Developing student teachers' understanding of teaching and pupils' learning : the role of support and challenge in the mentoring of student teachers

Thesis

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DEVELOPING STUDENT TEACHERS' UNDERSTANDING OF TEACHING AND PUPILS' LEARNING:- THE ROLE OF SUPPORT AND CHALLENGE IN THE MENTORING OF STUDENT TEACHERS

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ABSTRACT

This study focuses on initial teacher education and results from the shift from college-based to school-based training in recent years. Specifically, the course involved is a post-graduate School Based Teacher Training Scheme (SCITT) in which the main participants are school-based training managers and mentors who hold the major responsibility for training trainee teachers. The study incorporates largely ethnographic research drawn from the participants taking part in several one year P.G.C.E. teacher training courses run by a non profit making Consortium, which is comprised of a partnership of secondary, primary and special schools together with colleges of Further Education.

The data is obtained from introductory questionnaires, analysis of documentation including the trainees' course and subject handbooks and training documents for mentors, and finally audio-recorded interviews with six mentor-trainee teacher pairs.

The study lays a particular emphasis on the role of support and challenge in mentoring and the effect of mentoring on student teachers' professional growth, specifically their understanding of learning to teach and of pupils' learning. The study is constructed around four themes:-

A. Mentoring and Teacher Professional Development.

B. Teachers' and Student Teachers' Beliefs about Teaching.

C. Student Teachers' Subject Knowledge.

D. Mentoring and Children's Learning.

The importance of the study is the need for more research into the complex relationship between support and challenge in the training of student teachers, when the primary training role is that of the school-based teacher-mentor.

The findings are as follows:-

The study highlights the effectiveness of school-centred initial teacher training schemes in producing competent, thoughtful and highly motivated professionals who place children's learning at the centre of their teaching. It also emphasises the importance of the mentor's role in the student's training and professional growth. In the hands of skilful, experienced mentors the process offers the chance that students can become more rounded professionals providing that mentors are adequately trained.

Trainees were more concerned with immediate classroom skills in early stages of their training. In general, the study found unequal amounts of support and challenge from mentors with the focus largely on support for the student, particularly early in the training. Students tend to lack awareness of being challenged. However, the study concludes that to achieve students' optimum professional growth, high levels of support and challenge are necessary. Support not only to engender improvement in classroom skills but also to enable students to have the confidence to express their personal beliefs about teaching and learning.

The study's findings have important implications for mentor training, namely that if mentors were required to be conversant with theories of knowledge advocated by the SCITT and with the social, moral and ethical issues of teaching, they may be more inclined to challenge students' thinking on these issues. Furthermore, students' beliefs are more likely to be challenged by more skilled and knowledgeable mentors who could then help to clarify these beliefs and perceptions of teaching. Consequently, students may be encouraged to reflect critically on children's learning beyond the aim of enhancing their understanding of subject matter and obtaining academic success, to engage the pupils with these public forms of knowledge.

ABBREVIATIONS

DES	Department of Education and Science
DfE	Department for Education
DfEE	Department for Education and Employment
DT	Design and Technology
GCE	General Certificate in Education
GTR	Graduate Teacher Programme
HE	Higher Education
HEI	Higher Education Institution
ICT	Information and Communication Technology
IT	Information Technology
ITT	Initial Teacher Training
KS1/2/3	Key Stage 1/2/3
LEA	Local Education Authority
LMS	Local Management of Schools
MFL	Modern Foreign Languages
OFSTED	Office For Standards in Education
PDP	Professional Development Portfolio
PE	Physical Education
PGCE	Post-Graduate Certificate in Education
PSHE	Personal, Social and Health Education
QCA	Qualifications and Curriculum Authority
QTS	Qualified Teacher Status
RE	Religious Education
RTP	Registered Teacher Programme
SCITT	School Centred Initial Teacher Training
TM	Training Manager
TMA	Tutor Marked Assignment
TTA	Teacher Training Agency
U.K.	United Kingdom
U.S.A.	United States of America

Note that all persons and institutions in this study have been treated anonymously.

CHAPTER 1: INTRODUCTION & BACKGROUND TO THE STUDY

Introduction

Queenston High School is an 11-16 rural comprehensive school with 610 pupils on the roll, situated in Midshire. In July 2000, Queenston completed a one year collaboration with the Borders Consortium and Midshire College of Higher Education in a post-graduate SCITT Scheme. The school then dropped out of the scheme. This followed on from a six year partnership with Perrin's College of Higher Education in a previous post graduate teacher training scheme. From the outset of the former scheme, the researcher's role was that of a subject mentor for Chemistry.

Initial Teacher Training and Partnership

In order to place this study, it is important to recognise how SCITT schemes fit into the changing patterns of provision for initial teacher education, especially regarding the role of theory and practice, and partnerships between schools and higher education institutions. It is the purpose of this section to do this, showing the professional and political content of the Consortium at the centre of this study.

This study is written against the background of continuing debate about the most effective methods of initial teacher training. There are different interpretations of what 'effective' means. It can be seen as any of the following:- the trainee gaining the required teaching skills to manage a class of pupils; to deliver competently a prescribed curriculum; the successful application of educational theory into practice; the development of understanding and expertise through systematic enquiry into and reflection on practice. One could suppose that discussion of just how teachers should be trained has always taken place but the debate has been particularly contentious in recent decades.

The traditional method for training teachers was the 'apprenticeship' approach. This system, based on 'on the job' training in one school may have been effective in giving the trainee a set of techniques needed for teaching. However, there was the danger that this approach resulted merely in the trainee accommodating the practices which prevailed in the particular school in which the learner was placed. Additionally, there was little challenge to the student's preconceptions of teaching. This model became increasingly seen as inadequate and in need of being replaced. Bines and Welton (1995) argue that there have been two main driving forces for change in teacher education over the last four decades. The first impetus has been educational and professional concern about the content of teacher training courses and particularly the balance and relationship between theory and practice. Firstly, there was a move to a fully graduate teaching profession. This was achieved by the devolving of provision and validation of training courses to higher education and the upgrading of the length and quality of the academic components of these courses. With a few exceptions, this resulted in a hierarchical relationship between higher education and schools with the latter rarely consulted about the training courses for which they provided teaching practice. Thus, it was the academic components of training that were formally dominant. This dominance of theory over practice was increasingly challenged from the mid-1960s onwards. Wilkin (1990) argues that theory suffered an epistemological challenge from those engaged in academic debate such that its role became seen as subordinate to practice with its function now to clarify or refine professional activity. Additionally, the role of theory received professional challenge from those within teacher training since it was felt that it failed to provide answers to problems in the classroom. Thus, its value within the curriculum was diminished.

The growth of partnership can be seen as a consequence of the shift in the balance between theory and practice (Wilkin, 1990; Griffiths and Owen 1995). With the gradual erosion of theory and the strengthening of practice, teachers became more actively involved in teacher training and the term partnership was used more and more frequently. Wilkin (1990) explains that

this shift in emphasis led to the emergence of two models of the theory-practice relationship at opposite ends of a "continuum" (Wilkin, 1990, p.7). At the 'traditional' pole, the tutor remains the expert in theory and guides trainees to develop understanding of their practice. At the opposite 'radical' pole, the practitioner, as the owner of a personal theory is the expert with the role of theory confined to helping the trainee to articulate and refine this practical theory.

Bines and Welton (1995) explain the second impetus for change in teacher education was political. These changes have been part of substantial reform of the education system which has gathered pace under successive governments since the 1980s. Developments such as the National Curriculum, local management of schools (LMS) and changes in the role of LEAs have all had a major impact on every aspect of school education. In addition, there have been a series of government policy interventions leading to the introduction of a variety of schemes for initial teacher education that require and emphasise the role of partnership involving two or more of the following:- schools, LEAs, higher education institutions and trainee teachers. Circular 3/84 (DES, 1984 in Wilkin 1990) made partnership a mandatory requirement of training courses, although, as alluded to earlier, this particular government initiative merely confirmed a professional trend that had been apparent for several years. Also in 1984, strict accreditation criteria for initial teacher training was implemented when the Council for the Accreditation of Teacher Education was established as a replacement for the previous validating body, the Council for National Academic Awards. However, from the mid-1980s, government legislation on ITT diverged markedly from professional developments. Circular 24/89 (DES 1989, in Griffiths and Owen, 1995) gave more responsibility to schools for mentoring rather than simply supervising students. Griffiths and Owen (1995) go on to say that Circular 9/92 (DES, 1992 in Griffiths and Owen, 1995) expects school-based partnerships to become the norm in the secondary sector as well as stating the amounts of time which trainees teachers are required to spend in their 'partner' schools. Circular 14/93 (DfE, 1993 in Griffiths and Owen, 1995) clearly shifted the balance towards

schools in that they were no longer required to work in partnership with HEIs. They may do so or take the lead by setting up their own school-centred schemes. In 1994, the oversight and funding of all initial teacher education was handed to the newly formed Teacher Training Agency (TTA) which was itself answerable to the Secretary of State for Education. Subsequent Labour administrations have not altered the situation markedly with the result that the role of HEIs in initial teacher training has continued to be undermined.

Bines and Welton (1995) argue that the focus on partnership is not merely a reflection of government's aim to develop a more effective system of teacher education, but that it is part of "a political climate of critique to legitimate reform" (Bines and Welton, 1995, p.14). Thus, it is part of wider agenda shifting the responsibility and funding for teacher education away from higher education and "the imposition of a utilitarian view of education" (Bines and Welton, 1995, p.15). Edwards (1995) affirms that this challenge to the traditional role of higher education in teacher training stems originally from the disdain of Conservative governments in the 1980s and 90s for educational research and their perceived view of the ineffectiveness of initial teacher training. For example, it has been suggested that courses run by higher education were too theoretical and therefore the impractical nature of the training left new teachers ill-prepared for classroom teaching. This is exemplified by the James Report (DES, 1972 in Griffiths and Owen, 1995) which criticised university-validated ITT courses for being too academic. The claim that 'progressive' teaching was pervasive in primary schools and the supposed left-wing bias of higher education were also used as evidence of the adverse influence of higher education. Authors such as Bines and Welton (1995) argue that such attacks had the specific purpose of legitimising reform to involve a stronger role for schools, yet, as alluded to earlier, this critique was occurring in a climate of increasing partnership between higher education and schools. Glenny and Hickling (1995) go further in stating that this has led to an endorsement of the apprenticeship model and the concomitant minimising of wider, more reflective approaches provided by higher education. Griffiths and Owen (1995) cite the Licensed

teacher and Articled teacher initiatives as schemes founded on the apprenticeship model, with an emphasis on the acquisition of skills or competences rather than the development of practice through critical reflection. Glenny and Hickling's assertion is supported by Edwards (1995) who suggests that the then Conservative government saw teaching as a practical activity for which theory is irrelevant. She quotes a government minister's contention that teaching can be learned "simply by doing and emulating good role models" (Edwards, 1995 quoting Cox, 1989, p.165). Bines and Welton (1995) make a similar point in referring to the then Secretary of State's comments to the effect that teaching is a straightforward activity which can be learned largely through practice (Clarke, 1992). These authors suggest that this is the primary reason for the introduction of school-based training in the early 1990s and the expansion of such schemes under subsequent Labour administrations. They go on to affirm that these beliefs have legitimised the deliberate narrowing of the scope of initial teacher training by excluding the wider contexts of schooling, and focusing instead on the immediate tasks of instruction, classroom management and assessment.

Partnership past and present

Since 1989, a variety of schemes have been introduced which stress the importance of partnership.

The Articled Teacher initiative introduced in 1990 but no longer available, involved a partnership between LEAs, schools and higher education institutions (HEIs) and was set up as an alternative to the traditional Postgraduate Certificate in Education (PGCE). During this two year course, students spent much more time in schools than trainees on conventional courses but only in one school. The involvement of an HEI provided quality assurance and academic integrity.

The Licensed Teacher Scheme, also introduced in 1990 and now not available, involved a contractual partnership with unqualified teachers. The

school or LEA recruited students and HEIs only took part in the training at the discretion of the school or LEA. This scheme was set up to regulate the acquisition of Qualified Teacher Status (QTS) by overseas-trained teachers and to encourage others to change careers and enter teaching. Licensed teachers were recruited by the school or LEA, were based in one school, training 'on the job' for a specific period 'under license' (usually two years) before being assessed for QTS.

The Graduate and Registered Teacher Programmes have replaced the Articled and Licensed Teacher schemes, but offer similar employment-based routes into the profession. Whilst following a training plan that leads to QTS, trainees are employed by schools as unqualified teachers. The Graduate Teacher Programme (GTR) is open to those with a first degree equivalent whilst the Registered Teacher Programme (RTP) necessitates a partnership with an HEI since participants must complete a degree at the same time as qualifying as a teacher.

In the School-Centred Initial Teacher Training (SCITT) scheme, consortia of schools (which can be primary or secondary, state or independent) have prime responsibility for development and delivery of the training course and for assessment of students. SCITTs are funded directly from the government and are encouraged to involve higher education although there is no requirement for this. Despite being in operation for over a decade, SCITTs still provide training for a small minority of student teachers, appoximately 2000 places out of a total of some 30,000 in 2004.

Two recent developments are of note at this point. Firstly, the creation of the General Teaching Council in 2002, a body which monitors the training process and seeks to safeguard professional standards. Secondly, the establishment of Training Schools. The aim here is a network of high quality Training Schools which will build up and disseminate good and developing practice in ITT with other schools and their training providers.

Finally, at present, the different forms of partnership between ITT providers and schools are as follows :- schools working in partnership with an HEI on

two, three or four-year undergraduate and/or one-year postgraduate programmes; several schools working together, with or without the involvement of an HEI, to provide school-centred initial teacher training; a school working with an HEI, LEA or another school to provide an employment-based route to QTS. Each trainee teacher must have experience in at least two schools and spend a minimum number of weeks in school ranging from 18 weeks for all primary postgraduate programmes to 32 weeks for all four-year undergraduate programmes.

The position of SCITTs in the national provision for ITT

I have referred to Wilkin's (1990) idea that national ITT provision exists as a continuum from the traditional through to radical approaches. One can argue that the shift in responsibility for ITT away from HEIs towards schools now leaves a situation in which few if any 'traditional' courses exist. HEIs have more control of the training in the two, three and four year undergraduate programmes. Indeed, trainees still spend far more time in college than on school placement in the three and four year courses. Additionally, these courses still try to provide a deeper understanding of the aims and purposes of ITT as well as the practical aspects. However, theory and practice have not remained entirely different areas of expertise. Rather, trainees are encouraged to use theory to investigate their own practice.

The place of SCITTs in the national picture is clearer. It is firmly towards the radical pole of the continuum. Theory and practice are ostensibly integrated and the former has more to do with personal practical principles that the student acquires than with 'scientific' theory transmitted didactically. The location of power and control is firmly with consortia of schools. The Borders Consortium SCITT of this study is typical in that it has prime responsibility for development and delivery of the course. It gives practically orientated training in which the role of mentors and tutors is not merely supervisory but to enhance the student's understanding of the practicalities of teaching. However, it is atypical in that, in terms of student numbers, it is now the largest SCITT in the country and it lays a critical

emphasis on the central role of the training manager (page 11) who oversees the training in school as well as being the key link with the HEI. This SCITT, through experienced training managers, mentors and tutors, aims for an integrated approach in which college theory can be incorporated into students' practical training.

The Borders Consortium SCITT

The Borders Consortium is a non-profit making partnership of secondary, primary and special schools together with the colleges of Further Education, The Careers Service and The Training Providers. A start to Initial Teacher Training (ITT) was made in September 1998 with an 11-18 PGCE Programme leading to the Qualified Teacher Status (QTS). The drive for a 7-14 scheme came from the Primary School Headteachers who recognised the benefits of partnership for schools and wanted to become involved in school based initial teacher training. The 7-14 scheme started in September 1999 following more than 12 months work by a group of Primary Headteachers. Although Queenston High School dropped out of the SCITT after one year, the number of schools taking part in the scheme has increased since its inception in 1998.

From its inception, the Consortium has ensured that it has met government requirements for initial teacher education. Successful completion of the course of initial teacher training requires that trainees must achieve all the standards set out in DfEE Circular 4/98. The SCITT is overseen by OFSTED, the last inspection and report having taken place in the academic year 2000-2001.

Student Numbers

In 1998, the original 11-18 scheme was followed by 21 students of whom 20 gained the PGCE and QTS. At the start of the September 2000 school year, 16 of those students were employed in teaching. In that first year, 16 High Schools/Colleges were involved and 6 subjects were offered:- Geography, Maths, MFL, PE, RE and DT.

The phased recruitment continued in 1999 with the introduction of the 7-14 programme and an increase in student numbers to 42 of whom 28 gained the PGCE and QTS. The student numbers were evenly distributed between the 11-18 and 7-14 programmes, 15 Primary Schools and 18 Secondary Schools/Colleges were involved and two new subjects were offered-English and History.

The expansion to the structure of the Borders Consortium SCITT continued in subsequent years. In addition to the 7-14 Primary Course and 11-18 Secondary Course which featured in the initial study, two further courses are now in operation. These are an 11-16 Course and 14-19 Course.

The Borders Consortium itself has expanded considerably. In the academic year 2001-2002, during which the data for this study was collected, it extended across four geographical areas. Fifty-seven schools accommodated trainees in Autumn Term 2002 and a total of 87 students were involved initially, 45 of which were primary and 42 secondary. Sixteen students trained with Science as their major subject (12 primary and 4 secondary trainees).

In addition, the Borders Consortium has designated 4 secondary schools as 'Leader Schools'. The Leader Schools provide a base for meetings and the local delivery of training in addition to providing support, guidance and assistance to schools and colleges within the SCITT Local Partnership and encourage and support new members. The aim is that this will have the benefits of development of and staff involvement in best practice, access to additional resources and generally to support colleagues within the SCITT.

Recruitment

Originally, the scheme aimed at recruiting mature, local students. Therefore, there is extensive local marketing through the press, radio and T.V., the Chamber of Commerce, employers, schools and colleges, parish magazines, the Careers Service and 'Keynotes'- the weekly Borders Consortium

newsletter. There is still a strong local emphasis to the scheme but it is now aimed at students of any age and is marketed nationally through Journals, the National Press, University and HE Libraries, the Graduate Teacher Training Agency, Higher Education Career Services and the Internet.

Course Aims

The Course's aim is to train teachers who are highly qualified reflective practitioners. In particular, they must meet the Standards for the award of Qualified Teacher Status as set out in DfEE Circular 4/98. The subsidiary aim is to foster further collaborative working within the schools and between teachers in the Borders Consortium.

Structure of the Course.

There are in-built assessment structures which help trainees to audit their knowledge and support is available to remedy weaknesses. The key personnel involved in this process of support are the Mentors (subject specific at KS3 and General at KS2), the Subject Advisers and the Training Managers. Appendix 1 provides details of the roles of the course personnel including a diagram of the personnel structure and brief information on training.

The chief assessment mechanism is the Professional Development Portfolio (PDP), based upon QTS Standards as set out in DfEE Circular 4/98 and provides a mechanism by which the various elements of the course can be integrated. Evidence of meeting QTS Standards can come from work in school, from Professional Preparation Study at one of the colleges involved with the scheme and from Subject Pathway Units. The PDP is the trainees' responsibility but there are formative opportunities for its regular review. These, together with contributions and endorsement by training managers, subject mentors and subject advisers aim to ensure that it is an integral component of the assessment process and central to the trainees' professional development. Therefore, the PDP is a means by which trainees can be responsible for their own professional development.

The award of the PGCE is based upon the satisfactory completion of all Professional Preparation units, Main Subject units, School Placement units and ICT units. Appendix 1 gives an outline to the course including details of the course units and school placements.

The award of QTS is based upon the Parent School training manager's recommendation to the examining board. The assessment is judged against the QTS standards in the PDP - the core requirement for successful completion of the course.

The concept of 'The School Training Manager' is central to the SCITT and is recognised as such in the SCITT's OFSTED report following its inspection in the academic year 2000-2001. Each trainee has one training manager who is the day-to-day line manager for the scheme and the ultimate arbiter in decisions of assessment, making recommendations to the Examining Board, writing references and acting as a critical friend. Two models are in operation:- Model A) The Single School Model for KS3 or KS2 placements in large primary schools and Model B). The Cluster Model for KS2 placements in small primary schools. In Model A, both training manager and mentors will be teachers in the same school. Model B is the option for clusters of rural schools. Here the training manager (from either one of the primary schools or from a local partner secondary school) operates across several primary schools and works with a mentor in each school.

My role as mentor and researcher

I taught at Queenston High for over twenty-three years. The Science Department comprised five teachers, two of whom had been present for longer than myself. We considered ourselves to be friends in a close-knit department. As explained earlier, Queenston had previously been involved for six years with Perrin's College PGCE Teacher-Training scheme, starting in 1993. I volunteered and was chosen as a chemistry subject mentor. I used both the E830 and E835 Open University courses as well as Part 1 of the Doctorate programme as vehicles for small scale studies into mentoring. However, I did not act as a mentor after 1997 because of the school's gradual decrease in the numbers of students it accepted.

For my first two years as a mentor I read little of the theory or research on the subject, except for rather superficial coverage of these aspects in the Perrin's College Handbook. At first, the role of a mentor was merely a useful addition to my curriculum vitae. However, I quickly realised that I was getting more from the role. My teaching may have profited as much, if not more than that of my students, given that I was a beginner in this role. This process progressed during 1993 when my mentoring role was accompanied by studies in E830, Mentoring.

All but one of my students were in their twenties and embarked on teacher training immediately after their university degrees. Perhaps because of their inexperience coupled with my rawness as a mentor, initially I considered that the mentor should act primarily as a 'role-model' and performed it as such. The aim was to support the student to achieve competence at teaching. Indeed the Perrin's scheme was based on the student's professional growth through the development of seven 'generic' competences which provided a ready-made assessment framework. In retrospect this approach may have been insufficient to advance the student beyond minimum classroom competence-particularly in the hands of a mentor who was still feeling his way through the role. Initially, there was very little of a 'collaborative' approach between the student and mentor and a minimum of critical

reflection by either participant. Debriefing sessions usually consisted of suggestions on how I would tackle a task and any reflection that did occur was centred around classroom management, with consideration of the National Curriculum and to a lesser extent subject knowledge, being skimmed over.

Even before the end of my first year as a mentor I realised that mentoring was having a beneficial effect on my teaching and that the competency model of mentoring fell short of what was required. In an early E830 TMA, I recall using a quote from Anderson and Shannon (1995, E830 Reader. P.29) in which I at first saw the mentor as one who "teaches, sponsors, encourages, counsels and befriends a less skilled or less experienced person" with minimal reflection and no hint of challenge built into the role. Yet merely acting as a role model is bound to focus attention on one's own practice to a degree, so by the time of my final student in 1997, my increased experience and knowledge of the mentoring process led to a more thoughtful, collaborative technique incorporating much discussion of the National Curriculum, how children learn, how to explain her subject knowledge in a way that children understand, encouraging the student to try out her own ideas and then reflecting on their appropriateness etc. That final student eventually became a member of the Science Department and, although both of us have subsequently retired from teaching, our discussions are ongoing and alive today.

CHAPTER 2:- RESEARCH THEMES AND LITERATURE REVIEW ON MENTORING

THE RESEARCH THEMES

The original title of the study was 'An Evaluation of the Training of Mentors in a SCITT Scheme'. However, my reading of the literature on mentoring brought about two changes in emphasis, namely, to the number of research themes and to the title of the research project itself. The study was centred initially around three themes. However, the development of students' subject knowledge is now considered sufficiently important to be added to the research themes. Thus, the central themes of the study are now:-

A. Mentoring and Teacher Professional Development.
B. Teachers' and Student Teachers' Beliefs about Teaching.
C. Student Teachers' Subject Knowledge.
D. Mentoring and Children's Learning.

As to the title of the research, the focus has shifted firstly to concentrate on what mentoring processes enable the professional development of both mentors and trainees, and finally to rest on student teachers' understanding of teaching and pupils' learning combined with the concepts of support and challenge.

LITERATURE REVIEW

The following review of the literature on mentoring is arranged according to the four themes identified earlier.

(A) MENTORING AND TEACHER PROFESSIONAL DEVELOPMENT

The concept of challenge

Mentors have become an essential part of initial teacher training in recent years. Indeed, the ITT requirements espouse mentoring as the most effective method of teacher training. This is supported by most of the literature and the concept of challenge is a central idea in much of this literature.

In his seminal work, Daloz (1986) describes the characteristics of support and challenge and discusses the possible impact of the dynamics of these two on student teachers' learning. He describes support as an affirming activity in which the learner feels cared for. Daloz argues that, through mentor support, a relationship built on trust must first be established in order that the mentor may then introduce challenge. He states that the function of challenge is then "to open a gap between the student and the environment, a gap that creates tension in the student, calling out for closure" (Daloz 1986, p. 213). Daloz refers to this process as "cognitive dissonance, the gap between what we believe should be the case and what appears 'in reality' to be true" (p.189). Kagan (1992) regards challenge engendered by cognitive dissonance as essential to trainees and says that without it and the "concomitant mitigation of pre-existing images, knowledge acquired ... appears to be superficial and ephemeral" (Kagan, 1992, p.147). Other authors use similar arguments. Mayer and Goldsberry (1993) argue for the importance of having productive tensions whilst Martin (1996) explains that when facing challenge, students experience tension and have a tendency to move from a position of 'unstable equilibrium' to one which is stable. Butcher (2002), explaining Daloz's ideas states that cognitive dissonance is

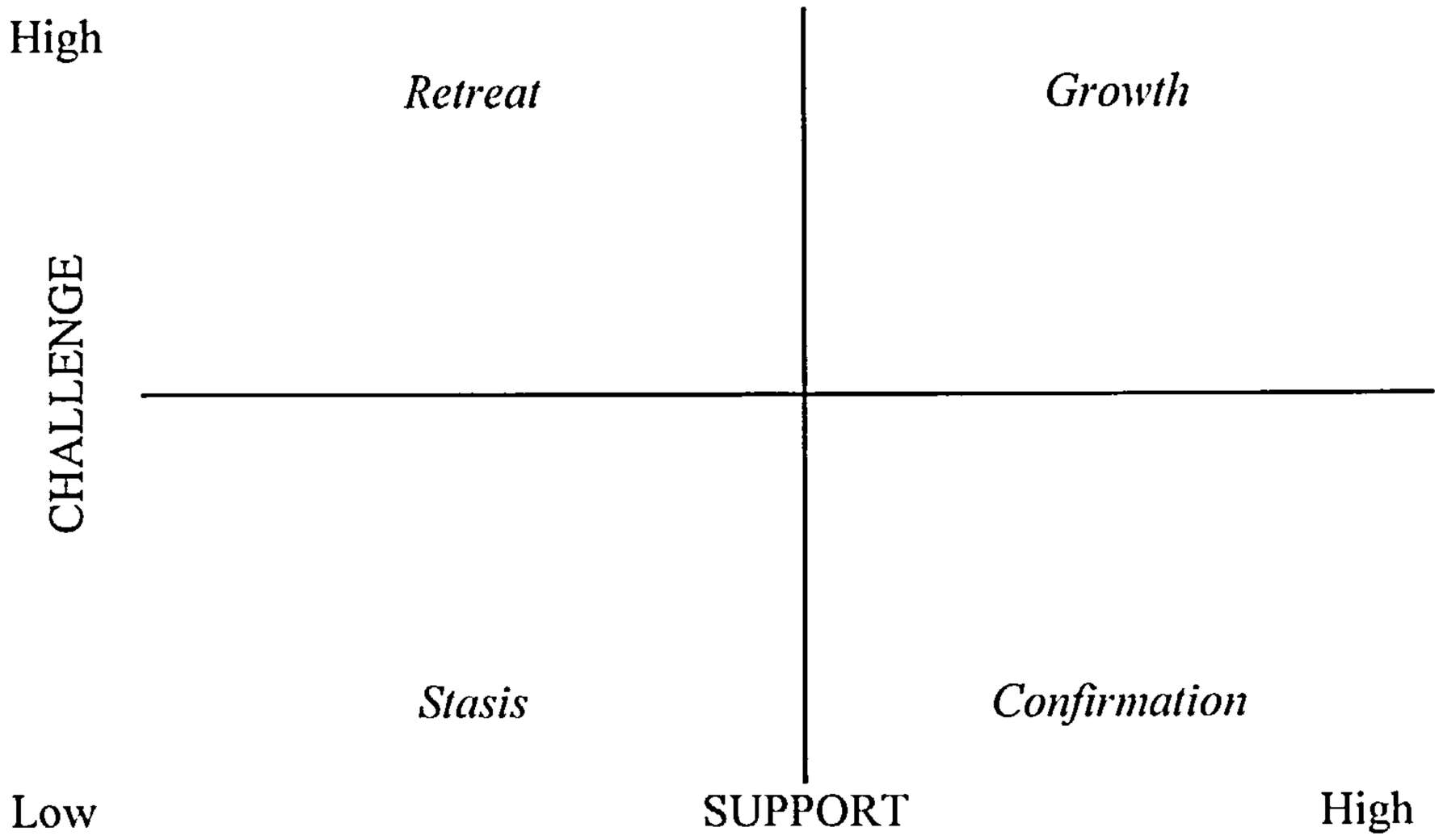
introduced by the mentor to "question student thinking and critique student preconceptions and tacit assumptions" (Butcher, 2002, p.198).

Daloz explains that support is exemplified by more open-ended strategies such as listening, providing structure, establishing positive expectations and making the trainee feel that their relationship is special. Daloz suggests that these approaches are more favoured by female mentors, whilst male mentors may be more comfortable using challenging techniques such as setting tasks, engaging in discussion, taking differing or opposing perspectives, constructing hypotheses and setting high standards. Daloz affirms that the final strategy mentioned here helps students to "construct positive self-fulfilling prophecies" and to "challenge students to challenge themselves" (Daloz, 1986, p.229). This study will analyse the types of support and challenge utilised by mentors. The descriptions of support and challenge used in the study are based on Daloz's interpretations, that is, supportive roles suggest affirmation of the student whilst challenge opens a gap between the learner and the environment, calling for closure.

Daloz represents the balance between support and challenge as four quadrants (Fig. 2.1, p.17) corresponding to four varieties of the mentor-student relationship. When both support and challenge are low, standstill (stasis) results with little progress likely to take place. When support is enhanced, the potential for growth increases. However, support without challenge confirms the status quo with students likely to respond by feeling good about themselves but will not be stimulated to develop any further. Butcher (2002) suggests that in this case the mentor role is effectively that of counsellor. However, too much challenge in the absence of appropriate support, can drive the trainee to retreat or withdraw as a trusting relationship has not been established. Gipe and Richard (1992) summarise this scenario in saying that "an overly threatening field placement may promote negativism and stagnation" (Gipe and Richard, 1992, p. 486). High levels of support and challenge is the combination most likely to lead to student growth. Thus, challenge and support are

"complementary to student teachers' professional learning" (Tang, 2003, p. 486).

Fig. 2.1



Daloz's model of support and challenge in mentoring relationships

From their research, McNally and Martin (1998) refer to three mentor typologies which correspond directly with three of Daloz's quadrants. The 'laissez-faire' mentor supports and nurtures but is non-challenging, non-interventionist and reactive, allowing novices to proceed at their own pace. Students then have to challenge themselves to progress beyond minimum competences. The 'imperial' mentor holds strong views about teaching and learning, is interventionist, challenges the trainees' ideas about teaching leading them to discover the mentor's beliefs, but little support is offered. 'Collaborative' mentors are the most effective. They are likely to be more experienced as mentors, combining support and challenge empowering students "to engage in learning to teach as a critically reflective process" (McNally and Martin, 1998, p.47) and take risks in a collegial and supportive climate.

McNally and Martin's (1998) research typifies the literature on mentoring in finding that mentors acknowledge challenge to be a key factor for growth. However, their research found that mentors were not strong in this role, preferring to respond to students' initiatives rather than being proactive.

Indeed, the general trend reported in the literature consistently points to the lack of challenge in the interactions between mentors and trainee teachers, (Jacques, 1992; Elliot and Calderhead, 1993; Abell et al. 1995; Cameron-Jones and O'Hara, 1995 and 1997; Martin, 1996; Hawkey, 1997; Butcher, 2002). Abell et al. (1995) speak about the intense quality of support which trainee teachers receive, using terms such as 'empathy' and 'understanding'. I have found only one small study (Wenham, 1996) that departs from this general view. Wenham reports that appropriate levels of challenge were a feature of the relationship between teachers and students he studied. My study will examine how much support and challenge is used by mentors and the relationship between these two strategies.

