CE with one student) basis which has been shown by Ladyshefsky et al (1998), to have an adverse effect on time management. He revealed, after auditing patient throughput and comparing productivity between CEs working with one student and those working with more than one, that the bigger teams saw more patients and that time commitments lessened for the CE as students could share learning when not with the educator. Also, the majority of clinical educators who responded to Questionnaire 1 were working at Senior 1 level or above. At these grades physiotherapy staff already have many managerial roles relating to supervising more junior staff, which has resultant time commitments. A possible solution may be found if an exploration of sharing their responsibility is explored.

Nevertheless, both managers and CEs were aware of the important role that learning plays in reaching quality when the 'process' (DoH, 1989) model of quality assessment is considered – where how students learn is taken into consideration. Both groups valued how clinical education has an important role in both personal and professional development. They were aware that in order to maintain and improve quality both

good management of patient throughput and high quality learning are important for the provision of high quality patient care.

4:2:5 Action taken after analysis of results

The outcomes of these stages of the action research revealed that the advantages of employing or being a clinical educator outweighed the disadvantages both in terms of productivity for departments and educators. Contrary to earlier research by Baldry Currens and Bithell (2000), physiotherapy managers in the research sample did have regard for clinical educators as exemplified by the views given in Table 7.

Clinical educators were aware of some of the issues relating to quality in the process of facilitating student learning. These related to quality for both students and educators.

A decision was made to share these findings with physiotherapy staff at this stage in the hope that it may have the following effects:

- a. Clinicians may be more inclined to adopt the role of educator if they were made aware of the supportive views of managers.
- b. Clinicians may be more inclined to adopt the role of educator if they were made aware of the advantages of being a clinical educator in regard to their personal development and CPD.

Sharing of this information was also part of the action research process.

The results were shared through presentation at a peer-reviewed conference and published in a peer reviewed journal. (See Appendix 17 and 18). The results were also presented locally during courses for CEs.

On a more informal basis, but relevant to the method of action research, managers were informed of the results when requesting placements for students. This informal sharing of findings allowed the managers to discuss the findings and possible changes to future placements. At this early stage, sharing information at a local level was more important to address the local problem of acquiring placements for the Birmingham students.

Through maintaining this open-and-close relationship, a high level of interest and co-operation in the study was promoted. However, a weakness of the study was that, despite the results being shared, the methods of data collection were not discussed with all respondents.

4:2:6 Questions that arose from the analysis of interviews and Questionnaire 1

The following questions arose out of the analysis, as changes were needed to expand the pool of physiotherapy staff who were involved in clinical education.

1. Did existing CEs believe that other clinical physiotherapy staff would possess the abilities/qualities that they brought to clinical education?
2. What grades of staff did they believe could offer these abilities/qualities to students?

These questions led to the development of another questionnaire.

4:3 Development of Questionnaire 2 from results of Questionnaire 1

Questionnaire 2 (see appendix 9b) was developed from the analysed results of an open question in Questionnaire 1. This had asked the CEs (n=67) to list up to four abilities/qualities that they believed were important to bring to their role as CE (see Table 5 and sections 3:6 and 3:6:1 for information on sampling and administration of questionnaire in addition to information in section 4:4).

After content analysis (verified by sharing the analysis with two other researchers who have experience in clinical education) 54 different views emerged and these were organised into five thematic categories. The themes arose from the contextual material being studied and cover the main areas of content. The analysed results of this question from Questionnaire 1 are displayed in Table 19.

Four of the themes related to teaching and learning. They revealed that existing CEs believed that having abilities related to these topics was very relevant within their role. They displayed abilities that working paper 10 (DoH, 1989) place in the “process” model of measuring quality – where considering how students learn is important. Only a small number of existing CEs highlighted abilities that may fall into the “product” model of measuring quality (DoH, 1989) and these are categorised under the subheading of management/organisation of placement in Table 19.

There is some subjective overlap between themes, and alternative categorisers may, for example, place abilities related to teaching and learning under different headings.

For this study these themes are related to; how the CE might approach a student, how they might act as a facilitator, and how they go about processing learning.

Table 19 What CEs bring to clinical education
(numbers in brackets indicate number of clinical educators who thought ability/quality important - from open question).

Teaching and learning –the approach n=67		Facilitation of learning n=67	
Approachability	(40)	Share knowledge with learner	(14)
Enthusiasm	(37)	Ask questions to enhance learning	(7)
Desire to facilitate learning	(14)	Reflective practitioner	(4)
Motivate learning	(7)	Appraise learner	(3)
Good listener	(5)	Continuous evaluation of learning	(3)
Show integrity	(2)	Discuss clinical reasoning	(2)
Patience	(2)	Team worker	(2)
Firm but fair in all areas of Clinical Education	(2)	Problem-solving	(2)
Sense of humour	(2)	Maintain links with University	(2)
Professional	(2)	Effective facilitator of learning	(2)
Good role model	(2)	Discuss theory and practice	(2)
Able to remember what it was like being a student	(2)		
Consistent in evaluation and assessment	(2)		
Self confident	(1)		
Available when needed	(1)		
		1	
Management/organisation of placement n=67		Teaching and Learning – the process n=67	
Set timetable for learner	(2)	Give honest feedback	(9)
Set framework for placement	(2)	Set objectives for placement	(7)
Manage time	(2)	Provide opportunities for learning	(4)
Organise work commitment prior to placement	(2)	Make student feel valued	(4)
Ability to delegate	(1)	Constructive feedback	(3)
Provide stress free environment in team	(1)	Some understanding of teaching and learning from experience and or attending courses	(3)
		Encourage hands on experience	(2)
		Demonstrate good teaching skills	(2)
		Able to demonstrate personal skills	(2)
		Encourage good notation	(1)
CPD in teaching and learning n=67		Adapt to different student personalities	(1)
Good communicator in sharing professional practice development	(37)	Provide frequent teaching	(1)
Good communication with University staff	(3)	Observe student interaction with clients	(1)
Aware of research in linking theory and practice	(2)	Provide a varied caseload	(1)
Some knowledge of outline of curriculum	(2)		
Self evaluation	(2)		
Good knowledge of subject	(2)		
Understanding of clinical objectives and outcomes	(2)		
Good clinical skills to comply with grade	(1)		

Table 19 shows that the CEs are concerned with elements within teaching that may make them good facilitators of learning. The most common abilities thought to be important were approachability (40 of n=67), enthusiasm within their role (37 of n=67) and good communication when sharing professional practice (37 of n=67).

These are commendable as, according to Dunn and Hansford (1997), building interpersonal relationships with students holds the key to developing a positive and high quality learning environment. Furthermore building these learning relationships through the educator being approachable can identify and address personal learning needs (Irby, 1995). If the student sees a friendly, enthusiastic CE who is prepared to share knowledge, then there may be possibilities for the concepts of shared / peer learning to emerge and it's that which authors (including Baldry-Currens (2003), Holland (1997) and Ladyshevsky (2002, 2003)) believe can improve the quality of knowledge promotion. Characteristics of shared learning are highlighted in the next two most often identified beliefs; desire to facilitate learning (14 of n=67) and share knowledge with learner (14 of n=67).

The CEs questioned had moved from a position of didactic teaching and providing opportunities for students to observe and practice the skills that they saw to being facilitators of learning. They were demonstrating that they believed in facilitating learning in ways that were proposed by Higgs (1993) where students have opportunities to extend their prior knowledge and to create new knowledge through not only learning from others but also by bringing their personal knowledge to the learning environment. They believed in shared learning and to some extent this could reflect some of the training they would have received during courses for CEs.

Interestingly, Cross (1995) also found that her sample of CEs placed important value on their ability to be approachable, and to be enthusiastic and good communicators in their role as clinical educators, whilst having an ability to be interested in the learning process. The data suggests that clinical educators were now emerging with an

increased knowledge of the learning process, without losing their beneficial interpersonal skills that improve facilitation of learning.

The existing CEs (respondents to Questionnaire 1) identified a large variety of abilities. Questionnaire 2 was developed to investigate whether other physiotherapy staff were considered capable of displaying similar abilities. As there was a need to increase the number of clinical educators, Questionnaire 2 investigates whether existing CEs and other physiotherapy staff believed that physiotherapists of other grades could offer these same abilities to students.

4:4 Questionnaire 2 (to clinical educators)

The abilities/qualities were listed on Questionnaire 2 (as listed in Table 19 but without the numbers) and respondents (physiotherapy staff of all grades) were asked to indicate which of the abilities/qualities they believed could be offered by staff of different grades. They could also indicate if they believed a particular grade would have a greater level of each specific ability within each view.

A purposive sample of physiotherapy staff including clinical educators and physiotherapists of all grades was used. The sample was drawn from within existing locations where CEs worked, and questionnaires were distributed in numbers that were proportional to the number of physiotherapy staff employed within a particular site. The questionnaire was posted when cohort numbers had risen to 60 with an increase to 84 students planned for the following academic year. The same process of administration and ethical considerations were used as for Questionnaire 1.

4:4:1 Results of Questionnaire 2

Forty two questionnaires (70% response rate) were returned from twelve Junior Physiotherapists, eleven Senior II, twelve Senior I, five Superintendent III, and two from higher grades. Two questionnaires were eliminated from the results as the respondents had written across them with statements. They stated that they could not fill it in, as they believed that only the most senior staff (Senior I and above) should be involved in clinical education.

Completed questionnaires were analysed to provide descriptive statistics of the results. Results of the responses are presented in thematic headings in Table 20 (themes that correspond to those highlighted in Table 19) and are further illustrated - revealing categories within the themes and related to grades in Tables 21-25. These tables present the 10 highest scoring outcomes. The percentages in Table 20 represent the mean of all categories within individual themes.

Table 20 Grades perceived able to offer abilities - n=42 (Means of categories within themes)

Category	Junior	Sen. II	Sen. I	Sup't III	Higher grade
Approach to teaching and learning	58%	84%	91%	71%	44%
Facilitation of learning	50%	84%	96%	78%	31%
Management/organisation of placement	29%	68%	91%	79%	41%
Process of teaching and learning	47%	87%	92%	78%	29%
CPD related to teaching and learning	56%	81%	92%	81%	50%

Higher grade in table 20 and subsequent tables, refers to physiotherapy staff working above Superintendent III level. It does not include 'clinical specialist' as data was collected prior to the development of such posts.

Analysis of Questionnaire 2 showed that Senior I grade clinicians were perceived by a high percentage of the sample to be able to offer all abilities and qualities. However, a closer examination of Table 20 shows that Senior II and Superintendent III grades are also considered likely to be able to provide most abilities/qualities at a highly acceptable level. Comparison of these two grades reveals that 68% of respondents considered that Senior II staff are likely to be capable of the management and organisation of a placement, as compared to 79% for Superintendent III staff.

The table also shows that 87% considered that Senior II staff could offer abilities/qualities which are relevant to the process of teaching and learning as compared to only 78% for Superintendent III staff. Other than the ability to manage/organise a placement, Junior physiotherapists score more highly than the most senior grades (i.e. those working above Superintendent III Grade). It may be hypothesised that much of this could be due to the Junior grade respondents stating that they had the requisite abilities. However, as they made up only 30% of the sample, there would have been staff of higher grades who believed them to be capable.

Tables 21-25 gives a more in-depth presentation of the components within the categories displayed in Table 20. The tables list the top ten scoring abilities for each grade. Further comment will be added for responses that lie above a 70% self imposed cut-off, but which do not appear in the tables.

Table 21 Abilities that sample believed Junior grades possess

Ability	Number n=40	Theme – from Table 19
Remember what it was like being a student	100%	1
Good communicator	88%	1
Be approachable	85%	1
Good team worker when learning	84%	4
Act professionally	82%	1
Be a good role model	82%	1
Make student feel valued	82%	5
Share knowledge	81%	3
Be enthusiastic	80%	1
Self evaluate personal knowledge	70%	3

Themes in Tables 21 to 25 inclusive:

1. Teaching and learning approach
2. Management of placement
3. CPD in teaching and learning
4. Facilitation of learning
5. Teaching and learning – the process

Nine items for the Junior grades were above the 70% cut-off. The Junior grades were believed capable of displaying abilities that could primarily promote an environment in which learning could be undertaken in a relaxed, yet supportive atmosphere. They would remember what it was like to be a student and could show this through being friendly and supportive. These abilities, according to Neville and French (1991), enable a student to feel secure to ask questions and be supported if they made mistakes, which is important if high quality, effective learning is to occur.

Table 22 Abilities that sample believed Senior II grades possess

Ability	Number n=40	Themes – from Table 19
Be approachable	100%	1
Good communicators	92%	1
Self evaluate their personal knowledge	90%	3
Good skills to share with students	90%	3
Remember what it was like to be a student	90%	1
Manage time	90%	2
Make student feel valued	88%	5
Good sense of humour	85%	1
Good team worker	85%	4
Motivate learning	84%	1

Key of Themes:

1. Teaching and learning approach
2. Management of placement
3. CPD in teaching and learning
4. Facilitation of learning
5. Teaching and learning – the process

(Fifteen more abilities were above the 70% cut-off point. These were dispersed across all 5 themes – Table 19)

Like the Junior grades the Senior II grades were believed capable of offering abilities that made for a good learning environment for students. Within the top ten abilities they, like the Junior grades, were believed capable of self-evaluating their knowledge. However, they would be more inclined than the Junior grades to share this through demonstrating their personal skills and then motivating the students to learn.

Of the 54 categories, 75% plus of the sample believed that Senior I grades could possess all but three of the categories. (The three categories fell within the approach to teaching and learning theme and included having a sense of humour, remembering what it was like to be a student and being available when needed).

Table 23 Abilities that sample believed Senior I grades possess

Ability	Number n=40	Themes from Table 19
Appraise learner	100%	4
Observe students interactions	100%	5
Have a desire to facilitate learning	98%	1
Motivate learning	98%	1
Be firm but fair	97%	1
Be effective facilitators of learning	97%	4
Be approachable	97%	1
Set timetable for students	93%	2
Set framework for placement	93%	2
Be aware of research in linking theory with practice	90%	3

Key of Themes:

1. Teaching and learning approach
2. Management of placement
3. CPD in teaching and learning
4. Facilitation of learning
5. Teaching and learning – the process

The Senior I grades scored highly on being approachable. However, aspects relating to creating a relaxed environment – make student feel valued, and remembering how

it must feel to be a student, did not fall into the ten most repeated responses. They were believed to be very capable of facilitating learning and to be able to both organise and manage the learning process for the student. Although it did not fall into the top ten their ability to share knowledge scored highly at 89%. The Senior I grades were perceived as being capable of being clinical facilitators (Cross, 1994) – rather than dictate to students they would share their knowledge through facilitation. This allows students to interact in the learning process and to employ concepts of self-directed learning (Bravata et al, 2003).

Table 24 Abilities that sample believed Superintendent grades possess

Ability	Number n=40	Themes from Table 19
Appraise learner	100%	4
Firm but fair	90%	1
Self confident	90%	1
Good teaching skills	90%	5
Good clinical skills to comply with grade	90%	3
Good knowledge of their subject area	90%	3
Self evaluative	90%	3
Good communicator	90%	1
Ability to delegate	90%	2
Organise work prior to placement	90%	2

Key of Themes

- 1. Teaching and learning approach**
- 2. Management of placement**
- 3. CPD in teaching and learning**
- 4. Facilitation of learning**
- 5. Teaching and learning – the process**

Like the Senior I grades, this grade scored above 70% for the majority of categories. (Just ten fell below the 70% and these came mainly from within the approach to teaching and learning theme)

The superintendent grades were believed to possess the ability to facilitate and appraise students' learning at a high level. This could be undertaken with confidence and with the ability to manage placements efficiently. However, none of the abilities that would make the student feel comfortable within the environment ranked highly.

Of the abilities not tabled, 60% of the respondents had thought that they would be approachable. However, less than 20% thought they would have good interpersonal skills including being a good listener, having a sense of humour and remembering what it was like being a student all abilities that would help the student to settle into a placement. They appeared to be thought capable of giving clear guidance which Billett (1994) and McAllister et al (1997) believe will help the student to link theory and practice.

Table 25 Abilities that the sample believed highest grades possess

Ability	Number n=40	Themes from Table 19
Self confidence	60%	1
Good role model	58%	1
Maintain links with the university	57%	4
Understanding of clinical objectives and outcomes	54%	3
Show integrity	53%	1
Good communicator	52%	1
Ability to delegate	51%	2
Manage time	51%	2
Adapt to different student personalities	50%	5
Provide stress free framework in team	47%	2

Key of Themes

1. **Teaching and learning approach**
2. **Management of placement**
3. **CPD in teaching and learning**
4. **Facilitation of learning**
5. **Teaching and learning – the process**

None of the abilities believed to be possessed by the most senior grades were above the 70% cut-off. The highest grades (above Supt III) came out with the lowest scoring throughout and only 27% of respondents believed that staff at these grades would be approachable if interacting with students. Respondents to Questionnaire 2 were not asked to state reasons for their responses and therefore there is no evidence for the low scoring of “higher grade” physiotherapists. At these highest grades physiotherapy staff are commonly involved in management within their specific

departments and often adopt a role within the broader management of health care, including being advisory board members or leading multidisciplinary management strategies and /or change. It is therefore suggested that at this level these staff would give greater priority to these management issues and would delegate clinical education to more junior staff.

It is also recognised that the demographics of the grades of the respondents may have added bias to the results. Twenty three, of the forty in the sample, were working at Junior and Senior II grades and this could have resulted in them scoring their abilities highly. Both Junior and Senior II grades tend to work closely with Senior I grades and will have observed their abilities at close hand. Collectively these three grades accounted for 83% of the respondents and could have resulted in the very high scoring for the Senior I grades throughout. The more senior grades often work independently rather than within teams so it must be recognised that those of lower grades may not be aware of their actual abilities. Lastly, there were only two respondents from the highest grades which, in itself, is a bias.

Questionnaire 1 had revealed that clinical supervision was largely being undertaken by clinicians working at Senior I level and above (Table 14) who had been qualified for a mean of fifteen years (Table 12) and that these were the grades that managers had believed suitable for a CE (Table 11). It had also revealed that 71% of CEs had chosen to become a CE because they like interacting with students (Table 16).

Further analysis of the results from Questionnaire 2 allows information to be revealed which may question the outcome of Questionnaire 1. Table 20 illustrates that many of

the attributes deemed important for CEs to possess are considered to be well within the capability of many Junior, Senior II and Senior I grades. A report of the results of the categories that fell within these themes can be seen in the published paper in Appendix 9.