Whereas there is a consistent trend of lack of challenge reported in the mentoring literature, the reasons given for this trend are varied. It has been argued that the dominance of intense support reported by Abell et al. (1995) above might mask the student's perception of challenge, even if it is present in the mentor's strategies (Cameron-Jones and O'Hara, 1997). Elliot and Calderhead (1993) speculate on several possible reasons. The authors agree with Hawkey (1997) in suggesting that neither mentors nor trainees may want to put their dependent relationship at risk. Alternatively, mentors may believe that learning to teach offers sufficient challenges without adding to them. Elliot and Calderhead suggest also that it is possible that the only adult relationships that mentors experience in schools are based on friendship with other colleagues rather than those related to learning. These explanations point to the influence of mentors' preconceived beliefs on the way they mentor and will be a significant part of this study.

Other authors place the mentor-mentee relationship at the core of this lack of challenge. Haggarty (1995) points to mentor politeness which results in disagreements being ignored or unexplored. Similarly, Jacques (1992) describes the temptation that mentors may have to ignore difficulties faced by mentees, both parties collaborating in "a conspiracy of silence" to avoid the issue (Jacques, 1992, p. 345). Concerns that challenge may be associated with assessment and thus perceived as being critical or judgemental have

also been put forward as reasons (Stark, 1994; Martin, 1996). The culture of the school may also have a bearing on this issue. Edwards and Collison (1996) refer to schools where challenge is seen as a negative, interfering activity, whereas Elliot and Calderhead (1993) suggest that challenge is more likely to occur in schools where professional challenge and debate are common. Other suggestions for the lack of challenge are the constraints of time (Benton, 1990; Kerry and Farrow, 1996) and of mentors' workload (Hoyle, 1996). Finally, a crucial point is made by Butcher (2002). His study of mentoring in post-16 education highlights mentors who fail to establish "a sense of trust and dialogue" in the mentor-student relationship (Butcher, 2002, p.209). He echoes Daloz (1986) in concluding that without affirmation and empathy then trust will not occur and any perceived challenge will be uncomfortable for the student. A crucial part of my study will be the examination of this supposed lack of challenge in mentoring and, if so, the reasons for it.

However, the degree of challenge used by mentors may not be well defined. Martin (1996) affirms that "it is different for different people and that there are degrees of challenge" (Martin, 1996, p.49). She goes further in stating that Daloz's four categories of support and challenge are context dependent since a trainee's perception of being supported in one setting may be seen as challenge in another. McNally and Martin (1998) continue this theme in explaining that the ability and purposefulness of the student can influence the appropriate amount of challenge deemed necessary. Thus, motivated, able students may challenge themselves by using self-reflection as a means of target setting, whereas novices lacking in ability, commitment or clear purpose may require stronger challenge to develop teaching competency. Butcher (2002) summarises this well, explaining that mentoring in general and challenge in particular should be negotiated and appropriate to the individual student's needs.

If there is general agreement about the importance of challenge as a mentoring strategy, we should consider the effects of its absence on student learning. I have earlier explained that support without challenge may result

in students failing to progress beyond minimum competence in teaching. Butcher (2002) suggests that another result may be the persistence of strongly held, outdated and perhaps inappropriate student preconceptions and beliefs about teaching. Indeed, it has been argued that students should be encouraged to examine and understand these prior beliefs if they are to focus on children's learning (Hawkey, 1996). The effect of student teachers' beliefs on their own and pupils' learning is a major theme of this study.

A key aspect of Daloz's model of mentoring is that mentors utilise support to build trust and then, allied with challenge, create their own vision of where the student is going. McNally and Martin's (1998) research found that a small minority of mentors possessed firm visions linked to challenging novices yet most thought that there was a timeline of development whereby trainees modelled or imitated the mentor or other teachers, found a method that worked, experimented with their own approach before settling on their own teaching style. The authors also suggest that, even if mentors have a vision, they have difficulty in expressing it to their students. Butcher (2002) argues that mentors need to extend their vision to see the end point as that of a professionally competent and reflective teacher and that both support and challenge are the means for reaching this goal. McNally and Martin (1998) agree but argue that mentors must be willing to open their own teaching to scrutiny and challenge. The literature confirms that undertaking a mentor's role does indeed result in mentors examining and reflecting on their own teaching (Elliot and Calderhead, 1993; Hawkey, 1997; Butcher, 2002), but McNally and Martin found that mentors were less willing to share this two-way self-reflective process. This may have implications for mentor training. Butcher (2002) suggests that mentors need to be trained to be more confident in challenging and sharing their vision with students. The importance of the concept of challenge in the training of mentors and which issues and ideas should provide this challenge form part of this study.

Teacher professional development

Dadds (2001) suggests that the trend in professional development of teachers is currently in favour of delivery models of teaching. The teacher is viewed as a 'technician' who is expected to implement outside policies uncritically. In this model, Dadds argues that teachers are treated as 'empty vessels' who are required to receive and deliver central decisions. This model may well underpin the implementation of the National Curriculum as the author suggests. She argues that a more challenging model of professional development is needed, one in which thoughtful, enquiring teachers are actively involved in self-study and whose practices, perspectives and opinions are considered as valuable input to professional development. In this model, Dadds argues that teachers should not give in to the outside 'experts' but should endeavour to act as reflective practitioners. Dadds claims that the notion of the reflective practitioner has been scorned in the past by some politicians. If there is substance in Dadds' view that some official government materials tend to disregard reflective practice, then this is at odds with the academic literature on the subject, the vast majority of which utilises the idea of reflection on practice and encourages trainee teachers to focus upon this to foster their own professional development. This very point is emphasised by Soler, Craft and Burgess (2001) in their introduction to section 2 of *Teacher Development*. However, as Adler (1991) points out, reflection does not mean the same thing to different authors. Nevertheless, it could be argued that the current trend towards utilising teacher-mentors in school-based trainee-teacher education is a move away from the 'delivery' models condemned by Dadds and towards a model using the expertise of classroom teachers to encourage the reflective practice which she advises. However, mentors may not necessarily be fully aware of the nature of reflective practice or of the benefits of using it if they themselves are not explicitly encouraged to adopt such practice.

Conceptions of mentoring

Several authors give a brief history of mentoring in trainee teacher education. Among these are Hans and Vonk (1995) in their review of two books on mentoring:- *Understanding Mentoring* by Tomlinson (1995) and *Issues in Mentoring* by Kerry and Shelton Mayes (1995). Hans and Vonk point out that mentoring is en vogue at present and the extensive use of mentors in ITT in the U.K. certainly supports this. However, Hans and Vonk explain that mentoring is a fairly recent phenomenon, starting in the early seventies in universities in northern Germany, Holland and some Nordic countries with the aim of bridging the traditional gap between universities' theoretical knowledge of teaching and teachers' practical knowledge. At this time, mentoring of student teachers was not common in the U.K. However, there has been an upsurge of interest in mentoring since the late 1980s with a distinct move to a more school-based training in recent times. As Orland (2001) confirms, "the momentum is strong to pursue the idea of teachers as teacher educators ... moving more of teacher education into field settings, i.e. schools, and assigning school teachers important roles as teacher educators..." (p.75). The question remains as to whether practising teachers understand reflective practice or have the skills to promote it.

Research into mentoring is largely in agreement that if classroom teachers are to be partners in the education of trainee teachers, a clear conception of mentoring and the role of the mentor is necessary (e.g. Stanulis and Russell, 1998). Three strategies for mentoring receive most attention in the academic literature. These are termed the master-apprentice, clinical supervision and reflective practice models. They have a direct correlation with the three models of mentoring advocated by Maynard and Furlong (1993). These authors argue that each of their models, which they term 'apprenticeship', 'competency' and 'reflective practitioner', has its sequential place in the process of learning to teach. Maynard and Furlong also suggest five distinct stages of development that student teachers move through in learning to teach: 'early idealism', 'survival', 'recognising difficulties', 'hitting the plateau', and 'moving on'. The authors suggest that their three models

should be used sequentially to facilitate development through these stages. Starting with the 'apprenticeship model' in which the mentor acts as a role model and students learn through collaborative teaching, through a 'competency model' through which trainees develop effective classroom practice and where the mentor essentially acts as a coach, perhaps using a predefined list of competences. Finally, the 'reflective approach' is well suited to the last stage of training in which the mentor as a co-enquirer encourages mentees to concentrate on children's learning but only after the student has mastery over their teaching skills.

In addition to being used sequentially as advocated by Maynard and Furlong, initial teacher training programmes have employed the master-apprentice, clinical supervision and reflective practice models individually and largely in isolation from each other. The strategy focusing on mentoring and reflection has been advocated by researchers such as Handal and Lauvas (1987). However, as Franke and Dahlgren (1996) explain, other models of mentoring are prevalent in the literature. They disclose that the master-apprentice model is still used in Sweden and the U.S.A. with an emphasis for trainee teachers to master methods and techniques without paying sufficient attention to the underlying theories on which they are based. In this model, teaching is discussed mostly with respect to *how* it is planned and carried out, while questions about *why* teaching is performed in a certain way are more rarely discussed. Tomlinson (1995), among others argues that such an approach may promote technical efficiency, i.e. competency, but in the long term may not lead to better insights into the work of the teacher.

The most frequently mentioned model in the literature is the clinical supervision model developed by Cogan (1973) and his colleagues. In this model, a mentor, as described by Hans and Vonk (1995), is seen as "an experienced teacher, well trained to guide student teachers during teaching practice" (p.531). The latter description is typical of the literature which echoes an earlier image of the mentor by Anderson and Shannon (1988) as a veteran teacher who supports, encourages, counsels and befriends a

less-experienced person in order to promote the latter's professional and personal development. This view is similar to that of Orland (2001) who goes on to state that current mentoring concepts stress the idea of an ongoing relationship between mentor and mentee. Other researchers take the importance of the mentor relationship a stage further. Elliot (1995) argues that the mentoring relationship is a source of student teacher learning about teaching and may dominate over any externally set agenda for development. Wildman et. al. (1992) who suggest that, because of the highly personalised interactions involved in mentoring, the roles of mentoring should not be rigidly specified and therefore that it is a mistake to develop any external conception of mentoring and seek to impose it by means of political pressure or staff development. This view of mentoring is in direct contrast to doctrine underpinning most teacher training programmes of recent years and indeed to the thrust of mentoring research as stated earlier in this section. A typical example of this is the view of Hans and Vonk (1995) who strongly affirm the ideas of Anderson and Shannon (1988) who conclude that the existence of a clear conceptual foundation of mentoring is a prerequisite for the development of an effective mentor training programme.

The conflicts in the literature on mentoring as a concept provide an area of interest for this study. I aim to discover whether mentors have a clear conception of their role and how this impacts on their teaching and mentoring. The study will ask how students and mentors view the mentor's role and whether this remains a constant or changes as the training progresses.

Mentoring and reflective practice

A construct central to all recent literature on mentoring (as it will be to my study) is that of reflection on practice, and as Soler, Craft and Burgess (2001) explain, almost every teacher education course of the last twenty years has used this notion at some point. Whilst I agree with the general consensus that there is a need for reflective teachers, this does not take us much further into an understanding of the concept unless we endeavour to

explain what is meant by 'reflection' or what it is teachers should be reflecting about. This problem has been highlighted by many researchers such as Zeichner and Tabachnick (2001). McIntyre (1993) gives a relatively straightforward definition of reflection based on teachers' practical knowledge and which will be directly relevant to this study: - "systemic enquiry into one's own practice to improve that practice and deepen one's understanding of it" (p.43). Calderhead (1989, p.375), in reviewing the work of Handal and Lauvas (1987) expands on this practical view when he concludes that "reflective teaching involves both the evaluation of one's own effectiveness as teacher, and the questioning of one's purposes; ... a critical approach to practice requiring one to justify as well as shape, classroom action."

Historically, perhaps the earliest notion of reflective action was propounded by Dewey (1933). He distinguishes it from routine action which he suggests is guided mainly by tradition and authority. He explains that reflective action entails "active, persistent and careful consideration of any belief or supposed form of knowledge in light of the grounds that support it and the further consequences to which it leads" (p.9). Probably the most significant text on reflection in recent years has been *The Reflective Practitioner* by Donald Schon (1983) in which he extends Dewey's ideas. In this, Schon indicates that professionals can no longer rely on an accepted body of knowledge being applicable to the array of human challenges which they meet. Their professional knowledge should be developed, not on scientifically based knowledge, but on experience by teachers researching their own practice by means of 'reflection-in-action.' By this he means that teachers should deliberate about their decision making in order to bring about appropriate changes to their practice. He argues that this will lead to improved learning experiences for students and enhanced self-awareness for teachers.

Other researchers have criticised Schon's ideas as being strong on vision but weak on detail. Munby and Russell (1989) and Convery (2001) conclude that Schon offers an account of where we might wish professional

development and teacher training to go but little in the way of how we might get there. For example, echoing my earlier point, Schon has little to say about what teachers should be reflecting upon. Other researchers have elaborated the concept of reflection in a variety of ways. Yet, though many agree on its worthiness, as Calderhead (1992) indicates, there is a dearth of theory and empirical research to guide the practice of those involved in programmes aiming to promote reflective teachers and, as Stanulis (1994) points out, there is little agreement between researchers on what should be the content of such guidance. The lack of research and guidance on what teachers should reflect about adds further justification for this study.

Critical reflection and how to recognise it

I now turn to the matter of how one should gauge whether reflection has taken place. The data for this study is drawn from questionnaires, interviews and analysis of documentation. Russell (1993) suggests reflective teaching cannot be assessed except through observations of teachers in practice and discussions with them about how they approach their work. Observation data was not forthcoming for this study, therefore the interviews with trainees *and* with their mentors becomes even more significant for assessing the validity of the research findings. Other researchers advocate the analysis of students' reflective journals. The students in this study did not keep reflective journals as such. Any comments, reflective or otherwise would be included in the student's Professional Development Portfolio to which I could not negotiate access. Other researchers, such as Harrington et al.(1996) have used dilemma-based case studies to challenge the perspectives and beliefs of trainees and mentors. One could adapt this resource to provide 'critical incidents' to aid the individual's professional development.

Tripp (1993) views the term 'critical incident' in a way which I believe is very pertinent to those endeavouring to encourage reflective practice. Tripp's point is that everything has the potential to be a critical incident. The incident does not have to be dramatic or obvious, indeed he maintains that

the majority of critical incidents are mundane, commonplace events that occur in routine professional practice - 'typical' at first sight rather than 'critical'. The incident is rendered critical through subsequent analysis of it. Thus, Tripp contends that critical incidents are not simply observed, they are created by the person reflecting on them. Tripp emphasises the importance of analysing an incident in terms of its social, ethical and moral consequences as the criteria for determining whether the incident is critical. To be critical, the incident has to be shown to have a more general meaning, to be indicative of underlying trends or in other words, to indicate something else of importance in a wider, usually social, context. Tripp's ideas would seem to offer a more useful, effective way of fostering reflective practice since at their core lies the necessity for the practitioner to reflect and analyse his or her everyday practice in order to understand the fundamental nature of that practice.

McIntyre (1993) proposes three levels of reflection which I intend to incorporate into the analysis of data to be obtained from questionnaires and interviews. Firstly, a *technical* level which emphasises the attainment of given goals, for example, basic criteria of teaching such as gaining pupils' attention, achieving and maintaining classroom order etc. Secondly, *practical*, where the emphasis is on teachers articulating their own criteria, and evaluating and developing their own practice. Thirdly, the *critical* level concerns wider ethical, social and political issues, which are ascribed such importance by Tripp (1993). McIntyre (1993) argues that the three levels are hierarchical in nature and that in the early stages of student teaching, reflection is at the technical level, later progressing to practical reflection. He further asserts that few students exhibit critical reflection, a level rarely practiced even by experienced teachers. Whether, the levels need to be hierarchical or if student teachers can be given access to all three levels through being mentored may be highlighted by this study. Another point worth mentioning here is whether the DfEE's preoccupation with students attaining specific standards may restrict the achievement of higher levels of reflection.

Other researchers give similar definitions of critical reflection as that of McIntyre (1993). Dinkelman (2000) refers to it as "deliberation on the moral and ethical dimensions of educational practice" (p.195). He maintains that critical reflection appears to be an aim that is more desired than achieved. Researchers such as Berliner (1988), Kagan (1992) and Calderhead and Gates (1993) claim that it is beyond preservice teachers' capabilities. Hans and Vonk (1995) put forward a similar argument in stating that Schon's idea of reflection-in-action is only a means for experienced teachers. Indeed, there are many reports of trainee teachers falling short of reflective practice but just focusing on immediate practical concerns. Aspirations such as maintaining classroom control, the necessity of gaining a favourable evaluation from the mentor and having to work within the bounds of a specific educational context and set curriculum may also constrain the development of reflective practice. Dinkelman (2000) found that students considered critically reflective thinking central to the work of teaching, but he documented only a small amount of such thinking occurring, he still found that students were preoccupied with the practical aspects of teaching. In short, his research concludes that the technical and practical demands of teaching result in the dominance of non-critical forms of reflection. Whether students tend to concentrate on their own performance at the expense of the ability to reflect on their practice and on pupils' learning is an important theme in this study.

Dinkelman (2000) makes an interesting point when he asks what amount of critical reflection teacher educators should reasonably expect from beginning teachers? He concludes that it depends on the teaching context - he was looking for students' capacity or willingness to reflect critically, i.e. to consider the moral and ethical dimensions of their practice. He found little evidence that this definition of critical reflection was incorporated into trainee teachers' teaching or thinking about teaching. I would take a different perspective here and would consider that *any* reflection uncovered by my research could be considered to have *become* critical reflection, or at least working towards attaining it, if it can be seen to have been included in the respondent's teaching. Thus, technical or practical reflection could be

judged to show elements of critical reflection if it clearly *changes the practice of the individual for the better*, for example to enhance pupils' learning. In other words, changes to individuals' practice could thus be considered to constitute a step towards the process of critical reflection.

A final point to make here is that some researchers, for example, Cochran-Smith (1991) have argued that student teachers can only learn critically reflective teaching in schools with experienced teachers who themselves value and practise critical reflection. Yet Dinkelman's (2000) research found some critical reflection in his three student respondents despite the mentors being not especially helpful at encouraging it. He suggests that the researcher himself may have had an influence by consistently drawing attention to these issues over the period of his year long study. One should note that this effect may be less evident in my study since the data for it was collected almost retrospectively in the students' last teaching placement towards the end of their year's training. This study will provide more evidence on the degree to which students are encouraged to reflect on practice, the areas in which any reflection occurs and whether such reflection can be considered 'critical.'.

This review of the research on mentoring and professional development of teachers gives a variety of questions to be asked in this study:-

- What are students' main concerns at various stages of the training?;
- What are the views of trainees and mentors on the role of the mentor and whether this role is constant throughout the training?;
- How do students and mentors view the mentor-mentee relationship?;
- What is the usual content of mentor-student discussions?;
- What are the opinions of mentors and students on the proportion of support to challenge given by the mentor?;
- What are the reasons for any lack of support and/or challenge from mentors?;
- In what ways and in which areas do mentors support and/or challenge trainees?

These questions are addressed in the findings to be found in Chapter 4.

(B) TEACHERS'/STUDENT TEACHERS' BELIEFS ABOUT TEACHING

The origin of teachers' beliefs

In any discussion of teachers' beliefs, a necessary starting point is an explanation of the term 'beliefs'. By this I refer to an aspect of teachers' knowledge that has been given many labels:- perceptions, conceptions, personal theories, frames of reference, images, constructs and schemata. I would agree here with the opinions of Anderson and Bird (1995) who state that beliefs include the frames of reference or the perspectives that teachers use to make sense of their practice and its effects on their students.

Unsurprisingly, most researchers suggest that beliefs about teaching originate in childhood when as pupils we experience and acquire the norms and expectations of schooling (e.g. Britzman, 1986; Richardson, 1996). Merton (1975) has coined the phrase 'anticipatory socialisation' for these prior views of teaching possessed by preservice teachers. Several writers (e.g. Argyris and Schon, (1978); Goodman (1988); Kettle and Sellars (1996)), assert that initially these views and theories are only partially developed and are expanded and refined as student teachers develop professionally. Hawkey 996) explains that these experiences can influence, both positively and negatively, the images preservice and beginner teachers hold about what kind of teacher they want to be. Students' pre-conceived ideas about teaching is a key concept in this study.

Teachers' practical theory

Teachers develop a system of knowledge and beliefs derived or accommodated by their teaching practice. This is referred to by authors such as Elbaz (1983) and Eraut (1994) as 'practical knowledge', or by others such as Handal and Lauvas (1987) as 'practical theory'. Elbaz describes practical theory as incorporating both experimental and subject matter knowledge integrated together by the individual teacher in terms of his or her personal

beliefs and values. Handal and Lauvas (1987) define practical theory as: "a person's private, integrated but ever-changing system of knowledge, experience and values which is relevant to teaching practice at any particular time" (p.9).

During their training, student teachers will be faced with the knowledge and beliefs systems of their trainers. At the teacher-training institution, they are informed about educational theories and teaching methods, whilst at their practice schools they will encounter their mentors and other staff armed with their own practical theories. As Zanting et al (2001) explain, the knowledge and beliefs of the three information sources;-teacher-training, mentors and student teachers, do not always correspond to each other. The literature reports a gap between theory and practice. An example is described by Elliott and Calderhead (1993) when they found that trainees frequently experience difficulties in relating theories acquired at the training institute to their teaching experiences and their mentor's feedback. My study will add to the research on the relationship between the views and beliefs of students and mentors and compare these ideas with the 'ethos' of the SCITT course, thus adding to the debate on the existence of the divide between theory and practice.

The stability of student Teachers' beliefs

There is a growing body of research that suggests that student teachers' beliefs influence what they learn and in addition, affect their classroom practice and hence pupils' learning. Anderson and Bird (1995) suggest that, like any learners, prospective teachers can learn only by drawing upon their own beliefs and prior experiences to understand new ideas, but that their beliefs and knowledge may not support their learning about new views of learning and teaching advocated by teacher educators. Brown and Borko (1992) argue that teachers' perceptions are linked to knowledge structures which in turn influence their thinking and hence classroom practice. Other evidence suggests that actions do not always follow beliefs. Thompson (1982) and Shaw (1989) found sharp contrasts between teachers' professed

views of teaching (mathematics) and their instructional practices. Sometimes, it seems, practice lags behind aspirations. The contradictions in the literature show the need for more research here. Thus, my study aims to investigate how the nature of student beliefs impact on their practice.

Handal and Lauvas's (1987) idea of an ever-changing practical theory has been supported by others. Kettle and Sellars (1996) agree that it is susceptible to change, whilst Sergiovanni (1990) considers it to be "dynamic, changing over time as new knowledge and experiences are encountered." Sergiovanni, 1990, p. 249). These arguments seem to me to follow a common sense approach, yet a number of studies have found that student teachers' beliefs are resistant to change and that this may have profound effects on their teaching and learning.

Pendry (1995) discovered that student teacher perspectives were not only very stable, but also, rather than getting in the way, received greater elaboration during the initial teacher education year and were remarkably useful in the task of helping student teachers to teach.

Tillema and Knol (1997) quote several writers to support their claim that student teachers come to teacher education programmes with outspoken ideas about teaching and their roles as future teachers. Tillema and Knol's work endorses an earlier study by Bramald, Hardman and Leat (1995) into trainee teachers' views of teaching and learning. The latter authors found that the thinking of the majority of the students did not change significantly during their preservice training and that those students whose beliefs did not alter tended to show strong teacher role identities from the beginning of the course. This trend has been found by other research such as that of Zeichner et al. (1987) who go further in finding that trainees' perspectives are elaborated rather than radically changed by professional training;-the students selecting from their experiences whatever suited their own perspectives. Bramald et al. (1995) suggest that students should be made aware that their beliefs systems may influence their classroom behaviour and therefore the trainees need to be given the opportunity to identify and

examine their beliefs through critical reflection. Here the authors do not explain what the nature of critical reflection might be, i.e. whether it be reflection on moral, ethical issues etc. or, as I have interpreted it, as reflection (of any kind) that changes practice for the better. Nevertheless, Bramald et al. make a pertinent point that without consideration of their own beliefs, students are likely to adopt teaching practices they remember from their schooldays and merely reinforce the status quo.

However, challenging students to face up to their beliefs may not have the effect that is desired or intended. This point is made by Hawkey (1996). She gives two scenarios in which firstly, students with a clear, strong image of self as a teacher may have that image compromised or shattered if it conflicts with the norms of the teaching institution they find themselves in. On the other hand, other students with a weak or unarticulated image of self as a teacher, may tend to conform to the prevailing norms of the school. In other words, the ability to behave as a thoughtful, reflective teacher may be hindered. Hawkey's latter point clearly corresponds with Bramald et al.'s (1995) contention that reinforcing the status quo results from students not identifying and analysing their beliefs. However, a different view is considered by Anderson and Bird (1995) who argue that prospective teachers who are pushed too early to consider and evaluate their visions of teaching may feel their sense of themselves as a teacher under threat and will therefore preserve their original convictions by assimilating those visions into familiar forms, i.e. maintenance of the status quo.

These conflicting views about the intensity and stability of student teacher beliefs perhaps leads one to argue that a balance between support and challenge may be needed to encourage the professional growth of trainee teachers. Support is necessary to enable students to discuss their personal beliefs and values, whilst to address moral and ethical dimensions and assumptions, a degree of challenge may be required. As explained earlier, this balance between support and challenge and its effect on students' learning and practice is an area for investigation in this study.

Teacher Education programmes and challenging student beliefs

Having assumed the existence of students' prior views on teaching and that these have an influence on their learning and classroom actions, we come finally to the implications for teacher education. Examination of the content of teacher education programmes reveals that they are scarcely related to student teachers' beliefs and conceptions concerning teaching. For example, Calderhead (1995) states that student teachers' beliefs still play a relatively minor role as a cognitive unit for teacher educators. As explained in the previous section, there is considerable research pointing to the minimal effect of teacher training on student teachers' beliefs. Yet, even when trainees' perspectives on the value of a particular approach do coincide with that of their teacher educators, as Foss and Kleinsasser (1996) found, the student may still ignore the complexities of putting it into practice or find it difficult to do so.

On the other hand, Bramald et al. (1995) found that conclusions about the minimal effects of preservice courses on students' thinking to be too pessimistic in that too little note has been taken of the variation in characteristics and impact of individual courses and institutions. Their research found a modicum of shift in some students' approach to their teaching. Bramald et al's conclusions are typical of the majority of the research in this review which argues that teacher education programmes should encourage students to examine, recognise and articulate their prior beliefs in order to produce professional growth. Indeed, Hawkey (1996) argues that if trainees do not understand their own beliefs then they cannot realistically focus on pupils' learning and Tillema and Knol (1997) attest that it is futile to present new conceptual information to students if their existing perspectives are not taken into account. Many researchers go further and stress that training programmes must challenge the conceptions of beginning teachers. The impact, if any, of the SCITT training programme on trainee beliefs and perspectives is another aspect of this study.

However, Hawkey (1996) strikes a pessimistic note when she remarks that the current emphasis on competences, skills and qualification in initial training courses rather than as the beginning of professional development, may fail to encourage trainees to examine their hopes and aspirations as teachers. Perhaps, as Kettle and Sellars (1996) argue, key objectives of ITT courses should be to become reflective and to articulate one's practical theory. With this in mind, this study will analyse Borders Consortium SCITT documentation to see where its emphasis lies between the acquisition of teaching competence and reflective practice, and the degree to which it encourages students to examine their prior beliefs.

Mentors' beliefs

References to mentors' beliefs can be found at various points of this review. However, I will complete this section by discussing the impact of mentors' beliefs on the mentoring process and on student teachers' learning.

Mentors' perceptions of their role

Studies such as Elliott & Calderhead (1993); Saunders, Pettiger and Tomlinson (1995)) suggest that, as mentors interact with teachers, they bring their own values & beliefs about learning and teaching. Furthermore, other research on mentoring (e.g. Cochran-Smith (1991); Stanulis (1994)) indicates that classroom teachers have a significant impact on the learning of novices *and* in shaping novices beliefs and practices. Hawkey (1998) agrees that mentors bring their own particular orientations and conceptualisations of their role to the mentoring task. Abell et al. (1995) and Saunders et al. (1995) support this point. Elliott and Calderhead (1993) declare that such orientations, far from being specific to mentoring, operate on a more general (teaching) level. In their review of 'Issues in Mentoring' by Kerry & Shelton-Mayes (1995), Hans and Vonk (1995) assert that mentors do indeed bring strong perceptions of mentoring to their training and these may override any new knowledge and skills which are learned during that training.

Much of the literature maintains that mentors need to acknowledge their own values and perspectives. Stanulis & Russell (1998), make this point and advocate 'conscious collaboration' in which all participants (university & school-based teacher educators *and* students) be made aware of the kind of collaboration that is being fostered whilst supporting students. In particular, this involves the view that all participants feel safe in revealing their vulnerabilities for the sake of learning. For example, students need to feel safe asking for the kind of help they need (whether it be demonstration, explanation, segmented learning, providing hints or clues, etc. In addition, mentors need to be willing to expose their own vulnerabilities to avoid unconsciously engaging in behaviours that safeguard their privileged positions.

The stability of mentor beliefs

I have commented earlier on research indicating the stability of trainee teachers' prior perspectives during the teacher training programme. Hawkey (1998) says that the same may be true for mentors. Elliott and Calderhead (1993) conclude that "mentors' assumptions about the mentoring task are often embedded in a network of other assumptions and values. For example, it appears that assumptions about the very nature of teaching and how learning occurs provide part of the rationale for the mentors' approaches" (p.179). Thus, Elliot and Calderhead (1993) argue that the resistance of mentors' beliefs and values to change may affect how they mentor. An example is given by Martin's (1997) eighteen month ethnographic study looking at two student teachers and two mentors in primary school classrooms. Far from promoting the ideologies of the particular teacher education programme, the two mentors interpreted their roles in ways that appeared to reflect their own approach to teaching. As they taught, so they mentored. Thus, attempts by mentor training programmes to promote a particular model of learning to teach may have its limitations if it conflicts with the beliefs and ideas of mentors. Hawkey (1998) finishes by affirming that, although reflective practice may be the model that most usually informs initial teacher education courses and may be the preferred approach in

learning to teach, other models may be more compatible with mentor beliefs or have more resonance with their own experience in initial teacher education.

Other research indicates that mentor beliefs can adapt to course programmes. Stanulis (1995), looking at how five teachers made sense of their role as mentors, found that in their practice four of the mentors were mindful of the themes developed in the teacher education programmes of which they were a part. Dunne and Bennet (1997) followed four student teachers over ten week teaching programmes and looked at their interactions with mentors, tutors and other teachers. They found that the different personnel involved in the students' training did indeed take on the different roles as set out in the partnership mentoring model, and thus concluded that a specific model presented in mentor training can be successfully implemented.

The above review of research on student and mentor beliefs generates many questions to be examined in this study:-

- What are the origins of and the influences on student's prior-beliefs about teaching?;
- Do students have or recognise their own beliefs on entering the course?;
- Are they encouraged to examine or articulate their beliefs by mentors, tutors, the SCITT programme?;
- How stable are students' beliefs during the training?;
- If their beliefs change, what changes their beliefs?;
- If not, why do their beliefs not change?;
- Are trainees' beliefs challenged?;
- How and when are they challenged and by whom?;
- What effect do their prior beliefs or new beliefs have on the students' practice?;
- How do students' beliefs compare with those of their mentor?;
- What are mentors' perceptions of their role and how do these perceptions affect their mentoring and students' learning?;

- How stable are mentors' beliefs and the effect of these beliefs on how they teach and mentor.
- How do both mentor and student beliefs compare with the aims of the training programme?

  These questions will be addressed in Chapter 5.

(C) STUDENT TEACHERS' SUBJECT KNOWLEDGE

Categories of knowledge

In the previous section of this review, I discussed teachers' practical theory, i.e. the practical craft and theoretical knowledge and the problems of integrating them. I will now elaborate on the forms of knowledge that teachers possess.

Edwards and Ogden (1998) suggest that teachers face increasing difficulty when teaching the substantive and syntactic knowledge of National Curriculum subjects. Schwab (1978) explains that substantive and syntactic knowledge comprises a subject's logical structure, its key concepts, ways of defining and analysing in the subject, and the standards of judgement that operate in the field. Edwards and Ogden (1998) claim that how to teach substantive and syntactic knowledge and indeed much of the research into teachers' professional knowledge and subject knowledge in particular, derives directly or indirectly from Shulman's proposals of categories of knowledge, (Shulman, 1986, 1987). Zeichner and Tabachnick (2001) explain that Shulman's ideas are part of the academic conception of reflective teaching practice which emphasises the teacher's deliberations about subject matter and its translation to pupils to promote understanding. Shulman has proposed a model of professional knowledge comprising three categories of content knowledge:- subject matter content knowledge; pedagogical content knowledge and curricular knowledge. According to Shulman, pedagogical content knowledge is the key component. He explains that this embodies "the ways of representing and formulating the subject that make it comprehensible to others ... it also includes an understanding of what makes the learning of specific topics easy or difficult; the conceptions and preoccupations that students of different ages and backgrounds bring with them to the learning" (p.9).

Banks et al. (1996) take a slightly different stance. They recognise subject knowledge and pedagogic knowledge in a similar way to Shulman, but

extend his curriculum knowledge to suggest that what is taught in schools, 'school knowledge', is not the subject as constructed in the community of experts, rather it consists of 'didactic transposition' which involves the progressive selection of relevant knowledge and a sequence of transmission.

Others have criticised Shulman's view that pedagogical content knowledge can only be possessed by teachers. Edwards and Ogden (1998) state that if this is the case then teacher educators have a major problem. Their reasoning is that trainee teachers need to acquire this knowledge but it cannot be taught in universities since university tutors do not possess it. However, mentors may not be able to pass it on since it largely takes the form of tacit knowledge and consists of routines and conceptions which are taken for granted in many ways. This is clearly an area requiring further research. Therefore this study will seek to answer whether or to what extent mentors and tutors can transmit this tacit knowledge to novices.

Subject knowledge and teaching science

Since the 1980s, education reformers have been advocating a kind of teaching that focuses on students' conceptual understanding of subject matter. This trend has been made manifest in the U.K with policy makers emphasising the need for teachers to have secure knowledge of their subjects, especially in English, Mathematics and Science in the training of primary teachers in England and Wales (eg. DfE, 1993; OFSTED, 1995; TTA, 1996). With reference to science, entry requirements and exit standards have been specified (DfE, 1993) with the exit standards for newly qualified teachers later being defined as "a secure knowledge and understanding of the subject content specified in the relevant Initial Teacher Training National Curriculum (DfEE, 1998, P.9). This later document also includes the requirement for knowledge of pupils' most common misconceptions and mistakes in the subject, an aspect of Shulman's tacit pedagogical content knowledge. The degree of emphasis on subject knowledge in the SCITT course and its effects on student training and learning is directly relevant to this study.

This emphasis on subject knowledge may be seen as a necessary if rigorous goal for secondary school teachers and for students training to teach only the subject in which they graduated. However, it may be more problematic for primary school teachers whose professional knowledge may be seen as defined in part by their grasp of the subject knowledge of the ten subject primary school curriculum (Edwards and Ogden, 1998). It is not surprising perhaps that many of the studies into the science knowledge of primary teachers and student teachers highlight gaps or misconceptions in their knowledge. This is one of the areas that this study will investigate.

Smith's (1999) longitudinal study of how student teachers build up their repertoire of knowledge for teaching science, found that their subject knowledge was developed and challenged when the need was created by the nature of the set task. Subject knowledge development was in turn linked to the students' changing perceptions of the need for a deeper understanding of the subject. However, the study also concluded that students identified the course units in science and their time with the programme's university tutors as the most significant source of their learning as subject specialists. Smith suggests that the reason may be that the tutors often illustrated general pedagogical strategies with reference to science teaching.

Roth and Tobin (2001) allude to the gap that prospective teachers perceive between 'idealistic' knowledge and theories taught in the teacher training institution and the reality of teaching practice, one problem being the need to act appropriately and quickly in lessons with no time to reflect on one's next move. The authors question the theories of teaching and the epistemology that underline teacher education courses. They argue that one does not learn to teach by trying to implement the theory of teaching during teaching practice. Higgins and Leat (2001) make a related point in stating that the TTA's requirements for primary teacher training seem to assume that trainees will automatically be better prepared if they receive enough instruction in subject knowledge and technical skills. This is perhaps a rather bold assumption since trainees are now required to spend a large part of their time in school placements. Nevertheless, the research evidence does

point to the existence of a gap between theory and practice. To bridge this gap, Roth and Tobin (1997) advocate 'co-teaching' in which experienced teachers teach alongside trainees. In this way, they maintain that tacit knowledge has to be theorised and articulated in reflective discussion afterwards. However, as my earlier discussion of reflective practice and the views of Edwards and Ogden (1998) indicate, the success of this method may be problematic since practitioners can find it difficult to articulate such tacit knowledge. Clearly, this study will need to investigate the theories of knowledge advocated by the SCITT together with their influence on students' subject and practical knowledge. The aim here will be to identify any theory-practice divide and propose solutions to reduce this phenomenon.

Subject knowledge and teacher beliefs

The nature of beliefs about subject matter and about its teaching and learning is relatively new research according to Foss and Kleinsasser (1996). Conclusions drawn from this research seem unanimous, that differences in belief about the nature of conceptual knowledge lead to differences in approach to practice. However, there is dispute amongst writers about the relationship between the different forms of knowledge possessed by teachers. Some, for example, suggest that Shulman's distinction between pedagogic content knowledge and subject content knowledge is spurious. Aubrey (1996), for example, found that even when teaching children as young as five, that both pedagogical content knowledge and subject matter knowledge were still important, and both were interrelated and influenced by the teachers' own feelings and beliefs.

Research into mentoring also suggests that mentoring is an extension of the mentor's own pedagogy, i.e. how they teach so they mentor. (Martin, 1997). Hence, teachers will mentor idiosyncratically according to their beliefs and knowledge base despite the teacher education programme's ideology or pedagogy. Whether this is desirable is dependent perhaps on the characteristics of the individual mentor. There are those who would argue against standardisation of mentoring practice.

Another study that impacts on the transmission of teaching knowledge to trainees is again that of Edwards and Ogden (1998). They found that mentor feedback sessions with trainees rarely included discussions of subject knowledge. I have earlier stated that teachers' practical theory is considered to be largely tacit rather than shared with others in the school. Edwards and Collison (1995) found that mentors in conversation with student teachers, concentrated largely on students' observed performance and were unable to tease out general principles of pedagogy. Given the evidence that mentors may not easily share their pedagogical knowledge with students, it raises questions about mentoring, the reliance of school-based initial training on the oral transmission of practical knowledge from mentor to mentee, and the reliance of researchers analysing mentoring conversations when investigating the nature of teachers' knowledge. These points will clearly impact on this study.

This section produces many questions to be examined in this study:-

- What is the degree of emphasis on subject knowledge in the course?;
- What are the influences on students' subject knowledge?;
- Do trainees gain their subject knowledge from tutors or mentors?;
- Is a there a divergence between the theories of knowledge students receive in college and the reality of teaching practice?;
- What type of knowledge is referred to in mentoring conversations?;
- Is students' subject knowledge challenged?;
- If so, how, when and by whom?;
- Are there gaps in students' subject knowledge, particularly for primary teachers and in science teaching?

These questions are answered in Chapter 6 of this study.

(D) MENTORING AND CHILDREN'S LEARNING

Teacher beliefs and children's learning

Researchers such as Kagan (1992) suggest that beginner teachers cannot focus realistically on pupil learning until their own implicit beliefs of themselves as teachers are understood. For example, Anderson and Bird (1995) document a student teacher with a firm image of the teacher's role. In her image, teachers should be careful not to tell pupils too much or imply that their thinking was incorrect. This student possessed a more sophisticated view of pupil learning in that she treated children's thinking as important and believed that teachers' actions or statements can influence what goes on in pupils' minds. An example of perhaps less sophisticated thinking is given by Foss and Kleinsasser (1996) when they report that many trainee teachers believe that most children learn mathematics on their own through innate abilities. The authors go on to explain that this belief is used as a reason for not applying methods to teach and learn challenging mathematics.

A fascinating study by Strauss et al. (1998) may have important implications for this study and for initial teacher education. Strauss et al. studied teachers' implicit espoused mental models of children's minds. Espoused theories are those that professionals display when they speak about how they practice their profession. By analysing teachers' statements from semi-structured interviews, the authors claim that the teachers possessed an 'engineering' model of children's minds. The basic premise is that the teacher has knowledge external to children's minds. Two engineering problems then arise:- firstly, how to get the external information into the child's mind?; secondly, once it gets there, how can one ensure that the child learns it? Strauss et al. argue that teachers break down complex subject matter into component parts that can enter 'openings' in pupils' minds if they are interested or motivated. Once through, the knowledge gets learned by connecting it with already-existing knowledge by means of analogies, associations, familiar examples etc.

The crux of Strauss and colleagues' (1998) findings is that teachers' espoused mental models of children's minds and learning take precedence over their subject matter knowledge. They claim that this is shown for both novice and experienced teachers and for teachers with high or low subject matter knowledge. If these conclusions are accurate they have major implications for teacher training. One may be able to increase teachers' subject knowledge but it does not follow that the subject will be taught any differently. In addition, these ideas could have direct relevance to the teaching of science. Prain and Hand (1996) among others, have advocated a move from the more traditional, text-and-teacher dominated science lessons to learner-oriented constructivist perspectives. If this is to happen, then professional development programmes, including teacher training need to stress that teachers must examine their own espoused mental models of children's minds and make close observations of pupils' learning and thinking. These novel ideas need to be investigated in this study. There is some overlap with theme (C) here in that one can query whether improving trainees' subject knowledge improves their teaching of the subject but also whether it brings about a change in the way they teach to take into account how it is perceived by the child. My study will add to the research on student beliefs and children's learning in that it will investigate the extent to which students focus on pupils' learning at different stages of the training and relate this to the trainees' views on this matter.

Student teacher learning and children's learning

I have mentioned earlier Edwards and Collison's (1995) findings on the nature of mentoring conversations with mentees. They found that discussions of children as learners centred on descriptive accounts of observed pupils' actions and very little on the transformation of knowledge into forms which promote children's learning.

Studies of the resources trainee teachers draw upon in planning their practical teaching give interesting results. McNamara (1995) found that the main sources utilised in decreasing order were:- the students themselves,

who considered that teaching is natural or common sense; secondly, help from mentors and tutors; advice from relatives and teaching friends; and lastly educational magazines. McNamara's point here is that using input from their own common sense or from friends, relatives or magazines is unlikely to focus on children's learning and emphasises the importance of mentor and tutor roles in teacher training. The mentor in particular should take the lead in directing students' reflection towards pupils' learning.

Anderson, Smith and Peasley (2000) claim that teachers should aim to balance concerns for learners' experiences in class with concerns that they learn subject content. The researchers point out that novices often focus on only one element of practice at a time and suggest that they may not be able to integrate the two concerns if they have no firm ideas about learners' subjective experiences.

Once again, this study will add to the literature in this area. Specifically, It will look into the influences on students' prior beliefs about children's learning, the extent and nature of mentor-mentee conversation on this matter and whether children's learning can be considered as the acquisition of subject knowledge and understanding, or something more fundamental. Finally, I outline some of the questions that this study will ask:-

- To what extent do students focus on pupils' learning?;
- If they do, when in the training course does this happen?
- How do they adapt their knowledge to focus on leaning?;
- Do mentors/tutors help them to focus on learning?;
- To what extent is children's learning discussed in mentoring conversations?;
- How do National Curriculum pressures and achieving standards affect trainees' views on pupils' learning?;
- Do trainees have a clear image of themselves as teachers and how does it relate to their views of pupils' learning?

These questions are addressed in the findings to be found in Chapter 7.

CHAPTER 3:- RESEARCH METHODOLOGY

THE TWO APPROACHES TO EDUCATIONAL RESEARCH

Origins of quantitative and qualitative approaches to research

Anderson (1998) defines educational research as a "problem-solving activity which addresses a problem, tests an hypothesis or explains phenomena" (Anderson, 1998 p.7), or "the systematic process of discovering how and why people in educational settings behave as they do" (Anderson, 1998 p.10). His book focuses on the two dominant research paradigms:- the positivist and post-positive paradigms. The roots of modern educational research are in the natural sciences. As Landsheere (1993, p.4) points out, educational research as we know it today emerged from psychological approaches in the late nineteenth century. As a result of these roots, early researchers placed great emphasis on using a 'scientific' approach with quantitative measurement of the behaviour and characteristics of teachers and students. This tradition of research follows the positivist paradigm which is favoured by researchers in the sciences, particularly chemistry and physics. According to Bassey (1991, p.41), "Positivist researchers seek systematically, critically and self-critically, to describe and explain phenomena which they take to be 'out there in reality' and which therefore they can study without disturbing." Hence positivist researchers do not expect that they themselves are significant variables in their research. Positivists often start with an hypothesis to be tested, the data collected tends to be numerical and suitable for statistical analysis and they expect other researchers to have the same perceptions of phenomena and hence come to the same conclusions as they find.

To summarise, the key idea of positivism is that the social world exists externally, and that its properties should be measured through objective methods, rather than being inferred subjectively through reflection or intuition.

The new paradigm that has arisen during the last half-century, largely as a reaction to the application of positivism to the social sciences, stems from the view that the 'world' and reality are not objective and exterior, but that they are socially constructed and given meaning by people. This alternative paradigm, variously referred to as 'naturalistic', 'interpretive' or 'qualitative' in nature, is often called 'phenomenology'. These new qualitative approaches arose mainly because of fundamental doubts concerning the validity of quantitative research, that is, even though its numerical evidence appeared authoritative, there were concerns about whether it represented accurately what it claimed to represent. This alternative philosophy of research stresses the way that people's diverse perspectives of the world shape their actions and asserts that observation is not value-free and furthermore, aspects of human behaviour, such as intentions and feelings, cannot be directly measured. It emphasises qualitative, rather than quantitative, measurements and an exploratory approach in which researchers acknowledge their own perspectives and values but endeavour to see the world from others' points of view. The result is the emphasis on the detailed investigation of actual social processes as they happen in everyday situations. Setting out to explore what takes place in schools from the point of view of teachers and students is a typical example of this qualitative methodology. Thus, this study will take a mainly phenomenological stance.

Comparing the key features of the two philosophies

To compare and contrast the two paradigms it is necessary to understand the meaning of the word 'paradigm'. There are many different ways in which it has come to be used. Morgan (1979) proposed a way of tidying up the usage and it is his interpretation that I intend to use to compare quantitative and qualitative research. Morgan distinguishes three levels of use:-

- The philosophical level which reflects basic beliefs about the world.
- The social level, which provides guidelines on how researchers should conduct their activities.
- The technical level, which involves specifying the methods and techniques which should be adopted in conducting the research.

This basic classification will now be used to summarise the differences between the positivist and phenomenological viewpoints of educational research.

The philosophical level - basic beliefs

As briefly explained in the section on the origins of the two philosophies, the fundamental ideologies of quantitative research are that the observer is independent of what is being observed and that the 'science' is 'value-free', that is, the choice of what to study and how to study it can be determined by objective criteria. Opposed to this view, the qualitative position is that the world is socially constructed and hence subjective with the observer being an integral part of what is observed. Thus, 'science' is driven by human interests. It can be seen that from this perspective, the two paradigms are fundamentally at odds in that there are deep-seated philosophical disagreements about the nature of human behaviour and how it can be understood. As a science teacher of long standing, one might expect the author of this report to lean towards 'scientific' methodology and indeed one of my first ventures in to the field of research did involve 'systematic observation' of pupils' classroom behaviour, together with tick-lists and resulting quantitative analysis. The overriding impression of that study was that the methods used seemed 'forced' and artificial and that much relevant pupil behaviour was missed or overlooked since it did not fit in with the categories of behaviour being observed. In this respect, the scientific approach to research seems unrealistic and not in tune with the study of relationships and behaviour. It is for this reason that I have subsequently adopted more qualitative approaches and will largely do so for this study.

The social level - what the researcher should do

Quantitative researchers affirm that the aim of social sciences should be to focus on facts and look for 'causality', that is, to identify causal explanations and fundamental laws that explain regularities in human behaviour. In addition, the positivist expects to formulate hypotheses and then deduce what kinds of observations will demonstrate the truth or falsity of these hypotheses.

This again is markedly in contrast with the qualitative view that the task of social scientists should not be to gather facts and measure how often certain patterns occur but to look at the totality of each situation, to appreciate the different constructions and meanings that people place on their experience and therefore try to understand and explain why they have disparate experiences, rather than search for external causes and basic laws to explain their behaviour.

It is clear that, just as when considering the two paradigms on Morgan's 'philosophical' level, the assumptions involved on this 'social' level are again intrinsically antagonistic- phenomenologists deem that human action arises from the sense that people make of different situations, rather than as a direct response from external stimuli.

At the social level, I find that my disposition to qualitative methodology is perhaps not so clear-cut. It is entirely probable that human action can be a result of an external stimulus and that instances of particular behaviour may well be measurable. However, positivist approaches may not cope with the entire gamut of personal relationships which phenomenological procedures are more likely to be able to interpret. The mentor-mentee relationship can be both subtle and complex and is unlikely to be as well understood by the use of quantitative methods alone.

The technical level - preferred methods and techniques

In the 'pure' versions of each paradigm, distinctly different research methods are utilised. Typically in quantitative research it is judged that concepts need to be operationalised so that facts can be measured quantitatively. Secondly, in order to generalise about regularities in social behaviour, it is necessary to select samples of sufficient size such as in systematic observational studies and social surveys. It is also considered that these regularities can be most easily be identified by making comparisons of variations across samples.

The characteristic techniques of qualitative research are to use a variety of methods to establish different views of phenomena, investigating a small number of cases in depth or over time and the data collected is usually 'unstructured', or semi-structured, that is, not coded at the point of collection. For example, qualitative researchers would audio or video record or make open-ended field notes of observed behaviour rather than coding that behaviour in terms of a set of categories or rating them on a scale as in systematic observation. Similarly, qualitative interviews use open-ended questions, not those requiring choice from pre-specified answers such as on a questionnaire. Finally, analysis of the data will normally take the form of verbal explanations and descriptions, not of statistical analysis and quantification.

Stenhouse (1975) considers qualitative methods more appropriate for teachers embarking on classroom research and suggests that scientific methods such as interaction analysis are of limited use to a teacher when researching his/her own teaching. Although questionnaires requiring some form of statistical analysis are used in this study, the bulk of the data has been collected using qualitative methods. These approaches remain more appropriate since the aim is to obtain the opinions and views of respondents on the four themes of the study.

I have explained the differences between the two research philosophies using Morgan's three classification levels and have stressed the fundamental incompatibility of the two paradigms on the philosophical and social levels. It may seem at first sight that this extends to the technical level since the two philosophies attempt to achieve validity using very different methods. Yet, as many authors point out, the distinction is by no means clear when it comes down to the techniques used by researchers. This is pointed out in the Study Guide for Open University course E835 (1996), Educational Research in Action. It argues that many qualitative researchers utilise a combination of both quantitative and qualitative methods in their work and "have also remained committed to the task of testing empirical claims and trying to maintain objectivity of analysis," (E835, 1996, Study Guide, p.19).

Examples of such research are Hargreaves' (1967) and Lacey's (1970) studies of a secondary modern school and a grammar school using a mainly 'ethnographic' or participant observation approach but also collecting quantitative data such as drawing on school records and accumulating data on the friendship patterns among pupils. I will return to this point later and give further examples but, at this stage, I will summarise the strengths and weaknesses of the two approaches. This should shed light on the problem of which methods and aspects are most likely to be of help in a given situation.

Strengths and weaknesses of the two approaches

Quantitative methods

The main strengths are that they can provide wide coverage of the range of situations; they can be fast and economical and they can be of considerable relevance to policy decisions, particularly when statistics are aggregated from large samples.

On the debit side, these methods are not very effective in understanding processes or the significance that people attach to actions- as the E835 (1996) Study Guide (p.15) affirms, many researchers suggest that human social life is much too complex to be analysed by mechanical cause and effect relationships. For this reason, quantitative research techniques tend to be rather inflexible and artificial. They are also not very helpful in generating theories or inferring what changes and actions should take place in the future. It has also been argued that their experimental findings are open to alternative interpretations. Positivists say that possible ambiguities can largely be eliminated by pilot research whilst others try to remove these misunderstandings by devising more subtle or complex experiments. However, other researchers, such as Mehan (1973), go further and state that ambiguity is endemic to quantitative data such as psychological and educational tests so cannot be minimised by improved test construction and advocate an entirely qualitative approach. I would suggest that the ambiguity of some quantitative data is likely to be compounded by the sometimes ambivalent nature of human relationships and developing more complex

experiments may be unlikely to delve into these relationships with understanding.

Qualitative methods

The main strengths of the phenomenological paradigm and associated qualitative approaches have already been mentioned. To summarise:- their ability to look at changes over time; to understand people's meanings and to adjust to the evolution of new theories. They also provide a way of gathering data which is seen as natural rather than artificial.

However, data collection can take up a great deal of time and resources. In addition, the analysis and interpretation of the data may also be time-consuming and difficult. Qualitative studies can feel very untidy because it is harder to control their pace, progress and end-points. There may also be the problem that people, especially policy-makers, may give low credibility to these types of studies. This is an interesting point, namely that the allure of statistics can be very persuasive, yet this type of data can be manipulated to suit a purpose as can qualitative evidence.

Another shortcoming that is sometimes attributed to phenomenological research is highlighted by the E835 (1996) Study Guide (p.16). It indicates that the conclusions drawn from this kind of research can be criticised for using vague verbal quantifications such as 'often', 'generally', etc. without reference to the numbers involved. Similarly, causal claims are sometimes made but without the control of variables expected in quantitative research or making it clear how alternative explanations are otherwise eliminated. These are valid points and ones to be mindful of in this study. Nevertheless, despite the considerable time spent on data collection and the far greater period which will undoubtedly be needed to transcribe and analyse interview and to peruse documentary evidence, qualitative methods will form the major part of this study for the reasons explained previously.

The complementary nature of the two paradigms.

I now return to the question of whether the paradigms are incompatible or complementary. Earlier, I explained that although the underlying philosophies in their 'pure' versions may be diametrically opposed, much educational inquiry uses quantitative and qualitative methods. Indeed, perhaps it would be logical to use an amalgam of both techniques if it provides more perspectives on the phenomena being investigated and if the validity of the research claims can be enhanced as a result.

One study that used a combination of both qualitative and quantitative methods was that of Hofstede (1980) in his investigation into the effect of national cultures on social and work behaviour. His data was based on questionnaires, that is, totally quantitative, and its analysis was conducted purely by computer. This analysis indicated four dimensions of national culture which were statistically independent,- a high score on one would not imply a high or low score on any of the others. Questions were created by the researcher from the literature and quantitative analysis. However the four dimensions of national culture were not formulated as initial hypotheses but only after considerable post hoc analysis of the data and through much reading and discussion with other colleagues. Secondly, in Hofstede's (1980) account of his research, he accepts that he is dealing with mental constructs rather than hard objective facts, he accepts that his results are not necessarily value-free and he recognises that different methods will provide varying perspectives on what is being studied. Thus, it is worth 'triangulating' where possible by using a mixture of both qualitative and quantitative methods.

Other researchers advocate the use of both methods. Fielding and Fielding (1986) provide examples of how to combine the two kinds of data where the overall direction and significance of the two sources are fairly similar. However, they do not explain what to do when the two forms of data are in direct opposition. This problem demonstrates that one should not mix methods simply for the sake of getting a slightly richer picture and also that

the researcher should be aware that the reality of what is being investigated may be considerably more complex than the data collection methods are capable of demonstrating.

Although these two examples show that in practice it is possible to use characteristics of both philosophies in a study, some researchers accept no compromise between them. These convictions came to prominence in the late 1960s and early 1970s when some sociologists) argued that an understanding of the political and cultural processes involved in education could only be provided by qualitative research. Similarly, in the area of curriculum innovation, some felt that the narrow focus of quantitative research could not elucidate the real effects of innovations because it made false assumptions about human nature and interaction. These beliefs led to the emergence of other qualitative approaches such as the educational action research or teacher-as-researcher movement. Some qualitative researchers now not only reject all use of quantitative methods but go further and suggest no evidence can be independent of the researcher's presuppositions and so question whether the aim of most educational inquiry to obtain 'objective' knowledge is achievable, even in principle.

I have not rejected the use of quantitative methods. The questionnaires used in this research contain a variety of question types. Some require brief free-response answers whilst others necessitate a 'tick-in-a-box' response or the placing in order of importance a list of predetermined choices. Follow-up interviews may go over much the same ground as in the questionnaires, particularly where responses in the latter are ambiguous or perhaps where the question needs further amplification. The underlying principle is that a variety of questions is utilised in an effort to enhance triangulation in the study.

Objectivity and the two approaches

Is objective knowledge, that is, knowledge whose validity is independent of the researcher, achievable? In order to answer this, one needs to define what

being objective means. Eisner (1993), uses Newell's (1986) distinction of two kinds of objectivity- ontological and procedural. To be ontologically objective is to obtain a view of the world as it really is. Procedural objectivity is achieved by using a method that eliminates, or at least minimises the scope for personal judgement. The aim of traditional educational research is to use procedurally objective methods to gain an ontologically objective account of the phenomena under investigation as they truly are, independent of the researcher.

Eisner rejects ontological objectivity as unattainable on the basis that perceptions are framework dependent and gives examples of how what we regard as being objectively true has changed during the history of scientific thinking. Here he is agreement with Popper (1968) who advocates the 'nonfoundationalist' perception that nothing is known with such certainty that all possibility of future revision is removed, i.e. all knowledge is tentative. Eisner urges us to accept that all experience is 'transactive', hence all we can know is the result of a transaction between our sentient selves and a world we cannot know in its pristine state. On this point I differ. There are many examples where science has explained how the 'world' really is and where that reality is unlikely to be changed- ontological objectivity is obtainable. Although people used to think otherwise, can anyone now seriously argue with the 'fact' that the Earth revolves around the Sun, not vice versa, or that this view is ever likely to alter?

Eisner also says that possessing procedural objectivity provides no grasp on reality but merely demonstrates that people can agree. This 'group consensus' is what Phillips (1993, p.66) interprets as 'quantitative objectivity' but he gives it little credence as agreement does mean that the views concerned are correct or that they have been reached in a way that has avoided bias and distortion. Ironically, some quantitative researchers now regard procedural objectivity or consensus as the only form of objectivity there is- a stance from which I have already distanced myself.

Stenhouse (1975) gives an interesting view of the researcher's problem of objectivity. In this work he declares that in situations where teachers are performing research in their own classrooms, the problem of objectivity does not arise, since he advocates that *any* classroom research should be performed by teachers where their subjective perceptions of what is happening are crucial. However, Stenhouse seems to imply that, on the one hand, we should be prepared to accept teacher-researchers' judgements as conclusive and sufficient for their own classroom, but on the other to contend that they should not be expected to make generalisations from their research.

I favour Phillips' more recent opinion (1993) that to abandon objectivity is to threaten the validity of observational or qualitative work. For example, he argues that observers are prone to misjudge frequencies of occurrence of events unless they use some quantitative scoring. Thus the conclusions of a researcher who controls these factors would carry more weight, would be considered more 'objective' than if they had not been.

Crucially, Phillips (1993) states that to produce objectivity in the qualitative sense, a view has to be open to vigorous examination and challenge. In my view, it is this aspect of objectivity that suggests that qualitative and quantitative research can be considered compatible. All research has to stand up to outside scrutiny if it is to be considered to be valid and reliable.

All research must strain for objectivity by achieving *validity, reliability and generalisability* (which Anderson (1998) calls 'external validity'). Although the language of validity and reliability was originally developed for use in a quantitative social science, provided the researcher is committed to providing a faithful description of others' perspectives, then the ideas will vary in the two paradigms. Easterby-Smith et al. (1994, p.90) suggest the following interpretations of these terms:-

To achieve *validity*, the positivist asks whether an instrument measures what it is supposed to, whereas the qualitative view is whether full access to

respondents' meanings has been gained. This issue is discussed later in highlighting the problem of 'reactivity' whereby informants may act or respond in a way they believe they are expected to, rather than the way they usually do.

The issue of *reliability* is viewed differently in the two research paradigms. Quantitative reliability is obtained when the same results are recorded on different occasions, whereas qualitative reliability occurs when similar observations and interpretations are made by different researchers on different occasions. The present study can perhaps be criticised on these grounds since questionnaire and interview data has only been collected at one point in time, namely towards the end of the academic year. Although questions are asked which require respondents to consider their views across the whole course, I recognise that the narrow time span for data collection constrains the study to being viewed as a 'snapshot' of the mentoring process.

Generalisability means that quantitative patterns observed in a sample will also be present in the wider population. The phenomenologist sees it as the likelihood that theories generated in one setting will also apply in others. Generalistaions in the present study will be restricted to the sample taken but may be applicable to the wider population of students and mentors. In his 1975 article, Stenhouse makes a somewhat contentious point when he argues that teacher-researchers will not face and will not be interested in the problem of generalising beyond their classroom experience. He asserts that this area should be the domain of professional researchers who would be more skilled at scrutinising the accumulated case studies of teacher-researchers for general trends. This latter point may have some merit, but I consider it unlikely that teachers in general cannot contemplate a broader view of teaching than that restricted to their own classroom experience.

SUMMARY

I have explained that on a philosophical level there is a clear dichotomy between the positivist and phenomenological position. There are also sharp differences of opinions about the desirability of research methods.

However, this incompatibility is tempered in the reality of research which involves a lot of compromise between the two viewpoints and it is in this respect that they can be seen as complementary with qualitative researchers often drawing on quantitative data and vice versa. A prime example is OFSTED inspections which rely very heavily on quantitative research methods such as systematic observation, parent questionnaires, analysis of exam results and financial data, but which also utilise qualitative techniques such as semi-structured interviews with parents, governors, teachers and pupils.

I have also suggested that an area of compatibility between the two approaches is in their search for objectivity. This is attainable through differing interpretations of validity, reliability and generalisability.

A REVIEW OF LITERATURE ON RESEARCH METHODS

One of the major arguments that is a feature of many studies on teacher mentoring and educational research in general is the importance attached to taking up both a critical and reflective point of view. One may embark on a piece of research with these ideals at the forefront of one's mind but these noble intentions can easily be pushed aside in analysing the welter of data and simply forgotten with the restrictions of time that are invariably present.

At this juncture, I will explain what is meant by 'critical reflection'. I have earlier referred to Tripp's idea that any incident, however mundane, can become a 'critical' depending on how the incident is analysed and reflected upon. In a later study, Tripp (1998) contends that research should be critical in both the content and the process used. By taking a critical stance on the process of research, Tripp means that the methodology used should be monitored, reflected upon, evaluated and thus build guidelines for improvements in future projects. This is surely common sense. A researcher should become more skilled at utilising certain methodological techniques with practice. He or she will learn which methods are suitable in a given situation and type of research. However, one runs the danger of being too conservative, of using techniques that one is familiar with and not being willing to experiment. I have taken up Tripp's ideas to some degree within this research by using the initial questionnaire data to reappraise the questions to use in later interviews. This study is concerned with developing student teachers' understanding of teaching, but in addition, by combining a critical stance with reflexivity the researcher can endeavour to question his own values and practice - a process that the role of a mentor should, I believe, bring about as a matter of course.

Tripp also suggests that the researcher should deliberately build participation, as a flexible and emerging process, into the research. Fine and Weiss's (1998) urban ethnographic study is a good example of this process in that decisions about design, sampling, interview schedules, interpretation

and dissemination of findings were developed with consultation from research team members and community leaders. My study may fall short of this aspiration in that the other participants in the research have primarily performed the role of information givers, either by questionnaire or interview and it is the researcher who will base his subsequent actions on what has been learnt from them. There may be some spin-off from the research in that the participants may reflect on their own methods following my contact with them and on seeing my findings but one cannot presume that this will happen. Tripp (1998), using the ideas of Pretty (1994), suggests seven kinds of participation of which 'information giving' is one of the more passive forms. He goes on to outline six ways in which teachers themselves can participate in research. He terms these as 'consenting', 'consulting' (two types), 'co-operative' (two forms) and 'collaborative'. My project has been mainly of the 'consulting' variety in which I have acted as the research supervisor with control of the research, whereas the respondents have been research assistants rather than researchers themselves.

Stenhouse (1975) goes further and argues that curriculum research and development should be in the hands of teachers and by so doing teachers can become 'extended' as opposed to 'restricted' professionals. By this he means that as well as teachers possessing essential skills such as classroom competence and understanding and managing children, they should in addition have a concern to link theory with practice and have a commitment to some form of curriculum theory and mode of evaluation. In short, the extended professional will have the capacity for professional self-development through systematic self-study, through the study of other teachers' work and by testing ideas by classroom research. This may well be seen as an ideal situation but it may not correspond with what happens in reality since there are several impediments to putting it into practice. Firstly, the number of teachers who are inclined to take the initiative in curriculum research may be less than expected. This is not necessarily due to a lack of interest on the part of teachers. The barriers to Stenhouse's idea of large numbers of teachers as researchers seem to be those already referred to by himself and other authors. He argues that teachers casting themselves in the

role of researchers have to overcome social, theoretical and methodological problems.