4:4:2 Discussion of themes (Table 20)

4:4:2:1 Approach to and the process of teaching and learning

As might be expected, all respondents had considered that Junior grades would be able to remember what it was like to have been a student, an attribute that is likely to have a positive effect on teaching and learning. However, it is also accepted that, as might have been expected, the respondents felt that Junior grades could lack self-confidence, and this may affect their ability to supervise students. There was also some concern that Junior grades would have problems with setting learning objectives, and may not have all the teaching skills that were believed to be within the capabilities of Senior II, Senior I and Superintendent II physiotherapy staff. This might have a direct link with quality, if the findings of Paukert and Richards (2000) are considered. They found that students rated the quality of their clinical learning directly to the abilities of their ‘teachers’ to facilitate learning. However, Junior grades scored highly in aspects of possible interpersonal interaction that according to Dunn and Hansford (1997) hold the key to developing high quality, positive learning environments. These included being perceived as being approachable and enthusiastic. Senior II staff were perceived to possess many of these interpersonal attributes to a high degree including approachability, good listening, enthusiasm and ability to motivate.

4:4:2:2 Management/organisation of placement

It would be unrealistic to expect management of a placement to fall solely within the role of a Junior physiotherapist. Nevertheless, many other aspects of student supervision are regarded as well within their realm, for example being able to provide a stress-free framework within a team, and to manage time. This could be important, as Nahas (1998) found the benefit of a stress-free environment directly influenced the quality of learning.

Senior I staff emerge as those considered most able to take on a management role within clinical education. However, closer scrutiny of the results might lead one to consider that delegation of part of this role to other grades could help to share the burden. Senior II grades are perceived to be better able to manage time than the grades above them and were thought, by 80% of respondents who returned Questionnaire 2, to be capable of setting the timetable for the learner. Allowing others to share the role of organiser/manager would encourage new or less experienced CEs to develop a fuller sense of responsibility. The overall organiser and manager of the placement (the 'main' CE), through employing delegation, would be testing their personal judgement (Gray and Halbert, 1998) in their ability to delegate part of their role.

As is shown in the literature, Maxwell (1995) highlighted that a concern with pressures on time management could be preventing managers from offering to accommodate students within their departments, and may deem physiotherapy staff reluctant to take on the role of educator. However, as both Junior and Senior II grades were believed to be good time managers, could they be used and would this have an

impact on time management? If more junior staff were responsible for sharing the management role, this could be a way of addressing the concerns of the disadvantage of time management that the managers and clinical educators who responded to Questionnaire 1 highlighted (Tables 8 and 18).

4:4:2:3 CPD and facilitation of learning

CPD is a necessary part of professional practice for all grades of physiotherapy staff, and clinical education can form a substantial part of this, which the CPD Information paper (CSP, 2002b) highlighted. This paper lists the benefits of clinical education to personal CPD including the development of teaching skills, evaluation of practice and keeping up to date with current research.

All but the highest grades were believed able (at varying levels) to facilitate learning through communication, discussion, reflection and problem-solving. These abilities can be considered to have only a positive outcome for both personal and professional development. If physiotherapy staff have opportunities to demonstrate to students good clinical skills to comply with grade, and have an awareness of research, they may be able to help students to link theory with practice. Through sharing knowledge, clinical supervision may be a way to enhance skills, knowledge and practice.

Junior to Superintendent III physiotherapy staff were believed to be able to reflect, discuss theory, clinically reason and problem solve (highlighted by 65% plus of the sample). These are all aspects that can assist in shared and peer learning (Piaget 1971, Vygotsky 1962) and that have been found beneficial in helping physiotherapy

students to improve the quality of learning in clinical settings (Ladyshevsky, 1993; 2002; 2003, Baldry- Currens, 2003).

4:4:3 Implications for supervision and practice

Questionnaire 1 did not provide evidence on why the clinical educators (at the time of administration) were generally employed at Senior I grade and above, and this is a limitation of the study. It is probable that up to that time it was as a result of habit and tradition. Also as the Questionnaire only covered one geographical region, it cannot be assumed to illustrate a national picture. (There was no national data available but informal networking with other HEIs revealed a similar picture in other geographical areas). A possible reason was that as 77% of the managers believed (at the time of interviews) that only Senior I staff should be clinical educators, (Table 11) they would only steer this level towards the role.

Analysis of Questionnaire 2 suggested that Junior to Superintendent III grades could provide many of the abilities/qualities considered important in clinical supervision. At this point it raised the question of why the number of more junior grades engaged in clinical education was so low.

The results of Questionnaire 2 provided evidence that could, if shared with others, encourage them to understand the value of becoming a CE and to have the confidence to adopt the role. It may show managers and existing CEs that other lower grades could play a part in clinical education.

4:5 Reflections

Analysis of the results revealed that consideration could be given to creating ways that would provide opportunities for lower grades to benefit from the advantages of being a clinical educator, such as the scope to improve personal knowledge and teaching skills, and to benefit from joint learning (Bennett, 2001). However, it was paramount that any changes that occurred did not compromise on the quality of clinical placements. Also since clinical educators had stated that they enjoyed interacting with students, a decision was made to share the results with physiotherapy staff of all grades.

(Department of Health NHS Plan, 2000c) then perhaps it was timely for clinical education to be incorporated into the normal working pattern of all physiotherapists. As illustrated in the results of Questionnaire 2, the study (to date) in no way suggested that Junior Physiotherapists could take on all aspects of the management of a placement. However, it revealed that physiotherapists from Junior grade upwards were considered, by a range of physiotherapy staff, to possess abilities/qualities relevant to clinical supervision.

One way of doing this would be to incorporate students into a team, and as the results revealed that Junior to Superintendent III grades were considered to have the ability to be team workers, this could be a way forward (See Appendix 13 for example of team). Instead of the more traditional practice of a single clinical educator supervising a single student, a team could accommodate a number of students. Team supervision would provide opportunities for students to learn and gain experience from a variety of situations and professionals, and would support the notion that clinical education is

a vital component for preparing students to adopt a professional role (Richardson, 1999; Williams and Webb, 1994).

Hart (1990) stated that peer (team) consultation benefits not only the individual but the group, quality of care and the profession. To include Junior and Senior II physiotherapists in the process of facilitating learning, during clinical placements, would not only bolster the experiences that could be shared, but could also help to ease the problems that newly qualified physiotherapists sometimes have in adding their personal perspective to the clinical arena (Richardson, 1999). Through introducing a range of physiotherapy grades into clinical education, there may be opportunities to benefit from the differing qualities they could bring to the learning environment.

Team supervision would at this stage provide opportunities to open up new locations if the workload was shared, and could help to reduce the service pressures that Maxwell (1995) identified as a contributory factor in the shortfall of placements.

The team approach to clinical supervision can be compared in part to the 2:1 model, where peer support frees up time for the clinical educator (Nolinske, 1995). However, a team approach goes one step further by, in theory, not only having a positive effect on time management as the work of being a CE is shared, but also by promoting learning directly within the team of physiotherapists, rather than only between the educator and student(s). Rather than one CE being with one or more students (the 1:1, 2:1; 3:1 model), a number of physiotherapy staff could work together as a team and share supervision of the students thus making a 1:2 or more, 2:2 or more, 3:3 or

more etc. (one student with two or more CEs etc). This could, for example, include a Junior and Senior I working together to share the supervision of one or more students.

Another example could be a team within a speciality that may consist of a Superintendent III, Senior I, Senior II and Junior offering to accommodate a number of students whereas in the past only one of the team acted as a CE, and that CE had only had one student at a time. The experienced CE could take care of the overall management however, she/he could delegate aspects of facilitation to others within the team and a number of students could gain from the advantages of peer learning (Holland, 1997; Ladyshevsky, 2002). Nevertheless, and importantly, it was also accepted that patient care and professional development should not be compromised in the pursuit of accommodating more undergraduate students and that quality should be given high priority throughout.

Through evaluating the positive aspects of team work, clinicians may be encouraged to explore a new model of supervision, whereas in the past they have sometimes been perceived as reluctant to venture past the traditional 1:1 model (Baldry-Currens and Bithell, 2000). This would involve the main CE delegating part of their role.

4:6 Review of findings

After completion of interviews with managers and Questionnaires to clinical educators, a decision was made to reflect on the outcomes from comparison of the results to date. These reflections are presented in Table 26.

Table 26 - Reflection of outcomes of managers interviews and Questionnaires 1 and 2

Results	Changes made	Further investigation needed
Managers believed that students within the workplace had a positive effect on issues relating to 'product' enhancement (e.g. positive effect on recruitment and retention, raising profile of department)	Managers were asked to accommodate more students.	Would increased numbers affect recruitment?
Managers believed that students in the department help clinical educators to improve personal and professional development.	Managers encouraged to share views with clinical educators.	What specific development derives from being a clinical educator?
Managers believed that students created added work for clinical educators.	Clinical educators given information on different 'models' of supervision that may help with time management.	Could changing 'models' of supervision affect the quality of supervision? What would be the views of students to changing 'models'?
Managers believed that clinical educators should be working at Senior I grade or above.	Suggestion made to managers that they may try to involve more junior grades in supervision. Managers encouraged to allow more junior grades to attend courses for clinical educators.	Could changing 'models' of supervision lead to more junior grades being involved in clinical education? How might this impact on quality?
Clinical educators adopted the role because they liked interacting with students.	Results published to encourage others.	Was this information being filtered to more junior grades ?
Clinical educators believed that being in that role had a positive effect on 'process' development (e.g. improves personal knowledge, improves teaching skills).	Clinical educators encouraged during courses for CEs to involve more junior staff within their 'team' to be involved in supervising students.	Would more junior staff benefit /utilise the 'process' development for improving personal knowledge and teaching skills? Would the quality of this 'process' be good?
Clinical educators found their role time-consuming.	More information on time management included in courses for clinical educators.	Would changing 'models' have an effect on time management?
Clinical educators possessed a large number of abilities and qualities that they brought to clinical education. Clinical educators believed that more junior grades could possess and share some of these abilities/qualities with students.	Clinical educators encouraged to allow more junior staff to reveal these abilities/qualities through changing 'model' of supervision.	How would students view any changes and would this affect the quality of their experience during clinical placements?

4:7 Action taken

The results from Questionnaire 2 were published in a peer reviewed journal (see Appendix 17) and managers were also made aware of the results during conversations when clinical education management was discussed with the researcher.

After publication and verbal feedback, the following actions were taken.

1. Managers were asked to give more junior staff opportunities to be involved in clinical education. This suggestion was included in written form when making requests for clinical placements for the next academic year.
2. A suggestion of team supervision of students was made during courses for CEs and in telephone conversations with managers.
3. Changes were made to the content of some CE courses to increase information on peer and shared learning, and to include methods of team facilitation.

In so doing a number of questions arose.

4:8 Next questions

1. Would managers and existing CEs provide opportunities for more junior staff to be involved in clinical education?
2. If this did occur what would student views be on the quality of facilitation of their learning on clinical placements?
3. If team supervision occurred, could this become a new 'model' of supervision for students in Birmingham, and would this impact on the quality of clinical education?

It was decided that further investigation should involve students in my research sample, as this would enable me to address some the issues revealed in column 3 of Table 26. Researching into how facilitation of learning was managed during clinical

placements may reveal not only the quality of that supervision for students but also how clinical educators were developing personally through the methods they adopted when facilitating learning. It would also help to evaluate the quality of clinical education when different models of supervision were adopted (in this case team supervision).

I chose to use one cohort of students and survey issues relating to their experiences of clinical education throughout the three years of their degree course. In so doing the aim was to investigate if more junior staff were becoming involved in clinical education and if so, how they were involved and, importantly, whether these changes had an impact on the quality of learning for the students. The intention was to reveal, at the end of their three year degree course, whether increased numbers had affected the quality of their clinical education experiences and, if moving from the traditional model where one student was placed with one educator, would have an effect on quality.

The sample of students came from a cohort where numbers had increased to eighty four students. The results would inform placement provision and organisation in future years when the intake of undergraduate students would increase to a hundred.

Chapter 5

Results from students' first two Questionnaires

5:1 Questionnaire 3 (Students)

The next stage of the action research explored the views of the chosen cohort of students after they had undergone their first clinical placement (at the end of the first year of the degree course). The aim of the questionnaire was to:

- Establish a descriptive profile of the grades of physiotherapy staff with involvement in the students' learning on clinical placement.
- Explore the students' views on being supervised by physiotherapy staff of different grades.
- Elicit the views of the students as to what clinical educators did to facilitate student learning during clinical placement.
- Elicit the views of the students as to what hampered this facilitation.
- Provide evidence that could later be triangulated with the views of physiotherapy managers and clinical educators.

(When the student questionnaires were administered, managers had been asked to involve more junior grades in clinical education, so questionnaires 3 and 4 might start to reveal students perceptions of the quality of these changes).

Questionnaire 3 (see Appendix 11a) was compiled then piloted on five students from a cohort of physiotherapy students who would not be part of the research sample. After refinement (example responses to some questions given as a guide) it was

distributed, with a covering letter, to a cohort of eighty four students (see 3:6:1). The questionnaire included both closed and open questions.

As the questionnaire was administered in a classroom situation it was possible to ensure that there was no discussion between students thus reducing elements of possible contamination. The students were all aware that I was the clinical coordinator, therefore there may have been a bias towards students wanting to 'please', which could have resulted in them writing what they thought I would like to hear, rather than giving their personal views. However, through guaranteeing anonymity (questionnaires not identified by name and students able to post replies into a sealed box) the possibility of either identifying the student or the clinical educator or the location where students had gained their clinical experience was minimised with the aim of eliminating bias. At the time of distribution eighty two students were present. No attempt was made to contact the other two students as it would have been easy to identify them with the result that anonymity would be a problem. The students were not placed under any obligation to complete the questionnaire, as any pressure put on the students in a 'power' relationship between student and lecturer would have been unethical.. The students were entering the second year of their degree course and had experienced their first clinical education placement.

5:1:2 Results of Questionnaire 3

Questionnaire 3 was returned by 73 students (89% of cohort ; 12 male and 61 female students). This is an unusual outcome as generally students are responsive to completing questionnaires in a classroom environment. The nine students who did

not complete the questionnaire were not identified and therefore no explanation can be given for the refusal. However, with the high response rate (Saunders et al, 2000) from those present, the sample was accepted as a good representation of the cohort.

The closed questions were analysed to provide descriptive data with the open questions providing qualitative material.

In total 63 students were able to identify the grade of their main educator and these are displayed in Table 27.

Table 27 Grades of main educator identified by the students

Grade of main educator	Percentage and number of specific grades (n=63)
Junior grade	7% (5)
Senior II	15% (11)
Senior I	53% (39)
Superintendent III	11% (8)

The data revealed that the percentage of main CEs under the grade of Senior I had risen to 22% as compared to the 7% that had been supervising students when Questionnaire 1 was administered (Table 14).

Fifty five students (75%) had experienced shared supervision by more than one physiotherapist during their placement. Of these, eleven had experienced supervision from staff working at the same grades, seventeen with a member of staff working at a lower grade than the main educator and nine with a physiotherapist working at a higher grade than the main educator. The remaining eighteen had experienced supervision from three or more physiotherapy staff, with all but one student spending time with staff working at a lower grade than Senior I. The results show a marked change to the supervisory patterns displayed by the respondents of Questionnaire 1,

when all CEs were working using a 1:1 model (one student with one educator). This data reveals that the changes introduced earlier in the study, asking physiotherapy managers to allow more junior staff to be involved in clinical education and CEs to consider team supervision, was, (in some placements) being implemented. It is speculated that this increase arose from discussion of past results with the physiotherapy managers and existing clinical educators. When the questionnaire was administered the results from Questionnaire 2 were not yet in print so any action following that was not relevant at this stage.

The students were asked to say whether or not they perceived that all grades of physiotherapy staff can play a role in clinical education. Table 28 presents the outcome of this question.

Table 28 Do students believe that all grades can be involved in clinical education ? (n = 73)

Yes	No	Don't Know
54 (74%)	8 (11%)	11 (15%)

There was no significant relationship between the replies shown in Table 28 and the grade of the main supervisor (chi square test). Those who believed that all grades could be involved in clinical supervision weren't supervised by specific grades. Five of the students who said they did not know gave the following reason for their answer, expressed in the words of one of the students:

I have not experienced more than one grade so I cannot give an opinion either way.

Questions 4 – 7 on the questionnaire produced qualitative material. (See copy of questionnaire in Appendix 7d). These questions were aimed at eliciting the views of the students relating to personal learning experiences during their first clinical placement. Students were asked to justify the responses revealed in Table 28 with qualitative data. They were also asked to indicate what their CE had/had not done to help facilitate their learning.

After data analysis, a decision was made to combine the results of the open questions as overlaps became apparent. They are, however, placed into sections depending on the students' opinions as to whether all grades of physiotherapist can be involved in clinical education

5:1:3 Students who 'do not believe' that all grades can be involved in clinical education

Four of the students in this category, (from n=8 in Table 28), had been supervised by only one CE. The grades were Senior I and Superintendent III. The other four students had experienced supervision from Junior to Senior I grade. Reasoning for their views fell into two distinct categories, and is expanded upon with direct quotes from students.

➤ Workload

Senior staff have too much paperwork

Some higher grades have too much managerial responsibility

Senior staff do not have enough time

➤ Experience

Juniors do not have the confidence

Teaching skills would not be good enough if they did not have experience

All four students who had been supervised by one educator from Senior I and Supt III grades, and three who had experience of two educators believed that due to work commitments the higher-grade educators were restricted in the time they could spend with the student.

A brief overview of their reasoning could lead to the conclusion that only middle grades (Senior II) are appropriate, as the more senior grades are too busy and the Junior grades lack experience. However, the numbers in this category are too small for any generalisation to be reached even among the research sample.

A possible cause for their views was seen when the results of what the CE did to facilitate/ not facilitate learning was analysed. This group of students appreciated help, guidance and direction from their educator in the form of one-to-one facilitation. They wanted to observe their CE and have help with their practical skills.

Set aside teaching time

Helped me to put case study together

Guided me to appropriate literature

Six students (of n=8 in Table 28) were similar to the medical students in Paukert and Richard's 2000 study. They appeared to want a more didactic form of facilitation of learning. Consequently, they were wanting time with their educator. As this was not

forthcoming in the degree they wished, and as their educators were Senior 1 and Superintendent III grades, they might consequently have reached the conclusion that the senior grades are too busy to be CEs.