One of the major barriers considered by Stenhouse is that the social climate in which teachers work offers little support to teacher-researchers. He affirms that schools need a fundamental change in organisation and pedagogy to obtain the capacity to critically review their processes and practices. However, the school faces many restrictions to this aim. Stenhouse mentions the following:- lack of resources-schools are under financed and staffing is perennially difficult; low morale in schools-he suggests that it is difficult for schools to change without an upturn in this area, which in turn depends on support from outside, including positive social opinion. These factors would seem as valid now as when Stenhouse first highlighted them. In addition, Stenhouse maintains that other impediments to the goal of 'reflexiveness' which face schools are the problem of 'control', their need for 'rectitude' and the strain on the competence and identity of teachers that innovation exerts. The idea of control seems pertinent in that any far-reaching curricular changes are likely to be resisted because they will affect the order or control within the school by inevitably and necessarily seeking to alter the institutional arrangements and norms on which they depend. A school may take up a position of 'rectitude' in order to justify the power it exercises over its pupils and hence their parents. However, Stenhouse's supposition that the moral authority of the school would be threatened if doubts are cast on its present practice could perhaps be avoided with intelligent and enthusiastic promotion of the use of teachers as critically reflexive researchers leading to improvements in teaching. Similarly, the threat to a teacher's identity, subject knowledge and professional skills could be decreased with firm and appropriate support, encouragement and resources.

Stenhouse delineates several methodological barriers faced by teachers attempting to assume the role of researchers studying their own teaching in order to improve it. His ideas on the problem of objectivity have been discussed on p.60. He suggests that teachers may find the close examination

of their own teaching to be personally threatening. Other teachers who may be inclined to take up research may not do so because of lack of experience or confidence, their perceived lack of knowledge of research or perhaps their mistrust of educational research. In addition, he claims that only the most energetic and enthusiastic teachers will find the time to perform research, given the present staffing and organisation of schools.

As Burgess and Butcher (1997) make clear, these tensions between the roles of teacher and researcher are taking place against a political background of ever increasing demands to improve the quality of teaching. Given this context, Stenhouse is correct in arguing that these tensions should be tackled. With financial and practical support it is possible to be optimistic that an ambitious scheme of school-based in-service teacher training could resolve these problems.

Ethical issues

Researchers need to be aware of a variety of ethical issues. Anderson (1998) points out that the practice of research, like all human behaviour, is subject to ethics, principles, rules and conventions. These are formulated in terms of the rights to privacy and protection of those being researched.

The most important principle to adhere to is that of 'informed consent'. Anderson (1998) explains that the participants must be informed of the nature and purpose of the research, its risks and benefits, and must consent to participate without coercion. In this study, I give brief details of this nature at the start of the questionnaires (although not referring to potential benefits or risks) and talked through what would be involved with the participants either by phone or face to face. All gave their permission, the only reservation invariably being one of when to fit in an interview.

However, Anderson suggests that it is relatively easy to get consent from participants because of their inherent trust of a 'scientific leader' whose individual attention to them becomes a subtle form of coercion. For this

study, few of the prospective participants were friends or colleagues of the researcher so the possibility that participants felt obliged to help in the study may be diminished. On the other hand, people may volunteer with the expectation that they may be helped in some way or to 'sound off' to an interested party about problems they have been encountering. A further area of concern is that the role of the researcher may result in caution on the part of respondents. Thus, they may be guarded when answering, or may feel the need to give the 'correct' answer. In collecting data for this study, I endeavoured to be honest and open, respecting the participant's right to discontinue at any time-a point that was made to them at the outset. Whyte (1982) raises this issue of respondents having 'ulterior motives' or a 'desire to please'. Similarly, since the research will eventually lead to a published account, this may have similar and significant effects.

The above concerns associated with the researcher's role reflect the issues of 'reactivity' whereby informants may act or respond in a way they believe they are expected to, rather than the way they usually do. Reactivity is a major threat to the validity of claims based on interpretation of evidence. To diminish the likelihood of these problems occurring, considerable effort must be put in to building relationships and clarifying confidentiality issues. It should be stressed at the outset that all information collected will be treated anonymously so that no individuals or groups are able to be identified.

The issue of confidentiality should involve a clear understanding between the researcher and participants concerning how the data will be used. I made a verbal assurance that the questionnaire and interview material would be seen in full only by the researcher and any quotes or references would be anonymised. It is also desirable that participants are able to respond to the data that they give the researcher. Thus, transcripts or summaries of the findings could be provided for them to comment upon. The training manager and most of the mentors in this study provided feedback on the findings, but time constraints meant that this was not possible to do the

same for the students. Further reference to this will be found in the evaluation for this study.

Perhaps an even more sensitive ethical issue is how to handle what Fine and Weis (1998) term 'hot data'- unexpected information that may put participants or those they refer to in a bad light. This may be contextual information or the respondent may have a personal agenda, as Anderson puts it, seek to air dirty laundry or address problems which they feel contribute to the subject at hand. As Finch (1998) states, there is a clear potential for exploitation here. Is there a possibility that the data could be used by others for their own purposes? Finch also points out that although it is in the researcher's interests to build up rapport with the respondent, this may lead to information of a more personal or controversial nature being given. Whereas individual interests may be secured by guarantees of anonymity, confidentiality and a personal code of ethics, it may be more difficult to ensure that information will not be used ultimately against collective interests-in this case of mentors in general for example. Barnes (1979) suggests that in the long-term interests of sustaining informed criticism in a democratic society, the results of research should be published whatever they are. However, there are those who would not agree with this assertion if they judge that more harm could be done than good. However, it is clear that if such 'hot' information is obtained (assuming that it is recognised as such), then the researcher faces a delicate decision about what action to take and how the information should be shared.

Yet another issue that could arise is that of a conflict of interests. The researcher's personal interests may influence the nature of the questions asked and hence the responses obtained as well as having an effect on the researcher's ability to make fair judgements. As an ex teacher-mentor myself, I have an interest in the outcome of the study. How much of one's own experiences should one put in? One may feel inclined to side with the mentor participants and this may lead to an emotional as well as intellectual commitment to promoting their interests. Perhaps objectivity may be compromised but would that be just if it leads to improvement in the skills

of mentors and of the teacher training scheme on the whole? It is important that the researcher is aware of this dilemma and, as Fine and Weis (1998) assert, it is the responsibility of researchers to talk about their own identities and experiences.

A further point to take in to account is that the researcher will inevitably approach the research with preconceived ideas. Therefore, to counter bias on the part of the researcher, one could identify a 'critical friend' who can check such bias in the questioning and analysis, and respond on criteria of fairness, accuracy and relevance.

Finally, it is impossible to identify every situation where an ethical dilemma may surface but by paying attention to the issues outlined in this section, one can offer some measure of security and protection to the respondents.

RESEARCH METHODS USED IN THE STUDY

Support and challenge defined

This study has its foundation in the process of mentoring in initial teacher education. The concept of support and challenge is central to the study and has to be taken into account in the collection of data and the subsequent analysis of this information.

The study employs Daloz's model of mentoring to illuminate our understanding of the possible impact of dynamics of support and challenge on novice teachers' learning. Daloz's model was explained in the literature review on mentoring in Chapter 2, p.15. To recap, support is seen as an affirming activity and provides "a place where the student can contact the need for fundamental trust, the basis of growth" (Daloz, 1986, p.215). The function of challenge is very different. In Daloz's words, "while the function of support is to bring boundaries together, challenge peels them apart" (p, 213). He conceptualises challenge as 'cognitive dissonance' whereby a gap

is opened between the student and the environment, a gap that creates tension in the student, calling for closure" (p.213). In other words, strategies are introduced to question trainees' thinking, preconceptions or tacit assumptions, thus stimulating learning.

The place of the study's research methods in the literature

The research in this study incorporates many of the characteristics of qualitative research. A variety of methods are used to establish different views of phenomena, investigating a small number of cases in depth and collecting semi-structured or unstructured data, i.e. not coded at the point of collection. Questionnaires and audio-recorded interviews are examples of this. Finally, analysis of the data is mostly descriptive and explanatory although there is some statistical analysis and quantification from the questionnaire responses.

Anderson (1998) discusses five types of qualitative research methods often used in educational research. These are:- Applied Research; Case Study; Ethnography; Grounded Theory; Phenomenology. This primarily qualitative study has features in common with three of these qualitative research methods, namely, case study, ethnography and phenomenology.

Firstly, Anderson explains that a 'Case Study' is a qualitative investigation of a specific phenomenon within its real-life context that relies on multiple sources of information such as:- documentation, file data, interviews, direct or participant observation and site visits. This study can be considered to be a series of linked case studies or a longitudinal case study viewed over the three year Doctorate course.

Secondly, this study is undoubtedly a form of ethnography, the main features of which are detailed by Atkinson and Hammersley, (1994). The study aims to explore phenomena within their natural setting, the data is not be pre-coded in terms of its analytical categories, a small number of cases are

investigated, and analysis emphasises description and explanation although there is some quantification and statistical analysis.

Thirdly, this research can be classed as phenomenology since, as Van Manen (1990) argues, it attempts to illuminate and explain phenomena rather than classify, taxonomise or abstract it. The research also relies on retrospective reflection, -thinking about the experience and what it means, after the fact.

Applied research is action-oriented and "aims to assess, describe, document or inform people concerned about the phenomena under investigation," (Anderson, 1998, p.121). Its findings are intended to have immediate and practical value. This contrasts with the present study which is aimed at adding to the existing knowledge base concerning mentoring.

The fifth of Anderson's qualitative research methods, Grounded Theory, has been defined by Strauss and Corbin (1974) as "a general methodology for developing theory that is grounded in data systematically gathered and analysed" (Strauss and Corbin, 1994, p. 273). Grounded theory may have some impact on this study since I will be attempting to explain the evidence from the data collected and to illuminate the principles which underpin the work being studied.

Collection of data

Gaining consent from the participants

Initial contact with the Consortium was made by telephone in September of the training year. It was not possible to speak with the Chief Executive but I explained the aim of the research to the SCITT Manager who showed considerable interest in the study and explained that he would pass on the information to the Consortium. Later, he provided a list of participating schools and students, together with their subject specialisms and school placements. Also in September, first contact was made with several students

and mentors through after-school training sessions organised by the training manager based in one of the SCITT's Leader Schools. The study was described and all the students and mentors present agreed to take part. In each of these initial contacts, I raised and stressed the issue of confidentiality.

The original intention was to embark on data collection in the first autumn term. However, certain impediments prevented this happening. Most of the students and mentors who were at the early training sessions suggested that I contact them later in the year after the initial pressures of coursework and school experience had decreased. In addition, my ill-health prevented me from working on the research for long periods. Thus questionnaire and interview schedules could not have been produced in time for the first term. Eventually, I decided to collect most of the data for the study during the final term of the students' school placements when all trainees would be present in their Parent School once again.

It has been explained earlier that a total of 87 students embarked on the SCITT scheme in the year 2001-2002. Of these, 44 were in the Primary sector and 43 Secondary. Sixteen students had science as their major subject and of these 12 were placed in a Primary school as their Parent school.

Sampling

The sampling procedure in any research should be carefully explained in order for the reader to understand the relationship of the sample to the group or target population from which it is drawn. Ideally, the sample will be typical of the wider population. In this study, the population is that of teacher-mentors and student teachers and its characteristics are naturally varied in terms of age, experience, gender, subjects taught and the type of school in which the training takes place.

Here I outline the problems I encountered with data collection. I revisit this aspect in the study's evaluation, Chapter 8 (pp. 153-154). At this stage, I

will explain that the sample of respondents may not have been a representative of the general population.

The questionnaires for this study were obtained only from students and mentors in the secondary sector and although there were approximately equal numbers of male and female respondents from a range of teaching subjects, I have no information on the age or experience of these participants.

The make-up of the interviewee sample was heavily weighted in favour of women. All six mentors and four of the six students were female. I have no data on the gender make-up of mentors in the SCITT. Of course, it is possible that the majority are indeed women. Nevertheless, one must be aware that the sample may be atypical when making generalisations from the findings.

Ball (1993) argues that gender issues can cause problems for a man researching women. He suggests that a women interviewing other women is a situation more conducive to the easy flow of information. The author goes on to say that the power relationship in a male-female interview is such that in some cases any research formulated in these terms will be inadequate and distorted. While I would hope that this is not the case in this study, it is important that the researcher recognises the potential problems and every effort should be made to make the interviewees feel comfortable and providing unfettered information. More on data collection from interviews follows later in this chapter.

The age and experience of both mentors and students may also be an issue. The majority of the students interviewees were more mature people with experience of adult life other than school and college. The mentors were all experienced teachers, as one would expect since they were chosen for the key role of mentor, but in addition, they were experienced in this role. Thus, the researcher and reader should be aware that a less experienced and mature sample of respondents would not necessarily produce similar data.

Questionnaires

I was concerned that the report for Part 1 of the Ed.D was criticised for the small size of the sample obtained. To counter this, it was decided, initially, to send questionnaires to as many students as possible and then to follow up with interviews with a smaller number of respondents and hopefully with their mentors. By the time the questionnaires were ready for distribution, a number of students had dropped out of the course, including one secondary and four primary science students. Nevertheless, I proceeded by first contacting 22 secondary schools by telephone, asking to speak to the headteacher or training manager to explain my research briefly and to seek permission to send questionnaires to the student or students present in the school. Occasionally, I discovered that the student was no longer on the course, but all schools in which students were still present gave their permission to distribute a questionnaire to them. Contact was usually with the headteacher or training manager. In a few cases the school secretary gave provisional permission and was asked to contact me by telephone if there was a problem. A total of 36 questionnaires were despatched. Eighteen questionnaires were returned, of which 15 (8 male, 7 female) were from students in secondary schools and 3 were from female mentors (also secondary based). All the questionnaires were collected during the final term of the course.

Originally, it was the intention to contact primary schools in a similar way. However, a problem concerning the Consortium's consent arose at this stage with the result that no questionnaires were obtained from primary schools. This matter will be referred to in more detail in the evaluation for the study (p.156).

Subsequently, the three mentors who returned questionnaires were interviewed as were their students (who had also completed and returned the questionnaire). Three other mentor-mentee pairs were also interviewed.

The questionnaires for students and mentors (Appendices 2 and 3 respectively) are organised into four sections, corresponding to the study's four themes. Similar questions are used for both groups of respondents. The questionnaires comprise a variety of questions. Firstly, those requiring a yes/no choice followed by an explanation for that choice. Also, questions necessitating respondents giving slightly longer comments on aspects of their year's training, questions requiring a single tick-in-a-box from a choice of options, and finally questions asking the participant to place specified options or categories in order of importance.

Interviews

This questionnaire data was followed up by conducting interviews with 6 mentor-student pairs, that is, a total of 12 interviews. The interviews took place towards the end of the third term or early in the subsequent summer holidays. Four of the mentor-student pairs were based in local primary schools, the other two pairs being located in one of the four Leader Secondary schools for the scheme. All six of the mentors were female, as were the four primary school students. The two secondary students were male. The primary schools were contacted initially by means of a telephone conversation with the headteacher and/or training manager of the appropriate school followed by arranging the time and place for the interview by telephone or a personal meeting with the mentor or student. The interviews with the secondary-based respondents were arranged through initial contact with the school's deputy headteacher who was also the training manager for his school and a science subject tutor for the SCITT. In addition, I had already met the students and mentors who were to take part in the interviews during meetings which the trainees attended with the training manager after school on Wednesdays throughout the course. It was at one of these meetings in the first term that the thrust of my research was explained to some of the participants and gained their agreement to take part in the study.

The interview schedules for students and mentors (Appendices 4 and 5 respectively), are organised into four sections, corresponding to the study's four themes. Once again, broadly similar questions are used for both students and mentors. The contents of the schedules were adjusted following the literature review on methodology and initial analysis of questionnaires. The schedules consist mainly of open-ended questions of the type, "what were your main concerns ... ?" or, "what were the reasons for ... ?". If necessary, the informant's response would be followed up with more searching probes during the course of the interview.

It was planned to run a pilot interview with either a mentor or student. The aim was to test the suitability of and the presence of both ambiguity and bias in the questions. This procedure would also have helped to practise and standardise interviewing technique. Insufficient time was found to perform this trial interview. Nevertheless, the first interviewees, a mentor followed by her trainee teacher were very positive in their opinions as to the appropriateness of the interview questions. Additionally, the researcher is fairly experienced in this activity, having performed a variety of interviews as part of previous smaller scale projects.

The interviews were semi-structured i.e. open ended rather than using a questionnaire or yes/no format and a relatively informal style was used so that a more conversational tone rather than a formal interview developed.

Cohen and Mannion (1980) consider the relative merits of interviewing as a research technique. These include the fact that they provide extensive opportunities for asking, for personalised responses and for probing issues more deeply. The semi-structured approach was aimed at ascertaining general trends and feelings. R.G. Burgess (1982) discusses this process of using data from different respondents to ascertain what are common trends and feelings and what are purely individual points of view. The semi-structured approach allows flexibility. However, I endeavoured to keep the informants providing information relevant to the research being carried out. Burgess (1982) comments, "Researchers need to have understanding

and sympathy for the informants' point of view. They need to follow their informants' responses and to listen to them carefully, in order that a decision can be made concerning the direction in which to take the interview" (Burgess 1982 p.108).

As stated above, as many open-ended questions as possible were included. The merits of using this type of question are discussed by Cohen and Mannion (1980). Open-ended questions allow considerable flexibility and allow the interviewer to probe and go into more depth when the need arises. They also enable misunderstandings to be cleared up and the researcher to establish a rapport with the interviewee, hence enabling more detailed, honest information to be obtained.

Beforehand the respondents were told the purpose of the interview and were assured that everything would be treated as confidential. Permission to use quotes was requested and given. Assurance was given that all quotations would be treated anonymously.

The interviewees were told that the interview would last for a maximum of an hour. No notes were taken during the interviews as this might have diminished the informal nature of the proceedings. The interviews were audio-taped with the interviewees' consent. The use of a tape recorder means that the information is complete and can be referred back during analysis.

The merits of using a tape recorder for interviewing are referred to by Whyte (1982). It enables the interview to flow and the interviewer can give his or her full attention to the informant. This also means that there is not the distraction of notes being taken or the problem of having to rely on memory to ensure the information is complete.

The researcher and respondent sat side-by-side, not opposite each other, with the tape recorder nearer the interviewee but out of his direct line of sight when looking at the interviewer. The greater degree of informality was

aimed at gaining a more accurate picture of interviewees' perspectives by increasing rapport, thus allowing respondents to speak for themselves. To emphasise the informal nature of the proceedings, participants were asked to choose the venue for the interviews. Most chose their teaching room, although some were interviewed in their home.

To improve both the reliability and descriptive validity of the data, I recorded my thoughts on the interviews soon afterwards. This included the interviewee's demeanour and how they responded to questions. Jones (1987) suggests that one should note any factors concerning the place, time and relationship with the interviewee that seem important to take account of when coming back to the data later.

Analysis of documentation

This comprised analysis primarily of the schemes and manuals provided by Midshire College for the training of mentors. This was done mainly in the initial stages of the study to familiarise myself with the overall structure and workings of the scheme. In general, research benefits from combining research methods and sources of data. Hence, by triangulation using the questionnaires, interviews and documentation, the validity of research findings should be increased. The following documents were gathered:-

- The Borders Consortium Validation Proposal for the PGCE 7-14 Course, June 1999;
- The Borders Consortium/Midshire College Training Manager Handbook and Workbook for Secondary Schools, 1998-99;
- The Borders Consortium Secondary Handbook, 2001-2002 (for 11-16,11-18 & 14-19 courses);
- The Borders Consortium Middle Years Handbook, 2001-2002 (for 7-14 course);
- The Borders Consortium Subject Handbooks, 2001-2002 for Mathematics, MFL, History, Geography, RE, Music, 7-14 Science, Secondary Science, Core Science, Core English, Core Mathematics.

The 2001-2002 documents were provided by the SCITT Manager in disc form.

A summary of the Middle Years Course Handbook and Secondary Course Handbook 2001-2002

These are the main pieces of documentation provided for mentors, training managers and trainees at the beginning of the course. The handbooks are provided for all participants in the form of a floppy disc. The handbooks explain the Borders SCITT scheme in detail-its relationship with Midshire College, its aims and structure, calendar for the course, details of assignments and school placement, the roles and responsibilities of all participants, useful contacts, guidance on how to complete the trainee's Professional Development Portfolio together with blank proforma for feedback discussions, assignments feedback, lesson observation, assessment, and finally agreed targets. There is no explicit mention of the emphasis that is to be placed on the teaching of moral and ethical issues.

A first reading of the handbooks helped in the drafting of the questionnaires and interview schedules. Further detailed analysis of the above documentation enabled details of the SCITT to be assembled for Chapter 1 and Appendix 1 of this study. These included course aims, structure and outline, roles of the participants and information on mentor training.

Analysis of data

Questionnaires

The four themed sections were analysed question by question. For questions requiring lengthier comments or one choice from a number of specified choices, similar responses were grouped according to frequency. Some questions produced category data which needed to be quantified. These were questions requiring options to be placed in rank order of frequency. They were analysed in tabular form and the mean order worked out. Finally,

trends and patterns were looked for in answer to questions and for each theme.

Interviews

Wragg's (1987) model was used as a basis for processing and analysing the interview data. The recordings of the twelve teacher interviews were fully transcribed. A first reader (myself) read the transcripts and identified key points and comments. A second reader independently made a list of salient points. Areas of disagreement were then discussed and analysed further. There was a final reread after the initial analysis to see if anything has been missed or distorted. This technique enables correlation of ideas and decreases the chance of missing relevant information.

The basic form of analysis I used was 'theme analysis'. This means searching the qualitative data for themes of relevance to the research focus under which the data can be organised. For this study, these were the four mentoring themes. Further data was then coded and allocated to the categories. The aim is to clarify and develop relationships between and amongst the categories to produce an integrated set of features, each illustrated by extracts from the data. This technique requires the systematic labelling of particular data items relevant to each category in the same place, so that they can be compared and contrasted.

The interview schedules were structured in such a way that initial categories (the four themes of the research) were already identified. James and Ebbutt (1981) describe the problems for teachers analysing data and they suggest the use of index cards for categories to emerge, allowing cross-referencing and searching for patterns. An alternative to using index cards is to construct a chart, on which relevant points can be entered in categories and coded according to transcript page number and response number. This latter technique was used to analyse the interview data in this study.

The interview transcriptions were coded S for student or M for mentor. They were then analysed one question at a time and the most relevant responses were then copied on to a large (A2 size) piece of blank paper. For similar questions answered by both student and mentors, the student responses were placed alongside those of the appropriate mentor, for example S1 next to M1. Therefore, each question would generate 6 answers from both students and mentors. The S1/M1 and S2/M2 pairs were those based in secondary schools, whilst the remaining responses S3/M3 to S6/M6 were from pairs of primary participants. A second reader who was familiar with my study was utilised in an effort to ensure that any relevant responses were not missed or placed in an incorrect place on the hand-written sheets. The four themes generated two analysis sheets each. These were then perused to discover similarities and differences between; (i) student comments, (ii) mentor comments and (iii) comments from students and mentors, in particular between student-mèntor pairs. Finally, the responses from the questionnaires and interviews were compared and contrasted with the aim of eliciting overall trends and patterns.

Follow up feedback from mentors and training manager

As explained earlier in this chapter, it was only possible to assemble three sources of data during the main collection period. These were from questionnaires, interviews and analysis of SCITT documentation. It was not possible to collect any observational data. Therefore, to increase the level of triangulation, a summary of the study and its conclusions was sent to five of the six mentors who had been interviewed and also to the training manager in the Secondary Leader School. The summary provided for them consisted of the abstract, the summary and discussion sections of the chapters on findings, the research commentary and the final chapter on the relevance of the study.

Eventually, five of the above were interviewed to elicit their opinions of the study and specifically of its conclusions. The training manager (TM) and mentor 1 (secondary science) were interviewed together whilst mentors 3, 5

and 6 (mentors in primary schools whose students specialised in science, maths and science respectively) agreed to be interviewed individually. The meetings were audio taped with the respondents' permission and took place under the same parameters as the original interviews. The interviewees were asked for their opinions of the findings which were summarised in terms of the six areas delineated in the research commentary, and also for their comments on the suggestion summarised in the final paragraph of the abstract that major benefits could ensue if mentors were required to be armed with more knowledge of the theories of knowledge advocated by the SCITT and of the social, moral and ethical issues of teaching. These discussions were transcribed and then analysed for patterns, trends and anomalies as before. These were then summarised and categorised according to the study's four themes. These summaries appear after the findings and before the research commentary for each theme in Chapters 4 to 7.

CHAPTER 4:- STUDY FINDINGS - THEME A

MENTORING AND TEACHER PROFESSIONAL DEVELOPMENT

The findings of the research are arranged according to the study's four central themes and within each theme according to the main questions asked of the respondents.

Students' concerns during the course

The questionnaires indicated strongly that the overriding concerns of students at the start of the course were worries about inadequate subject knowledge (7 out of 15 responses, denoted as 7/15 hereon), and secondly whether students' classroom management would be sufficient to cope (5/15). This was generally supported by the comments from the six students who were interviewed, with subject knowledge and classroom management eliciting three responses each. However, there was some divergence in the aspects of subject knowledge which were of concern to primary and secondary students. Those concentrating on primary teaching were more concerned with the prospect of having to teach the range of subjects required. However, secondary school trainees were more perturbed over whether their knowledge in their specialist subject would be of sufficient depth.

Other concerns mentioned more than once in the questionnaires were, "being able to cope" (2/15) and developing a good relationship with pupils and staff (2/15). Interestingly, only one student, either in the questionnaires or interviews, specifically mentioned the relationship with the mentor in answer to this question. This particular student hoped for constructive support from her mentor and training manager.

From the questionnaires, when asked for their concerns towards the end of the course, fewer students now cited continuing worries about classroom

management (3/15) and subject knowledge (2/15) compared with the expected workload envisaged in a teaching post (5/15). Specific classroom skills such as maintaining the pace of lessons (1/15) or more vaguely, "giving good lessons" were mentioned (1/15) as was the need for the students themselves to continue their own professional development (2/15). It is of interest here that none of the trainees' initial concerns considered the pupils' learning and this aspect was only touched on by one student when detailing the worries trainees possessed near the conclusion of the year. The student concerned stated the aim that pupils should achieve the learning objectives of a lesson.

The worries concerning subject knowledge and classroom management were supported by the six mentor interviewees, although the majority (4/6) considered that a general lack of confidence amongst the trainees in terms of classroom skills was the major concern rather than a lack of subject knowledge (3/6). The close correlation between the student and mentor responses is the first indication that the relationship that developed between mentor and mentee was usually close.

When asked how the concerns changed during the year, a large majority of questionnaire responses were positive, with 11 of 15 trainees stating that their concerns had been removed. Of the other trainees, 3 explained that their worries had largely disappeared, but with some concerns remaining. These were, respectively:- not being completely confident taking a problem class in a tough school; worries that one student's lessons may be sometimes dull and finally the "daunting prospect of getting a job and wondering whether the trainee would cope when she did. Finally, just one student responded that initial concerns were partly alleviated, although the person involved felt that he still did not reach an acceptable level of confidence in classroom management.

There were no reservations amongst the six student interviewees when asked the same question, all of whom explained that their original worries had been allayed. When asked the reason for this success, all the trainees

initially concerned with their classroom management cited either discussions with or support and encouragement from their mentors. The lack of confidence in subject knowledge was discussed with mentors and other staff. However, all the trainees who had stated subject knowledge as a concern were in agreement in disclosing that they themselves had been mainly responsible for bringing their subject knowledge up to the required standard before a lesson by such means as reading up from text books or accessing the Internet. Indeed, one trainee respondent suggested that the situation amongst students on the age 7-14 course was that, "we taught ourselves about the subjects we didn't know.

Although mentors had agreed with students' comments that they (the trainees) considered subject knowledge to be of initial concern, no mentors stated that it had transpired to be the case, at least at this early stage of the interviews. In addition, mentors were agreed that early unease about classroom skills, although usually justified, was speedily alleviated so that the six students interviewed in the study exhibited a fair measure of competence in this area by the end of the first term.

What is important for trainee teachers to learn about teaching?

The questionnaire responses suggested that, whilst classroom management and control (8/15) together with developing subject knowledge (4/15) were again most often mentioned, the responses were more varied than in the previous question. I should point out that the questionnaire data was gathered during the final term of the course, so perhaps it is not surprising that among other factors that students considered important for teachers to learn were:- varying one's teaching style (3/15); managing bad behaviour (3/15); lesson planning and organisation (3/15); developing rapport with pupils, and one mention each for communication, pacing of lessons, motivating pupils, (lesson) presentation, time management, assessment strategies, the law and finally the importance of lessons in which the pupils are "active".

The detailed responses from the student interviewees were perhaps more significant. Whilst two respondents again made brief statements about the importance of classroom control and learning the "basics" of teaching, four of the six respondents linked the areas of subject knowledge and teaching style. By this stage of the course, these students were still stressing the need for knowledge of the subject, but were now emphasising the importance of teaching the content in such a way that the pupils could understand it. This is what student S2 considered to be "effective teaching." Another trainee, S4, stated, "it doesn't matter how well you know your subject, if you can't convey that knowledge to the pupils and get them to understand it, to get into it, then you're not going to get them to learn anything."

The mentors were asked the same question. Their answers mirrored the over-arching point made by the majority of the students, that of being able to develop a flexible teaching style. Mentor M4 expressed the idea that teachers should be adaptable in their teaching style in the different subjects that they are required to teach in primary schools, whilst M1 emphasised the need for trainees to observe as many different staff as possible, to enable the students to see the different teaching styles both within and outside a secondary school subject department. The other major theme in evidence across the mentors responses was the importance of concentrating on pupils' learning. Typical comments were:- "how to achieve each child's potential" (M3); to realise "that children are not commodities but individuals" (M6); "there's a reason why a child who appears articulate can't write" (M5); "how to set appropriate work for different levels in the same classroom" (M3) and "how to deal with different ability groups" (M2).

The mentor's role

The content for this part of the questionnaires was originated by Darling (1985) in the field of nurse education and subsequently adapted for use in teacher education by Cameron-Jones and O'Hara (1995). It was shortened in order to focus on challenge and support for the purpose of the present study. The questionnaires for both students and mentors gave a list of twelve roles

that mentors may exhibit with student teachers, together with a phrase suggesting the type of mentor behaviour that might be expected if aspects of the role had been in evidence in the mentor's performance. For example, the role of 'challenger' was exemplified by the phrase, "made you examine your ideas about teaching, subject knowledge, etc ..." Six of the specified roles were classified as relatively supportive and the other six as relatively challenging (italicised in table 4.1, Appendix 6). The illustrative phrases attempt to define the roles in ways which are consistent with the notions of challenge and support as described by Daloz (1986). Thus, the six support roles suggest affirmation of the learner with the mentor who plays these roles described as befriending the student and including him or her in school life. On the other hand, the function of the six challenging roles is to introduce ideas which contradict those of the learner or question the learner's tacit assumptions. Thus, when the mentor displays challenging roles, the trainees hear about discrepancies between what they are doing and what they might be doing, and learn something new from their observations and discussions. In short, the challenging roles are those which may be considered to encourage critical reflection in addition to classroom competence.

The roles were placed in random order and not classified as supporting or challenging on the questionnaire. Participants were asked to place the roles in order of importance from their experience of acting as a mentor or from being mentored, i.e. 1 = most important feature, 12 = least important. The results are shown in table 4.1 (Appendix 6). In addition, the mean scores for student and mentor responses are illustrated in bar charts 4.1a and 4.1b (Appendix 6). To enable the bars to show a decreasing order of frequency (i.e. importance) of the chosen mentor roles, the total scores were calculated by giving a respondent's first choice 12 points, second choice 11 points and so on. Mean scores were then calculated from these adjusted total scores.

Analysis of the student questionnaires reveals a bias in favour of the supportive aspects of the mentoring role, with the roles of 'supporter' and 'feedback-giver' ranked first and second and having by far the lowest mean

scores of 2.5 and 2.8 respectively. The most important challenging roles are seen as those of 'assessor' and 'model', being ranked third and fourth respectively. The remaining rank order positions favour supporting roles with the two lowest positions being occupied by the challenging roles of 'challenger' and 'tutor'.

Analysis of the mentor questionnaires once again places the 'supporter' role in first place with a mean score of 2.3. However, after the first position, the challenging roles are much more in evidence compared with the rank order generated by the student questionnaires, and indeed, the final positions 8 to 12 are occupied by supportive roles.

In subsequent interviews, several respondents explained the difficulty they had in placing the twelve options in order from 1-12, emphasising that most of the roles were exhibited at some stage, although there was usually little difficulty in identifying the most and least significant roles.