However, the educators may have been using teaching and learning strategies that are relevant for the adult self-directed learner (Knowles, 1975) and that are promoted during courses for clinical educators. This would have led to the educator expecting the student to be more involved in their personal learning and to use learning strategies that did not always involve the educator.

Also this group of students had little experience of supervision from staff lower than Senior I grade. They may have come to the same conclusions regarding time even if their educators were all from more junior grades.

Generally all CEs should expect a degree of self-directed learning during clinical placements as it has been shown by Chene (1983), Boud (1988), and Candy (1991) to lead to increased quality of independence of critical thinking and decision making and this group of students may have found that their time with the educator would be limited no matter the grade of educator.

5:1:4 Students who do not know if all grades can play a role in clinical education.

The responses of the eleven students (Table 28) who did not know whether all grades could be involved in clinical education were related to an appreciation for being given

opportunities to display their personal knowledge and to be involved in shared learning. (Words in brackets indicate the grade of their educator)

Encouraged me to use the skills I knew. (Senior II)

Increased my knowledge through sharing their experiences. (Senior I)

Left me to take the lead. (Senior II)

Good question and answer sessions (Junior)

Asked me to tell them what I learned in university (Senior I)

They gave more information on what facilitated their learning than what did not.

Their main complaint was that they would have preferred to have more opportunities to have greater involvement with patients. This is represented in a quote from one of the students in this group:

Sometimes too much time spent observing treatments and not given enough opportunity to show what I knew and get involved in problem- solving.

This group of students had been supervised by CEs from Junior to Superintendent III grade.

They felt unable to comment on whether or not all grades could be involved in clinical education. This was mainly due to their lack of experience with different grades. However, the comments on what facilitated their learning revealed that a variety of grades were using methods to facilitate learning that could encourage shared/peer learning and that has been shown to add quality within clinical education placements (Finkel et al, 2003).

5:1:5 Students who believe that all grades can play a role in clinical education

This was by far the largest group and, of the 54 students (Table 28) who fell into this category, only six had been supervised by a sole educator. Table 29 lists the reasons given for their beliefs. Following this direct quotes from students are given, as examples of their belief behind this reasoning.

Table 29 Why students believe that all grades can be involved in clinical education.

Reasons	Responses (n=54)
Good to have range of expertise.	32
Different relationships between student and CE.	30
Different approaches depending on experience.	29
Team work.	28
Allows for sharing learning with all grades.	17
Gives a picture of work at different grades.	13
Younger staff aware of students needs.	11

Each can bring a different approach depending on their experiences.

All physiotherapists have different abilities depending on their experience.

It is good to work with more junior staff - they are aware of what you know.

All can communicate well and you can share learning with all grades.

Good to see different approaches to practice and working life.

All grades can work together as a team.

Working with lots of different physios means you see different personalities.

Different grades highlight different qualities.

The students who believed that all grades of physiotherapy staff could be involved in their clinical education gave a large number of views on what facilitated their learning and only a small number of views on what hindered it. An overview is represented in Table 30.

Table 30 Overview of what facilitated/did not facilitate learning

<p>Directed facilitation</p> <p>(+)</p>	<p>Given advice Given information CE provided opportunities to be observed. In-service training in the form of teaching sessions. Explanations CEs gave suggestions for patient management CEs demonstrated Evidence Based Practice</p>
<p>Self-directed learning</p> <p>(+)</p>	<p>Sharing knowledge (students able to add to knowledge base from information gained personally) Encouraged to work things out Problem solving Time to work alone with patients Testing and questioning which encouraged students to seek out knowledge. Encouraged self directed learning and evaluation Encouraged to research Opportunities to use skills (unsupervised) and transfer knowledge learnt in the university into practice. Student presentations Goal setting Evidence Based Practice</p>
<p>General interaction</p> <p>(+)</p>	<p>Friendly Encouraging Induction to placement Instilled confidence</p>
<p>Barriers to learning</p> <p>(-)</p>	<p>Not allowed to think for myself Interrupting CE not always available - Time commitments Little guidance with notation Not pushed hard enough Not enough opportunity to show personal knowledge</p>

Table 30 shows that this group of students appreciated a degree of directed facilitation. However, unlike the group who did not believe that all grades can be involved in clinical education, they showed that opportunities to be self-directed in their learning were valuable. This is emphasised when the barriers to learning are

considered, as the students felt that they would have preferred more opportunity to reveal their personal knowledge and think for themselves.

Though it cannot be proved, the clinical educators referred to by this group of students seem to have provided opportunities, through directed facilitation, for students to link theory and practice using clear guidance, which Billett (1994) believes to be important. Students will have been able to observe how the theory they had learned within the university was being put into practice. The CEs have, however, adopted a process of facilitation that allows the students to be self-directed and use shared learning, which has been shown by, amongst others, Ladyshevsky (2002, 2003) and Moore et al (2003) to be appreciated by students during clinical placements.

Students were given the opportunity to add further comments on the questionnaire. These related to their perceptions of which grades of physiotherapist they believed could play a role in clinical education. Those who commented only came from this group of students and their overall beliefs are represented in the following quotes.

Increased knowledge resources from higher grades but found diversity of working with different staff very valuable. Lower grades tend to explain better as they have to do more 'active thinking' themselves.

I think it was helpful being supervised by different grades of clinical supervisors as it helped me to understand how much is expected of different grades and their role within the dept.

I worked with physios of different grades and found that this

introduced me to a variety of different approaches, skills, and knowledge. Most of the physios had been working in the area for many years and their experience taught me a lot. But, one of the physios was new and this different approach to having to learn things as she went along was also a major learning experience.

The more senior the grade the more experience the clinical educator has. However, juniors provide a person who is near your age and knows more what it is like to be a student. All grades are essential for a balanced placement.

The qualitative data suggested that, where supervision is shared between two or more physiotherapists, the time disadvantage identified in the group of students who did not believe that all grades of staff could be involved in clinical education could be lessened.

I fully appreciated the help of my main clinical educator. However, I had other people who supervised me also. I thought this was helpful as I could see other approaches and styles. Also I felt that the main educator then had more time to do her own work. (Main

Clinical educator Senior I. Also supervised by Senior II and Junior physiotherapist)

The comments indicated that the students perceived that all grades could be involved in clinical education. They have also indicated that team supervision is valuable.

5:1:6 Further reflections and triangulation of data.

- At the time of administering Questionnaire 3, 53% of the main CEs were Senior I grade. When Questionnaire 1 was administered Senior 1 grade represented 73% of the sample. The students who could reveal the grade of their main educator were able to show that there had been a 15% increase in placements being supervised by physiotherapy staff under the grade of Senior I, and a decrease of 28% in the number of placements being supervised by grades Senior I and above.
- Responses to Questionnaire 3 revealed that students (74%) perceived that it is advantageous for all grades of physiotherapy staff to be involved in their clinical education. Through being advantageous rather than disadvantageous it is argued that involving a range of grades may improve quality as there would be a larger range of experiences and values on which to reflect. This view is opposed to that of the managers (77%) who believed – at the time of data collection - that a CE should be at grade Senior I or above.
- Students (Table 30 - representing the views of 74% of respondents to Questionnaire 3) believed that all grades could offer directed teaching. This conflicts with the views of managers who believed – at the time of data collection - that only Senior I staff can ‘teach’ (see Table 11).
- Time was revealed, by the managers (54%) and CEs (76%) who responded to Questionnaire 1, to be the main disadvantage in facilitating learning. Time being a disadvantage, was identified by the eight students who ‘did not believe’ that all grades could be involved in clinical education. They related time constraints specifically to physiotherapy staff working in the higher grades. Managers and respondents to Questionnaire 1 did not offer any possible reasons why time was a problem, or any possible solutions. Students cited that more senior staff were

limited in the time they could dedicate to clinical education due to too much paperwork, meetings and managerial responsibilities. Despite managers and CEs not giving reasoning behind time being a problem, clinical staff at higher levels do have more administrative duties than their more junior counterparts (including staff appraisals, clinical team reports and interviewing). However, even if it is recognised that more junior grades do not have these administrative responsibilities they may lack confidence /knowledge in clinical education.

- Students showed that CEs were using a large number of activities to facilitate their learning (Table 30). Many of these were similar to those that CEs believed they brought to clinical education (Table 19). Through using a wide range of abilities when facilitating learning, it is argued that there could be more opportunity to improve the quality of learning for individual students.
- Students believed that all grades had abilities to facilitate their learning and gave examples of what they had found advantageous to facilitate their learning (Table 30). Students appeared to agree with respondents to Questionnaire 2 which revealed that physiotherapy staff believed that that all grades can offer some of the abilities considered advantageous in facilitating student learning.
- The CEs' abilities relating to teaching and learning in Table 19 (when there were 60 students in a cohort) were also revealed from Questionnaire 3 when there were 84 students in a cohort. Increased numbers was not having a negative impact.
- When Questionnaire 1 was administered all students were being supervised using a 1:1 model of supervision. By the time Questionnaire 3 was administered, 75% of students had experienced supervision by two or more physiotherapists.

5:1:7 Action taken after analysis of Questionnaire 3

The outcomes of Questionnaire 3 revealed that students found ‘team’ supervision to be advantageous for their personal learning. Also they showed that staff of all grades can offer abilities that are considered important in providing high quality clinical education to students. Further research could be conducted to explore managers’ views of the change in clinical education practice.

A decision was made to share the findings, as it may help to sustain the increased offer of placements and may help when student numbers would rise even further to an intake of a hundred.

The results were published and presented at a national peer reviewed conference (see Appendix 17 and 18) and discussions continued between the researcher and clinicians with responsibility for organising the offer of clinical placements.

5:1:8 Next questions

Table 26, which identified the need for further investigations after reflecting on the outcomes of managers’ interviews and Questionnaires 1 and 2, directed the research journey to questions that would be used in the compilation of Questionnaire 3.

After analysing the results from Questionnaire 3, and as a way of deciding what data should be collected next, the same procedure was implemented at this stage in order to identify how quality within clinical education may be further explored. The outcome is seen in Table 31.

Table 31 Further investigation needed

Questions that arose from triangulation of results of interviews with managers and Questionnaires 1 and 2 to CEs	Outcomes of Questionnaire 3	Further investigations needed after analysis of Questionnaire 3
Would increased student numbers affect recruitment to the profession?	Questionnaire not suitable to address question.	Would increased numbers affect recruitment?
What specific development derives from being a clinical educator ?	Students revealed many aspects relating to helping facilitate their learning.	How might methods of facilitation affect the quality of learning for individual students?
Could changing ‘models’ of supervision affect the quality of supervision? What would be the views of students to changing ‘models’ ?	Students found ‘team’ supervision helped the quality of facilitation of their learning.	Continue to match perceptions throughout degree programme.
Could changing ‘models’ of supervision lead to more junior grades being involved in clinical education?	Questionnaire 3 revealed a 15% increase in lower grades being main educators and 72% increase in lower grades being part of clinical education team.	Is this pattern continuing?
Was this information (CEs like interacting with students) being filtered to more junior grades?	More junior grades involved but Questionnaire 3 unable to answer this Questionnaire.	Are more junior grades asking to be involved in CE for specific reasons?
How would students view being supervised by more junior staff?	Students found more junior staff accommodating, informative and willing to share learning-attributes that may have a quality impact. However, there were some reservations.	Does this continue throughout degree course?
Would changing ‘models’ have an affect on time management?	Students found more senior staff are pressured by time. More junior staff can be more accommodating.	Does time emerge as a ‘disadvantage’ throughout a students experience of clinical education?
How would students view any changes to their supervision throughout their clinical placements, and would this affect the quality of their experience during clinical placements?	Staff of different grades were displaying many aspects relevant to teaching and learning that facilitated student learning. Different grades displayed different abilities.	Are all grades facilitating learning in a manner that helps the individual student?

5:1:9 Next stage of the action research

Questionnaire 3 had shown that the break-up of the range of grades supervising students had increased, and that all grades were able to offer abilities (though in some cases different and to varying degrees) that facilitated student learning. However,

there was no available evidence to match this facilitation with the needs of the individual student.

In 1998, McManus et al had shown that the level of knowledge gained during clinical experience improved when the teaching matched a student's preferred learning style and that in so doing, improved the quality of the learning experience.

At this stage of the action research it became apparent that an investigation of this phenomena using the physiotherapy students could be a way of exploring quality.

Therefore, having made a decision to follow a cohort of students through their clinical experience, the next stage involved using this sample and asking them questions specific to their individual learning. All students had filled in a Honey and Mumford learning styles questionnaire before going on clinical placements (see Appendix 4 for copy of questionnaire). This had indicated to the students whether they were activists (people who involve themselves fully and without bias in new experiences and who tend to centre activities on themselves), pragmatists (people eager to try out new ideas, theories and techniques, respond to a challenge and see opportunities as a challenge), reflectors (those who like to stand back and ponder and act on the wide picture including past as well as present observations), theorists (those uncomfortable with subjective judgements and lateral-thinking, who work in a logical way and like to integrate observations into logical theories) or a combination of more than one of these.

Due to the diversity of how students gain knowledge within the university through, for example, lectures, tutorials, seminars, group work and a variety of assessment strategies including essays, practical demonstrations, seminar presentations and group presentations, there are opportunities for students with different learning styles to develop and show their knowledge in ways that are more suitable to address their learning style. However, clinical placements only have one form of assessment (see Appendix 6 for copy of clinical placement assessment form). It may be speculated that there is a possibility that this could be biased towards different types of learners, especially if the clinical educator is not facilitating the student to learn in ways best suited to the individual. This might then have a direct impact on the quality of learning for the individual student.

5:2 Questionnaire 4 (students and learning styles)

Questionnaire 4 (see Appendix 11b) was administered to the same cohort of students as Questionnaire 3 after they had completed four clinical placements. It aimed to investigate how individual students perceived the benefits and disadvantages in the way their learning was facilitated. It was also administered within a classroom setting, for convenience and to reduce possible contamination of replies due to discussion amongst respondents. After compiling the questionnaire, and before distribution, it was piloted on five students who were not part of the research sample.

The students were not put under any pressure to complete the questionnaire and anonymity of student, clinical educator and locations where students had been on clinical placements were guaranteed. The students had completed four clinical

placements but were asked to refer solely to their last clinical placement y when answering the questionnaire.

The questionnaire was designed to discover the grade of clinical educator, whether the students knew their learning style, and what had facilitated their learning. Analysis was intended to reveal if individual students were being facilitated to learn, during clinical placements, in ways that may suit/not suit their learning style and if this had an effect on the quality of learning.

5:2:1 Results of Questionnaire 4

All of the students who were in the classroom on the day that the questionnaire was distributed completed the questionnaire. This amounted to sixty three female and thirteen male students, and attributed 90% of the cohort. With this high response rate absentees were not followed up.

From the closed questions, sixty eight students were able to identify the grade of their main educator and this information is displayed in Table 32.

Table 32 Grade of main educator

Grade of educator	Number of students with particular grade (n=76)
Junior	9 (12%)
Senior II	13 (17%)
Senior I	31 (41%)
Supt III	8 (11%)
Supt II	4 (5%)
Team supervision (no main educator)	3 (4%)
Unable to identify	8 (11%)

Students were being supervised by a spread of grades ranging from the most Junior grade to Superintendent II. The number with a main educator under the grade of Senior I had risen to 29% from 23% when Questionnaire 3 was administered and 11%

when Questionnaire 1 was administered. Only 4% of students indicated team supervision with no specific grade as lead CE. The questionnaire was not designed to allow students to indicate whether the main educator led a team of CEs (a weakness of the Questionnaire).

Forty nine students (38 female and 11 male) were able to indicate their preferred learning style. These are presented in Table 33.

Table 33– Learning styles of sample

Learning style	Female	Male	Total (n= 49)
Reflectors	15	6	21 (43%)
Activists	12	4	16 (33%)
Pragmatists	3		3 (6%)
Theorists	5		5 (10%)
Activist / theorist	1		1 (2%)
Activist / reflector	2	1	3 (6%)

The highest percentage of students (43%) identified themselves as reflectors. People with this learning style, according to Honey and Mumford, (1982) like to stand back and ponder experiences. They act on a wide picture including past as well as present observations. This type of learner suits the reflective practitioner who questions their performance and in so doing helps to link theory and practice (Jerlock et al, 2003). Following closely behind, 33% of the students identified themselves as activists. They like to involve themselves fully and without bias in new experiences and tend to centre activities on themselves (Honey and Mumford, 1982). This type of learner finds linking theory and practice most efficient when subjected to context-specific experiences (Stavenga de Jong et al, 2006).

Open questions allowed for the students to state what they believed did/did not facilitate their learning. The students' views were systematically coded to reveal emerging themes. These are presented giving separate results for male and female

students to explore gender traits. The themes are presented with subdivisions of the learning type.

5:2:2 Emerging themes

5:2:2:1. Reflectors

All 'reflective' students provided more information of what did rather than what did not facilitate learning.

Table 34 Themes from reflectors. What facilitated learning

Female Reflectors - Liked (n = 15)	Male Reflectors - Liked (n = 6)
Discussion ⇐ explanation (14)	Explanation ⇐ Encouragement ⇐ Discussion (6)
Questioning (asking/answering) (14)	Questioning (6)
Resources (9)	Resources (2)
Multi-disciplinary working (8)	Multi-disciplinary working (2)
Independent practice ⇐ hands on (4)	Observation ⇐ Independent practice ⇐ hands on (5)
Independent study (4)	Independent study (4)
Researching (4)	Researching (2)
Feedback (3)	Feedback ⇐ Clinical Reasoning (2)

The themes that emerged from the female and male reflectors were very similar. However, the males preferred some explanation and encouragement leading to discussion and preferred to observe (CEs) hands on skills prior to their independent practice and hands on with patients. Both sexes revealed traits related to a reflector highlighted by Honey and Mumford (1982) - time to practice or observe before acting, time to study and research before acting and time to discuss what they had done.

Both female and male reflectors felt that more hands-on experience would have further facilitated their learning (Table 35). They wanted to be tested on what they knew, and to be observed to show their knowledge.