When asked the same question, three of the six student interviewees stated that the chief role offered by their mentor was that of support. As student S2 argued, "you have to have a mentor who is willing to listen to you and encourage you." The importance of the mentor acting as a 'feedback-giver' was also emphasised by three interviewees. As student S1 stated, the mentor "was very keen on fulfilling her role as a mentor in giving positive feedback." The challenging role of 'assessor' was mentioned as a required and integral part of the mentor's job whilst four of the respondents expressed the opinion that their mentor was a very good teacher whom they considered to be a good 'model'. The latter was the most common of the challenging roles put forward by the students, although all but one respondent thought of this role as subordinate to the supportive aspects already mentioned. Finally, student S2 could not bring herself to choose any roles over any others since she thought that her mentor was so good at all of them. It is interesting to note that, even at this early stage of the analysis of the data, a picture is emerging in which the students consider that being mentored is a very positive experience.

The mentor comments confirm the importance of support in the mentor-mentee relationship, with four of them describing their role in terms of support or encouragement. As mentor M2 attested, "I was partly a sort of mother figure and partly a colleague, saying things like 'come on, we can do this' or 'let's think up some ideas together.' " However, although support was seen as essential, the significance of challenge was not lost on the mentors. Mentor M1, explaining that her student was particularly confident and able, stated that "it was mainly support at the start, but then quickly pushing him on... in the end I would have classed him as a colleague." Mentor M5 went further in stating that she viewed the relationship with her student as "working colleagues in which the two aspects of support and challenge were constantly interwoven." The mentor comments in reply to this question seem to endorse the data generated from the mentor questionnaires, that support is seen as the major role but the significance of challenge is not lost, particularly once the students have gained in confidence.

Relationship with the mentor

The interviewees were asked a further question at this stage. This involved asking what relationship developed between the mentor and mentee. The responses were unanimous in describing the relationship in very positive terms. All the students saw the relationship as "close", "supportive", or "very professional" in which the students were treated as friends and colleagues. As student S1 declared, "she would treat me as a fellow teacher...", whilst S6 summed up her relationship with her mentor as "a friendship of two women working together."

All the comments from mentors were in agreement with the sentiments expressed by the students. Mentors M1 and M3 suggested an initial teacher-student relationship which quickly developed into a relationship of two colleagues as friends. Mentor M4 typified this situation when she declared that, "We've become quite close over the year. I think it's inevitable that you do."

The student's teaching style in comparison with the mentor

During their interviews, the mentors were asked whether the students developed their own teaching style as opposed to modelling it on that of the mentor. The mentors responses make it clear that all the trainees eventually developed their own teaching style, although mentors M3 and M6 both professed that they may have been used as models by their respective students in the early stages. Mentor M3 explained that her student "did not get to see other styles of teaching" and suggested this as a reason for the student using her as a model, even going as far as copying not only her stance in front of the blackboard but also the way she would move round the classroom and even things the mentor would say to her pupils. The mentor did go on to say that the trainee started to develop her own style in the final term, but the mentor still thought that she was not totally confident in her abilities even at that stage. In contrast, both M2 and M4 ensured that the student observed a variety of other teachers and may have taken various facets from the different styles observed in order to develop their own method of teaching.

The value of mentoring to the mentor

One of the findings of Final Report for the Open University E910 course was the great benefit perceived by mentors from their role. This is overwhelmingly endorsed by the present study, with total agreement amongst all six interviewees about the enrichment of their own professional development. Mentors M1 and M6 declared that it was "a positive experience", whilst M2 stated that it "made me evaluate my own teaching." Mentor M5 continued this argument when she suggested that "... it makes you look at the things you do in a way that, perhaps you otherwise wouldn't have done." Several comments related to the beneficial effects that trainees can have on the mentor. Mentor M1 affirmed that "you can get a lot of inspiration from your students, their enthusiasm rubs off." Mentors M3 and M5 referred to the knowledge students bring in to schools, M5 stating that "the youngsters have access to some up-to-date theories which can be

interesting. It keeps you open-minded." Mentor M4 related a different benefit when she explained that "it keeps you very focused and alert, your subject knowledge has to be pretty good as well." She was clear that this extended outside the classroom, "it's how you behave with staff, children and parents as well." She went further and stated, "it makes you a better teacher, you can't really have a duff lesson with someone observing you all the time." Mentor M6 suggested that "it's nice to share my experience with other people", whilst M3 was the most effusive in her comments. She exclaimed, "It's brilliant! I think every teacher should be a mentor at some stage. There are no negative aspects to it that I can think of."

Proportion of support and challenge in the mentoring relationship

The questionnaires required one tick in a box of four options:- high level of support and challenge; low level of both; more support than challenge or vice versa. Ten of the student respondents chose the first option, four thought there was more support and one ticked more challenge.

The six mentors, when questioned on this matter, were unanimous in their opinions that high levels of support were needed and given at the start of the course, but most stated that challenge became increasingly important as the course progressed. Typically, mentor M3 commented, "at the start, pretty much all support... and then, as she gained in confidence, I began to challenge her until it became equal to support at the end."

This scenario of initial high levels of support reducing as the course progressed and with the degree of challenge increasing was endorsed by most of the student interviewees and perhaps fits in with the majority view from the questionnaires of high levels of both support and challenge. The interviews indicate that the two aspects were significant but at different periods in the year, for example, both S4 and S5 declared that more support occurred in the first term but more challenge in the final term. However, mentors M1, M4 and M5 argued that they tried to balance the amounts of support and challenge throughout the course and M4 pointed out that her

student "didn't seem to think that I did challenge her in the first term, but I feel that I did quite a lot."

Reasons for lack of challenge

The interviewees were asked this supplementary question when it became apparent that most participants considered that support was much more important in the earlier stages of the course. The general reasons that were given were twofold. Firstly, students' subject knowledge was generally seen to be adequate but, where it was not, then it was the trainee's responsibility to remedy the matter. In addition, as student S5 explained, more challenge occurred in this aspect later on in the year when trainees taught more lessons, and in the case of primary students, more subjects. Secondly, the workload from coursework assignments was felt to be particularly heavy at the start of the year and therefore students needed considerable support, rather than challenge at this stage. As mentor M1 affirmed, "you had to be careful that you don't swamp them, because they can feel a bit overwhelmed." As M3 and M5 suggested previously, the general opinion amongst mentors was to increase the level of challenge as the students gained in classroom confidence.

Ways in which mentors supported or challenged students

The support which mentors provided took many forms. Student responses from both questionnaires and interviews made it clear that much was of a practical kind. This included provision of resources, helping with lesson plans and targets, advice on classroom management and control, ideas on how to teach a specific topic and help with college work and assignments. Other support aimed to improve or maintain trainees' confidence. Thus, making time to talk through problems and issues was often mentioned, as was praise from mentors, especially after a lesson had not gone well. A comment from mentor M4 was typical, "I'd say, 'You did this wrong, don't worry about it. Let's talk about what you can do to learn from it.' "

Challenge could be of a practical form. This included:- positive criticism during feedback sessions; questioning about how future lessons were to be taught or about the formative assessment of pupils; to modify the pace in lessons, and simply 'straight-to-the-point' advice such as given to student S4. She commented that her mentor would challenge her with remarks such as "this needs improving", or "you need to change this aspect of your teaching."

However, both students and mentors explained that challenge could often be to the trainees' thinking. Student S2 agreed with two questionnaire responses when he asserted that he had been challenged "in ways of thinking, to vary my teaching style and methods, thinking of different ways to get information across." His mentor confirmed this technique when she explained that she tried to get him, "to think up ideas for himself." Three mentors challenged the student's thinking regarding pupils' learning. Thus, mentor M6 questioned how to achieve the maximum input from pupils in lesson, whilst student S4 explained that she was made to think about what expectations the pupils would have from certain lessons. Mentor M2 specified the use of open-ended questions both before and after lessons exemplified by "how could you have done that better?" and, "how could you have stopped that happening?" Three of the student interviewees alluded to this technique and felt that it was beneficial to their teaching. Finally, little was mentioned of challenge to students' thinking on moral or ethical issues.

Areas in which the students were challenged

During the interviews, the previous question was extended by asking about the degree of challenge in the following:- Subject Knowledge; National Curriculum knowledge; Classroom Management.

The students again confirmed earlier findings that they were challenged by being expected to fill any gaps in their subject knowledge themselves. Little other challenge was evident with only student S5 indicating its presence. This was in Literacy, an admitted area of weakness for her, a point

confirmed by her mentor. The mentor explained that she had corrected student errors in Literacy during feedback discussions and felt that the challenge for the student was to improve the Literacy content of her lessons. Occasionally, lesson plans were checked with this mind and the mentor considered that the trainee's weakness in this area was overcome by the end of the year. It was clear that mentors challenged students' knowledge if it was thought to have gaps but that this was not usually necessary. However, mentor M1 considered that giving her physical science specialist some biology to teach was a challenging experience, but again he was expected to acquire the necessary knowledge himself, which he duly did. Only mentor M4 argued that it was essential to challenge students' knowledge at all times. She regarded this process as essential for the sake of the pupils and challenged her trainee to improve her maths knowledge and the amount of ICT incorporated into her lessons. Again, her student met these challenges.

The responses indicated that National Curriculum knowledge was least challenged, with only student S3 suggesting that there was any challenge in this area. Indeed, there was little evidence that any respondents questioned the content and structure of the National Curriculum beyond M1's comment that teaching is constrained by having to "put ticks in boxes to satisfy certain standards." Students S2 and S6 expressed the opinion that trainees kept abreast of National Curriculum requirements, whilst S3 and S5 explained that they put considerable effort into it. Both of these points were confirmed by the majority of the mentors with only M1 and M3 indicating any degree of challenge. Mentor M1 gave her assured, capable student the task of producing a scheme of work from the QCA document.

Classroom Management was the area which received most challenge with every mentor and all but one student indicating its frequent occurrence. As explained earlier in this report, 'a technique commonly used was that of open-ended questioning of students. This would be used to focus on specific problems such as class control and discipline, but mentors often indicated that the improvement of pupils' learning was the paramount reason for challenging the students in this area. However, when discussing the

management of pupils' learning, there was minimal comment on moral, ethical or social issues such as notions of equality. This point will be discussed in this study's findings. Nevertheless, the mentors' overriding consideration for the learning experience of the children is one of the important points to emerge from my study, as is the close relationship of friendly, working colleagues that developed between all the mentor-mentee pairs.

Discussions with mentor

Both students and mentors were asked what was usually discussed in feedback sessions after an observed lesson. The questionnaire asked respondents to place a list of eight subjects in order of occurrence from 1 = most often to 8 = least often. The results are shown in table 4.2 followed by bar charts 4.2a and 4.2b (Appendix 6) illustrating the student and mentor mean responses. As before, the total and mean scores have been adjusted to show a decreasing order of frequency.

One can see that there is close agreement between the responses of mentors and students, with 'students' teaching performance', 'children's learning' and 'classroom management' considered to have been discussed most often by both groups. In addition, discussions on the philosophy of teaching and moral/ethical issues were most infrequent. Points of interest that can be elucidated from the table are firstly the relative lack of discussion concerning trainees' subject knowledge and secondly, children's learning seems to be of major importance. The latter point contrasts sharply with the lack of acknowledgement of children's learning in students' initial concerns about teaching.

The responses from interviews confirmed that the three major areas of discussion between mentors and students are:- trainees' teaching performance; students' classroom management and thirdly, pupils' learning. Comments on these areas were consistent across all respondents and often included or led onto discussion of lesson plans and future targets. Students

thought that mentors were generally supportive, but as S1 explained, they "knew when constuctive criticism was needed." Mentors agreed that they aimed at providing support in discussions but did not ignore difficulties. Mentor M4 stated that "you have to be open and frank when problems arise. It's not fair to the children if you don't tackle them."

Subject knowledge was again a minor point for discussion with only student S5 claiming that it was discussed. Student S1 suggested that his subject knowledge was "never questioned really", whilst S2 attested that there, "weren't too many lessons where my subject knowledge fell short." His mentor, M2, the only one to mention subject knowledge at this stage, confirmed this but added that she, "filled in gaps in his knowledge, if necessary." Once again, moral and ethical issues or the general teaching philosophy were scarcely mentioned. Student S1 stated that sex education was brought up at one stage because he was placed in a Catholic Secondary school, whilst S5 argued that, "we probably did more about these issues in our course than anything else." Mentor M3 thought that her student's coursework assignments and presentations covered much of this work. Mentor M2 gave as her reason for lack of discussion on these matters as, "we're doing the National Curriculum, so that's what we do." However, M5 explained that she would say to her student that, "we teach in a way required by the National Curriculum, not necessarily the way I would do it." This would then often lead to talking about, "the wider view of teaching, not just to pass exams, but to educate the whole child." This mentor made it clear at this stage that educating the 'whole child' would indeed include issues of value such as equality, creativity and morality.

SUMMARY & EVALUATION OF FINDINGS FOR MENTORING & TEACHER PROFESSIONAL DEVELOPMENT

The findings under this theme are fourfold. These are summarised, followed by a discussion of the role of support and challenge.

Summary and Discussion

Classroom management

The student teachers' primary concerns at the outset of their training centred around classroom management and their perceived lack of subject knowledge, either its breadth at primary level or depth in the secondary sector. Mentors corroborated the students' views in the first area but considered that trainees views on their perceived lack of subject knowledge were largely unfounded.

These concerns were tackled in a variety of ways. Classroom competence was acquired largely during the first school placement with considerable input and support (both moral and practical) from mentors, whose main aim was to boost students' confidence in this area. That they succeeded in this is clear since initial worries over classroom performance had diminished substantially by the end of the first term. However, it is possible that the character, experience and maturity of the student interviewees had an impact on their attainment of good classroom skills. Most of the interviewees came across as confident, assertive characters. Furthermore, three of them were more mature students whilst one other had completed a teaching practice as part of a previous teacher training course.

Mentor-student relationships

Initially, the relationship between mentor and mentee was usually one of teacher-student. This was seen as inevitable considering trainees' lack of school experience. However, the relationship, at all times professional in nature with friendly yet open and frank discussions, swiftly developed into a

close partnership in which the students were viewed and treated by these experienced mentors as both working colleagues and friends.

Mentors as role models

Trainees considered their mentors to be good role models as teachers. However, this did not mean that students endeavoured to emulate the mentor's teaching style. Rather, with mentor encouragement, the aim was to develop their own style, sometimes incorporating good practice gained from mentor advice or from observing the mentor.

Subject knowledge

As explained earlier, it transpired that students' subject knowledge was not a major problem. Neither it seems was their knowledge of the National Curriculum. The latter area was not mentioned specifically by students as an initial concern. Competence in both these aspects of students' knowledge was largely assumed by the mentors. Trainees were expected to bring themselves up to speed in these areas. They usually did this effectively and it was rarely considered necessary to provide challenge.

A crucial point emerges here. This is that the students' training seems largely focused on achieving the standards expected by the National Curriculum and the Teacher Training Agency for Qualified Teacher Status. Furthermore, no students and only one mentor questioned the idea that these are sufficient as a starting point for teacher professionalism.

<u>The role of support and challenge</u>

The pre-eminent role exhibited by most mentors was that of support. This was particularly so in the early stages of students' training and was aimed at boosting trainees' confidence in the classroom. Students wanted and expected much support at this time, and mentors considered it appropriate to provide it to counter the students' inexperience in the classroom and the high initial demands of college assignments.

The importance of support is corroborated by the emphasis placed by trainees on the supportive facets of the mentor's role, with those of 'supporter' and 'feedback-giver' being most prominent. Mentors possessed a clear idea of the mentor's role. They agreed that their main role was that of support, and argued that the idea of challenging the students firmly in any area during the early part of the training could undermine trainees' confidence and was generally considered to be counterproductive to the aim of achieving or increasing competence in classroom skills. More challenge was used later in the year, although it was less evident to students than mentors. Challenge was confined mainly to the area of classroom expertise, whilst challenge to trainees' subject knowledge and National Curriculum was minimal. Trainees were expected to familiarise themselves with both of the latter areas. Students worked hard to achieve this and the result was that their command of these areas was largely assumed and only challenged where gaps became evident.

Mentors used a variety of techniques to challenge students. These included constructive advice on how they should modify their lessons or teaching style, using open-ended questions to challenge trainees' thinking on areas including general classroom management, teaching technique, how they imparted information to pupils, and their ideas on pupils' learning.

A theme which emerges here is the importance that both the course and mentors place on the idea that teachers should put a paramount emphasis on the pupils' learning. Hence, once mentors considered that students' classroom skills had matured, a major area of challenge (mainly occurring in the third term), was for trainees to vary their teaching style depending on the subject content and, more particularly, the pupils being taught.

All trainees eventually developed their own teaching style although some used their mentors as models (a 'challenging' role) initially. The mentors' aim that their trainees develop a flexible teaching style may well reflect the qualities which mentors are expected to exhibit as detailed in the Mentors' Handbook. Amongst these are that the mentors should themselves possess

flexible views on good practice, and enable trainees to develop their own teaching style. The Handbook provides more evidence that the course places great weight on children's learning when it suggests that mentors should highlight what pupils are actually learning.

The Handbook also advocates that mentors constantly challenge their own and trainees' ideas on teaching and learning. One mentor stated that she did indeed attempt to do this, although the majority endeavoured to balance support and challenge as they perceived it to be necessary according to the trainees' development and confidence. This generally resulted in more challenge in latter stages. However, mentors considered the amount of challenge to be more substantial than the students were aware of. A variety of explanations could be put forward for this phenomenon. Perhaps the experience and skill of the mentors, together with the inexperience of the trainees in this area disguised the degree of challenge. The high levels of support in the mentor-student relationship may have masked the trainees' perception of challenge, or perhaps the Handbook's advise to continually challenge students had an effect on mentors' own perception of their role?

MENTOR AND TRAINING MANAGER FEEDBACK

In this feedback, the findings are summarised in terms of the two areas corresponding to the research commentary.

- The students' concern for classroom skills in early stages of the training.
- The role of support and challenge in the mentoring of student teachers.

Students' concern for classroom skills in early stages of training.

The feedback from all the respondents confirms students' preoccupation with attainment of teaching skills to enable them to cope in the classroom. These concerns were at the forefront of students' thinking for most of the first term in school to the exclusion of concerns for pupils' learning. The training manager (TM) pointed out that classroom management is the key to students' progress in the early stages and goes further in suggesting that

students "have concerns as to whether this was the right move, career-wise for them." The four mentors were in total agreement as to the mindset of most students on their initial experience of teaching a class of children. Mentor M1 states that "they are terrified of what they are going to do when they stand up in front of the children. It's not what the children will learn ... it's that they are going to be in that room and they don't quite know how they are going to manage." Mentor M5 concurs in saying that students were "frightened to death when they first came in, but that is simply due to the lack of experience in organising classrooms and children."

The focus group was also in general agreement in affirming that students' initial worries about their possible lack of subject knowledge were largely unfounded, although the secondary school mentor, M1 suggested that "some have problems with chemistry and physics, the two subject area where we have least students." She also made the point that science trainees now come into teaching with a wide variety of degrees, rather than distinct chemistry, physics or biology degrees. The mentors once again confirmed that trainees used a wide variety of resources to increase their subject knowledge where necessary. Mentor M3 explained that "it's up to them to do the research to find out how they're going to use it in class, and that often comes in the process of doing the research," whilst the TM suggested that the ability to research and then use information effectively only came after competence in classroom skills had been gained.

The role of support and challenge in mentoring of student teachers

In line with the study's findings, all participants in the feedback acknowledged that they had provided far more support than challenge in the early stages. The two main reasons for this imbalance in favour of support were, firstly, the universal feeling that the pressures of coursework assignments were too great, and secondly, students' worries about coping in the classroom. There was less agreement on other possible reasons for the low level of challenge initially. Mentors M5 and M6 agreed that high initial levels of challenge could be counterproductive and have a negative effect on

trainees' confidence, but M1 pointed out that more able students could cope with greater challenge earlier. There was conflicting feedback on the study's point that less challenge may be one result of mentors and mentees having similar views and beliefs. Most of the mentors agreed that this could be a possibility but the TM thought that "the students' views are often different."

No respondents agreed with the notion that mentors may have a limited idea of what should be challenged although M5 agreed that it is possible that "some mentors haven't got their head around the idea of challenge." The consensus was that challenge should be introduced as soon as possible, providing that a good mentor-student relationship was established first. No mentors gave specific examples of what should be challenged, yet as M1 pointed out, "if you don't challenge the students, they are never going to challenge the pupils." Mentor M3 agreed but suggested that, in the early stages, achievable challenges should be provided and that "when the relationship is right then you can purse stronger challenge."

All respondents concurred with the finding that greatest professional growth occurs when high levels of both support and challenge are present but the consensus was that this situation should occur logically and naturally in the latter stages. Mentor M5 summarised the general feeling in saying that "when it comes to the point where you are really pushing and challenging, they know they've still got great support from their earlier experience with you." These comments correlate with respondents' thoughts on the development of the mentor-student relationship. As the study found, this progressed inevitably from early 'apprenticeship' through a 'supervision' phase to a final 'reflective' level in the latter stages. Mentor M1 stated that an initial master-apprentice relationship was the unavoidable outcome of the gap between theory and practice which students encounter. She explains that "they come in feeling very ill-equipped, so it's very much a nurturing role at the start." The TM, in agreeing, argued that students' reflection on practice "is more discerning later on" but he also noted that "some form of reflection is essential when learning classroom skills in the first term."

RESEARCH COMMENTARY ON MENTORING & TEACHER PROFESSIONAL DEVELOPMENT

In this research commentary the findings will be summarised in terms of the following areas:-

- The students' concern for classroom skills in early stages of the training.
- The role of support and challenge in the mentoring of student teachers.

Students' concern for classroom skills in early stages of the training.

This study's finding of the trainees' preoccupation with attainment of classroom skills early in the training is supported by both students and mentors, and confirms similar conclusions by other researchers. I have commented earlier that the trainees' focus initially on immediate practical concerns and attainment of Standards resulted in their reflection on pupils' learning being somewhat overlooked. At first sight, it would seem that researchers such as Berliner (1988), Kagan (1992), Calderhead and Gates (1993) and Dinkelman (2000) have a valid point when they assert that critical reflection is beyond the capabilities of novice teachers, or, as Hans and Vonk (1995) suggest, that reflection-in-action can only be achieved by experienced teachers. If one considers critical reflection to concern wider ethical, social and moral dimensions of educational practice as do McIntyre (1993) and Dinkelman (2000), then this study has found little evidence for it. The Course Handbooks make no reference to these issues and they rarely featured in mentor-mentee discussions. It would appear that, in terms of McIntyre's (1993) three levels of reflection, the students were concerned firstly with accomplishing certain goals such as maintaining classroom control, (McIntyre's first or technical level), followed by evaluating and developing their own practice (the second, practical level of reflection). In short, the third, critical level of reflection on the moral and ethical issues was generally not incorporated into the trainees' thinking or teaching. Yet, the students' thinking certainly did undergo a degree of advancement as the course progressed. The shift in their priorities to place pupils' learning at the centre of their thinking and planning required considerable reflection, and I

would argue that, since this undoubtedly changed the practice of the individual trainees for the better, then one should consider this as an indication of working towards critical reflection. Granted that this definition does not overtly include moral and ethical issues as previous researchers have defined them, but I would argue that children's learning should be considered as such an issue. Whether the last point is valid or not, it is clear that the growth in the novice teachers' thinking and practice was influenced to some extent by their mentors and indicates that reflection other than of the technical or practical variety is possible with the aid of skilled and knowledgeable mentors. Therefore, I would maintain that, mentors who are aware of the moral and ethical dimensions of teaching (however one defines these), could help students to recognise and act on them. Additionally, in the hands of skilled mentors, these issues could be discussed at any stage of the training, not merely when students are considered to have developed sufficient classroom proficiency. However, this has implications for the training of mentors. If the SCITT scheme does not acknowledge and support the development of students' understanding of ethical and moral issues, then mentors are unlikely to give them enough attention in their mentoring and students will not be capable of tackling them. Such issues would have to be an explicit requirement of the training programme so that mentors would be expected to incorporate them into their mentoring.

The role of support and challenge in the mentoring of student teachers.

As previously stated and confirmed by feedback data, mentors considered their prime role to be that of support for the student. This support was mainly to develop classroom skills and was most in evidence when students were least confident in the classroom and when the coursework load was at its most intense. Support was also commonly present in the compatibility of views on teaching and pupil learning between mentors and students. However, the training manager's feedback comment that trainees views are often different from their mentors is an area for further study.

Stanulis and Russell (1998) have proposed that if classroom teachers are to be involved in the education of novices, then a clear conception of mentoring and the mentor's role is required. The Course Handbook's conception of mentoring is clear enough when it states that mentoring is "being an instructor, teacher, counsellor and assessor rather than simply a craft expert to be copied by the novice," (p.4). This view correlates with models such as Cogan's (1973) 'clinical supervision' model and Anderson and Shannon's (1988) view of the mentor as a veteran teacher who supports a less experienced person to engender professional growth. However, the present study found that the mentor-mentee relationship was not static and did not correspond to any one model of mentoring. Rather, the relationship generally followed the sequential pattern suggested by Maynard and Furlong (1993) in their three models of mentoring. Early in the course the relationship was one of 'master-apprentice' but this was swiftly followed by a 'clinical supervision' association in which classroom skills and routines were developed. The final 'reflective practice' stage was indeed more apparent later in the training, although the more experienced mentors endeavoured to encourage a reflective approach in their students throughout the course when they considered it appropriate. It is clear that mentors tailored the degree of challenge to students' needs and abilities (as advised by Butcher, 2002), with the more able and confident trainees being challenged earlier and more strongly. However, it seems that few mentors went beyond this to develop a critically reflective stance in accordance with McIntyre's (1993), Tripp's (1993) or Dinkelman's (2000) ideas of deliberation on the moral and ethical dimensions of teaching.

Although the SCITT course's conception of mentoring largely views mentors in supportive roles, the Mentors' Handbook suggests that among the qualities which a good mentor should possess is to "constantly challenge their own and the Trainees views on teaching and learning," (p.4). However, the mentors' view was that challenge in any area was generally seen as counterproductive to students' confidence if attempted too early in their training but should be introduced once a supportive relationship is established. Therefore, challenge became more apparent later on when

mentors judged that students' knowledge, ability and confidence had increased sufficiently for them to move on to Maynard and Furlong's (1993) final level, -that of the reflective practitioner. Here, the mentors' stance corresponds with the conclusions of other researchers. Anderson and Bird (1995) argue that novices who find their values challenged too early may feel threatened and will thus preserve their original beliefs. However, I have remarked earlier about the overall confidence of this group of student interviewees. They were secure in their own ideas and, although they may have been influenced by their mentors' views, it was not because they felt obliged to model the mentors' practice but rather because they were convinced of the value of this approach to their teaching and to pupils' learning.

This study's findings of unequal amounts of support and challenge, there being more support than challenge, is in line with the general tendency found in the literature and exemplified by the work of Elliot and Calderhead (1993), Cameron-Jones and O'Hara (1995 and 1997), Hawkey (1997) and Butcher (2002). Cameron-jones and O'Hara (1997) also noted students' lack of awareness of the degree of challenge that mentors provided. The data in this study suggests that there was indeed a lack of challenge in early phases of the training but later its presence could have been masked by the subtle skills of the experienced mentors or by the great support they provided (Abell et al., 1995).

When challenge was provided, it was primarily to trainees' classroom skills, one of the three areas in which Burgess and Butcher (1997) advocate that students should be challenged. Mentors considered that students' knowledge of the remaining two areas, subject knowledge and National Curriculum matters were adequate and thus received minimal challenge. Students worked conscientiously to fill any gaps in their knowledge in these two areas.

To summarise, a close, friendly yet professional relationship swiftly developed between these skillful mentors and generally confident trainees.

The intense support and lack of challenge earlier on may have had the effect of reinforcing the students' pre-existing images of teaching, a point made by Daloz (1986). However, though students' views and beliefs did not undergo wholesale change, they did develop throughout the training. Indeed, it seems that professional growth of the students, judged by placing greater emphasis on pupils' learning, became more advanced later in the course when support was accompanied by significant challenge. This corroborates Daloz's (1986) contention that high levels of support and challenge are necessary for optimum professional growth of novice teachers. Statements from the SCITT training documents suggests that the course attempts to foster such a view. It is clear that mentor support for trainees is essential, not only to learn teaching techniques but also to establish a relationship built on trust (Daloz, 1986) thus enabling students to express their personal beliefs and assumptions about teaching and learning both in conversation and in practice. Such ideas cannot be challenged if they are not discussed. The mentors in this study had much experience in teaching and mentoring and, as such, once a sound, trusting relationship was established, utilised a 'collaborative' style of mentoring (McNally and Martin, 1998) in which support and challenge drives the trainee towards the goal of reflective practice, though perhaps not towards McIntyre's (1993) notion of critical reflection.

I have argued that if students' beliefs are skillfully challenged at an earlier stage, it is possible that these could become more sophisticated thus enabling students to consider the moral and ethical values of teaching. Others such as Burgess and Butcher (1997) espouse the value of utilising challenge throughout the training course. However, such a scenario relies heavily on the skills and knowledge of the mentors and has implications for their training.

This study has shown that mentors can indeed impart their practical theory to novices in a close, professional mentor-mentee relationship so that trainees gain a more refined image of the teacher's role. However, the study's evidence suggests that mentors are not challenging students

sufficiently because they do not possess or are not expected to employ the broader perspectives needed to promote the thinking and practice which could support students when planning, teaching and evaluating their lessons to a point where they progress beyond the requirements of the National Curriculum and the TTA's standards for Qualified Teacher Status. All mentors want their trainees to succeed but are generally not asking them to engage in wider issues of fairness, equality, justice etc., the result being the mere maintenance of the status quo with students continuing to gain a limited understanding of their potential as teachers.

CHAPTER 5:- STUDY FINDINGS - THEME B

STUDENT TEACHERS' BELIEFS

What kind of teacher do trainees want to be?

Student interviewees were asked the above question whilst the questionnaires contained a related one;- what do you think makes a good teacher? The results of the latter correspond in some respects to the trainees' initial concerns about teaching from earlier in this report. Of the 15 questionnaires analysed the most common skills that respondents thought teachers should possess were good classroom management and discipline (6 of 15) and sound subject knowledge (5/15). However, the learning of pupils was far more of a consideration in this case. Being able to enthuse or motivate pupils and develop a good rapport with children was prominent (5/15). Also mentioned were qualities such as:- to like children (2/15); a good communicator (2/15); create fun lessons (2/15); have a range of teaching styles (1/15) and just one trainee replied that pupils should be challenged. Finally, one student referred to 'fairness', otherwise issues of value were noteworthy by their absence in students' thoughts once again.

The emphasis on children's learning was an idea that also pervaded the comments from both mentor and student interviewees. All twelve respondents mentioned it at some point. The students' comments were more straightforward. When asked what kind of teacher they wanted to be, typical students' responses were; "... the best teacher for the pupils I teach," (S1); "... a calm sort of teacher," "... to get the kids to want to come to school, to want to learn"; "... an effective one, one who has a good relationship with pupils," (S4). Student S6 mirrored the questionnaire finding that teachers should enthuse children when she affirmed, "I want to be a good one. One that the children can look back on and say, 'she was fun, she was exciting, I remember getting excited in her lessons." This student went further in explaining that a teacher should "give them a feeling that they're important and lets them develop their self esteem, so that they can be fulfilled adults."

The wider interpretation of the teacher's role expounded by the last student was more typical of the mentors' comments, but the fundamental principle of the importance of children's learning was again uppermost. Mentor M6 professed her "love of teaching, to get the children to learn." Mentor M4 responded, "children should enjoy school and you need to realise that they are individuals and you need to develop the whole child." Mentor M2 continued this theme when she suggested that "to develop each child is a very important and responsible job." Mentor M5 went further in arguing that "we're actually quite privileged in the job we do. Primary Education is all about helping the children to find their way in the world. We're with them for a lot of their young lives and it's our privilege to find out what makes them, (a) happy, (b) tick and (c) learn and succeed."

Students' beliefs at the start and end of the course

The questionnaires asked whether students had strong beliefs about teaching at the start of the training and whether these beliefs had changed during the course. Of the fifteen responses, eight professed to having strong initial beliefs and seven students did not. In answering the second question, only five students stated that their beliefs had altered at the end of the training. Of these five students, three had strong initial beliefs and two did not. Thus, from this small sample of fifteen students, a majority (10/15) argued that their beliefs had been resistant to wholesale change. Five of these ten respondents had expressed strong initial beliefs and five did not. The questionnaire findings are not conclusive. One can simply remark that a slight majority of students emphasised strong beliefs initially and that most trainees, whether they had clear beliefs or not when the course commenced, found their beliefs unchanged at the end.