Table 35 Themes from Reflectors – What they wanted more of

Female Reflectors (n=15) Wanted More	Male Reflectors (n= 6) Wanted More
Hands-on (9)	Hands-on (4)
Being observed (6)	Being observed (3)
Time with educator (6)	
Testing (4)	Testing (2)
	Feedback (2)

5:2:2:2. Activists

The female and male activists provided more information on what facilitated their learning, rather than what did not.

Table 36 Themes from Activists. What facilitated learning

Female Activists - Liked (n = 12)	Male Activists – Liked (n = 4)
Handling skills ⇐ New skills (12)	Hands on ⇐ New skills (4)
Treating patients (Early intervention) (10)	Encouragement ⇐ Treating patients (4)
Being part of the team (Working with variety of physios) (8)	Team work (Working with variety of physios and Multi-Disciplinary Team- MDT) (3)
Direction to research topics (6)	
	Demonstrating knowledge (3)

The themes that emerged from the female and male activists were similar and reveal that they like to become involved, a trait that is significant according to Honey and Mumford (1982) in this type of learner. The males liked some encouragement to treat patients but, unlike the females, also liked to reveal their personal knowledge to their educators.

Table 37 Themes from Activists. What they wanted more of

Female Activists (n = 12) Wanted More	Male Activists (n = 4) Wanted More
Hands on (8)	Reassurance (1)
Feedback on performance (2)	

The females wanted more hands on experience (which is what this type of learner likes) and feedback. Only one male gave a negative response relating to personal reassurance.

Separating the male and female students revealed little by way of differences. However, there is one similarity found between this and the small study on 28 students carried out by Brassad (2004). She revealed from her Questionnaire that most students rated the interaction between themselves and their teachers as the key to facilitation of learning. However the males (76%) wanted this interaction more than the females (58%). Both the male reflectors and activists in this study were looking for encouragement and explanation from their CEs.

5:2:2:3. *Theorists*

There were only female theorists in the research sample.

Table 38 Themes from Theorists . What facilitated learning.

Female Theorists - Liked (n = 5)	
Time to research (read, discuss, problem solve, etc)	(5)
Help with skills (encouragement, observation, experience)	(3)

Table 39 Themes from Theorists. What they wanted more of

Female Theorists - Wanted more (n = 5)	
Theoretical background (homework, note-taking, discussion of personal knowledge, feedback)	(4)
Hands on	(1)

Despite the fact that the theorists found being given time to read and problem-solve was beneficial to their learning, they were not appreciative of being directed in what they read. These students were interested in being self-directed in literature searching.

5:2:2:4 *Pragmatists*

There were only female pragmatists in the research sample

Table 40 Themes from Pragmatists. What facilitated learning

Female Pragmatists – Liked (n = 3)	
Hands on	(3)
Early intervention with all aspects of patient care	(3)
Questioning and constructive criticism	(1)

Table 41 Themes from Pragmatists – What they wanted more of

Female Pragmatists - Wanted more (n = 3)	
Pressure to learn	(1)

The findings from the pragmatists fell into the descriptions given of this type of learner by Honey and Mumford (1982). They liked to try out ideas, theory and techniques. This group of students found that they benefited most when they were able to put theory into practice early on within their placement. However, they did find being pressurised to learn new things helpful.

5:2:2:5 *Themes from students who were unable to identify their learning style*

Twenty seven students were unable to identify their learning style, but still completed the sections on what had/had not facilitated their learning whilst on clinical placement. Their views are presented in Table 42, and are listed in sequence of most expressed view.

Table 42 What facilitated learning (n = 27)

Students liked		Students wanted more	
Encouragement	(20)	Feedback	(11)
Hands on	(14)	Observation	(8)
Questioning	(14)	To be challenged	(5)
Responsibility	(13)	Recognition of self directed learning	(3)
Researching	(12)		
Information	(10)		
Being part of team	(10)		
Sharing knowledge	(8)		

No attempt was made to put these students into learning style groupings, as some of the attributes considered valuable to facilitate learning can be appreciated by more than one type of learner e.g. activists and pragmatists might highlight hands-on experience. The students within this group appreciated many of the abilities used to facilitate their learning that had been considered important by the clinical educators who responded to Questionnaire 1. Interestingly they would have appreciated more opportunities to be challenged, not only in gaining new knowledge, but also through being given opportunities to share their personal knowledge.

5:2:3 Further comments

The questionnaire contained an open question, where students were given the opportunity to add further comments supporting their views on the quality of facilitation of their personal learning experiences whilst on clinical placement. Thirteen students wrote comments. Seven comments relate to having been facilitated in a manner that suited their learning style. Five comments related to how being made to feel comfortable within the placement facilitated their learning. Eight of the comments were made by reflectors, and the content of their comments are represented in the following quotes:

Female reflector

I loved my placement. It gave me great learning experiences and introduced me to a valuable area of physio – orthopaedics – as well as allowing me to see many other areas. Although I was not with my educator for the majority of the time, she gave me great feedback and regularly discussed my progress with those

*I spent time with. I had my own case load by the end of the placement but was introduced gradually and so that I felt comfortable with and confident with what I was doing. With **Senior I** physiotherapist.*

Male Reflector

During my clinical placement both myself and my clinical educator discussed my learning preference and consequently addressed/programmed my placement in accordance to my learning need – provided time for me to prepare for my patients and time to reflect on the sessions – very good.

*With **Senior I** physiotherapist*

The comments reveal that the students were introduced gradually to their workload and given time to reflect, which suits what Honey and Mumford (1982) believe helps the reflective learner.

Only female activists made further comments, which again illustrate methods of facilitation that are believed to assist this particular type of learner (Honey and Mumford (1982)). The following quote represents their opinions:

*I thoroughly enjoyed my placement. I thought the whole experience was really rewarding. I was able to apply all the knowledge –both previous and new- that I had learned. My educator was really supportive and provided an excellent learning environment. I was able to apply treatments to my own patients which was a real motivator especially when improvement was noted / seen. With **Senior I** physiotherapist*

Just one female theorist made a comment appropriate to their learning preference:

*Location and speciality was a good clinical placement. Was relaxed environment which enabled me to sit back and think about theories. With **Senior II** Physiotherapist*

There were no further comments from pragmatists.

The male activist / reflector (a combination of styles rather than a bias towards one) made the following comment:

The placement was a very good learning experience. The educators gave me several opportunities to learn what I needed and knew how I like to learn. They helped me with things outside the placement and inside physiotherapy. I was given an opportunity to treat patients and the educator understood my learning needs well. They progressed me well each week and made me feel part of the team. It was a brilliant placement.

*With **Senior II** and **Superintendent III** physiotherapists.*

Despite twenty seven of the students being unable to put a label on their learning style some appeared to suggest that they had a personal preference in how they best like to approach learning. This concept can be seen in the following comments:

*My placement suited my learning preference because I gained hands- on experience, but never felt out of my depth because I did it at my own pace by observing at first and later treating patients on my own. - With a **Junior grade** physiotherapist*

My placement suited my learning need,s as my educator would discuss aspects of physio care with me first and I would then complete self- directed study - theory into practice. I felt more confident in doing this because of the previous research.

*With **Senior I** physiotherapist*

5:2:4 Triangulation of Questionnaire 4 with earlier stages of the action research

1. Students provided a more positive than negative response to the facilitation of their learning.
2. Students believed that physiotherapy staff from different grades could facilitate their learning in a manner than suited their preferred learning style. Students provided evidence relating to all grades of physiotherapy staff from Junior to Superintendent II. They responded to supervision by different grades in a positive manner. This view was opposed to that of the managers who, earlier, believed that only Senior I staff should be clinical educators.
3. At the time of administering Questionnaire 4, 41% of the clinical educators that could be identified were working at Senior I level. When Questionnaire 1 was administered the Senior I staff represented 73% of clinical educators. This had reduced to 53% when Questionnaire 3 was administered.
4. The methods that students (Questionnaire 4) found advantageous to facilitate their personal learning style mirrored those that clinical educators thought important to bring to clinical education (Questionnaire 1, Table 19) and that CEs believed could be offered in part by staff of all grades (Questionnaire 2, Tables 20-25).
5. The abilities that CEs were using to facilitate learning and what students would like more of (Questionnaire 4) mirrored what students believed (Questionnaire 3,

Table 30) to be the best ways of facilitating learning. Questionnaire 4 revealed that CEs were tailoring these abilities to facilitate learning for individual students taking into consideration their learning style.

5:2:5 Summary

As clinical co-ordinator I knew that clinical placements had been offered to support the cohort of 84 students and that of these 98% were successful in their summative assessment for the placement to which Questionnaire 4 relates. The other 2% were successful on re-sit assessment.

Since administering Questionnaire 3, (after clinical placement 1, which occurs at the end of year one of the degree course), Questionnaire 4 (administered after students had completed four clinical placements at the end of year two), showed that there had been an increase of 7% in the grades under Senior I who were the main educators, and a decrease of 8% in those working at Senior I grade and above.

The CEs seemed to be responsive to the students' different learning styles, which is likely to have improved the quality for individual student placements.

Clinical educators / physiotherapy staff (Questionnaires 1 and 2) had not been asked if they considered the learning styles of individual students. This is a weakness of the study as data was not available to triangulate with students. The students who completed Questionnaire 4 revealed that their learning during placements was being facilitated in a manner that suited their learning styles, and they gave more positive

replies (things that helped facilitate their learning) than negative replies (things that could have been done to further facilitate their learning). Such information from the CEs would have enabled some comment to be made on whether knowledge/consideration of learning styles affects quality of learning.

At this stage it was decided that as a way of questioning students' views on the quality of their clinical placements they would be asked to complete a questionnaire at the end of the degree course when all clinical placements had been completed. This would be used to review quality.

Before undertaking this stage of data collection, Table 43 illustrates how the study had progressed in addressing issues raised in Table 31.

(Some of the information related to the offer of placements in column 3 of Table 43 is not supported by evidence. This information relates to how offers are made. The information is held within the School of Health Science but cannot be included in the appendices as students' names would be revealed).

Table 43 - Reflections on questions addressed within the study

Questions	Outcomes from study	Conclusions and suggestions for on-going investigations
<p>Would increased student numbers affect recruitment to the profession?</p>	<p>Undergraduate student numbers had increased from an intake of 48 students at the beginning of the study to 84 used as the research sample and is now 100. This should have a positive effect on recruitment.</p>	<p>Some students who graduated in 2004 (from cohort of 100) found that they had to apply for a number of junior grade positions before being successful. When student numbers were 84 (number of students who completed Questionnaires 3, 4 and 5) posts were easily available. The CSP is undertaking on-going investigations to address this problem (Martell 2005) and to find effective ways to address the NHS plan (DoH 2000a, 2000b).</p>
<p>What specific development derives from being a clinical educator?</p>	<p>Questionnaire 1 revealed that CEs found that being a clinical educator was advantageous for both personal and professional development. CPD advantages are linked to the quality of service. Questionnaire 2 revealed that all grades of staff could be involved in clinical education and gain from this development.</p>	<p>Clinical placement offers are increasing as physiotherapy staff are becoming more aware of the advantages of being a clinical educator. More CEs are choosing to complete the Accreditation of Clinical Educators certificate set up by the CSP in 2004. This is done under the guidance of an HEI. This CPD aims to improve the quality of clinical education by making the CE more aware of teaching and learning principles.</p>
<p>Could changing models of supervision affect the quality of supervision?</p> <p>Could changing models of supervision lead to more junior grades being involved in clinical education?</p>	<p>Students who responded to Questionnaire 3 perceived that involvement of different grades would be advantageous in clinical education. They believed that all grades could offer directed learning. Questionnaires 3 and 4 showed that the profile of clinical educators is changing with an increase of 22% in the number of physiotherapy grades below Senior I level taking part in clinical education (over a span of two years).</p>	<p>There is an increase in the number of placements that now supervise students in 2:1, 3:1 ratios and this is verified by the offers of placements I received. Also students are reporting team supervision (students revealed this in Questionnaires 3 and 4). This supports the advantages that have been highlighted in adopting these forms of supervision (Bennett, 2001, 2003c); Ladyshewsky, 2003, Moore et al, 2003) as quality can be related to the opportunities to share learning.</p>

<p>Was the information (CEs like interacting with students) being filtered to more junior grades?</p>	<p>Both Questionnaire 3 and 4 revealed that more junior grade staff are involved in clinical education. The study is not able to answer whether this is because they like interacting with students, nevertheless students revealed within these Questionnaires that junior grades were facilitating learning well and that they made students feel comfortable within placements due to their recent awareness of what it felt like to be a student.</p>	<p>Physiotherapy managers are offering to place students with junior staff. This knowledge is available through records of offers that are kept within the School of Health Sciences / Physiotherapy. As the CSP (2003b) says that all physiotherapy staff should be involved in clinical education further investigations would be needed in order to address this question fully. More junior staff may not be aware that CEs like interacting with students, may not like the role if they undertake it and may be directed to the role by their line managers.</p>
<p>How would students view being supervised by more junior grades and would this impact on quality?</p>	<p>Questionnaire 3 revealed that students found more junior staff accommodating, informative and willing to share learning. Questionnaire 4 showed that with another 7% increase in the number of junior grades being involved in clinical supervision they were facilitating learning to suit individual students and accommodate for their personal learning styles.</p>	<p>Students implied in Questionnaires 3 and 4 that they would be happy to be supervised by junior grades.</p> <p>Questionnaire 5 (administered when all placements were completed) further investigates this topic. Findings are presented in chapter 6.</p>
<p>Would changing models of supervision have an effect on time management?</p>	<p>Physiotherapy managers and CEs (Questionnaire 1) believed that time management was the greatest disadvantage in being/employing CEs. Students (Questionnaire 3) found more senior staff pressurised by time.</p>	<p>The increase in Junior grades being involved should take the pressure off more senior staff. Sharing the CE role should also decrease time commitment for individual CEs. Further research could explore the impact of the change by re-interviewing the managers and surveying the CEs about changes in student management.</p>

5:2:6 Next stage of the action research

Questionnaires 3 and 4 revealed that the range of grades supervising students on clinical placements continued to increase and that students appeared to appreciate the methods of facilitation being used to accommodate their personal learning. As a

consequence of these results I (as clinical co-ordinator) made further changes when requesting clinical placements. Managers were informed of these outcomes when requests were made and it was specifically suggested that one way of them offering more placements was to give junior staff even more responsibility.

To help answer the last question highlighted within Table 31 - 'How would students view any changes to their supervision throughout their clinical placements and would this affect the quality of their experience during clinical placement' - the final questionnaire revisited some of the questions asked in Questionnaires 3 and 4.

Chapter 6

Students' perceptions of quality

6:1 Questionnaire 5 (Students)

The final stage of the research involving students was conducted when the cohort, who had been followed throughout the three years of their degree studies, and had completed all six of their clinical placements. Research by Wachter et al (1998) had concluded that how students were facilitated to learn, and how satisfied they were with their clinical education, had an influence in both the quality of their education and the quality of their involvement in patient care. With this in mind, the aim of the questionnaire was to:

- Assess whether or not students had been aware of the grade of their clinical educators.
- Elicit the opinions of students as to which grades of physiotherapy staff they believed made the 'best' CEs and why.
- Find what facilitation of learning had been beneficial to individual students.
- Assess whether or not students had been able to share their personal knowledge during clinical placements.
- Explore if students were able to enhance professional development and, if so, how.
- Consider the quality of clinical placements through exploring the views of individual students.
- Review the opinions of different demographical student groupings to see if this influenced their perceptions of the quality of their clinical education.

The overall aim of the questionnaire was to relate to the key research question and investigate how the students perceived the quality of their clinical education in relationship to changes that might have occurred in both the management and facilitation of their learning, as student numbers had increased.

Analysis aimed to explore the overall quality of clinical education for the students who had completed all of their clinical placements and also to reveal if there were differences in the quality of clinical education for individual students. The results were measured against demographic profiles of the students cross tabulated with the differences in staff grade of the CEs.

Questionnaire 5 (see Appendix 11c) was piloted on four students who were not part of the research sample. No change or refinement was deemed necessary as those who piloted the questionnaire were able to understand the questions and the quality of their responses indicated that the information that would be retrieved would help answer the relevant questions related to the quality of clinical education experiences. It took the pilot subjects between ten and twelve minutes to answer the questionnaire and this time was deemed to be acceptable.

The questionnaire was administered in the same manner as Questionnaires 3 and 4. Students were given the questionnaire within a classroom setting, in the final week of the degree course after all placements and final year examinations were completed, and asked to complete it without entering into any form of discussion with other students. The students were free to decline participation. Questionnaires did not have any identifying marks and a sealed box was supplied in which Questionnaires could be posted.

Questionnaire 5 was completed by 62 students. This represented 77.5% of the cohort who were eligible to be part of the research sample. The sample had reduced to 80 from the original 84 as two students had left the course and two students still needed to complete a clinical placement due to illness. All students who were in class on the day that the questionnaire was administered completed the questionnaire. No attempt was made to follow up absent students.

All questionnaires were tabulated for quantitative and qualitative data, and data was entered onto SPSS for analysis

Data is presented mainly in table form, with qualitative responses in the form of direct quotes from the students used to substantiate and support findings.

6:2 Demographic profile of sample

The 62 students in the sample included fifty one female and eleven male students.

Table 44 Ages of sample on entering the degree course (n=62)

Age on entry	
18	23 (37%)
19-21	21 (43%)
22-24	9 (14%)
25-30	6 (10%)
Over 30	3 (5%)

As would have been predicted, the largest percentage (71%) of the sample were under twenty one on entry to the degree course and it is presumed that physiotherapy was their first career choice.

Table 45 Highest pre entry qualifications of sample

Age	Qualification	Total	
18	A Levels	23	(37%)
19-21	A Levels	20	(32%)
	B Tec	1	(1.5%)
22-24	A Levels	6	(10%)
	Degree	3	(5%)
25-30	A levels	1	(1.5%)
	Access	4	(6%)
	Higher degree	1	(1.5%)
Over 30	Access	3	(5%)

Examination of Table 45 shows that the greatest percentage (81%) of students entered the degree course with A level qualifications. Four students held a prior degree qualification.

The students were asked to say if they were aware of the grades of their clinical educator during their clinical placements and which grades of physiotherapy staff had acted as their clinical supervisors. Fifty-two students (84% of the sample) were able to identify the grades of their clinical educators during their clinical placements.

The students were asked to indicate the grades that had acted as their clinical educators. The results to this question are displayed in Tables 46 and 47, and are presented with the grade of the educators being cross-tabulated with the ages and the gender of the students.