The above results are supported somewhat by the comments from the student interviewees. Five of the six clearly had strong prior beliefs and these were invariably linked to the learning of children, as was alluded to earlier in this report. Four of these students explained that their views had not altered. Typical comments were:- "... nothing really changed my ideas

during the course," (S6); "I came into teaching with that attitude and I haven't really changed," (S3). Yet, even amongst these four respondents, there was evidence that their beliefs may have been further developed if not undergone wholesale change. Student S4 commented, "... I view the teaching profession similarly to when I started but it's probably more complex," whilst S5 stated, "I had a pretty solid ideas of what teaching was and is, but I'm more realistic about what the kids can achieve now." This clarifying of students' prior beliefs was reiterated by two of the five questionnaire respondents who had cited some change in their views. One commented, "I have no rose-tinted spectacles any more," and the other stated that teaching is, "... much more involving and rewarding than I had thought."

Only S2 commented that his previously held beliefs had been "changed quite a lot, actually." The following comment suggests that his views on children's learning had undergone a fundamental change. He stated that, "... at the start, I just imagined that every pupil was going to be interested in what we were doing, that they all wanted to be in school. The reality is completely different ... if they've decided they don't want to learn, there really isn't much you can do to change their minds."

Only student S1 openly stated that he had no strong beliefs about teaching when he commented, "I was very open-minded with no preconceived ideas." However, he went on to say that his views had changed "a little." He asserted that his recent experience of teaching was being lectured to effectively so "I was expecting to see myself in front of the class, talking all lesson, but that's not the case and it shouldn't be ... that wasn't the ideal way to teach, it's much tougher than that."

In summary, one can interpret these findings as indicating that the majority of respondents did have strong preconceived ideas about teaching which were somewhat resistant to wholesale change, although there was some evidence for these beliefs being augmented during the training.

Influences on student teachers' beliefs

Student interviewees were asked who or what had been the major influence on their ideas about teaching during the course. Their responses indicated that the two major influences had been the student's background and the mentor. Of the three trainees who nominated their mentor as the main influence, two of them explained that they considered the mentor as a good model, although both students emphasised that they had not modelled themselves on their mentor as such. As S4 declared, "... she was a good model, but on the other hand, I've got to find my own place and style as a teacher."

The three remaining students emphatically asserted that the key influence on their views had been themselves and their background. All three of these respondents had said previously that their beliefs had not altered significantly during the year. All three referred to their own schooling as being critical factors in the development of their views. Student S3 had wanted to be a teacher since childhood and referred to her very first teacher in primary school as being a positive influence. Similarly, S5 spoke of several teachers who she liked and then commented that "I wanted to be a teacher like them." Conversely, the same student referred to a teacher whom she "never ever wanted to be like." Student S6 had very supportive parents, had "thoroughly enjoyed school," and was expansive in attributing her "whole philosophy of life" as being the decisive factor in coalescing her beliefs. This student also suggested that her weekly meetings with her training manager had been a "calming influence" on her. This was corroborated by S2 who used exactly the same phrase concerning the effect that the same training manager had had on him. The importance of the influence that observing other teachers can have should also be noted, with two of the trainees mentioning this aspect. Finally, S1, whilst explaining that his mentor was the major influence, he was most effusive in exclaiming that, "every teacher I observed, every lecture I went to, I learned something - in fact from the whole course in general."

Comparing mentor beliefs with student beliefs

Nine of the fifteen students who returned questionnaires and all of the student interviewees declared that they had discussed their views on teaching with their mentor. Secondly, the questionnaires revealed the trainees had similar beliefs to:- the mentor (11 out of 13 who answered the question); their student friends (9/13); college tutor (7/13). The three mentors who completed questionnaires all suggested that they held similar views to the student.

Only students S1 and S2 modified this picture of compatible viewpoints. S1 agreed that his views were similar to his secondary school mentor but, as before, he professed to still be "... open-minded. I really don't think that I've come to any solid opinions." Finally, S3 felt that she and her mentor had a similar belief in the positive effects of praise on children's learning but admitted to having a different teaching style.

Does the course encourage students to identify or examine their beliefs?

Of the questionnaire participants, the fifteen students responded as follows:- yes (9); no (4); abstentions (2). The three mentors answered:- yes (2); no (1).

The interviewees were more positive with only one student (S2) and one mentor (M3) answering in the negative. The consensus was that it was by means of the coursework assignments and professional development lectures that trainees were expected to explore their views and beliefs, particularly at the start of the course. Three examples will suffice here. Firstly, student S6 enthused about her first assignment which concerned the necessity to understand children's prior perceptions of a subject before one can teach them effectively. The student had "never thought of that idea" and explained that she had "envisaged children as almost a blank piece of paper ... " Secondly, S5 commented that she had completed an assignment for her main subject, maths, which asked students to consider how they were influenced by teachers during their schooldays. Finally, S1 was excited by

the idea of "active learning" which he said was "very much encouraged, particularly at the university and in the science lectures there." Similar positive comments were furnished by the questionnaires. These included such views as:- "the lectures put across different ideas and information and allows you to formulate your own views"; "assignments require reflection on educational theories" and the course "challenges you to think about why you do what you do."

The mentors endorsed the importance of coursework assignments in this respect with M2 and M6 confirming that students had read up "quite a bit on background philosophy," (M2), and then use this "to make presentations" (M6). Mentor M4 went further and argued that "a lot of assignments focused on examining their beliefs and ... putting into practice what they know." Mentor M5 did suggest that the degree of student reflection on their beliefs would be "highly dependent on who their mentor and training manager was," whilst the only negative comment came from M3 who considered that, "even with all the assignments she did, it didn't get her to think about her own ideas of teaching in any depth."

SUMMARY & EVALUATION OF FINDINGS FOR STUDENT TEACHERS' BELIEFS

The preliminary findings under this theme are now summarised under the four points below, followed by an analysis of the role of support and challenge.

Summary and Discussion

Effective teaching

Most of the students exhibited strongly held prior views and beliefs on teaching. These views primarily revolved around students' aim to be effective teachers with good classroom management skills and sound subject knowledge. There was a clear conception amongst the trainees that, armed with this expertise, the aim was to increase their pupils' learning and enjoyment of their school experience.

Influences on student teachers' beliefs

There were two overriding influences on the student teachers' ideas about teaching. Firstly, their own background, particularly the trainees' schooling. The students invariably cited examples of teachers who had inspired them or, conversely, suggested that their views on teaching had been coalesced by being taught by someone whose teaching style they did not enjoy or respect.

Secondly, trainees' thoughts about teaching were influenced strongly by their mentor, with whom each student interviewee developed a close relationship. A large majority of students discussed their views with the mentor and the evidence indicates that most trainees had an affinity with the mentor's views on teaching and vice versa. The mentor was often seen as a good teacher who gave priority to the children's learning. On the other hand, students did not endeavour to model themselves on their mentor but sought to incorporate what they considered the best practice of the mentor and other teachers they observed when developing their own teaching style.

Stability of student teachers' beliefs

Students' preconceived views were resistant to change during the course, but the evidence suggests that they were not unaffected by the year's training. It seems that as trainees' gained knowledge of what teaching entails their initial beliefs undergo some clarification or development rather than wholesale change during the course. An example may be the transition from initial concern to be effective teachers, later giving way to increased regard for children's learning. This may, in part, be influenced by the required elements of coursework assignments and professional development lectures, especially at the beginning of the course. However, mentors were sceptical about the depth to which the course encourages trainees to examine their wider beliefs about teaching. Therefore, one can conjecture that the mentors had an influence on the development of the student teachers' views on teaching. The close, friendly relationship between mentor and mentee that invariably developed over the year may be partly a consequence of the congruent ideas on teaching. On the other hand, the similarity of views may have developed as the relationship progressed.

Mentors' beliefs

The mentors themselves possessed a clear view of teaching as they had of their mentoring role. These beliefs permeated all of their teaching and were not altered by the mentoring process and indeed there is evidence that the teachers sought to mentor in a way which was compatible with these views. The general tenor was once again the importance of children's learning but mentors viewed this goal more generally as the whole of a child's development rather than the mere acquisition of knowledge. This is as close as respondents ventured towards expounding on the ethical or moral issues of teaching. None of the student teachers proffered thoughts on values such as fairness or other ideas along these lines.

<u>The role of support and challenge</u>

In the previous chapter on mentoring and professional development, it was explained that at the start of the school placement, mentors provided high

levels of support but generally minimal challenge for their students. It is possible that this support extended to mentors agreeing with or at least not challenging students' ideas about teaching. Did this lack of challenge play a part in reinforcing pre-existing beliefs? It could be argued that if the trainee teachers' beliefs had been challenged more substantially or at an earlier stage then their views may have become adapted or developed in a more sophisticated way, perhaps to encompass their ideas on the ethical or moral values associated with their teaching.

The course itself seeks to encourage the students to examine their views on pupils' learning. This has some success in that students are required to review their ideas for assignments, but is largely neglected in the heat of initial classroom experience together with the necessity of being assessed on whether they achieve specific Standards. Once trainees have gained confidence in their teaching and classroom management, they may be more amenable to deeper ideas on children's learning and perhaps ethical issues, providing that the mentor is aware of and brings such concepts into discussions.

MENTOR AND TRAINING MANAGER FEEDBACK

The following is a brief summary of the main points made by the training manager and four of the mentors in response to the study's findings on student and mentor beliefs.

Trainees' and mentors' views and beliefs about teaching

The majority of the interviewees in the feedback sessions confirmed that most students enter the profession with strong views on teaching usually drawn from their own experiences as pupils. Additionally, as M6 pointed out, initially, students often "try to put into practice the ideas they have of teaching influenced by somebody who taught them."

The feedback group also concurred with the study's findings that trainees' beliefs are generally resistant to wholesale change but are developed following classroom experience and observation of other teachers. As M6 stated, "they try to teach the way they think it should be done and find that it doesn't necessarily work so they adapt their strategy whilst retaining similar views." Thus, as the training manager suggests, trainees develop their own teaching style based on "a combination of their previous experiences and their school experience." However, M5 argued that a very fixed idea of their role may reduce the students' ability to become a reflective learner.

RESEARCH COMMENTARY ON STUDENTS' BELIEFS

Much of the data from this study, including feedback data from mentors, supports earlier research which concludes that trainees enter the profession with strong but not necessarily clearly defined views on teaching. One student argued that he embarked on the course endeavoring to keep an 'open mind' about what to expect. However, even he admitted that he had envisaged teaching in similar terms to his most recent experience of education - the lectures at university. Other trainees explained that their childhood experience as pupils was the major influence in coalescing the beliefs with which they started the training. In this respect, Merton's (1975) 'anticipatory socialisation', by which novices bring prior views garnered from their own experience to the training, can clearly be recognised.

Student interviewees attested that their prior beliefs remained largely unaltered at the end of the training. Nevertheless, this study corroborates work by others such as Zeichner et al. (1987) and Kettle and Sellars (1996) which has found that novices' ideas are refined and elaborated by professional training. Here, the significant shift in trainees' perspectives to a greater focus on children's learning is an example.

I have stated that the experience, confidence and relative maturity of the student interviewees may have had a positive effect on their swift acquisition of classroom skills. However, it is possible that these mature attributes could have contributed to the resilience to wholesale change of their prior perceptions of teaching. Indeed, scant evidence was found of Hawkey's (1996) suggestion that trainees' strong initial images of themselves as teachers can be seriously compromised. However, some evidence from mentor feedback suggested that students' ability to become reflective learners may be inhibited if their beliefs are not challenged and developed during their training. This data corroborates Butcher's (2002) assertion that support with minimal challenge (as was the situation early in students' training), can heighten the persistence of firm, preconceived ideas, that is, the status quo or stasis (Daloz , 1986) is reinforced.

Mentors' prior views on teaching were generally clear, as was their image of the mentor's role. The latter was based largely around providing support for the trainee and an emphasis on children's learning. The findings endorse previous work by others such as Hans and Vonk (1995) which have asserted that mentors bring strong perceptions of mentoring to the training. One mentor undoubtedly possessed a strong 'vision' linked to challenging trainees (McNally and Martin, 1998), yet most mentors saw students progressing along a timeline of development analagous to Maynard and Furlong's (1993) three sequential models of mentoring.

This study found little change in mentors' views through the course's duration. This tendency towards stability of mentors' beliefs has been noted by Hawkey (1998) and this group of mentors clearly followed their professed values concerning the prime importance of pupil learning in their training of the novice teachers. These mentors undoubtedly interpreted their roles in ways that appeared to reflect their own teaching approach, or as Martin (1997) argues, "as they taught, so they mentored." However, I have intimated that the mentors' accent on children's learning in their teaching and mentoring corresponded with the emphasis which the SCITT scheme places on this theme. Although the mentors in this study seemed largely unaware of it, this lack of conflict between the course 'ethos' and the mentors' beliefs does not marry with another of Martin's (1997) contentions that mentors did not promote the ideology of the teacher education programme. Neither does the present study support the claim by researchers such as Anderson and Bird (1995) that students' beliefs may not support the ideas of learning advocated by teacher educators. On the contrary, by the latter stages of their training there was a distinct congruence between the tenor of the course, mentors' philosophy of teaching and the developed beliefs of the novice teachers. I consider this to be a most positive phenomenon and leads me to suggest that trainees could indeed be encouraged and challenged by experienced mentors to deliberate on more critical forms of reflection if the ITT course specifically requires mentors to assume such a stance.

CHAPTER 6:- STUDY FINDINGS - THEME C

STUDENT TEACHERS' SUBJECT KNOWLEDGE

Influences on subject knowledge

The questionnaire asked the students to place eight specified possible influences on their subject knowledge in order, (i.e. 1 = most important, 8 = least important). The results are shown in table 6.1 (Appendix 6), together with mentors' responses to the question, "What do you think influenced the student teacher's subject knowledge?" These results are followed by bar charts 6.1a and 6.1b for student and mentor mean scores (Appendix 6). As previously, total and mean scores have been adjusted so that higher figures correspond to the more frequent responses.

One can see that the students accredited most importance to the idea of pupils' learning, closely followed by the practicalities of the task before them and the need for a deeper understanding of how to teach the subject matter. The small sample of mentors, whilst recognising the aim of enhancing children's learning, thought that the day to day nature of what needed to be taught and their own advice or expectations were of more importance in the eyes of their students.

At the lower end, the trainees placed more importance on their degree studies than their mentors thought. However, there was agreement in attributing minor influence to college theory, the school's expectations and DfEE standards on the students' subject knowledge.

The interview responses supported the student questionnaire findings in that the major factors were considered to be:- enhancing children's understanding; a deeper understanding of the work in order to teach it, and the nature of the task involved. The first two factors were mentioned by S5 and her comment that "I thought that from the start and still do" is further evidence of the persistence of students' beliefs. College theory units were generally not seen as significant except for science where S6, (a science

specialist), thought that the core science lectures "were excellent, not because it taught you subject knowledge, but because it taught you how to teach that knowledge." However, the student interviewees placed more importance on the influence of school expectations and the DfEE standards than shown in the questionnaire data. The students once again confirmed the theme (A) findings that they re-taught themselves any knowledge needed depending on what they were to teach the pupils. Mentor advice was considered relatively unimportant, corroborating earlier evidence that subject knowledge was not a major discussion point in feedback sessions.

As with the questionnaire results, mentor interviewees gave most emphasis to the nature of the task and the expectation that trainees would fill in gaps in their knowledge themselves. DfEE standards, mentor advice and the students' degree studies were also mentioned, and again M3 thought that there had been considerable input to her student's weak science knowledge from her college lectures. Mentor M1 agreed that science students (like S3 and S1) often need input to their science knowledge because their degree is normally in just one science discipline and "they don't quite realise how much other science they would have to teach."

Influences on practical knowledge

The questionnaires asked students and their mentors what factors had influenced the trainees' "practical knowledge", i.e. the knowledge of how to teach. Seven options were placed in order, 1 = most important, 7 = least important. Table 6.2 (Appendix 6) gives these results and is followed by bar charts 6.2a and 6.2b for student and mentor mean scores (Appendix 6). As before, the total and mean scores have been adjusted to show a decreasing order of frequency.

The results show close agreement between the opinions of students and mentors. The trainees accredit most impact to the observation of other teachers and advice from the mentor, while learning by their own mistakes and observing the mentor are ascribed significant influence, (mean scores

for both are also under 4.0). The mentors concur with the top four influences but place more importance on observation (of themselves and of other teachers), whilst their own advice is (perhaps out of modesty) placed in fourth position. There is no disagreement concerning the factors which have least influence with college tutors' advice and assignments making up the last two places.

Very similar opinions were expressed by both groups of interviewees. Mentors again laid more emphasis on observation of teachers, including themselves, whereas 'learning by mistakes' was mentioned most often by trainees. Student S3 suggested that "It's the best way to learn on this type of course ... by evaluating yourself." College sessions and assignments made little impact according to the students, apart from S6 once again, who credited the core science lectures with providing useful practical advice. However, S2 thought that college assignments were "more interesting, rather than useful."

Emphasis on subject knowledge in the course

When asked for opinions on the degree of emphasis on subject knowledge, the questionnaire results were:- students; high (2); average (9); low (4). All three mentors ticked the 'average emphasis' box.

The six student interviewees generally thought that there was a "reasonable" or "average" amount. When asked to elaborate, four of the students referred to lectures in the core subjects of Maths, English and Science together with the student's main subject. Student S1 (a science specialist) made an interesting point when he remarked that "there are whole areas I've got gaps in ... because, you can only really increase your subject knowledge on a SCITT course like this in the areas you have to teach."

Four of the six mentor interviewees were unsure of the amount of emphasis but M1 and M2 repeated perceived areas of weakness that had been mentioned earlier. Firstly, M1 reiterated the problem of science specialists

having to teach subject matter other than there own science discipline, and, secondly, M6 remarked that there was "quite a lot in the main subject and core subjects" but that "all the other subjects they have to teach in primary school were not particularly well covered."

Instruction on subject knowledge and practical knowledge

The questionnaire respondents were asked whether instruction in (a) subject knowledge, (b) practical knowledge helps them to teach. The findings were, for subject knowledge:- 'helps a lot'- 6 students/2 mentors; 'helps a little'- 8 students/1 mentor; 'does not help'- 1 student. For practical knowledge:- 'helps a lot'- 11 students/1 mentor; 'helps a little'- 4 students/2 mentors; 'does not help'- no responses.

The majority of interviewees (4 students and 5 mentors) agreed that instruction in subject knowledge is helpful. Student S4 explained that she had found the main subject and core subjects sessions helpful, whilst all three science students praised the core science lectures. They restated earlier comments, for example, S1 mentioned work on children's prior knowledge and misconceptions about energy. Student S2 again stated her reawakening of interest in science, whilst S3 was effusive in describing the lectures as "absolutely brilliant ... if, you went in not understanding a concept, you know you'd come out understanding it." Only student S2 disagreed in remarking that "it's a personal thing. The only real way to improve is by reading up."

The mentors repeated problems stated earlier:- teaching non-specialist science and the lack of emphasis on non core subjects. Mentor M3 mirrored her student's enthusiasm for the science core lectures in saying that her trainee had thought they were "fantastic, really helped to know how to teach science."

Regarding tuition in practical knowledge or in "how to teach", three students thought it useful, citing examples of advice on planning, classroom

management, assessment, differentiation, the National Curriculum and bullying. However, three students felt that they, in the words of S3, "got more out of actually doing it, being a teacher." Interestingly, this point was reinforced by all the mentors, though one said that practical instruction may help. Mentor M3 summed up the general feeling in declaring that "the best place is learning on the job, watching other teachers and having a go yourself."

Discussions with the mentor on (a) subject knowledge,

(b) practical knowledge

This area has been alluded to in theme (A) of this report. The questionnaire found unanimity between the opinions of students and mentors in that the most discussed type of knowledge between the parties was very clearly 'how to teach', followed by 'other teacher responsibilities' with 'subject knowledge' the least discussed.

Apart from student S5's acknowledged weakness in Literacy (p.90), the students explained that their subject knowledge was considered satisfactory or assumed to be adequate for the task, with only S3 and S4 affirming that it was discussed if and when the mentor felt it was inaccurate or insufficient.

This was the general pattern found among the mentor responses, with M3 again pointing to her student's initial weakness in her science specialism though the trainee felt "comfortable" in teaching it, unlike her history and geography which "she had not studied since she was fourteen herself." Mentor M1 argued that her student's main concern was in whether he was "pitching the information at the right level for the children." However, the consensus was that the mentor's role in this area was to pick up any deficiencies (usually in the lesson planning stage) and thereon pointing the student to the correct resources for them to research the subject matter.

All interviewees agreed that the practical knowledge of how to teach formed the major part of mentor-mentee discussion. The reason was simply put by

S1 in that "this is what every student needs to develop," whilst S4 averred that "you can know your subject but that doesn't really matter if you're not able to manage a classroom." Student S2 echoed earlier findings in stating that he thought that his "learning how to teach was 50% from my mentor and 50% from myself." Several students explained that their mentors had been excellent sources of ideas which they encouraged the students to put into practice. Mentor M5 argued that this and general discussion of practical knowledge naturally took place when "things hadn't gone well."

Degree of support and challenge of students' subject knowledge

The questionnaire respondents were asked to consider how much the mentor supported and challenged their subject knowledge, and at what stage of the course. The findings were, firstly for students:- 'support' (3); 'challenge' (2); 'both support and challenge' (8); 'neither' (2). All three mentors responded that both support and challenge occurred.

As to when support took place, students replied:- 'at the start' (7); 'throughout' (8); 'later in the course' (0). The three mentors responded:- 'at the start' (1); 'throughout' (2); 'later in the course' (0)'.

Asked when challenge happened, students replied:- 'at the start' (2); 'throughout' (5); 'later in the course' (5); abstentions (3). The three mentors responded:- 'at the start' (0); 'throughout' (2); 'later in the course' (1).

The interview findings are in line with the above results and repeat what was found from the more general questions on support and challenge which were asked in theme (A). It was found that higher levels of support for subject knowledge occurred in early stages of the course, with challenge tending to increase as the year progressed. Two student interviewees (S1, S6, both science specialists) suggested that their knowledge was sufficiently good that neither support nor challenge was necessary. The other four trainees confessed to needing more support initially which then usually decreased. However, only three students declared any significant challenge to their

subject knowledge (S2, S4, S5), with more challenge later in the course when, as S4 asserted, "my confidence had increased and my teaching strategies were more in place."

Mentors agreed closely with their students, with M1 and M6 agreeing that their students' knowledge had been excellent. Mentors M2, M3 and M5 professed that they offered more support initially, although M5 said that her aim was always to challenge whenever possible, such as if the pupils were not being challenged by the student. However, the mentor recognised that her student's confidence was a factor in deciding when challenge was appropriate. Interestingly, M4 again asserted that she challenged her trainee's knowledge from the start, yet her student's remarks indicate that she was unaware of the challenge in the early stages.

Differences between theories of knowledge at college and what is needed for teaching

Only the students were asked this question. The general consensus was that there is a gap, with twelve students who replied to this enquiry on the questionnaire suggesting this to a greater or lesser degree. Their comments can be grouped into three varieties of responses, illustrated, by the following quotes:- " ... massive difference. The theory was interesting but not enough relevance to practical situations", " ... the theories are good to know but students are too busy coping in class to apply them", " ... teaching is best learnt and tested in the classroom."

Most interviewees concurred with these broad sentiments, with only student S6 arguing that the theory sessions "were often quite practical" and "quite relevant to my teaching as background information." Finally on this matter, S1 acknowledged that the college theory was interesting but "as soon as you are thrown in at the deep end in terms of teaching, all you wanted to know were the basic survival techniques." He made an interesting point when suggesting that the "more subtle, refined theory" may have been more useful later on in the course.

SUMMARY & EVALUATION OF FINDINGS FOR STUDENT TEACHERS' SUBJECT KNOWLEDGE

The findings are fourfold. They are summarised below and are followed by a discussion of the role of support and challenge.

Summary and Discussion

Emphasis on subject knowledge in the course

There is clearly a significant emphasis on trainees' subject knowledge in the course. This is corroborated by reference to the assessment requirements for the Core Science Module of the 7-14 course and for the Secondary Science course. In the former, approximately one third of trainees' assignments involve constructing concept maps or notes summarising eleven areas of science specified by the TTA National Curriculum for primary science, or identifying key concepts in a science area in order to devise intervention activities to enable children to develop a better scientific understanding of the chosen area. In the Secondary Science course, one of the four assessment modules requires students to analyse and challenge the naive ideas that both children and the students themselves may have concerning science concepts, and a further 'broadening' module helps trainees to face the challenge of teaching topics in the National Curriculum which were not part of their own specialist studies.

However, this emphasis on subject knowledge was concentrated mainly in the core and specialist subjects with a resulting lack of emphasis on non-core subjects. Both mentors and trainees commented that this can result in problems for students teaching material other than their specialism. This can occur with science students teaching out of their science specialism in secondary schools or with primary trainees having to teach across a range of subjects.

Influences on student teachers' subject knowledge

Subject knowledge was primarily influenced by classroom related tasks. Hence, the key concerns were the nature of the task to be done, to gain a deeper understanding of subject matter in order to teach it and to enhance pupils' understanding of it. College tutorials, particularly those in science, were found to be interesting and occasionally useful but were rarely utilised in the students' teaching. School expectations and DfEE standards did not rate highly on the questionnaires although student interviewees placed more importance on them. However, it should be noted that the subject knowledge considered here both by mentors and mentees refers exclusively to that which pupils need to enhance their understanding of the subject. In this context, nothing was mentioned of other forms of knowledge such as that related to moral and ethical concerns.

Adequacy of student teachers' subject knowledge

Both mentors and mentees took the view that the students' subject knowledge was adequate for the task and therefore was not often discussed. The mentor's role in this area was seen as recognising any deficiencies and pointing students towards sources so that they could correct these shortcomings themselves.

Influences on student teachers' practical knowledge

Students' practical knowledge of how to teach was gained mostly on school placement, the main influences being; observation of mentors and other teachers; mentor advice; learning by making mistakes. On the other hand, coursework assignments and college tutor advice were viewed as interesting rather than useful. The exception to this concerned comments about college science core units. These lectures were well presented and often quite practical in nature, stimulating trainees' interest in science. Examples were those on common pupil misconceptions in science. Other than these, the student interviewees generally agreed with the mentors in arguing that, regarding practical knowledge, the best training takes place in the classroom. The latter point is perhaps an example of the perceived gap that most respondents thought existed between theories of knowledge provided

at college and the practicalities of teaching. Once in the classroom, students expect practical advice on 'what works' above all else.

The role of support and challenge

Support to boost students' subject knowledge was made available by mentors throughout the course but was mainly needed at the start of the year. It seems, as in other areas, that any challenge to trainees' subject knowledge was more likely near the end of the course when students' confidence and teaching strategies were in place. I gained the distinct impression from the interviews that the six student interviewees were a confident set of trainees possessing sound subject knowledge. This was particularly the case for the science specialists. Because of this, mentors generally deemed it unnecessary to challenge trainees' subject knowledge.

There seems to be a contradiction at the heart of the issue about subject knowledge. The course encourages trainees to analyse their own and pupils' subject knowledge, but students perceived a gap between the knowledge put forward at college and that which they consider necessary for teaching. Students ascribe little influence to college theories on teaching, though there is evidence that they are used in areas such as eliciting pupils' misconceptions in science. It seems likely that trainees generally do find college theory of interest and might be prepared to put them into practice if they were not so preoccupied with attaining survival techniques, particularly in the early stages of training. Mentors are unsure of the degree of emphasis on subject knowledge in the course and seem to be not very familiar with the nature of coursework assignments in this area. Perhaps if mentors were required to familiarise themselves with the latter and college theory in general, then they would see more reason to challenge trainees' thoughts and the gap between college theory and practical knowledge may be narrowed.

I have commented earlier on the lack of discussion of moral and ethical forms of knowledge. It may be that the mentors interviewed for this study were unaware of these forms of knowledge, or, more likely, that they may

have assumed that they were not expected to challenge their students on these matters, perhaps because mentors considered these forms of knowledge too complex for trainees to contemplate when the latter are more concerned with the practicalities of teaching. However, a more simple reason may be that the National Curriculum and therefore the SCITT training documentation for mentors and students, do not specify that such forms of knowledge should be part of students' training. Thus, it is perhaps not surprising that such knowledge is largely ignored in discussions between mentors and students.

MENTOR AND TRAINING MANAGER FEEDBACK

In this feedback, the findings are summarised in terms of the two areas corresponding to the research commentary for this theme.

- The emphasis of subject knowledge in the course.
- Influence on students' practical knowledge of how to teach.

The emphasis of subject knowledge in the course.

The study's finding of a significant emphasis placed on subject knowledge in the SCITT course is supported by all the interviewees who provided feedback. The TM suggested that the reason is because trainees are studying for a PGCE as well as QTS. He argues that "because they are doing PGCE, which is an academic qualification, there is a lot more rigour, a lot more subject content is required." Mentor M5 affirms that this emphasis on subject knowledge means that "it can sometimes be unrealistic for trainees in the primary sector to be first rate in terms of subject knowledge across the full range of subjects." This problem in the 7-14 age course, highlighted earlier in this study, is further stressed by the TM when he says that "the 7-14 course is horrendous. The amount of work they have to do in Foundation and Core subjects is far more than compared to the Secondary course." In addition, he and M1 once again touch on the problem that often arises since secondary science trainees are expected to do some teaching

outside their science specialism but sometimes their knowledge in this area can be deficient.

Influence on students' practical knowledge of how to teach.

There was unanimity among the feedback group in agreeing with the study's conclusion that student's practical knowledge of how to teach was mostly gained in the classroom and that this aspect formed the major part of mentor-student feedback discussions. The TM explains that this is inevitably the case since the SCITT "is an apprenticeship course where you get topped-up with knowledge, rather than a college-based course." In addition, several mentors highlighted the aforementioned 'gap' that exists between college theory and the practicalities of teaching. Mentor M1 suggests that "the how" of teaching is learnt during school placements whilst "the why" of teaching is "perhaps best learnt from other sources such as college input and further reading". She goes on to argue that "it is the mentor's job to draw out the connection between the 'how' and 'why' of teaching." Mentor M3 goes further in stating that the theory-practice gap is "massive" and that it is essential that the mentor and other school colleagues "bridge that gap as soon as students arrive, because we can't possibly let them into the classroom until it's tackled. It's not fair on them or the pupils."

RESEARCH COMMENTARY ON STUDENT TEACHERS' SUBJECT KNOWLEDGE

In this research commentary the findings are summarised in terms of the following areas:-

- The emphasis of subject knowledge in the course.
- The influences on students' practical knowledge of how to teach.

The emphasis of subject knowledge in the course.

There is a significant emphasis on subject knowledge in the SCITT course, confirmed by student teachers' comments, by reference to the assessment requirements stated in the Course Handbook and by mentor and training manager feedback. This emphasis is centred around the core subjects of English, maths and science. As Edwards and Ogden (1998) pointed out, this can pose problems for primary school student teachers who are required by the TTA. to have a secure knowledge of the ten subjects in the primary school national curriculum as well as religious education. In addition, this study ascertained that secondary science trainees may also have gaps in their knowledge when required to teach out of their science specialism, although the course recognises this and seeks to counteract it by inclusion of a 'broadening' module in the trainees' assignments.

However, students' subject knowledge was found to be adequate for the task in hand and therefore, as Edwards and Ogden (1998) also discovered, it occupied a minor part of mentor feedback discussions. This study's findings are in line with Smith's (1999) research, which found that trainees' subject knowledge was very much influenced and guided by classroom related tasks. Thus, subject knowledge was developed and challenged when the set task necessitated a deeper understanding of the subject. Mentors may have noticed gaps in their students' subject knowledge but generally left it to the trainee to remedy the situation. Students thought that the college tutorials in subject knowledge were interesting and could be of value but, as Foss and

Kleinsasser (1996) noted, the trainees rarely followed this up by putting such knowledge into practice in their teaching.

The SCITT's emphasis on subject knowledge can be considered in terms of Shulman's (1986,1987) three categories of content knowledge:-subject matter content knowledge; pedagogical content knowledge and curricular knowledge (or what Banks et al. (1996) extend and refer to as 'school knowledge'). Subject matter knowledge is mainly the responsibility of the students but they are assessed on their knowledge of it as part of their course assignments, for example the compulsory construction of concept maps or notes in various topic areas of the Core Science module in the 7-14 course. Coursework assessment is also aimed at pedagogical content knowledge, an example being the requirement (detailed in the DfEE, 1997 document) for trainees to understand and challenge their own and pupils' misconceptions in science. Other pedagogical content knowledge is left in the hands of the mentors or training managers, as is the third of Shulman's categories, curricular knowledge.