Table 46 Grades of CEs cross-tabulated with age of students (N= 62)

Grade	Age 18	19-21	22-24	25-30	Over 30	Total
Junior	12	14	1	4	1	32 (52%)
Senior II	19	19	6	5	3	52 (84%)
Senior I	22	21	9	6	3	61 (98%)
Supt III ↑	6	8	1	1	1	17 (27%)
Team	11	9	3	2		25 (40%)

Table 47 Grades that educated male and female students (N=62)

Gender of students	Junior	Senior II	Supt I	Supt III	Team
Female	24	44	50	16	23
Male	8	8	11	1	2
Total	32	52	61	17	25

Tables 46 and 47 show that all ages and both gender of students experienced supervision from a range of grades. This was confirmed in chi square test, which showed no statistical significance in distribution. Placements were seemingly not biased in allocation.

The students were asked to give their opinion as to which grade/s they believed made the best clinical educators. The overall results are displayed in Table 48 with the results subdivided and cross-tabulated with age, and entry qualifications of students shown in Tables 49 and 50 to identify if students with different demographical profiles had varying perceptions.

Table 48 Grades believed to make the best clinical educators (N=62)

Grade	Frequency	Percentage
Senior II	13	21%
Senior I	14	23%
Supt III	2	3%
Team	33	53%
Total	62	

The Junior grades were not highlighted as making the best CEs but they may have been part of a team of facilitators. (see quotes after table 51 from students who believed that ‘team’ supervision was best)

Table 49 Best grades cross-tabulated with age of student (N=62)

Grade	Age 18	19-21	22-24	25-30	Over 30	Total
Senior II	4	4	2	2	1	13 (21%)
Senior I	5	6	3			14 (23%)
Supt III		1		1		2 (3%)
Team	14	10	4	3	2	33 (53%)
Total	23	21	9	6	3	62

Table 50 Best grade cross-tabulated with entry qualifications of students (N=62)

Grade	A levels	Access	Degree	Higher Degree	BTec	Total
Senior II	9	2	1	1		13 (21%)
Senior I	13				1	14 (23%)
Supt III	1	1				2 (3%)
Team	27	4	2			33 (53%)
Total	50	7	3	1	1	62

An overview of Tables 47-50 shows that over half of the students (53%) thought that a team of different grades made the best clinical educators. An almost equal number of students (13 and 14) believed that the Senior II and Senior I grades made the best educators. It is interesting to note that even the older students (those over 25 years of age on entry) believed that a team of educators, which would in all possibility include qualified staff who were younger than themselves, was the best way to be supervised. This was also true for the Senior II staff (a grade that is generally reached two years post qualification and therefore for most staff can mean an average age of 23-24 years) as many believed that they made the best clinical educators. Also, despite some students having first/higher degrees on entry, they were also of the opinion that a team or Senior II staff made the 'best' clinical educators (Table 50).

Statistical analysis of the differences between the views of the demographical profiles of the students (age, gender and qualifications) using chi square test produced a chi square value less than the critical value ($p < 0.05$) when tested against their perceptions of the 'best', clinical educator. It is interesting to note that the results in many ways mirror the outcome of the study by Murphy et al (2004). They found that students' perceptions of good clinical educators was not influenced by the demographic profile of the students. What influenced the students were the methods used to facilitate their learning. (Examples of the chi square outcomes can be seen in appendix 15).

6:3 Students' perceptions of what makes a good Clinical Educator

As a way of qualifying the views on which grades were believed to make the best educators, the students were asked to give reasons for their choice. The reasons were

analysed and put into categories. These are displayed in Table 51 against the grade of staff and are further demonstrated with quotes from students.

Table 51 Reasons why grades are believed to make the best educators (N=62)

Reason	Senior II	Senior I	Supt III	Team
Had best experience	10	12	2	7
Provided range of experience	1	2		25
Good facilitators of learning	2	6	1	4
Not intimidating	5	1	5	
Gave student feeling of belonging	2			12
Empathy with age of student	9			7
Junior keen				1
Revealed models of grades				5
Had time for students	2	3		3
Range of personalities				11
Gave overview of abilities		2		5

Team in table above – a group of CEs drawn from different grades

The greatest variety of reasons came from the students who believed that a team of grades made the best educators (10 reasons), followed by the Senior II grade staff with seven reasons and the Senior I with six. As expected, there were few reasons why some students believed that Superintendent III grades make the best educators, as only two students were of this opinion. It is interesting to see that the two students who selected the Superintendent III grades, did not regard their seniority to be intimidating, which Dunn and Hansford (1997) found might hamper the learning environment.

Examples of quotes from those believing that ‘team’ supervision was best included:

Juniors have more knowledge of how you are feeling, senior staff know a lot and facilitate learning really well.

Seniors experienced though can be out of touch, Juniors may lack experience but be aware of recent research.

It is easy to ask Juniors questions, Seniors provide a broader knowledge and Superintendent IIIs have knowledge to draw from.

In a team there are different approaches, different knowledge levels and team bonding.

These quotes reveal that the students appreciated opportunities to learn alongside physiotherapy staff of different grades who would have different things to offer. The more junior grades could facilitate the students by making them feel more relaxed within the clinical environment and thus they were more inclined to question and share knowledge. The more senior staff were believed to have high levels of knowledge and experience to share with the students.

Those students who considered that Senior II staff made the best educators said:

Age may be similar to students and they remember what it was like being a student.

Have experience to share with you but not too senior to make you feel stupid.

These quotes also reveal that this grade of staff were felt to be good at making the students feel comfortable within the clinical learning environment, yet they had a good level of personal experience to share with the students. They were empathetic towards the students.

Those who believed that the more senior grades (Senior I and above) made the best educators were looking for educators who had a high level of personal knowledge to share with the students:

Has experience that is specific as they are not rotating into different areas.

They have a very good personal level of knowledge within their area as they have chosen to specialise in that area.

Having gained the opinions of the students, as to who and why they believed certain grades made the best educators, they were asked to provide more specific opinions related to their personal learning. What did they believe the best clinical educators did to facilitate individual learning? Responses were categorised and presented against grades in Table 52. Specific quotes are given to further illustrate opinions.

Table 52 What the best educators did to facilitate personal learning (N=62)

Facilitated by	Senior II	Senior I	Supt III	Team
Discussion		2		7
Observation	2	2		6
Questioning	5	1		5
In- Service Training	5	3		9
Giving feedback	3	2	1	13
Directing to research	2	2		5
Using learning contracts and diaries	2	7		5
Getting student to do presentations		2		4
Adapting to individual learning styles	1	3	1	5
Being friendly and encouraging	3	2		12
Giving study time	1			2
Involving student in multidisciplinary team	2	2		1

Table 52 shows that those students who believed that a team approach was best, responded positively to each category (which in part may be due to this being the largest group). This illustrates that a team is able to incorporate a range of abilities to

facilitate personal learning for individual students. From these categories some of the principles of adult learning are displayed. Through discussion, observation, feedback and having to present what they know, the students were given opportunities to learn how adults like to learn (Knowles, 1984). Through adapting to individual student needs, being friendly, and including the students within teams, clinical educators were providing an atmosphere where effective learning can occur (Neville and French, 1991).

Facilitated reflection through discussion during treatment sessions.

They asked me questions but also discussed my answers.

Was able to see how I was doing as they gave frequent feedback.

Both the Senior I and Senior II staff were deemed to be facilitating learning using an array of strategies.

*Spent time on my learning contract so that we could
discuss learning outcomes.*

*Discussed patients with me and helped with clinical reasoning
Good in-service training*

The representation of responses for each of these three grades is in line with the 53% (Team), 23% (Senior I) and 21% (Senior II) spread of which grades students believed made the best educators (Table 48).

The two who thought the Superintendent III staff were best identified learning facilitation through feedback and adapting to individual learning needs. It can only be speculated from these views that the 3% of students who believed this grade to be the best clinical educators (Table 48) responded positively to close one-to-one facilitation. However as only 3% of the students believed that this grade made the best educators there is little evidence from which to draw conclusions.

The next question explored whether students were able to share their personal knowledge whilst on clinical placements, as this has been shown by Bennett (2003b) and Finkel et al (2003) to improve the quality of evidence-based health care. It might also link with the opportunities for the CEs to use clinical education as part of their CPD (which the CEs thought advantageous – Table 17). Of the sixty two students in the sample only four had felt they were unable to share their personal knowledge. Students were able to make comments on their response. The responses were analysed and put into categories that are displayed in Table 53.

Table 53 Ways in which students shared their personal knowledge

Ways of sharing knowledge	Number able to share (N=58)
Commenting during feedback	57
Being asked to give their opinions	40
Through discussing curriculum	13
Giving presentations to clinical staff	7
Knowledge sometimes undervalued	2

On all of my placements other physios and multi-disciplinary team (MDT) members were willing to listen to my views.

I felt I was free to include any of my personal knowledge experienced.

Clinicians were interested to discuss the physiotherapy curriculum.

I could share my knowledge especially if I gave a presentation.

I was able to discuss what I already knew and I also showed them some of the skills we practiced in uni.

Having explored if the students were able to share their personal knowledge, the questionnaire then went on to ask the students if they were able to enhance professional development when on clinical placements. This would indicate whether they considered that they had a role not only in gaining personal knowledge but in the development of knowledge within the profession as a whole. All but one of the sample felt they enhanced professional development. The results to this question are presented in Table 54. Professional development relates to both student and CE development. (one student did not complete this question)

Table 54 How students perceived they enhanced professional development (N=61)

How Professional development was enhanced	Frequency
Reflecting on practice	27
Being involved in teamwork	18
Being autonomous	17
Patient content	3

Through having opportunities to work with patients, the students could both share and reflect upon their learning and, as Belfield et al (2001) believe, CPD could become part of day to day working. The students believed that through teamwork they were able to develop their personal professional practice, and could also add their knowledge to the continuing professional development of others.

I kept a day by day diary, reflected on it and shared what

I had learnt with the staff.

Clinical placements were best for developing profession specific skills and sharing these skills should help professional development.

Was able to build profession specific skill such as communication and teamwork all of which helped me to become autonomous and make professional decisions.

Analysis using the chi square test showed no statistical significance between the responses to the question and the gender, age and pre entry qualifications of the students.

6:4 Overall perceptions of quality

As the main question of the study related to quality, the students were asked to indicate on a likert scale their opinion as to the quality of their clinical education placements (how they ranked the quality of facilitation of their learning). Statistical responses are presented in Table 55 (with numerical ratings from very highly satisfied - coded 7, to very strongly dissatisfied - coded 1) and the reasoning for their response is presented in Tables 56 and 57 which are representations, after analysis, of the categories that arose from the open responses.

Table 55 Satisfaction scores of quality of clinical education placements

Satisfaction grading	Frequency (n=62)
7	4 (7%)
6	27 (44%)
5	18 (29%)
4	11 (18%)
3	1 (1%)
2	1 (1%)
1	0

Table 55 shows that 79% of the students were satisfied with the quality of their clinical education (grades 5-7). Of these, 51% were very highly/very satisfied (grades 6 and 7).

Table 56 Reasons why students were satisfied (N=62)

Reason	Frequency
Good clinical educators	35
Teaching excellent	14
Good range of placements	9
Variety of in-service training	4
Good to share learning	4

Table 57 Reasons why students were dissatisfied (N=62)

Reason	Frequency
Inconsistent marking	10
Not all core areas covered	5
Do not like away placements	2
Used as an extra pair of hands	2
CE too busy/lack of time	2

More than one reason was given by a number of students in the responses produced in Tables 56 and 57. After cross-tabulating the satisfaction ratings with the reasons for the students' responses, it became apparent that despite some of the students being satisfied/very satisfied with their clinical education some did give negative comments. To further illustrate this the cross-tabulation is presented in Table 58.

Table 58 Reasons why students were dissatisfied cross-tabulated with satisfaction rating

Reason	7	6	5	4	3	2	1
Not all core areas covered			1	3		1	
Do not like away placements			1	1			
Used as an extra pair of hands		1		1			
CE too busy/lack of time			2				
Inconsistent marking		3	3	4			

Table 58 reveals that despite two students having indicated that they were dissatisfied with their clinical education (Table 55), only one comment relating to dissatisfaction

came from these students. Interestingly, the majority of the dissatisfaction-reasoning came from students who had indicated an overall satisfaction with their clinical education placements. Having cross-tabulated the satisfaction ratings (Table 55) with the preferred CE (Table 48) there was no statistical difference between the outcomes for the students who had indicated that they believed team, Senior I or Senior II supervision made for the best clinical education.

Only two students indicated dissatisfaction with their clinical placements. Closer examination of their returned questionnaires showed that one had believed Senior II staff to make the best CEs and the other Senior I and above. Both of these students had expressed a desire for close one-to-one teaching and neither had commented on how they had shared their personal and/or professional learning despite indicating that they were given opportunities to do both. In the further comments at the end of the Questionnaire they both expressed feelings of being unprepared for clinical practice as a qualified member of staff. There is no evidence to show why this dissatisfaction arose but it is suggested that they may not have appreciated the way in which their learning was facilitated. Their desire for one-to-one teaching would not fit into the development of shared and self-directed learning that is encouraged within the degree course.

At the end of Questionnaire 5 an empty box allowed students to make further comments relating to the quality of their clinical education placements. Forty four of the sample of sixty students chose to make comments (some giving more than one comment). The comments were analysed and placed in categories that mirrored some of those seen in Tables 56 and 57.

These were:

- Teaching excellent +ve (22 comments)
- Variety of In-service training +ve (14 comments)
- Good to share learning +ve (12 comments)
- Not all areas covered -ve (1 comment)
- Lack of time -ve (2 comments)
- Inconsistent marking. -ve (8 comments)

The following quotes are examples of comments made, and give an indication of the comments made on each topic:

Teaching Excellent

Twenty two students made comments about the high standard of teaching in their clinical education. This was the most frequently expressed view.

The teaching and learning opportunities were very good and it gave me a real taste of what is needed of me when qualified.

Education was on the whole excellent and strongly facilitated learning and CPD.

Although clinical educators varied a lot in their approach to teaching and learning, I saw this as a positive thing as it allowed me to take away different skills from each placement.

Generally a lot of good quality in the teaching with it aimed at me as a student and my personal learning.

Generally very good quality. Teaching, especially when learning skills was especially beneficial.

Variety of In-Service Training (IST)

Several of the twenty two students who commented on the quality of the teaching during their clinical education placements mentioned IST as being of high standard. Two students were more specific.

The quality of the education varied with the amount of IST.

When there was a lot of IST the quality was better.

Good to share learning

In all twelve students made comments about shared learning.

It is good when you are on placement with other students as you can share what you learn.

When on a 2:1 placement it is very good as there are opportunities for peer and shared learning.

Good when you work alongside others as you can see what they do, they can see what you do and you can discuss things.

Some educators ask you to do presentations or ask your opinion and this is good as you feel you can share knowledge.

Not all areas covered

There was only one comment here related specifically to the management of allocation of placements.

I did not get a neuro placement.

Lack of time

There were just two comments under this category both related and represented in the quote.

Senior staff just do not have the time.

Inconsistent marking

Eight comments related to the inconsistency of the marking within clinical education. Unlike assessments within the university where systems of double marking, internal and external moderation are in place, there is no similar process for clinical education assessments. It is recognised by both HEIs and the CSP that this is a problem and it has been discussed at meetings for clinical co-ordinators, held at the CSP . However, due to the large number of CEs, clinical education placement locations and the mobility of staff within the locations it has been/is difficult monitor closely. Marking forms part of the courses for clinical educators. As marking may have a direct influence on quality of outcome for students, this highlights where further research could be developed.

Grading in clinical education can be very subjective and there should be closer direction from the university.

Some educators need more guidance in clarification of the marking system.

The level of marking throughout the placements was not well standardised.

6:5 Final triangulation

At the end of the study, after the students had rated the quality of their clinical education experiences, the main indicator of quality was the ability of the CE to facilitate learning. All data were triangulated and comparisons made between the views of the different samples in the action research.

1. The great majority of students in this sample regarded their clinical education to be of high quality and they related this to being facilitated to learn by physiotherapy staff of all grades.
2. Unlike the managers and the CEs who completed Questionnaire 1, the students considered that grades lower than Senior I were competent to act as clinical educators and were able to demonstrate good abilities in their approaches to teaching and learning.

3. Unlike the managers, who believed that Senior I grades and above were best equipped to provide high quality placements, the students believed that team supervision was the most appropriate.
4. The students supported the views of the sample of physiotherapy staff who responded to Questionnaire 2, who believed that all grades have abilities to bring to the clinical education arena. Juniors could be part of the team.
5. The students' views provided in Questionnaire 4 relating to teaching and learning were similar in Questionnaire 5. They revealed that CEs were using a variety of teaching and learning methods to facilitate learning and that they were using these to address individual student learning needs.

(It must be noted that managers and CEs were investigated during earlier stages of data collection and before new models of supervision had been tried. This means that their views and comparisons within the final triangulation may have altered).

6:6 Postscript to triangulation

The results from Questionnaire 5 revealed that team supervision was highly regarded by the students. Despite early stages of the study highlighting that students were generally managed on a 1:1 basis, both managers and CEs appeared to have adopted the new 'team model'. Further research could be developed through exploring their views of this 'new' model. (see Appendix 19 for 'team model' example)

Furthermore, in addition to this new model, a greater number of more junior staff were also involved as clinical educators on a 1:1 basis and as the ‘main educator’ when a team of physiotherapy staff were involved.

Expanding the range of physiotherapy staff grades within the pool of clinical educators had enabled a greater number of physiotherapy staff to benefit from the advantages of being a clinical educator. This was evident in the study and resulted in greater sharing of knowledge enhancement for both individual and professional development, from students up to the higher grades of qualified staff.

(Results from the study were presented at World Physical Therapy Conference in Vancouver, June 2007 – see Appendix 17)

6:7 An illustration of the impact of the study

The following information is presented, not as a formal part of the study, but as an illustration of how an informal presentation of the results led to the offer of more placements. A manager working outside the NHS was approached with the desire of encouraging her to consider accommodating students. She agreed to be interviewed after the results were presented to her in conversation mode.

Previous conversations had been unproductive, as her senior managers were only concerned with the physiotherapy staff within her department addressing CPD through attending courses related to skill enhancement. Furthermore, the organisation in which she worked was most concerned with ‘client’ throughput.

The interview both highlighted her concerns and allowed for a discussion of possible solutions. Having heard the evidence from the study she appreciated that educating students may be a way of gaining knowledge of the current curriculum content and that students would be aware of some of the most recent research evidence that is developing within the profession. Much of the discussions centred around shared learning. Concerns with time management would be addressed if the physiotherapy staff worked as a team. Through relating the study findings to her senior managers she had evidence to supply when suggesting that her department became involved in clinical education.

The outcome was positive as, after sharing findings from the study with both senior managers and staff within her department, placements were offered. Issues related to facilitating learning were addressed by running a course for clinical educators within the establishment in which she worked.

6:8 Some points that emerged from initial reflection of all results

POINTS:

- In order to evaluate quality within clinical education, consideration needs to be given to the organisation of placements, the roles of those involved in facilitating learning and the individual needs of students. In some instances, those ‘the practitioners’ that organise and manage learning (managers and clinical educators) had differing views from the students.

- Clinical educators generally adopted teaching and learning methods that were appropriate for the adult learner.
- An individual's method of facilitating learning could influence the learning process.
- Learner comfort can influence the learning process.
- The students' regard for their clinical education remained high during the study period (which included involvement of more junior grades as facilitators of learning).
- The development of a 'learning team' had positive outcomes for individual and professional development.

Chapter 7

Discussion

The aim of this chapter is to discuss the overarching themes that emerged from the data. Through discussion the results are further explored, and comparisons are made with literature and the context in which historically clinical education has been managed. The main conclusions that arose from analysis of the data and possible ways forward to develop and maintain quality in clinical education are considered specifically for the management of clinical education for students who are studying at The University of Birmingham. Strengths and weaknesses of the study are highlighted along with suggestions of areas for future research.

The discussion is structured around implications that arose from the data. Sections 7:1, 7:2 and 7:3 consider concepts within clinical education related to departmental and professional management. Within 7:4 issues related to personal management are examined. Deliberations on the development of the ‘learning team’, are presented in 7:5 with the review of overall quality being presented in section 7:6.

7:1 Performance measurement and management in clinical education

Physiotherapy service managers who are graded at the higher levels (normally above Superintendent III grade) have the overall responsibility for day-to-day management of their clinical locations, which in some cases involves managing the budget for the department. Only in exceptional circumstances would they be involved in facilitating

students' learning (exceptions can include involvement if the department is very small and the manager has a clinical load, or if CEs are unexpectedly absent).

The many and diverse components of their managerial role include responsibility for ensuring that productivity outcome measures are met. However, problems in reaching these goals can arise if, when managing human resources, the workforce is either depleted or, in some instances, does not have the appropriate expertise to reach set targets. Furthermore, when their workforce may also be involved in dedicating some of their time to the clinical education of the future workforce, it is conceivable that there may be added concerns related to the achievement of outcome measures. Moreover, as the literature in chapters 1 and 2 shows, this concern has been highlighted due to the demand for more clinical placements to accommodate the increased number of physiotherapy students.

Managers are thus responsible for overseeing performance measurement - measuring efficiency. This is not the same as performance management, which is concerned with how to improve performance - which may, in physiotherapy, be related to the outcomes of the clinical management provided to patients by individual clinicians. In assessing the quality of management within their departments, some structure is needed as a means of monitoring the results of programmes and people.

It might be argued that if you cannot measure a performance then you cannot manage it. You may be unable to 'benchmark' one's performance against others. How does the performance within one physiotherapy department measure up against the performance in another? Is it possible to make objective comparisons?

Historically, within the health service, there has been a tendency to adopt the ‘trust me’ policy (Ennis and Harrington, 2001), which implies that performance is not ‘measured’. Patients accept that the managers and clinicians have the expertise and, consequently, outcome measurements hold little regard for patients’ views. With the emergence of more open policies and the wider availability of information through, for example, the internet, there is now more of a culture of ‘tell me’ and ‘show me’, where disclosure of information, and more evidence that those in the health service are performing well, is demanded. In order to provide relevant information, the demands on clinical managers have increased. They are responsible for achieving targets, (which in the NHS can be set by the government, whilst in the private sector may be set by market demands and/or senior management within their place of work), and are also involved in ensuring and proving that the quality of performance within their departments is of high standard. They need to both measure and manage performance.

At the start of the research journey, it was not envisaged that the investigation into the quality of clinical education would bring to light elements of performance measurement/management. However, it became evident, as data analysis progressed, that components of measuring performance were emerging from the data, and that these underpinned the main emerging themes of the study. For example, the managers had concerns that accommodating students created extra work for some of their physiotherapy staff and this might prevent them from helping to develop the abilities of the more junior qualified staff, which may result in the underperformance of the more junior grades.

Furthermore, it emerged that there were areas where a link between performance measurement and the DoH (1989), 'product' model of assessing quality overlapped. The 'product' model considers the needs of the stakeholder in terms of efficiency and economy and these aims are monitored through performance measurement. Some discussion of these two concepts is required at the start of this chapter in order to present and support further discussion of subsequent themes.

Some performance measurements of quality are in the public domain. The Health Care Commission publishes performance ratings from individual Trusts that are freely accessible on their web site (<http://healthcommission.org.uk>). Patients are able to see how particular Trusts are performing, and can compare the ratings against those of other Trusts. However, as with the 'league tables' that are published for schools and higher education institutions, it is suggested that in some instances they do not represent the actual picture of the quality of performance (Austin and Gittell, 2002). The consequences of poor ratings may cause people to subvert the measurement system, particularly when these measurements are made public (Edmondson, 1996). The managers in this study may have initially been more concerned that patients judge performance on how effectively appointments and interventions were processed, rather than the effectiveness of the quality and outcomes of their care.

When first measuring school performance, an initial focus was on exam results, but it became apparent that additional data was needed to determine the overall performance within schools. Examples included looking at the aptitude of the students when they entered a specific school, and demographic differences between school populations who were being measured. An illustration of this was reported in a publication from

the National Audit Office in 2003 (www.nao.org.uk) which produced an analysis of data from more than one million pupils in more than 31,000 schools who sat their Key Stage 3 tests or GCSE/GNVQ examinations in 2002. It showed that prior academic achievement was the external factor that most closely related to current academic achievement, and that external factors including economic well being (often using eligibility for free school meals as an indicator of deprivation), and cultural factors could influence performance. In order to reach a measurement of overall performance, student specific data (input data), and the demographic profile of students should be used to produce outcome measures that take into consideration the impact of student differences. Not only should raw output scores (e.g. the gross outcome of say the performance of a cohort of students) be considered, but also the ‘value added’ performance measurement.

This is sometimes referred to as a ‘gain’ performance measurement, which might consider how differences between students within a school or cohort are incorporated to isolate the impact of school environments on pupils’ progress (Propper and Wilson, 2003). This value added performance measurement does not merely measure the effectiveness and efficiency of the school but also reveals measures of total school performance through considering other aspects that might impact upon outcome measures. These performance measurements might include teacher effectiveness, resource levels, and peer group measurements and the impact these may have on students from and with different backgrounds (Meyer, 1997). Resultantly this could lead to comparisons between ‘similar schools’. Relating ‘gain’ performance measurement to this study can include the effectiveness of the clinical educators and ways in which students worked with their peers. Further research from this study

might look at whether increased students numbers and wider participation has had an impact on degree classification.

Within the health service, star ratings are used as an audit measure; three stars are awarded to NHS Trusts with the highest level of performance, two stars to those with mostly high levels of performance and just one star where there are deemed to be areas of concern. Those that have shown the poorest levels of measured performance receive a zero rating. However, as with such measurements in education, the ratings do not provide a comprehensive picture of performance. Also added to the differences in the demographical profile of students and clinicians, is the wide variety of patient populations.

No account is made for population traits in the general health of people living in a specific area covered by one Trust as compared to another, which may, for example be as a result of the housing or employment within the area. Similarly, different Trusts may cover areas where the age profile varies - the population may be older and require increased medical support. Treatments offered within different hospitals may vary as they could specialise in treatments/cases where there is a greater likelihood of higher mortality, for example, due to the complexity of surgery. But, despite these differences, the greatest weight is given to financial and waiting list targets, and only to a much lesser degree are clinical performance and patient experiences measured (Propper and Wilson, 2003), let alone patient demographics.

If physiotherapy managers perform well when measures focus on patient throughput and waiting times, they may be perceived to be managing their workforce well.

However, it is argued that this form of measurement does not measure overall quality. It tells us little about the actual clinical outcome and how it was achieved, or processes by which quality is maintained. Do students feature in the quality equation and how might they impact on performance measurement?

Given that those managing the Health Service are required to provide a reliable service whilst finding ways to reduce cost without compromising quality (Ennis and Harrington, 2001), it is understandable that managers feel obliged to work within their given budgetary boundaries. They are concerned with achieving the targets measured by the Health Care Commission, which would receive high outcome ratings. However, do the ratings demonstrate the global quality of the service and the overall quality of the staff who are working within the department? Hypothetically, if staff worked speedily to meet set targets and with minimal utilisation of costly resources, they may be deemed to be performing efficiently. However, working in such a manner does not exclude the possibility of performance being of poor quality. Both short-term and long-term outcomes should be considered. What is happening in the present may impact on the future. What is effective and how is such effectiveness measured?

As discussed earlier, the DoH Working Paper 10 (DoH 1989) puts forward a 'product' and 'process' model for measuring quality. 'Product' models measure both efficiency and economy, but do not include how targets are met or the quality of such targets. Arguably, the 'product' model indicates concepts of performance management and measurements of 'gross' output related primarily to quantitative measurements (time, throughput, resources). It may not reveal the effectiveness of treatments.

The 'process' model is concerned not only with what targets are reached but also how the quality of learning may impact on targets (that can include clinical effectiveness). Here learning may involve both the on-going development of the existing workforce and the workforce of the future. Incorporating the 'process' into performance measurement can, in the long term, lead to effectiveness. In relation to clinical effectiveness, the quality of learning may influence the management of patient care as the knowledge gained by clinicians/students can be used to solve individual problems. Put simply, what is input to improve learning may result in improved outcomes for the patient. The determinants of effectiveness include consideration, not only of whether it works, but how and why things work (Walshe and Freeman, 2002).

It is accepted that all performance ratings may include inaccuracies and tend to be subject to controversy (Barnow, 1992; Propper and Wilson, 2003). Managers tend to focus on the targets they can achieve and in so doing there is likely to be some omission of the impact of individuals' performance (Burgess et al, 2003). Subsequently, physiotherapy managers may focus on the readily measurable which, in the case of clinical education, may be the impact of the presence of students on quantitative measurements, including patient throughput, rather than the quality of the outcomes on staff performance and the impact on patients when students are present. Such measures encourage emphasis on short-term, rather than long-term, outcomes.

To what extent do the physiotherapy managers think about the impact on performance measurement if students make up part of the workforce? By considering aspects within both 'product' and 'process' models of evaluating clinical education, this study aimed to reveal not only how physiotherapy managers perceive and administer

clinical education, but also how students are facilitated to learn within clinical placements. It was hoped that this might indicate the quality of what happens during the clinical placement and how learning impacts on both clinical staff and students. This study did not look at departmental performance in product terms and further research might choose to look at possible links between the rating of departments that perform well in 'product' terms and the model of clinical education that is adopted. Conversely, it may be possible to explore links between good performance in the 'process' of facilitating learning and identify links with departmental 'product' measurements.

7:2 Students, patient throughput and the workforce

Reiterating key messages from the literature in chapters 1 and 2, in terms of the provision of clinical education placements within physiotherapy departments, there have been problems in securing placements to support the growing number of physiotherapy students. Confounded by problems with recruitment and retention of physiotherapy staff (Chadda, 2000), physiotherapy managers were concerned about managing the workload within their departments (Maxwell, 1995; Baldry-Currens and Bithell, 2000). The emergence in the study of concerns with performance management may provide a reason for this response.

The interviews with the physiotherapy managers revealed that almost half believed that accommodating students was both time consuming for their staff and that students may negatively affect patient throughput. This could be due to students

needing a longer time to manage individual patients, or through students requiring a patient to attend more sessions in order to achieve the desired outcomes. They were concerned that performance measurements related to efficiency of throughput within the physiotherapy departments may result in poor outcomes. They did not question that as students add to the workforce they may lead to greater output.

It cannot be ignored that a department that accommodates students must have some form of 'cost' implications as a physiotherapist who is supervising students must be required to give up some of their time when they would otherwise have been directly involved in patient care. The physiotherapy managers in this study related the time commitment directly to the perceived increase in workload for the clinical educators. This perception was further supported by some of the clinical educators themselves who were of the opinion that facilitating students' learning was time consuming. These clinical educators believed that when they accommodated students, it could create difficulties in managing personal caseloads and spending time 'teaching' students may slow down the progression of treatments.

Highlighting this perception could reasonably lead to the conclusion that accommodating students is detrimental to the performance of a department. If this is the case then it is plausible that physiotherapy managers would be reluctant to offer clinical placements. Whilst this may be a reasonable reaction, opinion may alter if positive effects on departmental performance can be demonstrated.

The research has shown that rather than concluding that students have a negative impact on the efficiency within a department there are ways of illustrating the 'cost'

benefits of accommodating students (Dillon et al, 2003; Graham et al, 1991; Holland 1997 and Ladyshewsky and Barrie (1996). They found that having students in no way hampered overall productivity.

This study adds to the existing evidence in the literature that CEs accommodating students bring benefits. The role of the CE was revealed to be more advantageous than disadvantageous to a department in productive terms. The most significant view that emerged showed that the principal advantage of having clinical educators in a department was related to staffing as they promoted recruitment and retention, which has been shown to be a problem within the profession (Chadda, 2000). In the context of performance, staff numbers correlated positively to patient throughput – with adequate staffing levels the managers would be able to fulfil set targets for patient throughput. The managers felt that if they accommodated students then these same students may apply to work with them once they qualified. Additionally, if the educators attracted students to the department then the students provided another ‘pair of hands’ and they in some ways helped to fulfil short-term goals of managing throughput. This belief was even more positive in staff working in some specific areas (e.g. mental health and womens’ health) that had had major problems with recruitment.

An implication of these findings is that both the managers and the clinical educators were concerned with reaching targets that can be shown in the Healthcare Commissions ratings (<http://ratings.2005.healthcarecommission.org.uk/home.asp>) – for example, throughput and waiting time audits. However, beyond the specific remit of performance measurement, the managers were also concerned with the quality of

service that is provided by their staff who are also clinical educators which demonstrates the complexity of the manager's role. Whilst the views of the managers and clinical educators were influenced by productivity and staffing, there was a strongly held perception that students are advantageous when issues related to the quality of the knowledge within departments are taken into consideration. They had views that would fall into the 'process' model of management (DoH, 1989) and these views centred most significantly around the learning that occurs during clinical education.

The study highlighted positive beliefs about the role of the clinical educators in learning (see 5:1:3). Unlike the managers in the study by Baldry-Currens and Bithell, (2000) where managers were mostly concerned with the performance of their staff in patient care and throughput, those in this study had respect for the development of future practice, which might impact on long-term quality indicators. Some comparisons can be made between the two studies in that in-depth, semi-structured interviews were conducted and the managers came from a variety of clinical settings (Acute secondary and primary care Trusts). However, this study included interviewing thirteen managers (as opposed to five in the Baldry-Currens and Bithell, 2000 study) and even though the results cannot be generalised arguably they provide a good reflection of the views held by physiotherapy managers within the majority of health care settings that provide clinical placements for the physiotherapy students who study at The University of Birmingham.

The clinical educators in the study believed that improving their teaching skills and keeping up-to-date, outweighed disadvantages related to productivity, as the ability to

teach could, in the long run, influence output as clinical educators develop the staff of the future. Through considering the methods and quality of the performance of these teaching and learning abilities, we not only consider ‘gross’ but also ‘gain’ components of performance measurement (Propper and Wilson, 2003). Gain concerns not only what is being done at present, but also what may happen in the future as a result of present performance. Through students observing management of teaching and learning they might, through reflection and evaluation, choose certain methods in the future if they became clinical educators. Such observations reveal methods of performance management. If the educators adopt methods that facilitate individual students to learn to manage their time, whilst developing their clinical skills, this might have an impact on productivity. Clinical educators may, for example, encourage the students to use self-directed study when time is a constraint, allowing the educator to have the time to manage their personal caseload whilst the student learns through observation or shared learning. Managers and clinical educators who are doing this should then be able to demonstrate management strategies that include both the ‘product’ and ‘process’ methods of measuring quality. Arguably, the results of such observations and actions provide a process of ‘modelling’, as the students might be tomorrow’s CEs and they can learn how caseload and teaching can be managed.

The data from the study was useful in providing some benchmarking material that the managers could use in an informal evaluation of their personal role in the management of clinical education compared to that of others within the geographical area. An example of this was the link between providing clinical placements and the

number of applications received for job vacancies from students who had gained clinical experience within their departments as students.

It was also hoped that, through making the clinical educators aware that their managers had respect for the role they played in staffing provision and development, it would have a positive impact on their personal development and encourage them to continue and / or increase their input into clinical education.

With the foundations set through the emergence of these performance indicators the main themes are discussed in the following sections.

7:3 Placement provision, professional development and range of educators

Although this study did not purposely set out to obtain views directly related to professional development, it emerged that clinical education was seen to have a direct impact. As the process of continuing to develop a profession involves the maintenance, development and enhancement of skills, knowledge and competence, it is likely that any work looking at the quality of an educational process should highlight these topics. Indeed, the CSP CPD policy statement (CSP, 2003c) mentions the impact of clinical supervision systems.

Additionally, as CPD has cost implications, related to professionals' time (Belfield et al, 2001), any opportunities where CPD can be incorporated into the 'normal' day-to-day management within a profession should be beneficial.

The time impact of accommodating students has already been discussed. The time demands of students might also impact on a clinical educator finding time for personal CPD (e.g. freeing up time to attend courses). However, this was not found to be the case. They highlighted aspects of clinical education that could be used for CPD with components of CPD related to teaching and learning that are written in the CSP, CPD agenda (CSP, 2003c).

It was evident in the early stages of the study that only the more senior grades were being given the opportunity to benefit from the positive impact of clinical education on CPD and it was argued that these opportunities should be available to all grades.