To continue with the Secondary Science course, a strategy that permeates this course is that of active learning which was commented on favourably by all the science student interviewees. The Course Handbook explains that this should involve trainees using a constructivist approach to improve pupils' understanding of science concepts. Such a technique has been advocated by some researchers, notably Prain and Hand (1996). The Handbook stresses that this should not be equated with discovery learning or pupil-centred learning. Rather, teachers could, for example, provide alternative ideas about a particular concept for pupils to latch onto before they can reconstruct or reformulate their own views under the direction of the teacher. My point here is that these strategies advocated by the SCITT course have their basis in the work of researchers such as Prain and Hand (1996) and Strauss et al. (1998), but are likely to be unfamiliar amongst the people mainly responsible for students training in schools, -the mentors and training managers. Strauss et al. (1998) argue that increasing the subject knowledge of teachers will not necessarily change the way the subject is

taught. The reason being that teachers' 'espoused theories of children's minds' (those that they display when discussing how they practice their profession) usually take precedence over the increased subject knowledge. However, I would propose that trainees' teaching can be altered for the better if key features are incorporated into the training course. Firstly, students should be required to improve their subject, pedagogical and curricular knowledge. This element is already in place to a large extent in the present course. The second facet involves the training of mentors and training managers. I have noted that trainees' views were augmented to place greater emphasis on pupils' learning with the aid of mentors who brought such values to their mentoring, whilst being largely unaware of the theories of knowledge encompassed in the course. These theories of knowledge should include the examination of moral and ethical issues and other public forms of knowledge. If such theories were required knowledge for mentors and training managers as part of their own training, then, armed with this expanded knowledge, these educators would be in a stronger position to enhance the mentoring of trainees. Firstly, by providing greater support, and, as Butcher (2002) argues, by being more confident in sharing their vision of teaching with students, thereby challenging students' thoughts, values and practice and hence further advance children's learning.

The influences on students' practical knowledge of how to teach.

All data sources in this study suggest that the students' system of knowledge and beliefs acquired or attuned by their teaching practice was gained mainly from their school placements. This 'practical knowledge' (Elbaz (1983); Eraut (1994)) or 'practical theory' (Handal and Lauvas (1987)), was predominantly influenced by the mentors, through their advice, from discussions with the students and from observation of mentors and other teachers. Aspects of trainees' practical knowledge also formed the basis of much of the mentor feedback sessions with the students. The data indicates that these discussions were not merely confined to students' observed performance or pupils' actions as Edwards and Collison (1995) found, but

were often centred around what the children had actually learned and what exactly the trainee had done to promote this learning.

As previous studies have found, notably those of Elliot and Calderhead (1993) and Roth and Tobin (2001), the students in this study had difficulties in relating and using the theories received at college to their teaching in schools. This so called 'gap' between theory and practice was strongly confirmed by the mentors and training manager who provided feedback. Roth and Tobin (2001) argue that this gap cannot be closed since one does not learn to teach by attempting to implement the theory of teaching during teaching practice. Others such as Edwards and Ogden (1998) have suggested that pedagogical knowledge as Shulman (1986) defines it, is unlikely to be easily passed on from trainers to novices. These authors follow through Shulman's contention that this mainly tacit knowledge can only be possessed by teachers. Edwards and Ogden thus explain that college tutors are unlikely to possess this knowledge and mentors may not be able to pass it on since it largely takes the form of routines and conceptions which are taken for granted. However, the present study provides grounds for optimism. Firstly, most of the college tutors in the SCITT are ex or current teachers and thus should still possess this pedagogical knowledge. Secondly, there remains the more fundamental problem of whether it can be passed on to trainees. The course at least attempts to target this knowledge as part of the students' assessment. Furthermore, their is some evidence that mentors can indeed pass on this 'tacit' knowledge,- the student interviewees felt that their pedagogical knowledge had been increased by observation of mentors and through the close mentor-mentee relationship which allowed free discussion and advice to be taken on board. These positive signs can perhaps be built upon if, as I have suggested earlier, the school-based educators can familiarise themselves with the theories of knowledge already incorporated into the course. Student teachers need to connect theory with practice and to their own (developing) personal theories, particularly when the aim of teacher education is to develop critical reflective practice. Mentors who are attempting to encourage such practice need to address the students' underlying beliefs about teaching and learning. They will be more capable of

achieving this if they are armed with an understanding of the theories of knowledge underpinning the course. This holds the possibility that more knowledgeable mentors could be instrumental in decreasing the gap which trainees see between theory and practice.

CHAPTER 7:- STUDY FINDINGS - THEME D

MENTORING AND CHILDREN'S LEARNING

How do children learn best?

The questionnaire asked respondents to place ten options in order of importance. (1 = most important, 10 = least important). The results are given in table 7.1 (Appendix 6), and is followed by bar charts 7.1a and 7.2b for student and mentor mean scores (Appendix 6). As before, the total and mean scores have been adjusted to show a decreasing order of frequency.

There is a degree of correlation between students' and mentors' opinions, with discussion, investigation, differentiation and challenging pupils' beliefs considered highly by both groups. The mentors laid greater emphasis on differentiated work whilst students thought more of demonstrations. Both groups considered that rote learning and children's innate ability were of limited significance.

The significant comments generated by the interviews were, firstly, the importance that students placed on entertaining the pupils (mentioned by S1, S3 and S5) and on 'active learning'/ investigation (S1, S2 and S5).

One mentor mentioned this "hands-on experience" (M6), but comments generally centred around the use of differentiated work (M2, M3 and M5) or challenging the pupils (M1, M2 and M3). Mentor M1 argued that one needs to "challenge kids to come up with their own ideas, not make it too easy for them". However, mentors did find this question difficult to answer with four of them admitting that a variety of methods is necessary, depending on the age and ability of the children being taught.

The prevailing belief amongst the interviewees of the fundamental importance ascribed to children's learning is surely not a coincidence. It could be argued that this is a result of the close relationship that developed between every mentor and student. In addition, one might put forward the

argument that pupils' learning is a major emphasis of the SCITT scheme itself.

Strategies used to increase pupil learning

The questionnaires required respondents to place nine strategies used to enhance pupils' learning in order. (1 = most often used to 9 = least often used). The results are in table 7.2 (Appendix 6), and are followed by bar charts 7.2a and 7.2b for student and mentor mean scores (Appendix 6). As previously, the total and mean scores have been adjusted to show a decreasing order of frequency.

The responses show that students generally use strategies which correspond with their beliefs about how children learn best. However, differentiated work is more prominent, perhaps because the mentors consider it so highly. Similarly, mentors made wider use of demonstrations themselves, although they did not rate its impact on children's learning as high in the previous table 7.1. Interestingly, challenging pupils' beliefs is not considered of prime importance by either group. This may indicate that, although both trainees and mentors consider it important to challenge pupils' perceptions and beliefs, it is less apparent in practice.

I should comment at this stage that other strategies were mentioned by questionnaire respondents:- 'active learning'; research; group work; working in pairs; problem solving; using a variety of techniques.

Mentors were also asked to specify what strategies they thought their students used most often. Table 7.3 (Appendix 6) summarises the responses and is followed by bar chart 7.3 (Appendix 6), showing mentor mean scores. As previously, the total and mean scores have been adjusted to show a decreasing order of frequency.

This small sample of mentors' views provides support for the strategies which trainees say they employ. However, one should note that mentors

placed 'didactic teaching' higher than the students and this sample of mentors did not think that their students challenged pupils' beliefs a great deal.

Influences on students' views on pupils' learning

The questionnaire asked students to place six possible influences on their views in order from 1 = most important to 6 = least important. The results are in table 7.4 (Appendix 6) and is followed by bar chart 7.4 showing mentor mean scores (Appendix 6). As previously, the total and mean scores have been adjusted to show a decreasing order of frequency.

The most significant influences felt by students are clearly teaching practice, the mentor and their own experiences. This pattern is supported by the interviews with students, although this group ascribed more importance to the trainees' own experiences, with all six students mentioning this. Trainees S1 and S5 believed that watching their own children was important, whilst S2 had never really thought about how children learn before. The role of the mentor was significant for three students. Three trainees also identified teaching practice as important, and particularly the observation of teaching that occurred during it.

The mentor interviewees were, once again, in close agreement with their students, with four of them regarding the student's own background and experience as the prime factor with M3 remarking that her trainee had "come into teaching with her own views on how children learn." The mentoring system and teaching practice were each commented on by two of the mentors.

Children's learning in mentor-mentee discussions

The questionnaire gave the following results when students were asked how often pupils' learning was discussed:- 'always' (7); 'often' (7); 'fairly often' (1), 'seldom' (0); 'never' (0). The student interviewees confirmed its

importance, only S3 commenting that " ... it was not really a major factor." It was emphasised by S2, S5 and S1 who suggested that it was "implicit in the way we talked about my teaching," whereas S4 and S6 maintained that it was commonly discussed in relation to the students' college assignments. Student S2 remarked that her mentor would challenge him with the question, "how do you know they learned what you wanted them to learn?"

The mentor interviewees clearly saw this concept as an essential part of their talks with the mentee. Mentors endeavoured to resolve any problems with the trainees before it adversely affected children's learning. Mentors M1, M2 and M5 considered the latter as the key element in discussions as had their students. Mentor M5 stated that "it was very much part of the ongoing discussion about her lesson." Only M4 judged that it was less discussed than covering lesson objectives and general classroom management.

Comparing students' and mentors' views on children's learning

The interviewees were asked to give their opinions on this matter. Once again, the findings point to close mentor-mentee relationships with all twelve respondents suggesting a degree of compatibility in views on children's learning. The use of 'active learning' strategies was again alluded to by students S1 and S4, whilst S6 suggested that the similarity of views on the teaching of pupils was one reason for the friendship with her mentor. Student S3 went further in saying that "I may have got some of my views from my mentor." You will recall that her mentor had commented on the student's "firm views" at the start, yet she now qualified this statement by remarking that she thought the trainee's ideas developed throughout the year. This effect of the mentor influencing the student's views was pinpointed by both M6 and M2, the latter arguing that her student, "probably has (similar views) now, since I've influenced them."

Support and challenge of students' views on children's learning

The consensus view among all student interviewees was that their views on children's learning were largely supported by their mentors, with only S2 explaining that the occasional challenge was aimed at "ensuring that the children had learned what I wanted them to learn." Trainee S5 gave the similarity of views between the mentor and herself as the reason for the absence of challenge. However, S1 again argued that "a lot of the course was based around how pupils learn best" and referred to his mentor at Sixth Form College (in the second term) who was an enthusiastic advocate of 'active learning'. Student S3 also remarked that the course and college tutors "challenged the trainees as a group" in this area.

As in other areas, most of the mentors considered that they had supported the student's ideas at the start, with four respondents (M1, M2, M3 and M5) saying that challenge was greater towards the end of the course. Mentor M2 gave this reason for this situation,- "if you challenged from the start, you'd knock their confidence for six." Mentor M1 challenged her student when she judged that the "there wasn't enough challenge in the tasks that he gave the children." Maintaining the theme which she had put forward throughout, M4 endeavoured to provide challenge throughout because it "wouldn't have been productive for the pupils." In summary, five of the six mentors pointed to the use of challenge at some time in the course.

Two points emerge here. Firstly, the apparent lack of awareness on the part of students of the challenge employed by their mentors. Secondly, mentors seem to be unaware of the possible challenge to students' beliefs that may have come from their college sessions.

When pressed further in enquiring of how their mentors may have challenged students' thinking on pupils' learning, students S3, S5 and S6 insisted that no challenge had existed. Only two students, S4 and S5, recalled evidence of mentor challenge. Trainee S1 admitted that his ideas were sometimes questioned if they "weren't as good as I thought they were"

but he "didn't feel particularly challenged" because his mentor was "very skilled at making me feel positive." Student S5's mentor seemed to utilise a similar, understated but positive technique when she confessed that "whenever a lesson had not gone well, I would praise her for at least one good thing but then say, 'but we need to look at ...'." "Mentors M2 and M3 argued that the secret of challenging students' beliefs lay in encouraging them to evaluate their planning and teaching. The mentors did this by asking questions such as "have the children achieved their best?" or "do you think they understood what you were trying to get over to them?" (both attributed to M3).

Much of the evidence referred to above corroborates the information already discussed in theme (A), pp. 91-93, on the ways and areas in which mentors challenged trainees. The above interviewee responses were supported also by questionnaire comments where the most common ways in which mentors supplied challenge was:- the use of questioning before and after lessons; challenging the choice of learning activities used in lessons; inspecting pupils' work and, once again, ensuring that trainees reflected on the children's learning when evaluating lessons. However, one should note here that where challenge was evident it aimed in general at ensuring that pupils' maximised their performance or understanding rather than discussing their learning with respect to social, moral or ethical issues.

Do students' views on children's learning change during the course?

The student interviews were asked this question. The responses indicate that trainees views on this matter were quite resistant to change. Two students (S5 and S6) were categoric in explaining that their initial beliefs had remained unaltered, with S5 reiterating her view that learning must be fun. Trainees S3 and S4 thought their views had been augmented whilst, S1, who professed to no prior views, argued that the year had incorporated a "building up of knowledge and a gradual realisation that every kid is different, so that what may be good for one child may be totally useless for

another." Student S2 felt similarly and stated that he was "more in touch with how children actually learn."

At what stage of the course do students focus on children's learning?

Questionnaire respondents were asked at what stage of the course did they consider that they focused on children's learning. Five options were given, of which respondents were asked to choose the one where most focus occurred. The replies were as follows:- 'throughout the course' (2); 'teaching practice' (5); 'towards the end of the course' (4); 'at college' (2); 'start of school experience' (0); abstentions (2). These results do not point to a clear-cut answer, perhaps due to the ambiguity in the question. However, it should be noted that no students felt that they focused on pupils' learning at the start of the course, with most suggesting that it occurred during teaching practice (in the second or third term) or at the end of the course.

This trend was supported by the student interviewees with five of them (S1, S2, S3, S4, S5, S6) suggesting that this skill developed during the course, although three trainees (S4, S5, S6) asserted that they had at least tried to focus on pupils' learning from the earliest stages. Mentors M1 and M6 explained that their students possessed the facility to do this from the start but that this was more evident once "the everyday mechanics of teaching had been mastered," (M1). Mentor M4, who had earlier argued that challenge from the start is essential, affirmed that her student did indeed focus his teaching around children's learning throughout the year. The mentor claimed some influence in that she had "emphasised right from the start that, in every lesson, the child has to move on."

Students S2 and S3 felt that they had learned to focus on pupils' learning as more experience was gained. This was confirmed by their mentors, both of whom suggested that this point came "towards the end of the first term." Student S3 felt that the process does not take place in the early stages of teaching because "all you really want to do is teach," and echoed previous sentiments in stating that "in the beginning, it's survival really."

How do student teachers focus on children's learning?

The students' responses are interesting since they may indicate the influence of both mentors and the college teaching units. Firstly, the idea of discovering children's prior perceptions and understanding of a subject before teaching it, is evident. Student S4 stated that her lessons would start with questioning of the pupils to find out what they knew and then she would provide an example which they could relate to in order to take the concept further. Questioning pupils was mentioned by three other students. Trainee S6 would do this at both beginning and end of lessons, whilst S3 and S5 employed it at the end of lessons and then built on what was found out when planning subsequent lessons. Here it could be argued that the SCITT's emphasis on the theory of learning in the early stages has had a positive influence on students' teaching as can S1's reiteration of his use of 'active learning' strategies to focus on children's learning. However, it is perhaps significant here that mentors considered generally that their students challenged pupils more infrequently than the trainees themselves thought they did.

The beneficial effects of being mentored are clearly seen in the repeated views of trainees of the importance of "developing the whole child" (S6), and "evaluating lessons by reflecting on what the children have learned" (S3). The use of differentiated work was again remarked on as a means to "treating pupils as individuals" (S5). All of these points were supported in questionnaire comments from both students and mentors. This can perhaps be best summarised by mentor M5 who stated that she tried to ensure that her trainee's "whole teaching, including lesson planning was clear and continually reviewed in light of children's learning."

SUMMARY & EVALUATION OF FINDINGS FOR MENTORING AND CHILDREN'S LEARNING

The findings under this theme are summarised under the three points below, followed by an analysis of the role of support and challenge.

Summary and Discussion

Student teachers' views on children's learning

The majority of student teachers in this study embarked on the year's training already possessing views on how pupils learn best, developed from their own schooldays and often based on the idea that lessons should be fun. These clear initial views were broadly resistant to change but were often extended or augmented during teaching practice with pronounced influence from mentors in addition to observation of pupils and other teachers. Students who professed to hold no definite ideas on this matter at the outset had developed coherent views towards the end of their course.

Mentors influence on students' views on children's learning

There was general agreement amongst mentors and students that their views on children's learning were broadly similar, although mentors placed considerably more emphasis on children's learning than students initially. Children's learning invariably formed a major part of mentor-student feedback. Accordingly, there is some evidence that the development of trainees' ideas in this area can be influenced by the mentor, particularly if there is a close, friendly relationship between mentor and mentee.

Development of student teachers' views on children's learning

The main thrust of trainees teaching in the latter stages of the course was to enhance pupils' learning in contrast to its marked absence in their thoughts initially. Students largely used strategies which they thought would best achieve this aim. These include techniques such as, (in decreasing order importance according to the data):- investigation; discussion; challenging pupils' beliefs; demonstration; differentiation. The use of active learning,

which can incorporate all of the above strategies but essentially concerns the idea of challenging children's views on concepts, was often mentioned by both questionnaire and interview respondents, mainly in the science subject area. However, there is some evidence suggesting that mentors considered that the student teachers challenged pupils' beliefs less often than the trainees themselves thought they did. Once again, I would point out that 'enhancing pupils' learning' was restricted largely to gaining a better understanding of subject matter which the teacher wanted them to learn.

The role of support and challenge

The apparent similarity of views between mentors and mentees may be one reason why trainees views were supported and were only challenged when mentors considered it justified to improve pupils' learning. Most trainees thought that the mentor agreed and supported their ideas on pupils' learning, with only two students recognising the presence of any degree of challenge towards the latter stages. All but one mentor tried to support the student's views initially. One mentor challenged her student throughout but the consensus was that, as in other areas, the degree of challenge increased towards the end of the course when student's confidence was greater and their teaching skills more likely to be in place. This scenario mirrors the findings in other themes such as students' subject knowledge, as does their relative lack of awareness of their views being challenged by the mentors. This may have been due to the skill of these predominantly experienced mentors. Their use of support and praise may have masked the degree of challenge they were using by subtle yet probing questions and by their insistence on reflection on what pupils' had learnt. There was undoubtedly an element of this present, but the evidence suggests that, in the early phases of the course, challenge to students beliefs in this theme played a minor role.

However, two mentors suggested that challenge would occur at any juncture if it improved the children's learning, though what was meant by 'children's learning' was not clarified. Challenge to the trainees centred on improving pupils' learning whether it was by questioning the students' teaching

strategies or activities, inspecting pupils' work or encouraging trainees to reflect on what pupils' had actually earned during a lesson.

The students in both questionnaires and interviews indicated that pupils' learning became more of a priority as the course progressed, an example shown by four of the student interviewees endeavouring to elicit children's ideas and beliefs on a topic before teaching it. The research data suggests that the reasons for the use of such challenging strategies are varied and interconnected. The SCITT scheme places much importance on pupils' learning embedded in the course Handbooks and is particularly emphasised by means of students' assignments and lectures earlier in the training. Although trainees declared that these played a minor role in the development of their views on children's learning, their espoused use of challenging techniques such as those exemplified above and their concentration on pupils' learning surely suggests that influence from college based work was present. Nevertheless, it is clear that a major factor in the clarification and development of trainees' ideas on teaching and specifically on pupils' learning was the initial support and later challenge provided by experienced mentors. This occurred within a close, friendly mentor-mentee relationship which helped students to gain confidence and experience, so allowing them to concentrate on children's learning.

This is a very positive sign, yet as previously indicated, 'children's learning' in this context seldomly encompasses anything other than understanding of subject matter. I may be judging the mentors in this study rather harshly here, particularly the primary school mentors who were most concerned that the 'whole child' was educated, but there is a possibility that some mentors may have a limited conception of what can or should be challenged regarding pupils' learning.

One may argue that the positive signs of students' preparedness to challenge their ideas and practice in the later stages are somewhat offset by more evidence for their preoccupation with classroom management and 'survival' earlier on. This coincided with the period of intense coursework assignments

(largely concentrated on theory of children's learning) but relative lack of challenge from most mentors. Nevertheless, I believe one should not overlook the brief indication that one mentor's practice of challenging her student throughout the course (in areas such as subject knowledge and pupils' learning) led to the trainee attempting to focus on children's learning at early stages. This is perhaps evidence that the presence of challenge early on in teacher training can enhance students' reflective behaviour and thus challenge their own beliefs and practice and hence those of their pupils throughout the trainees' time in school.

The mentor has a key role here. We have seen that being mentored has a major influence on students' thoughts and practice. If mentors had possessed or were required to gain more knowledge of the college theory given to their students, then mentors may be more convinced of the benefits of challenge and incorporate it into their role at an earlier phase. Perhaps this would have an impact on decreasing the students' perceived gap between college theory and classroom practice as well as ameliorating their dependence on learning 'survival techniques' at the expense of concentrating on pupils' learning. Yet to extend students' concern for children's learning beyond the admittedly worthy aim of wanting them to succeed will require more from mentors. The TTA standards for Qualified Teacher Status and therefore the SCITT documentation supporting mentors and students does not make explicit what it expects regarding the moral and ethical dimensions of teaching. Without the requirement to consider issues such as equality and social justice, it is unlikely that mentors will seriously challenge their students on these matters. Instead, both mentors and students may consider it sufficient to achieve what current standards require, which in this respect may be seen as being too narrow and restrictive.

MENTOR AND TRAINING MANAGER FEEDBACK

The following is a brief summary of the main points made by the feedback group in response to the study's findings on:-

- The emphasis on pupils' learning in the SCITT scheme.
- Mentors' knowledge of course theories and moral/ethical issues.

The emphasis on pupils' learning in the SCITT scheme.

All those who provided feedback were strongly in agreement with the study's indication that pupils' learning is of paramount importance in the training course. The respondents also concur with the notion that trainees' priorities undergo a major shift from initial concerns about their own classroom competence to later concurring with their mentors' overriding consideration for childrens' learning. As M6 explains, "they are so consumed by whether they are going to manage, that what the child has learned is secondary to this 'survival' in class." However, the mentors placed much more weight on their role in the change to students' thinking. As M5 states, "that's why we're here. That's what we're paid for!" Indeed, mentors M5 and M6 were unsure of the degree of emphasis which the SCITT lays on childrens' learning and only M1 suggested that the transformation in students' thinking was due to a combination of influences from mentors and course theories, but she agrees with her training manager when he argues that the major influence is "from the interaction with mentors and training managers.

Mentors' knowledge of course theories and moral/ethical issues

The conclusions and recommendations in this area arose naturally from discussion and analysis of the six findings discussed in the research commentaries for Chapters 4 to 7. Therefore the feedback group were asked for their opinions on these matters.

The mentors concede their relative lack of knowledge of the college theory. Mentor M6 says that "the role that mentors are asked to take on should require them to be much more aware of the college aspect." Mentor M1 agrees that we're not that aware of the theory they are taught in college, but, as a Catholic school, we are ahead of the game regarding moral and ethical issues.

The feedback was generally very positive concerning the benefits of more knowledgeable mentors, although the TM warned that "mentors have too much to do already, particularly in primary schools." However, he continued, "OFSTED remarked that the link between subject and mentor is not particularly good, the mentor should know what they're doing in theory lessons so that it can be more easily put into practice in class." Mentor M5 suggested that this problem could be accommodated within an overall improvement in mentor training before students arrive in school," and M1 reiterated that "we already try to bridge the theory-practice gap but further knowledge of college theory would help." Other mentors agreed with M6 stating that "I do wish that I had been helped to see the connection earlier in my career." Mentors agreed that they would be in a better position to help trainees with the pressures of coursework. However, the consensus was that students early preoccupation with 'survival' in the classroom would always be a problem, but M5 pointed out that "mentors need to be much better primed if they're going to do a first-rate job," whilst M3 acceded that "if we were more involved with the college-based tasks then the students may not think they've been thrown in the deep end so much."

Mentors felt that moral and ethical issues received minimal attention in the SCITT course, but M5 (in a small primary school) and both the training manager and M1 (in a secondary Catholic school) argued that these values were embedded in the ethos and practice of their own school. Finally, there was unanimity among respondents for the premise that greater emphasis shown by mentors for moral issues would result in trainees recognising and including them in their teaching and thus increasing the possibility that pupils' knowledge could expand to include these ideas. Mentor M5

summarises the general feeling when she states that "much of the National Curriculum is very subject-orientated. There's nothing wrong with that, but if we are attempting to engender reflective learners, whether they be adults or children, then you can't do that if you're constantly chasing externally imposed targets. These are necessary, but if you're talking about lifelong learning, then we have to find ways such as this to bring that reflection into what we do."

During the data collection period of the study, there was no explicit reference to moral and ethical issues in the TTA Standards for teacher training. However, the training manager explained that in the most recent TTA document from autumn 2002, the first Standard, namely 'professional values and practice' clearly correlates with these issues. Mentors were unaware of this, including both M1 and M5 who felt that these matters were part of the tenor of their own school. When it was pointed out that issues such as respect, fairness, justice and values are now incorporated into the Standards, the general response was that mentor knowledge was lagging behind what the Standards require of students and that this was a problem that mentor training needs to address.

Finally, I would add here that, despite being repeatedly asked to voice any disagreement or criticism of the study's findings and conclusions, the vast majority of the feedback comments from all respondents exhibited concurrence with and enthusiasm for the these findings. Neither does the inclusion of aspects of moral and ethical issues in the Standards lessen the impact of the study's conclusions. As the training manager pointed out, this merely lends weight to the research, rather than detracting from it.

RESEARCH COMMENTARY ON MENTORING AND CHILDREN'S LEARNING

The emphasis on pupils' learning in the SCITT scheme.

The feedback data corroborates the conclusion that one of the key features of the training scheme is the importance it ascribes to children's learning. However, few of the trainees in the study highlighted this aspect in their initial worries at the outset of the year's training. Nevertheless, it was clearly of prime importance to all respondents in the latter stages when the data was collected. The shift in emphasis seems to originate from two sources. Firstly, the SCITT course itself lays significant emphasis on pupils' learning from the evidence provided by various versions of the Course Handbook and student teachers' comments on the type of assignments they were expected to complete. The second, and perhaps more important influence (certainly in the opinions of the mentors), was the pre-eminent concern exhibited by mentors for their pupils' learning. The mentor interviewees all expressed this at some stage. In addition, they possessed clear views on teaching and on the mentor's role, and the close friendly relationship that was attained with their students seems to have had an effect in the development of trainees' views, as did mentors efforts to pursue open, frank discussions with mentees. Problems were challenged as they arose and they was little evidence of the parties co-operating in a "conspiracy of silence" (Jacques, 1992, p.345) to avoid issues. Thus, this study provides evidence to support the assertion by Elliot and Calderhead (1993) and Stanulis and Russell (1998) that teachers can have an impact on the novices' beliefs and practices. In addition, the present study supports Stanulis and Russell's (1998) claim that mentors inevitably bring their own beliefs concerning teaching and learning to the mentoring process. Indeed I would go further and suggest that the data corroborates the view of McNamara (1995) who advises that the mentor should take the lead in directing student' reflection towards pupils' learning.

This study argues that, despite most trainees' insistence of the limited impact of the course 'ethos' on their teaching, its accent on pupils' learning did indeed impact on students' thoughts and their teaching strategies. This influence, in concert with that of the mentors, helped to clarify the novices' own implicit beliefs of themselves as teachers and thus, as Kagan (1992) argues, they became more capable of focusing on children's learning as the course progressed. These findings offer encouraging evidence of what impact experienced mentors can have on the professional development of trainee teachers, but at the same time, highlights the limitations of present mentor training. The latter is emphasised by the feedback which endorses mentors' lack of awareness of college theory and of the latest TTA requirements.

To summarise the study's conclusions and recommendations, if the training of mentors (and training managers) included a requirement to familarise themselves with the moral, social, political and ethical aspects of their profession and with the theories of knowledge at the heart of the SCITT course, the benefits could be many. Mentors may be more comfortable with challenging their students throughout the training without 'immobilising' the novice in his or her practice or thinking about teaching and learning; a more knowledgeable mentor may help to alleviate the pressures caused by a heavy assignment workload in the first term; the students may perceive less of a gap between theory and practice; and the concentration on attaining 'survival' techniques could diminish whilst an earlier focus on pupils' learning could be engendered. Finally, if mentors are made more aware of the moral and ethical dimensions of teaching and are directed to incorporate these into their mentoring, then in the hands of skilled mentors, student teachers can endeavour to see that pupils' learning need not be limited to merely a better understanding of the subject matter.

CHAPTER 8:- EVALUATION OF THE STUDY

In this chapter, I will evaluate the study in terms of its strengths and weaknesses.

Strengths of the study

Data collection and analysis

A combination of qualitative and quantitative methodology was utilised in an effort to enhance the validity of the research findings. That a considerable amount of agreement was gleaned from statistical data on the one hand and qualitative data on the other is perhaps an indication of some success in this respect.

The data which was collected was dealt with in a confidential manner and the names of all respondents, whether they be individuals or institutions were anonymised. In addition, I endeavoured to retain an unbiased stance in analysing the data with the aid of a second reader as a critical friend.

All twelve interviews progressed smoothly with the respondents relaxed and open in their responses. Hence, I consider that the problem of 'reactivity' was minimised. The interview procedures themselves were standardised in terms of the seating arrangements, the use of audio-recording and the similarity of initial questions asked.

Interviewee respondents explained that the questionnaires were relatively well laid out and easy to understand. The interviewees remarked also that they found the questions of interest since it engaged them in reflection on their training and teaching. Finally most commented that the questionnaires were not time consuming to complete. This was most encouraging to myself as the researcher and is perhaps substantiated by the good response rate of approximately 50% for the questionnaires posted to secondary schools.

Weaknesses of the study

The study can be criticised on several grounds. These are summarised below.

Validity

The sample size for the interviews was relatively small, comprising only six mentor-mentee pairs and it was only possible to contact one mentor interviewee subsequently to follow up or clarify certain points and to gain respondents' opinions of my initial conclusions. The student and mentor interviewees themselves were chosen either through previous professional contact with a training manager based in one of the Consortium's Secondary Leader Schools or through personal contacts with a few primary school headteachers. Two of the student teachers were entirely secondary based whilst the other four had primary schools as their Parent School placement. All six mentors and all but two student interviewees were female. The students' main subjects ranged from science (two primary, one secondary) to secondary geography and primary DT and mathematics. Finally, the questionnaire data was obtained solely from students in secondary schools. Thus, it could be argued that the sample of respondents was not solely representative of the primary or secondary sector or of male or female gender. However, the fact that considerable agreement was discovered in the responses of this range of participants perhaps lends some weight and validity to the conclusions that have been drawn.

Neither the interview schedules or questionnaires were trialed as such, although following the first student and mentor interviews which lasted longer than anticipated, the only significant change for subsequent interviews was that a few questions which did not produce relevant data were omitted. As for the questionnaires, a few of the interviewees suggested that there was not enough space for extended comments on some parts of the questionnaire. This had already becaome apparent since several respondents

had continued their answers to some questions on the back of the questionnaire pages.

Triangulation

The study relies heavily on data collected from just three sources, i.e. Questionnaires, SCITT documentation and audio-recorded interviews together with my brief thoughts on each interview written shortly after it had taken place. It was not possible to gain access to any of the Consortium's SCITT personnel such as the chief executive or subject advisers. In addition, the training manager who had provided first contact with several mentors and students and who had readily agreed to be interviewed, was unavailable during the period when the bulk of the data was collected. Therefore, the lack of input from other participants in the training programme throws a greater burden on the validity of the data collected from mentors and student teachers.

It was not possible to gain observational data to assist in triangulation. The original aim was to attend mentor feedback discussions with students and perhaps to sit in on students' lessons with pupils. These sessions would have provided further sources of data with which to assess the main thrust of mentor-mentee discussions, particularly the types of knowledge discussed and the degree of emphasis on pupils' learning. Direct observation could have provided valuable data such as what strategies were employed by students in their teaching and the degree of challenge to trainees' beliefs was exercised by mentors. Preliminary discussions about observation sessions with two mentors and their students were very positive but the students' demanding schedule of teaching and assignments together with my continued health problems resulted in the failure to set up such sessions.

However, as explained at the end of Chapter 3 (p.78), to increase the level of triangulation, four of the six mentors and the training manager in the Secondary Leader School were interviewed and provided feedback on the study's findings and conclusions.