Despite Spencer (2003) criticising the variability and lack of intellectual challenge within clinical education, the clinical educators (from a range of grades) within this study demonstrated a good understanding of many of the theories of teaching and learning, as they were adopting methods to suit individual learners.. It is hypothesised that the younger staff would have first-hand experience of teaching and learning theories as they had recently left HE where teaching tends to be based on the principles of adult learning (andragogy), and where self-direction (Maslow, 1970; Rogers, 1961:1983) is promoted. Although not formally calculated (as identification of research samples would have broken the ethical principle of anonymity) it is envisaged that a number of the younger physiotherapy staff had studied for their degree at The University of Birmingham, as there is a history of graduates being successful in gaining posts within the West Midlands. They would have been involved in problem-based learning, which is embedded within curriculum delivery.

Those who were out of university for a longer time would have re-visited learning theories whilst attending courses for clinical educators.

The study revealed enough positive feedback to suggest that more junior grades could be involved in facilitating clinical education. This had three positive outcomes. Firstly, more new placements became available. Secondly, these physiotherapists were then able to use clinical education to fulfil aspects of CPD. The physiotherapy managers could also demonstrate that they were addressing suggestions made within the CSP Validation Guidelines (CSP, 2000b) and by Potter (2001) through considering alternative models of providing clinical placements. Thirdly, it gave students different levels of supervisory experiences on which to reflect.

7:4 Mutual and individual workplace learning

Workplace learning is a process of increasing the capacity for effective action through the development of knowledge and understanding (Garwin, 2000). So, through a process of learning, doing and reflecting, skills are developed which accomplish workplace goals (Crossan et al, 1999). In health care, these may be the outcomes of patient management.

Despite the study revealing that physiotherapy managers placed more emphasis on outcomes related to staff recruitment and patient throughput, they also held in high regard the relevance of teaching and learning and the more long-term effects it has on enhancing both present and future practice. Through clinical educators developing skills to facilitate learning and, in order to do this, having to keep up-to-date with

current practice, both managers and clinical educators felt that being involved in a mutual learning environment encouraged them to reflect upon their personal practice.

The development of a model of shared learning in the workplace, breaks down the barriers that may hinder learning and knowledge creation (Jarvinen and Poikela, 2001). Opportunities to experience clinical practice in the workplace allows students to put theory into practice and incorporate the knowledge needed to acquire expertise within specific specialties (Luntley, 2004). Boundaries between academia and workplace can be broken down (Flanagan et al, 2000) and the concept of the lifelong learner may be embedded (Chapman, 2006). However, as students are entering a different learning environment where teaching may have to be adapted to suit the environs (which can include large and small hospitals, private practice, schools), the methods used to facilitate learning need to be adapted and be different from those encountered within an academic institution (eg. lectures and group work). Coupled with this, how clinical educators manage the concerns, feelings and coping strategies of individual students could have an effect on individual student development (Cupit, 1988).

With the exceptions of the highest grades being seen as good role models rather than ‘teachers’, the study showed that the clinical educators believed themselves to be capable of possessing many of the attributes required to be a good facilitator of work-based learning. Not only could they demonstrate good teaching and learning abilities, but they were also able to be sympathetic to the requirements of the individual learner. The study showed that how the clinical educator facilitated learning held the key to exposing the quality of clinical education for individual students.

The value of linking an educator's knowledge of students' learning preferences and the outcome of learning has been highlighted in the work of authors including Miller (1998), and Langlois and Thatch (2001). This study undertook to explore such a concept within physiotherapy clinical education. The outcomes, which support this view, suggest that physiotherapy can be added to the literature from other health care professionals.

It would appear that the clinical educators were considering learning preferences and the students highlighted being facilitated to learn in ways that suited their learning styles. It is suggested that the quality of the students' learning would be enhanced.

Almost half of the students in the study identified themselves as being reflectors and they said that the clinical educators were managing their learning through allowing them time to practice and observe and then reflect on the information gained before acting on their reflections. From these outcomes, it would appear that the students were using 'reflection on action' through making sense of actions that they observed, before entering into 'reflection in action' when they were carrying out clinical interactions (Schon, 1987). This not only promotes dialogue and collaboration, as opposed to separation and isolation (Clouder, 2000), but provides opportunities for shared reflection, so developing collaborative rather than individual development. The second most prevalent group, activists, appreciated being involved in the action phase much sooner and reflected 'in action' sooner than 'on action' (Schon, 1987).

Overall, the study showed that the clinical educators were adopting facilitation strategies that accommodated different learning preferences. However, it should be

noted that the study has some limitations related to learning styles. Further research would be valuable, to seek comparisons between the attention given to learning styles within the university and clinical environments, and whether or not the clinical educators discussed their own learning styles with students. A further implication may emerge if research compared the outcomes of varying degrees of depth of discussion between the clinical educator and student related to their preferred learning styles. Data related to the learning styles of the clinical educators would have been valuable as, not only has it been said by Langlois and Thatch (2001) that knowledge of the learning styles of both educator and student can lead to improved clinical and professional performance, but also the results could have been triangulated with other areas of the study's outcomes especially issues related to CPD.

The students were able to show that, no matter the grade of the clinical educator, the educators were adapting their methods of facilitating learning to suit individual needs. The students appreciated this quality within their clinical education, but it is important to highlight that in spite of this linkage, students should be aware for future practice that learning styles may change due to life experiences (Grasha, 1990; Montgomery et al, 1998). Furthermore they may need to adapt their learning style due to environmental constraints (Murphy et al, 2004).

Shared learning

The meta-analysis of over three hundred studies within education, health care, business and management published by Johnson et al (1998) showed that cooperative learning promotes higher achievement than individual approaches. Not only does it improve the quality of social support and self-esteem, but there appears to be a

significant increase in the achievement of knowledge acquisition and retention. When people work together, the ability to be creative in problem-solving and reasoning can reach higher levels. These principles support the beliefs of Piaget (1971) and Vygotsky (1962) in that this form of learning encourages real exchange of thought and discussion, and improves the development of skills to a greater extent than can be reached through working alone.

This study showed that shared/peer learning was regarded highly, and that both students and clinical educators could benefit from this method of learning. In order to elaborate on the findings it is important to mention that the term peer relates to different presentations and in defining it the term peer includes not only students working together but also clinicians and students acting as peers. It was felt justifiable to include both students and clinicians as peers as according to Lord and Griffin (1986) it is the process of sharing learning that makes those involved peers.

Evidence of peer/shared learning in the workplace emerged throughout the study. Despite the physiotherapy managers not mentioning these specific words, they highlighted the advantage that mutual learning can bring to a department through clinical educators working with students. Additionally, even though the first sample of educators (mainly being staff of higher grades –Table 17) believed that the role was most advantageous to their personal development, they included the benefit of mutual learning with students as part of this. Once the study moved towards investigating what specific skills were characteristic of clinical educators, a number of terms related to peer/shared learning emerged. The educators were more concerned with the elements within the ‘process’ than the ‘product’ models of measuring the quality of

learning (DoH, 1989). It was *how* the students learnt that was important, and much of this involved the clinical educators being approachable, enthusiastic, communicative and wanting to share what they knew, whilst allowing the students to share their knowledge. The educators could see themselves as forming peer groups with students.

Once the number of physiotherapy staff lower than Senior I grade involved in facilitating clinical education increased, the level of peer/shared learning also improved. This raises an important issue. These more junior grades were thought able to share learning as they had more recent experience of being a student. However, as the CSP expects all qualified members to maintain and develop knowledge through learning (CSP, 2003c), should not all grades be working as peers?

The advantages of shared learning are embedded in the principles of adult learning - 'progressiveness' (Linderman, 1926; Dewey, 1933) which draws attention to the relationship of the teacher and students learning from each other and, 'individual self-actualisation' (Knowles, 1975; Rogers, 1983; Rogers and Freiberg, 1993) where teaching is student-centred. If the study's findings are looked at closely, it is seen that all grades were believed to possess the ability to use facilitation methods that fall under these principles. Most specifically, these included the clinical educators stating that the students had knowledge to share, and the students were satisfied that teaching was geared to individual needs. The most junior grades may have been perceived as being more approachable in sharing their learning and it is hypothesised that this could be due to them still being very concerned with developing their personal learning. This may result in them becoming close peers in learning with the students.

However, the more senior grades, deemed to have more knowledge due to experience, were perceived as having a desire to share this knowledge, and also, importantly, a strong desire to motivate learning.

7:5 The ‘learning team’

It is accepted that, as an aim of the study was to find more placements for the growing number of students, some might question that any model that enabled this would be acceptable. However, quality needed to be the main principle for any changes that were made, and so the benefits of different grades having varying abilities led to the suggestion of developing the model of team supervision and the creation of a ‘learning team’. Numerically, team facilitation was successful in fulfilling the aim of finding enough placements. Through more staff being involved, and allowing existing educators to share the responsibility, they were able to reduce the time commitment, which had been seen as disadvantageous, and were encouraged to increase the number of students within individual placements. In this regard this study can be compared to that of Callan et al (1994), where it was shown that, through utilising shared learning, the clinical educator could free up time.

A key need highlighted in the work of Strohschien et al (2002) is the requirement for greater understanding of the status of current models of clinical supervision and the need to develop new models. Rather than assuming that current models fulfil the needs of future practitioners it is suggested that changes should be considered in order to prepare students for changes that are developing within clinical practice. It had to be shown that team facilitation would not reduce the quality of clinical education.

The study progressed to evaluate the quality of such placements since team supervision could not be justified as a model if the students were shown to be disadvantaged.

As working practices within the modern NHS place the emphasis on multi-disciplinary teams (Boaden and Leaviss, 2000; GMC, 2002) students are encouraged to interact and share learning with other professions during their clinical placements. Moreover, inter-professional education has been cited as the way forward in implementing effective change to improve both health care services and implement work-force strategies (Barr, 2002). However, clear comprehension of the principles of inter-professional learning is required if students are to gain an understanding of working with other professions within a team (Finch, 2000). This study suggests that one way of helping to develop such team work could be through firstly working as part of a team within ones own profession.

The quality of learning that develops within a team requires the team members to act as peers. In so doing, not only can exchange and discussion of thought be encouraged but also the range of learning will outweigh that which can be achieved through working alone (Piaget, 1971; Vygotsky, 1962). If clinical educators are going to facilitate learning within such a model, they will need to recognise patterns of interaction. ten Have et al (2003) believe this requires the ability to distinguish and evaluate the differences between dialogue and discussion. Measures of quality may depend on the understanding of differences between dialogue, where the educator takes on the role of teacher and instigator of discussion, and that where both educators and students share knowledge and discuss learning opportunities. If the interaction of

these two methods of sharing knowledge is achieved there may be opportunities to use dialogue and discussion to complement each other (Senge 1999). There could be some acceptance that students are also able to act as 'teachers'. The CEs need the ability to manage the emergence of any power struggles that can become apparent when people with different levels of knowledge and experience work within the same team. Further research may aim to elicit the specific roles within the 'team'.

There has been an abundance of previous research within the clinical education of physiotherapy students including that of Baldry-Currens, (2003); Holland, (1997); Ladyshefsky, (1993, 2002, 2003); Ladyshefsky et al, (1998); Michelle et al, (1993); Moore et al, (2003) and Nemshick et al, (1996), that has supported the benefits of peer and collaborative learning during clinical placements. Although the findings of this study further support this research, there is a fundamental difference and this lies in the different constituents of the team. Whereas previous research has placed the emphasis on multiple numbers of students acting as peers and being supervised by a single clinical educator, this study has revealed that a peer learning team can comprise of a number of clinical educators with a single or multiple students. The clinical educators and students together form the 'learning team'. It may initially appear inefficient for a number of educators to be with one student, however given that the whole team can benefit both in sharing time and learning, it is suggested that the benefits may expand into clinical practice rather than remain within the domain of student learning.

Some earlier research carried out by Stiller et al (2004), looking at physiotherapy education in Australia, compared two methods of supervising students, one of which

could be seen as team facilitation. This work only looked at the views of the clinical educators. There are some differences between that and this study. They compared a model where an educator was wholly responsible for supervising the students, and had a significantly reduced patient-load, with a model where students were shared amongst staff and where the students treated some or all of their patients. The clinical educators preferred the educator-specific role, but further appraisal of the results shows that a large number responded that they were unsure which was the better model and this number, added to those who preferred the collaborative model, results in an almost equal view of the models. Quite worryingly monetary benefit gained from undertaking the role appeared to influence the results, as those who were using the educator-specific role received greater remuneration. The advantages of the educator specific role were almost wholly centred on cost benefits for the educator and the department. Additionally, the majority of clinical educators were either employed by the universities, or by a teaching hospital. The model that came out of this study differs in that it is a 'team-learning model', and the clinical educators are employed within a number of health care environments, many of which are not designated teaching hospitals.

In order to evaluate the quality of the team model in this study, the benefits and advantages of peer learning had to emerge. There had to be some justification of the degree to which clinical educators and students could be considered as learners of equal standing (Bruffee, 1993). Though this study did not specifically look at dialogue and discussion (and further research could explore this in more depth) there were areas where the views of the research samples fell under these headings.

The initial impression from the early stages of the study may imply that the managers and clinical educators placed more importance on the dialogue of teaching rather than entering into discussion to share knowledge with students. However, even at the early stages there was some mention of shared learning, which interestingly was held to be of greater importance by the managers than the clinical educators who were directly involved in helping the students to learn. On reflection of these findings it can only be speculated that, at that time, the managers were more aware of the emergence of problem-based and shared learning within the curriculum of the BSc (Hons) Physiotherapy at Birmingham. They had been invited to attend a meeting to introduce the new curriculum, during which learning strategies including peer and shared learning were discussed. Only those clinical educators who had recently attended a course for clinical educators had knowledge of the greater emphasis being placed on PBL and shared learning. A demonstration of the positive response of the managers was seen when, at an early stage, some considered team supervision could be appropriate in their place of work, and they were receptive to suggestions that this model might improve learning for all staff members involved.

As the study progressed, and the opinions of clinical educators as to which grades could be involved in clinical education was analysed, there was positive support for suggesting to all managers that all grades could be involved in supervising students. The more senior grades emphasised the sharing of their personal knowledge, rather than them having opportunities to further their personal knowledge through learning from others. It was the more junior grades that were considered better equipped to share learning within a team. As Hart (1990) stated that shared learning benefits the group and the quality of care and the profession, it could be suggested that the

addition of more junior grades provided the greatest benefit. Team facilitation makes the student and more junior staff more autonomous and as Williams et al (1998:305) argue, this allows them to 'become more patient-centred in their orientation to care and promotes greater conceptual understanding and better psychological adjustment'.

Initially, the more senior grades, being seen as less interested in shared learning, may have hampered the students and more junior grades, through making it difficult for them to add their personal perspective to the clinical arena. This could be having a negative effect on easing the problems of newly qualified staff, who Richardson (1996) writes can have difficulties in making the transition from student to qualified member of staff.

An implication of the addition of a range of experiential knowledge arose from the formation of the 'learning team'. Through the students being placed within a team of qualified staff, they observed an array of different levels and breadth of experience. The student was able to encounter different approaches to teaching and learning, and additionally had more opportunities to work with people of similar learning style preferences. Through being in a team with people of different ages and levels of experience they are able to gauge and self-assess their personal learning against that of the different grades of staff. Barriers that may appear when students are placed in a different learning environment were broken down as the students were able to see that the more junior grades were empathetic towards their role as a student and the more senior grades could instil an interest in the profession through motivating learning and demonstrating the increased knowledge that develops through CPD.

Arguably, this then leads to performance improvements for the whole team as they share learning and have both breadth and depth of knowledge to bring to discussion.

A conclusion of this is that the team approach identified in this study involves a number of strategies extra to those of peer learning and a development of a learning organisation. Performance of clinical education within such a team could mirror that used within management (ten Have et al, 2003). Firstly, individual objectives are identified. Each team member has their own strengths. How these objectives are achieved is approached through open and forthright discussion and collaborative goal-setting. However, it is not correct to make this claim without supporting evidence.

To complement the views of the managers and CEs, students were consulted. In contrast to the views of the physiotherapy managers, where half believed that not all grades should be clinical educators, the study showed that nine out of ten of the students believed that all grades could be involved in facilitating their clinical learning. Only a very few of the students thought that not all grades could be involved, and with such a small number it is not feasible to generalise the implications of their negative views. However, selected reflection of these views does raise some interesting questions. This minority of students were looking for one-to-one interactions and, similarly to the study carried out by Paukert and Richards in 2000, they wanted to be taught rather than be facilitated to learn. Despite this being in conflict with the ethos of self-directed learning and the underlying principles of adult learning, this small group of students may be unhappy with any form of team-learning and would need further facilitation, maybe at a later time, in order to enter the profession where team working is encouraged.

The study exposed that by far the majority of students were in support of all grades adopting a role within clinical supervision. A key strategy was the prospect of promoting a suitable learning environment, in which the students could feel comfortable to explore and gauge their individual levels of knowledge. The more senior grades gave the students clear guidance in linking theory and practice (Billett, 1994), and the more junior grades shared their learning in less threatening circumstances, as they were relatively inexperienced themselves.

Contrary to studies into shared learning using models where the students outnumber the clinical educators (Ladyshevsky, 2002: 2003; Moore et al, 2003), a conclusion drawn from this study was that the students appreciated shared learning when the number of clinical educators outnumbered the students (Table 48). Furthermore, through retrieving the views of the students, which happened after team supervision was put into operation, it was apparent that the clinical educators using this model had adopted teaching and learning strategies that were closer to those used within the university. The emphasis was skewed towards self-directed and problem-based learning (PBL).

The published emphasis on PBL within the education of health care professionals has leaned more towards that which happens within HEI establishments rather than in the workplace. This study adds evidence. In 2002, O'Neill et al were interested to observe how medical students could use PBL in clinical settings. They, found variations when students worked in groups to solve problems, and especially when this involved transferring knowledge gained within the classroom to their clinical placements. Students differed, with possible relationships being made between

students' learning styles and their abilities to work within a team. Barriers occurred when the organisation of clinical experience compromised on their preferred learning style, and where there were poor links between clinical experiences. This study has some evidence to show ways in which such barriers may be broken down. In the course of using the span of abilities of the different grades of physiotherapy staff in team facilitation, there is more likelihood for students to encounter other team members with similar learning strategies. Through identification, discussion and on-going links between goal-setting during subsequent placements, the student is able to explore issues related to PBL. A key strategy here was the range of positive ways in which self-directed learning was expanded when a team of educators was involved. Rather than being under the close scrutiny of one educator, the students were being encouraged to share knowledge and research within and outside the team, share goals and add their personal knowledge through being given a more acceptable environment in which to transfer knowledge learnt within the university into practice.

This study fails to address exactly how the more senior grades felt about adopting different learning strategies and further research could reveal how they reacted to the changes. It must be appreciated that some could have found it hard to hand over responsibility to the more junior grades and students (Gravett, 2004). However, this lack of information did not inhibit the more experienced educators from continuing to show their commitment to clinical education. This is an example of how the educators consider how adults learn and have moved, as Cross (1994) suggested, from teachers to educators.

Having put the emerging changes into action through adopting team facilitation of learning and allowing more junior staff to be part of the clinical education team, it was important for the study to evaluate the quality of such changes. The final stage of the study addressed most closely the study question and is an evaluation of how, at the end of the degree course, the students evaluated how performance measurement and management led to good quality clinical education.

7:6 Evaluation of the quality of students' clinical education

In 2004 Bullough et al carried out an action research study that looked at links between teaching within an HEI, and teaching within clinical settings. They concluded that boundaries exist between the differing ideologies within the two environments. They cite the work of Wenger (1998), who believes that crossing such boundaries not only exposes differences in experiences and definitions of what is important, but also can be a process in which learning can be enhanced.

This study raises some specific areas where boundaries exist and where benefits and impairments might be exposed. Firstly, within physiotherapy education, students are taught by academic staff whose primary role is that of 'educator', whereas the clinical educators are foremost clinicians (other than in a small number of situations, where a person might be a lecturer/practitioner). Boundaries may exist if the two professional groups have opposing views on how learning should be approached and assessed. Consequently collaboration in developing work-based learning, which may be academically accredited and aims at 'fitness to practice', is vital (Brennan and Little, 1996), rather than the HEIs being only concerned with 'fitness for award' (Giot,

2000). It is not the educators but the students that cross the boundary from university to clinical placement and any differences in the approaches of academic staff and clinical educators could impact on the students' learning. However, rather than concentrating on any negative impacts from such a change, it is put forward that the potential indicators for good practice emerge from concentration on the positive effects. These may develop as the students have the opportunity to experience learning within different environments and with a range of facilitators. They will have a wide range of experiences on which to reflect but it is important that any potential impairment to such changes is well managed.

This could lead to a number of concerns when quality is considered. Were the clinical educators being given appropriate support both to define and carry out their role? These are issues widely demonstrated within literature that includes the work of Hesketh et al, (2001); Williamson and Webb, (2001); Landmark et al, (2003); Lambert and Glacken, (2005); Morrison et al, (2005). Secondly, were the educators knowledgeable in the teaching and learning strategies that might help them to facilitate students to transfer their theoretical knowledge into practice? This is a matter of great concern for students and as Rauk, (2003) concluded the literature does not have any definitive models to use when this is required. Clinical educators need to be very open and adaptable to the demands of different students. Thirdly, when health care students have been shown to experience difficulties in being prepared for the transition from university to clinical placement (Roe-Shaw et al, 2003; Seabrook, 2004; Prince et al, 2005) further boundaries can emerge.

The final questionnaire in the study was used as the measure of quality. It was completed after the students had finished all their studies and most had experienced different models of clinical supervision, including 1:1, one student with one educator, 2:1, two students with one educator and team supervision (teams where the number of educators to the number of students could vary). Moreover, the students had experience of these models with different grades acting as clinical supervisors, and had experienced learning within a range of clinical specialties.

An earlier study carried out by Seabrook (2004) had shown that the maturity and the gender of medical students had an impact on their aspirations and expectations whilst on clinical placements. Analysis of the final questionnaire also explored these issues. No statistically significant differences in the perceptions of students related to these two demographic profiles (gender and age). Furthermore, there was no statistically significant difference when a student's prior levels of educational achievements and qualifications were tested against beliefs and perceptions of the quality of clinical education. Interestingly, this was after a range of physiotherapy grades ranging in age and experience had supervised all students. Mature students were satisfied when facilitated to learn by physiotherapy staff who would have been younger, as well as older, than themselves and who may have had a lower level of academic achievement. This study mirrored, in part, that carried out by Murphy et al (2004) who also revealed that it was not necessarily the demographical profile of the students that impacted on quality but the ways in which students were facilitated to learn and this was closely linked to the students' preferred methods of learning. However, it is imperative to highlight that there are important differences in the studies; Murphy's sample was larger and comprised of dental students. Also the Murphy study related to teaching

and learning within the university rather than within a clinical setting. However, this does highlight an area where the outcomes from this study could be further explored, if a similar study looked at team facilitation of learning within the university.

Over half of the students reached the conclusion at the end of the study that a 'learning team' was the 'best' model. The students were in favour of the range of experiences that could be shared. They were also strongly influenced by a feeling of belonging that emerged from 'team' facilitation as a result of being placed with a range of personalities.

For the other students there was an equal distribution of preference for the Senior I grades and the Senior II. At the end of the degree course the students were in disagreement with the managers, who had believed that only Senior I grade staff would have the ability to manage the students and produce a high quality clinical experience. However, it is possible that the views of the managers could have altered having experienced team facilitation, and it would be interesting for further research, which could be a continuum of this action research study, to explore such perceptions.

Evidence showed that 80% of the students who took part in the study were satisfied with the quality of their clinical education and half of the students rated their clinical education with a strong degree of satisfaction. The reasoning lay with the abilities of the clinical educators and the ways in which they facilitated learning. Interestingly, those students who indicated that team supervision provided the best quality gave both a wider range of reasoning for their beliefs and, perhaps more importantly,

revealed that a greater variety of teaching and learning methods were being utilised to facilitate learning.

Despite the development of inter-professional education being identified as a key element in the NHS plan (DoH, 2000) evidence from this study showed that the students related quality of learning specifically to learning within their own profession. Only a few students mentioned that being involved in the multi-disciplinary team helped to facilitate their learning. This outcome was unexpected as these students had experienced inter-professional learning within the university and during many of their clinical placements they would have observed that physiotherapy staff are involved in a multi-professional team approach to patient management. The students appreciated observing other professions at work. However, there may be a need to look at the methods used by the clinical educators to promote inter-professional learning such as those explored by, amongst others, Freeth et al (2001), Hilton and Morris (2001), and Ponzer et al (2004), where courses and specific structured learning environments are geared towards promoting shared learning amongst, and between, professions.

Given the high level of satisfaction in clinical education, it may be concluded that, in this study, the clinical educators must have been matching their facilitation to the individual needs of the student, which Lindquist et al (2004) suggest enhances students' preparation for entering the physiotherapy profession. So far as sharing knowledge was concerned, all students revealed that the clinical educators were open to free discussion (Table 53). The students greatly appreciated being asked to give their personal opinion related to patient care and feedback of performance.

A positive implication resulting from this is the opportunity to enhance evidence-based practice, as the students were able to bring recent research evidence from their academic studies and combine this with the clinical educators' experiential knowledge. Some students found that this was initiated by being asked to give a formal presentation to the physiotherapy staff within the team. Consequently, through shared learning, both students and educators could be made aware of emerging evidence. As research has shown (Green and Ruff, 2005), lack of time and in some cases, lack of the necessary availability to access relevant electronic information, prevents some clinicians from keeping up to date with emerging research findings. Through the students being given time to research and to share this information, they may not only help a professional to retrieve relevant material, but could possibly help to influence the attitudes of some clinicians who may be resistant to exploring EBP changes in their patient management.

With only a very small number of students in the study being dissatisfied with their clinical education, it could be considered as an irrelevance. However, their opinions raise questions that are helpful for future management. The issues they raised do not highlight areas where specific research would improve the situation. However, they do highlight issues where further development and changes within courses for clinical educators may be considered.

Inconsistent marking was reported as a disadvantage. With such a variety of placements and educators, it is difficult to gain absolute consistency in the marking criteria. To address this, the marks given for all clinical placements over the time of the study period were audited, and only one educator was giving all students very high

marks. In this case the educator was a sole practitioner and therefore was not employing team facilitation. This meant that the educator did not have the availability of discussing student performance with a team of educators. All other educators were marking across the full scope from fail to first class degree classification.

A few students were dissatisfied with the range of placements that they had been allocated. Again audit showed that a few placements had been changed after allocation and after the students had arrived at placements due to staff movement. This resulted in a few students repeating a placement in an area where they already had experience. As the questionnaires were anonymous it was not possible to cross tabulate the students with the changes.

7:7 Conclusion of chapter

It is important to note that the two main changes made from the findings of this study – team facilitation of learning and involving more junior grades in clinical education – resulted in the students perceiving that their clinical education had been of high quality. Furthermore, through changing the patterns of shared learning, both students and physiotherapy clinical educators of all grades have opportunities to enhance both individual and professional development.

However, as with any research that adopts action research as its methodology, there are implications beyond the actual project. These are discussed in Chapter 8.

Chapter 8

Conclusions and ways forward

This study, through empirical research, highlights some of the difficulties related to acquiring and managing clinical placements, and addresses a need, identified by Kilminster and Jolly (2000), to explore models of supervision in order to inform practice. Changes, which came about as a result of the study findings, (namely the inclusion of more junior grades as CEs and the formation of the ‘learning team’) enabled more clinical placements to be found to manage increased student numbers. There are no claims made related to the superiority of this ‘new’ model. However, it is proposed that the model does address the suggestion in the literature (Strohschien et al, 2002), that a model which accommodates the diversity of students’ personal learning needs would be advantageous.

The changes brought about by the introduction of the ‘learning team’ were seen to be positive by the physiotherapy students at The University of Birmingham. Through exploring the perspectives of managers and CEs, and longitudinally following a cohort of students through the three years of their undergraduate studies, evidence demonstrated that those involved in facilitating learning possessed a good knowledge of teaching and learning. The changes that came about as a result of the study were advantageous for both the management and facilitation of clinical education. The findings of the study can be added to existing literature, and may assist others who are facing similar placement challenges.

The content of this chapter provides some tentative conclusions from the study. Firstly, it reflects on the methodology employed and the main findings of the study. Secondly, areas where further research might prove valuable are presented, and these are linked to issues related to developments within physiotherapy employment in the NHS. Issues are discussed in relation to the relevance of the study and areas for further development.

8:1 Reflection on the methodology

It is generally assumed that the conclusions of research should be an accurate representation of the data and should not include any representation of the researchers presence within the research (Mantzoukas, 2004). However, within qualitative research the underlying epistemological and ontological assumptions on which research is based recognise the inevitability of not being able fully to eliminate the researcher' beliefs. With this knowledge, it has been important throughout the study to avoid bias in both the data collection and the analysis, and to be explicit about my own background.

As there was an urgent need for more clinical educators for the students it raised the prospect of acquiring any placement without giving attention to the quality of such placements. Change was needed, but how that change was managed was key to safeguarding the educational quality. Using research to identify change was fitting, as there has been criticism concerning the lack of research evidence supporting physiotherapy education (Chipchase et al, 2004), and a call to defend practices, particularly in relation to clinical education.

Through adopting action research, the study was able to concentrate on the main aim of managing change (Cunningham, 1995) as action research has an explicit focus on managing change within organisations (Marsick and Watklins, 1997). This also meant that, through involving the ‘practitioners’ within the area where change was needed, collaboration between the ‘practitioners’ and researcher developed (Eden and Huxham, 1996). A weakness in this study lies in the omission of discussion with the participants of the methods of data collection, as this did not allow the participants to be involved in the development of the research process.

Acceptance of the researcher by the samples was key in gaining the data for the study. The high response rate throughout each stage of the research process was possibly due to the research methodology, as the ‘practitioners’ were made aware of the findings as they arose and the students were informed that educational quality was being considered.

According to Reason and Bradbury (2001:2):

A primary purpose of action research is to provide practical knowledge that is useful to people in the everyday conduct of their lives.

On reflection, action research was appropriate for this study as, through sharing findings throughout the study, it specifically provided knowledge to the people who were and continue to be, directly involved – the managers, clinical educators and students within the geographical area. However, through publication and presentation of research findings, information has been and will be shared with a wider audience.

The focus of the study was on the subsequent transfer of knowledge gained into practice and the promotion of change within the places of work in which the samples worked or studied. This has been of greater concern than the development of theory.

A final reflection on the research methodology is that it allows research to ‘carry-on’ from where it previously concluded, as further need for change is identified.

8:2 Critical reflection on the study’s main findings

The study set out to contribute to the debate on the provision and educational quality of clinical placements for physiotherapy students and to add to the literature. Despite the changes that arose being implemented within one geographical area, there are implications that might be applicable more broadly.

The NHS plan (DoH, 2000a, 2000b) to increase the number of physiotherapists has meant an increase in student numbers in a variety of HEIs, and the findings of this study may be of interest to those who manage clinical education in those areas. Furthermore, the study has shown that through gaining practitioners’ in-depth perceptions of problems within clinical education, and through involving these practitioners through times of change, new models of clinical education can be accepted (Potter, 2001).

The study has highlighted two main areas where change has taken place as a result of the research findings. Additionally, the study has evaluated such changes through the students exploring the educational quality of their clinical experiences, both whilst

changes were being developed and once changes were in place. However, the current situation for clinical education has an impact on the study findings and warrants some discussion, and that appears in 8:4.

It is not disputed that junior staff have had some involvement in clinical education for many years, but this has been on an ad hoc basis when existing clinical educators may have requested informal assistance. However, involving junior grades in a more structured process of managing students' learning during clinical placements was shown to have positive advantages, for both the students and the physiotherapy staff. Areas where more junior grades were involved in clinical education, be it as sole educators or as part of a structured team, showed perceptions of improved management. This was shown to benefit departmental management and improve upon individual management strategies. However, it should not be assumed that, as the advantages were perceived to outweigh the disadvantages, that further problems may not arise and that ongoing evaluation should continue.

The more junior grades are shown to possess a good range of abilities to facilitate clinical education and they were valued by the students. The evidence of this study suggests that they should receive the same recognition as more senior staff and be included in evaluation of the role of clinical educators. Equally, they should be given opportunities, both to develop and demonstrate their abilities within working practices. It is recommended that 'Junior' physiotherapy staff attend courses for clinical educators. Additionally it may be appropriate to include content on clinical education in the undergraduate curricula as a way of preparing future staff to become CEs.

The development of a structured ‘learning team’ model of clinical education supports earlier research that illustrates the importance of peer and shared learning within clinical education. The study has, however, reinforced the importance of considering factors that are specific to the individual learner during learning experiences, and that a structured team model allows students to work with, and within, a broader range of situations. It allows students to work alongside physiotherapy staff who have differing degrees of experiences and varieties of personalities. Importantly, this model provides a greater range of physiotherapy grades to become part of a peer learning team, and for them to use this as part of their personal continuing professional development.

The changes made during the time in which the study was undertaken resulted in enough placements being found to accommodate the increased student numbers and the placements were perceived by the students to be of high quality.

8:3 Limitations and areas for further research

A number of suggestions for further research have been included. The views of managers could be sought in relation to the impact of the team model on their overall management and whether this has any implication on the quality of such management. Failing to seek these views, at the end of the study, may be regarded by some as a study limitation.

The study showed that clinical educators were facilitating learning in ways that the students perceived suited individual learning styles. Exploring if and/or how learning

styles are considered within academic modules would provide data to compare with this study.

Even though very few students highlighted inconsistent marking of clinical placements as a weakness, there is a pressing need to find ways to make this more uniform as it could have major implications on the overall outcome of the students' degree classification.

Despite adopting a methodology which allowed the development of change to emerge as the study progressed, it might be argued that the perceptions of the quality of the changes was skewed in favour of the beliefs of the students. The physiotherapy managers and clinical educators accepted the changes and demonstrated this by offering to accommodate more students. Further research, that might be conducted as a continuum of this action research, could seek to evaluate how those who manage students' learning appraised the changes.

The study has provided details of how learning benefits evolved within the development of the 'learning team' model for all levels of physiotherapy grades, from students to most senior grades. Further research could be centred on exploring if, and to what degree, qualified physiotherapy staff, who adopt the role of clinical educator, use the knowledge shared with, and gained from, students to influence their clinical practice. This could be related to evaluating how this gained knowledge might impact on their adoption and implementation of evidence-based practice, and whether it has quality implications. Further research might consider if the outcomes from shared learning, when students and qualified staff are part of a peer learning team, can be

embedded more systematically within the Chartered Society of Physiotherapy CPD Briefing and Policy Statements (CSP 2003c).

8:4 The current situation

Since completion of the study, student numbers increased at the University of Birmingham and up to September 2007, there was a yearly intake of one hundred and twenty five students (one hundred students at undergraduate level and twenty five at MSc-pre registration level, all of which require clinical placements). This had a bearing on the usage of available placements. Despite the adoption of the 'learning team' model and the involvement of more junior grades in clinical education, those who are now involved in finding the placements are experiencing some difficulties in placing students. This highlights the importance of continuing research in order to maintain a high quality of clinical placements.

Recent changes within the NHS could also be having an impact on the problems. Whereas the perspectives of the managers and clinical educators in this study highlighted that accommodating students was more advantageous than disadvantageous, recent changes could possibly lead to differing views. In terms of management, this study showed that accommodating students was believed to be beneficial in both attracting and retaining physiotherapy staff, which, during the time of data collection, was proving to be a problem. This in itself could have been a driver for offering to accommodate students. However, the 'job situation' has now changed and new graduates are having difficulty in securing junior posts within the NHS (Limb, 2006a, 2006b). Additionally, some NHS Trusts are faced with the possibility

of job losses. On the one hand this could influence a willingness to increase the number of students within departments, as staff numbers may be down, and concerns with patient throughput could lead managers to request that staff concentrate on patient management rather than clinical education. On the other hand, managers may encourage students into their department in order to increase the workforce. In the longer term a reduced workforce might result in fewer undergraduate students, and so lessen the challenge of finding placements.

In order to keep quality in the forefront, these changes need to be monitored closely. The CSP is closely examining the employment situation (despite the difficulties the government, at present, does not want a decrease in student numbers), and the job opportunities open to new graduates, including within education, research and private practice, are being explored. One possibility is that the employment situation may have implications for the number of applicants applying to study for a degree in physiotherapy.

Through exploring the complexities and interacting factors that are embedded within clinical education, this study has highlighted some benefits which may be used to improve management. It would be detrimental if quality were to be influenced by the current NHS situation. The importance of on-going research is fundamental if standards are to be maintained throughout all phases of learning, with the aim of students and qualified staff providing high quality, evidence-based health care.

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APPENDICES

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