Reliability

As noted in Chapter 3 on methodology, all of the data for this study was collected towards the final stages of the students' training. It would have been advantageous to discover where student teachers were in their development as professionals and to draw out what levels of support and challenge were being provided at specific points in the course. In addition, it would have been invaluable to elicit students' perspectives and beliefs of teaching at the time they embarked on their training and at other junctures in the year's programme. However, this proved to be impracticable since it was not possible to gain access to the number or names of trainees very early in the course. Arrangements were eventually made for questionnaires to be distributed and some interviews to take place towards the latter part of the autumn term only to be postponed because of my deteriorating health. Therefore, these constraints resulted in having to rely on participants' memories of events and their own perceptions in retrospect. The question must then be asked as to whether similar opinions and perspectives would have been forthcoming if data had been collected from respondents at more than one point in the year. Thus, because of the relatively limited contact with the participants, their comments must be framed within that context. As previously explained, the constraints outlined above may put the reliability of the results in to question. Therefore, they should perhaps be viewed as a 'snapshot' of mentoring in the final stages of a one year training course.

Generalisability

The study has focussed on a small collection of mentors and trainees at one point in the programme and can therefor make no claims to generalise across the whole spectrum of teachers entering the profession. Therefore, any conclusions are necessarily tentative and speculative. The findings are relevant only to the specific SCITT scheme and perhaps to others like it, and gives merely an insight into the perspectives of mentors and mentees and the processes involved in the professional development of the latter. However, it does raise issues of relevance to those planning initial teacher training

programmes. I will return to this aspect in the final chapter.

Consent

In the methodology section of Chapter 3 (p.71), I reported that a problem concerning the Consortium's consent arose whilst attempting to gather questionnaire data from trainees in primary schools. It was the original intention to employ the same system that had been successful with secondary schools. This was to contact the schools directly in order to gain the consent of headteachers and the respondents who would then receive the questionnaires by post. However, the student teacher at my wife's school kindly volunteered to distribute and then collect in copies of the questionnaire amongst her student colleagues during the next college sessions. This seemed to offer a greater response rate so the offer was accepted. However, the student was not able to distribute the questionnaire by hand due to illness. She then suggested that it could be e-mailed to her student colleagues through the students-only internet website. There was still time to contact schools directly and I was uneasy about this procedure. However, I was persuaded that the e-mail option would be quicker and produce more response so agreed to go ahead with it. By doing this, control of sample was lost since it was not known which students would receive the questionnaire. Secondly, the placement school of the student teacher would not have been contacted beforehand, thus further problems of consent were created.

The explanation of how control of the sample of primary respondents was lost compounded the initial error of assuming that the Consortium's consent had been gained by means of my initial telephone contact with the SCITT. This person was most enthusiastic about my proposed research but he did not have the authority to give the Consortium's consent for me to contact students and mentors in schools.

A further error was committed in the limited information about the study given in the questionnaire itself. This comprised a brief explanation of my

background in teaching and of the study's themes together with an assurance that all information would be treated in strict confidence. However, it was not made clear that all participants, including the Consortium itself would be treated anonymously. The result was that when the Consortium gained knowledge of what was happening and gained a copy of the questionnaire, it immediately instructed students not to complete the questionnaire. A letter was sent to the Consortium offering a clear apology and requesting co-operation from the Consortium in the ongoing research. However, it was by now too late to gather any further data from primary school sources. Hence the sample size for the study became considerably restricted compared with the my original intentions.

This salutary tale emphasises the importance of keeping all parties, including the training institution and officers, informed of the thrust of the research, and gaining prior consent to approach all participants.

CHAPTER 9:- RELEVANCE OF THE STUDY AND IMPLICATIONS FOR FUTURE RESEARCH

General conclusions

The study adds to the considerable body of research on mentoring and several conclusions corroborate previous research. Trainees were more concerned with immediate classroom skills in early stages of their training. In general, the study found unequal amounts of support and challenge from mentors with the focus largely on support for the student, particularly early in the training. Students tend to lack awareness of being challenged. However, a high degree of support used with a significant level of challenge is likely to produce optimum professional growth on the part of the student teacher.

In addition, the study highlights the effectiveness of school-centred initial teacher training schemes in producing competent, thoughtful and highly motivated professionals who place children's learning at the centre of their teaching. It also emphasises the importance of the mentor's role in the student's training and professional growth. In the hands of skillful, experienced mentors the process offers the chance that students can become more rounded professionals providing that mentors are adequately trained.

The evidence from this study demonstrates that mentoring is invariably seen as engendering professional growth in the mentor. Participants acknowledge the amount of time and work involved but agree that the perceived benefits of invigorating, developing and indeed challenging their own techniques and perspectives far outweigh these problems. In short, it is a satisfying and rewarding experience to take responsibility for the development of others.

Other conclusions are less familiar. The most important point here is the implication of the study's findings for mentor training. Namely, that if mentors were required to be conversant with theories of knowledge

advocated by the SCITT and with the social, moral and ethical issues of teaching as part of their training, they may then possess more capacity and be more inclined to challenge students' thinking on these issues. This may then help to clarify students' beliefs and perceptions of teaching and develop their thinking on children's learning beyond the aim of enhancing understanding of subject matter and obtaining academic success. In other words, student teachers will be encouraged to reflect critically on these ideas and consequently attempt to engage pupils with these public forms of knowledge.

The study's questions answered

Here, I summarise the findings of the study, relating them to the original questions that were generated by the literature review for each theme.

Mentoring and teacher professional development

Student teachers concerns at the start of their training are primarily focused on their own presence in front of a class and attaining the skills to ensure that it is well managed and disciplined. To achieve this goal, they expect and obtain considerable support from the mentor. Indeed, mentors view their role as mainly one of support for the student. However, mentors see a shift in their role as the training progresses to one in which challenge to the trainee is more in evidence, whilst maintaining a high level of support. Challenge is concentrated on students' classroom management initially, rather than their knowledge of their subject or of the National Curriculum. Discussions between the mentor and novice teacher reflect the importance placed on attaining classroom competence. However, by the latter stages of the course, mentors are challenging students' thinking about what they are expected to teach and particularly require their trainees to adapt their teaching style in order to concentrate their efforts on what children are actually learning.

The mentor-mentee relationship is considered by both parties to be that of a master-apprentice at the outset, with the student viewing the mentor as a good role model. This situation swiftly progresses through a clinical supervision stage as the trainee gains confidence in the classroom, and by the final school placement, the relationship has progressed to one of friendly, professional colleagues in which the trainees are more adept at reflecting on their practice.

Mentors and students are in agreement that intense support is required at the start of the course when the workload from coursework assignments is particularly high. Mentors consider that too much challenge early in the training can be counterproductive and may have a negative effect on trainees' confidence. However, there is some divergence in their opinions later on, with mentors considering that they incorporate more challenge into their mentoring than is perceived by their students. Possible reasons for this disparity of views are that the intense support offered by mentors can mask the presence of challenge, coupled with the inexperience of the trainees and the skills of the experienced mentors.

Student teachers' beliefs

Students generally enter teaching with firmly held views and beliefs about teaching. These are coalesced from their own background and schooling. Although trainees recognise that they possess these strongly held opinions, their perceptions of teaching are not necessarily clearly developed at the time they embark on their training.

Trainees' pre-conceived beliefs about teaching are resistant to wholesale change but are open to development and clarification during the training. There is evidence that the ethos of the SCITT course has some impact on encouraging students to examine their views, particularly through coursework assignments and professional development lectures. However, the major influence on the elaboration of their beliefs is that of the mentor. The latter possesses clear views on teaching and their role within it. These

beliefs remain unchanged by the mentoring process and indeed, mentors approach their role in the same way that they view their teaching. In essence, this is the overriding importance of concentrating on children's learning. Mentors, particularly those in the primary sector, considered that this means the development of the 'whole child' rather than just acquisition of subject knowledge.

There is some compatibility between mentor and trainee beliefs, but the priority given to children's learning is the main difference in early stages of the training, with students more concerned to be effective teachers. There is little initial challenge to trainees' beliefs on teaching, but this increases with the students' confidence. Therefore, by the latter phases, the degree of challenge to trainees' thinking is more significant and there is evidence that their views have moved on so that the importance of pupils' learning is now seen as pre-eminent. However, this is generally restricted to concern that children understand the subject matter, rather than consideration of the moral, social and ethical issues of teaching.

Student teachers' subject knowledge

There is a considerable emphasis on subject knowledge in the SCITT course, evidenced by the significant part it plays in students' coursework assignments, though mostly in the core subjects of English, mathematics and science. This can cause problems for students in primary schools where they may have to teach across a range of subjects, and for secondary science trainees who are required to teach out of their specialism.

Trainees do not gain significant subject knowledge from mentors or tutors. It is mainly influenced by classroom related tasks, that is, students perceive a requirement for greater understanding of specific subject matter in order to teach a particular topic. Mentors consider that trainees' subject knowledge to be adequate in this respect and thus, it does not form a major part of mentoring discussions and is rarely challenged by the mentor. Where it is found wanting, the mentees are expected to correct this themselves, which

they invariably do. There is some evidence that mentors do increase the level of challenge in the latter stages by giving trainees tasks such as planning a course of lessons on a specific topic.

Both mentors and students believe that the practical knowledge of how to teach is best learned during the school placements. Mentors are generally unaware of what is taught by college tutors, whilst trainees find college theory interesting but rarely put it into practice in their teaching. The reasons seem to be twofold. Firstly, students do perceive a gap between college theory and its usefulness in the practicalities of teaching. Secondly, any desire to incorporate theory into their teaching is lost with their preoccupation of attaining classroom competence.

Mentoring and children's learning

Student teachers enter the profession with a clear image of themselves as teachers, often modelled on a teacher they remember from their schooldays – whom they wish to emulate, or someone that they do not want to be like. They usually have pronounced views on how children learn best, often based around the idea that lessons should be interesting and fun.

Children's learning is a major part of mentoring conversations. Mentors and students agree that their views on pupils' learning are broadly compatible, although trainees lay considerably less emphasis on children's learning at the start of the course, preoccupied as they are with attaining competence in classroom teaching. Though there is no wholesale change in students' beliefs during the year, there is a marked shift in emphasis. This is clearly in evidence by the latter stages. By this juncture, students are far more concerned about whether children understand what they are being taught and in this respect they are indeed concentrating more on their pupils' learning. The growth in students' views to include more attention to children's learning is influenced mainly by the mentor but the SCITT's emphasis on this aspect also has some input.

There is no direct evidence that the pressures inherent in the National Curriculum and achieving standards affect students' views. Nevertheless, the evidence clearly points to the fact that students' ideas of enhancing their pupils' learning are restricted to ensuring that the children understand the subject matter. To this end, students adapt their teaching by using techniques such as investigation, discussion and attempting to challenge pupils' pre-conceived ideas on what they are being taught.

Once again, mentors provide little challenge to students' prior beliefs until they have gained competence in classroom management. Even then, trainees are sometimes unaware of the degree of challenge present, this possibly being masked by the high level of support that is provided throughout the training. Although the advance in students' views on children's learning rarely extends to the moral, social or ethical aspects of teaching, the study does provide evidence that the presence of challenge earlier in the training can enhance novice teachers' ability to reflect on their practice. This holds out the promise that their beliefs can be elaborated further.

Professional outcomes

Here I outline the possible implications for the three main personnel in the study, namely student teachers, mentors and training managers.

Student teachers

The major obstacle to the advancement of student teachers' learning is their paramount concern with being effective teachers in the early stage of their training. Mentors and training managers can have a role here to alleviate the impact of this perennial problem. In order for this to happen, perhaps mentors should challenge trainees' thinking earlier, without increasing the pressures they are under or undermining their relationship built on trust. The danger here is that the student may feel threatened, resulting in their pre-conceived beliefs becoming entrenched. To avoid this situation, trainees prior beliefs about teaching could be clarified at the outset by encouraging

them to articulate these beliefs to the mentor and training manager. This could then become an ongoing process wherein trainees continually reflect on their views and communicate to the mentor and training manager any modifications they have undergone.

Secondly, if the 'gap' that students perceive between theory and practice is to be reduced, maybe the student has a responsibility to ensure that the mentor and training manager are better informed of such theory. Students could articulate their views on this theory together with problems they have incorporating it into their teaching. Similarly, trainees could inform the mentor about any other aspects of teaching with which they may be concerned, such as areas in which their subject knowledge may be deficient, especially if they are required to teach outside their specialism.

Mentors

As explained above, mentors require access to student teachers' beliefs at the start of the programme. Perhaps there is a joint responsibility here. Students should be willing to impart their views, perhaps by means of structured sessions with the mentor and training manager, whilst mentors would appreciate the importance of understanding trainees' prior beliefs. The mentor could then be in a better position to challenge these beliefs, such as the idea that lessons should always be fun. Challenge would occur as early as possible and continue as trainees' beliefs develop, with the aim of stimulating learning in the student. In addition, perhaps mentors need to realise that this should be a two-way process. They could reflect on and clarify their own beliefs on teaching and be prepared to share their views with trainees. This is particularly important since mentors' beliefs are centred on the paramouncy of children's learning and this is the crux of the SCITT programme.

The findings suggest that mentors should realise that, although novice teachers require a high level of support, this needs to be complemented by significant challenge in order to extend students' learning beyond the

attainment of classroom competence. Student teachers are sometimes unaware of the amount of challenge given by mentors. Therefore, perhaps the latter need to be made aware of this situation and be prepared to provide greater challenge earlier in the course. A secure relationship built on trust could enable this to occur, stimulating trainees' growth without them feeling threatened. Early challenge could indeed be focused on classroom management. However, mentors would also encourage students to understand that aspects of this, such as, behavioural management strategies, seating arrangements or teacher questioning, can also have implications for children's learning. In this way, students see pupils' learning as paramount and that it entails more than acquisition of subject knowledge but can include debate about what children need to know. Hence, students progress towards the goal of critical reflection, that is, towards awareness of the broader moral, social and ethical issues of teaching which could then be made a part of children's learning.

It seems that mentors need to enhance their knowledge of the theories taught to students at college, of trainees' coursework load and of the up-to-date TTA requirements, which now do refer to issues of respect, fairness, justice and values. With greater knowledge, mentors would be more able to encourage and assist trainees to accommodate these theories and issues in their teaching. By this means, the theory-practice gap so often referred to by student teachers may be narrowed. Additionally, mentors' attention could be drawn to the imbalance of college tutorial input between the core and foundation subjects. Thus, mentors could provide more support and challenge for trainees' knowledge in these non-core (foundation) subjects.

Training managers

The training manager has the key role of overseeing the whole of the training in the school placement. Therefore, it is essential that this person is familiar with the latest TTA training requirements together with the theories of knowledge and subject specific knowledge the students encounter at college. The training manager would also be conversant with the trainees'

programme of coursework and the benefits of challenge in extending their learning. The programme that the training manager delivers could explain how mentors would guide student teachers through and beyond competency in classroom management. Perhaps it should be made clear that the aim is for students to develop critically reflection in their teaching, so that their pupils not only understand subject matter but are encouraged to become independent thinkers and learners.

To achieve these goals, the training manager could organise a programme of professional development for mentors. This would stress the importance of challenge as a mentoring strategy and how, when linked with support, it can be effectively utilised earlier in students' training. These sessions would also update mentors' knowledge of college theory and the TTA requirements and, in joint sessions with students, provide an exchange of beliefs about teaching. As previously argued, mentors and training managers should understand the starting point of trainees' beliefs so that these may be developed. Therefore, early in the course, the training manager could organise tutorials with trainees, in which their prior beliefs are compared with the educational theory. This could increase students' knowledge of how children learn.

In co-operation with the mentor, the training manager could develop a plan whereby the college theories of knowledge can be linked to practical activities in the classroom. Thus, it is possible that students would perceive the relevance of such theory and the gap between it and their practice could be diminished.

Finally, I suggest that the training manager's programme should aim to improve students' subject knowledge and to vary their teaching style by organising student observation of a wide range of teachers, by enlisting the support of other subject specialists and ensuring trainees have access to a school-based library of support materials.

Possibilities for dissemination

The findings have helped my understanding of mentoring and learning to teach. The conclusions, however, are necessarily tentative due to the variety of individuals (student teachers and mentors) involved as well as the different contexts in which the mentoring operates and teaching takes place. These include both primary and secondary contexts, mentors and students of different sexes, ages and experience and teaching a variety of subjects. In such a relatively small study, it is difficult to judge the extent to which the findings are specific to the particular case or may have wider applicability. The study should, therefore, be read as research in progress.

However, the study has implications for mentoring in education and deserves to have a wider audience. I consider that the study's findings have applications at three levels.

The most immediate practical level of dissemination would be to discuss the findings with the study's participants. This has been initiated in obtaining the perspectives of the feedback group of training manager and mentors. In addition, the Borders Consortium can be provided with a summary of the study, stressing the professional outcomes stated earlier. One can envisage that the Consortium officers would recognise that the study has practical implications for the training of students, mentors and training managers.

In the broader context of mentoring, one can expect to gain the interest of participants in other school-based programmes and indeed those in the other manifestations of ITT, given that the role of mentor is now almost universally utilised. To this end, a summary or extract from the research, accentuating its impact for the mentor's role, could be submitted in journals such as Tutoring and Mentoring or Teaching and Teacher Education.

Finally, the study may have an application in the field of leadership. I have explained that the key role in the Borders Consortium SCITT is that of the training manager, the person who leads the training in school and is the

crucial link between schools and the higher education institution. The essential component parts of the training come together in this person's capacity to co-ordinate the programme. I have outlined the study's implications for the role of training manager. This could have relevance for the function of leadership in teacher training generally and could be disseminated to the wider leadership community through an article submitted to a journal such as Educational Leadership.

Implications for further study

I have explained that triangulation was improved by obtaining feedback from the training manager and four of the original mentor interviewees. One of the latter was about to retire and talked at some length about her philosophy of teaching. She was one of the three mentors (all primary teachers) who had emphasised the importance of educating the 'whole child.' In our conversation she expanded on this suggesting that, in her long and wide experience of teaching and mentoring, she considered that those primary school teachers who had received their teacher training before the introduction of the National Curriculum, were trained that to be an effective teacher, it is essential to develop the whole child, not just the intellectual aspect. Therefore, these experienced teachers who are now also fulfilling the role of mentors, recognise that to manage pupils' development effectively, moral, ethical and social issues must be an integral part of the teaching process. She stated that student teachers need to understand this if they are going to be more capable professionals. The mentor further asserted that far more primary teachers thought along these lines compared with those teaching in the secondary sector where academic progress receives more attention, with ethical and moral issues sidelined or confined to PSHE lessons.

This line of research deserves to be followed up and expanded. I would argue that more detailed study is needed into the training of mentors, in particular to what extent the theories of knowledge and moral and ethical issues are covered in their training. Furthermore, the perceived contrast

between primary and secondary schools in the significance placed on ethical and moral dimensions of teaching, and hence the importance which mentors in the two sectors attribute to these issues, needs further study.

I have commented that both the mentors and students who provided interview data were in general a mature, experienced group of individuals and were largely confident and successful. One could hypothesise that a mature trainee develops into a more capable teacher or that the more mature, experienced teacher is more likely to challenge the learner to engender critical reflection. Here again are the grounds for further study.

Daloz (1986) argues that supportive activities are more favoured by female mentors, whilst male mentors allegedly find challenge easier. The mentor interviewees in this study were all female. Thus, there may be a gap in the research literature for a study which investigates whether mentoring strategies are gender specific.

Finally, most of the mentors in this study were experienced in mentoring students in college-based training schemes, not necessarily through SCITT schemes. As they become more familiar with such schemes, they may pay more attention to theories of knowledge and moral, social and ethical dimensions of their profession. Hence, there could be a need for longitudinal research in which mentors are followed over an extended period of time.

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APPENDIX 1

SCITT COURSE OUTLINE AND STRUCTURE

Course outline

All four SCITT courses are 37 weeks in duration and have a modular structure consisting of 11 units as follows:-

Three Professional Preparation Units

Review of the Learning Process

Consideration of the Learning School at Key Stage 2 & 3.

Management of the Learning Environment

The first two units are assessed by Seminar and Formative PDP entries.

Three Core Subject Units for KS1/2 (7-14 course)

English

Mathematics

Science

Each of these units is assessed by one Portfolio Task, completion of the relevant section from the PDP and a Subject Knowledge Audit.

Main Subject Pathway Units

7-14 course..2 units:-

Introduction to Teaching Main/Specialist Subject

Developing Specialist Subject Knowledge for KS2

11-16, 11-18, 14-19 courses...4 units:-

Introduction to Teaching the Subject

Development of the Subject

Extension of the Subject or 2nd Teaching Strength

Broadening the Teaching of the Subject

These units are each assessed by a 1500 word assignment.

In addition, one core module of Information & Communication Technology

Three School Placements

Trainee teachers spend 24 weeks in Consortium Schools with professional and subject training in the two Borders Consortium PGCE Centres based in central and north Midshire.

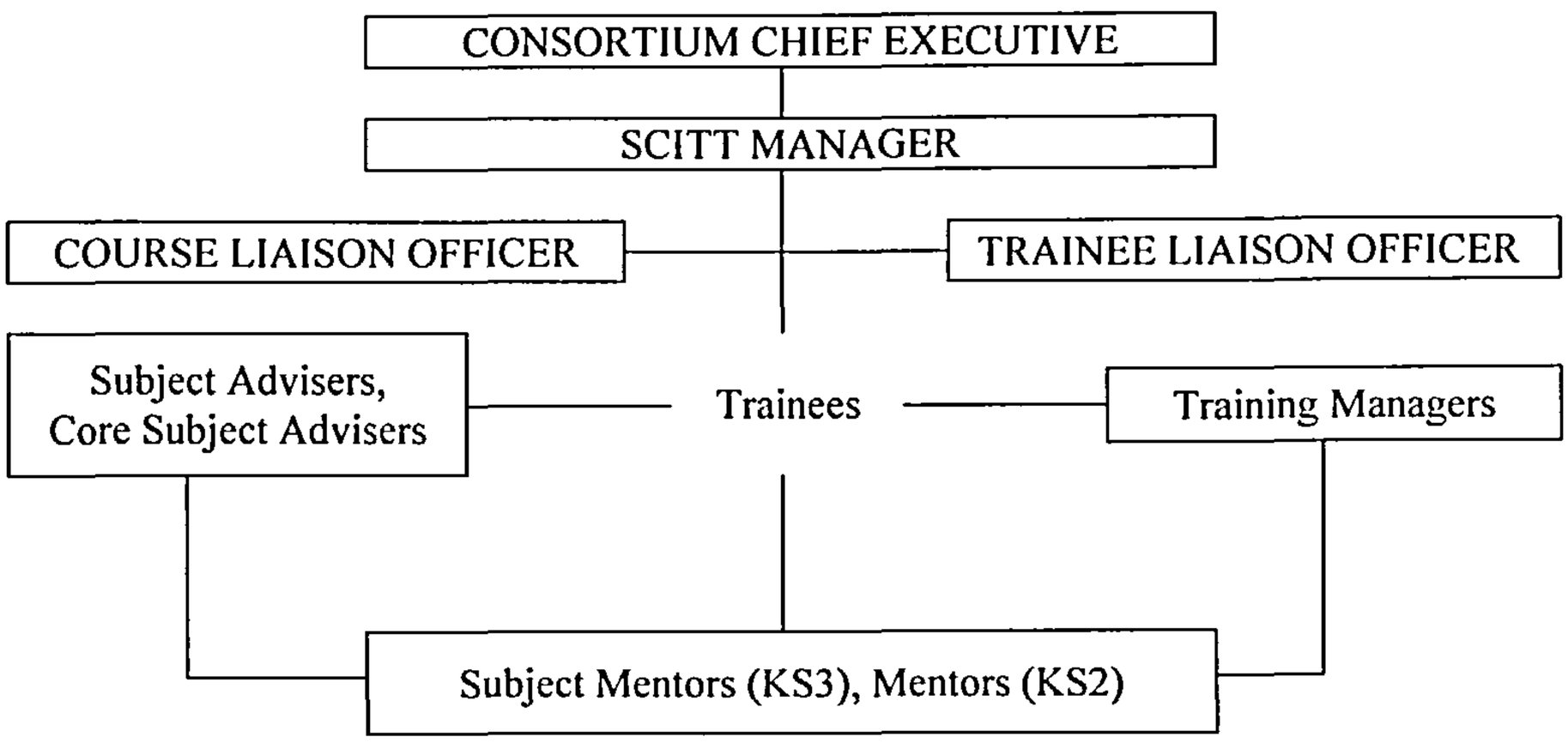
The 3 School Placement modules are the following:-

-Term 1 (Autumn); 'Parent School' Placement 1. (Primary School placement in 7-14 course)

-Term 2 (Spring); 'Twin School' Placement. (Secondary School placement in 7-14 course)

-Term 3 (Summer); 'Parent School' Placement 2. (Primary School placement in 7-14 course)

Diagram of personnel structure



Roles of the main participants

At all times the trainee is managed and supported across the training programme within a triangular relationship comprising the Training Manager (TM) and the Mentor (at KS2) or Subject Mentor (at KS3).

The Training Manager (TM)

The training manager is responsible for:- creating a whole school approach to teacher training in both Primary and Secondary placements; managing the trainee's experience, co-ordinating the whole training process and acting as line-manager; monitoring trainee progress and developing targets including those for the next placement; being a team leader for the mentors; being a course tutor, marker and moderator for Professional Preparation Modules; giving recommendations to the Examination Board for assessment of school placements and for the award of QTS; interviewing trainees for admissions

and writing trainee references; overseeing the trainee's creation of an effective PDP; liaising with and arranging visits by Subject Advisers and the Course Liaison Officer.

The Mentor (KS2) or Subject Mentor (KS3)

The Mentor is the school member of staff, who in liaison with the TM, is mainly responsible for supporting the trainee during school placements. He/she will have most contact with trainees in terms of both teaching and discussion time and is the key person with whom they can plan and evaluate their teaching. The Mentor is responsible for:- organising the trainee's teaching timetable, helping trainees to plan lessons and schemes of work, observing lessons (at least three times per week in the second term), providing feedback and maintaining an overview of the teaching file; helping trainees develop effective self-evaluation skills; liaising with other subject colleagues in school with whom the trainees are working and with the TM and Subject Adviser; monitoring the trainee's progress regularly with reference to QTS Standards and the PDP; assisting the TM in preparation of Summary Assessment Sheets and The Career Entry Profile; helping the TM with references; attending Mentor Training Meetings.

The Core Subject Adviser (KS2) or Subject Adviser (KS3)

The Adviser is mainly responsible for:- liaising with TMs and Mentors; leading the subject sessions in the Consortium's associated colleges; leading Mentor Training Meetings; monitoring the trainee teacher's progress.

Trainee Liaison Officer

This person is mainly responsible for:- recruiting and then interviewing trainee teachers for admission to the SCITT; publicising the SCITT in the local community, the region and nationally; liaising with all participants as well as schools, colleges and Careers Services.

Course Liaison Officer

This person is the operational link between the validating body, Midshire College of Higher Education and The Consortium.

The Consortium Chief Executive

This person has overall responsibility for course development and validation and for liaison with all participants.

The SCITT Manager

Among this person's responsibilities are: -recruiting trainee teachers to the SCITT, promoting the activities of the SCITT, managing the programme budget, co-ordinating the production of course documentation and developing and supporting the network of schools and colleges which are integral to the training process.

Training

The Borders Consortium provides one training meeting for mentors at the start of each school term. These sessions are usually run by the Subject Advisers. Training Managers usually attend these meetings as does the Consortium Chief Executive.

APPENDIX 2

Name: **School:**

STUDENT TEACHER QUESTIONNAIRE

I am an ex-Secondary school teacher who retired on ill-health in July 2001. I am, at present, studying for a Doctorate in Education with the Open University. My particular interest is the mentoring of trainee teachers and I was a Chemistry subject mentor for many years in a local secondary school.

There are four main themes of my study:-

Mentoring and Teacher Professional Development;
Mentors and Student Teachers' Beliefs about Teaching;
Student Teachers' Subject Knowledge;
Mentoring and Children's Learning.

I would very much appreciate it if you could spend a few minutes answering the following questions. All information provided will be treated confidentially & anonymously. Would you be so kind as to return the questionnaire in the stamped, addressed envelope provided. Thank you.

Phillip Handscomb.

(A) MENTORING AND TEACHER PROFESSIONAL DEVELOPMENT

(1) What were your main concerns about teaching when you started the course?

(2) Have these concerns been removed? Yes/No. Please explain your answer.

(3) What are your main concerns about your teaching at this stage of the course?

(4) What things do you consider are important for trainees to learn about teaching?

(5) Below are examples of 12 roles that a mentor may exhibit with student teachers together with an example of what each role might exhibit. From your experience with the mentor in your main school placement, please place the 12 roles in order (1=most important feature, 12=least important feature).

Assessor:	e.g. said what he/she thought about your work,	
Challenger:	e.g. made you examine your ideas about teaching, subject knowledge, etc.,	
Energizer:	e.g. very enthusiastic, 'gingered you up',	
Feedback-giver:	e.g. giving positive/negative feedback after lesson observation,	
Idea-bouncer:	e.g. discussing professional ideas, moral & ethical issues, etc.	
Investor:	e.g. put a lot into your training,	
Model:	e.g. learning by observing/following mentor's teaching, etc.,	
Problem Solver:	e.g. helped you to think things through, solve difficulties,	
Prodder:	e.g. pushed you to improve; kept you up to the mark,	
Provider:	e.g. provided materials, resources, etc.,	
Supporter:	e.g. willing to listen, help, encourage...	
Tutor:	e.g. gave advice on subject matter, the course, etc.,	

(6) How was the decision made about what you taught in your placement?

(7) What things were discussed with your mentor following one of your observed lessons? Please place in order from 1(most often) to 8 (least often).

Your teaching performance		Your subject knowledge	
Your teaching style		Future plans/targets	
General philosophy of teaching		Class management	
Children's learning		Moral/ethical teaching issues	

(8) What have been the main constraints on your learning to teach this year?

(9) Some research suggests that trainee teachers' learning is enhanced by a combination of support and challenge in their course. Which of the following best describes your relationship with your mentor? Please tick one box below.

High level of both support & challenge		More support than challenge	
Low level of support & challenge		Less support than challenge	

(10) In what way(s) did you receive (a) support or (b) challenge from your mentor?

(11) As a result of the course, do you now feel confident in your role as a teacher? Yes/No.

(12) If "no" to Question 10, could you explain why you do not feel confident?

(B) STUDENT TEACHERS' BELIEFS

(1) What do you think makes a good teacher?

(2) Did you have strong beliefs/ideas on teaching at the start of the course? Yes/No. Could you briefly summarise these beliefs/ideas?

(3) Have your beliefs/ideas on teaching changed during the course? Yes/No. If yes, could you explain why they have changed?

(4) Were your beliefs/ideas discussed with your (a) mentor or (b) college tutor?

(5) Are your beliefs/ideas similar to any of the following? (Please tick as many of the boxes as apply)

Your mentor		Your student friends		The school norms	
Your tutors		The course ethos/character		Other	

If "other", please explain.

(6) Do your beliefs/ideas contrast with those of any of the following? (Please tick as many of the boxes as apply)

Your mentor		Your student friends		The school norms	
Your tutors		The course ethos/character			

(7) Could you explain any differences that you have highlighted in Question 6?

(8) What problems have any differences in beliefs/views caused during the course?

(9) Does the course encourage you to examine your beliefs/ideas on teaching? Yes/No.

(10) If yes to Question 7, how does the course encourage you to examine your beliefs/ideas?

(11) Is your teaching style similar to what you received in your schooldays? Yes/No. Please briefly explain your answer.

(C) STUDENT TEACHERS' SUBJECT KNOWLEDGE

(1) What has influenced your own subject knowledge? Please place the following in order of importance (1=most important, 8=least important).

Nature of the task to be done		Mentor expectations or advice	
Need for deeper understanding		College Theory Units/College Tutors	
DfEE standards		Your previous university/college studies	
School expectations		Enhancing children's understanding	

(2) What gaps (if any) are there in the knowledge of the subject(s) you have been teaching?

(3) What has influenced your practical knowledge ("how to teach")? Please place in order (1-7).

Mentor advice		Observing other teachers	
College Tutors' advice		College assignments	
Observing Mentor teaching		Your own experience/background	
Yourself – learning by mistakes, etc			

(4) Do you feel that there is an emphasis on subject knowledge in the course?

High Emphasis		Average Emphasis	
Low Emphasis			

(5) Does formal instruction in subject knowledge help students to teach?

Helps a lot		Helps a little	
Does not help			

(6) Does formal instruction on 'how to teach' (e.g. discipline, class management, etc.) help students to teach?

Helps a lot		Helps a little	
Does not help			

(7) What type of knowledge was most discussed in mentor/student conversations? Please place in order from 1-4.

Subject knowledge		Knowledge of how to teach	
Knowledge of other teacher responsibilities		Little discussion of knowledge	

(8) Do you consider that your subject knowledge was supported and/or challenged by your mentor?

Supported		Challenged		Support & Challenge		Neither	

(9) If "Challenge" in Question 8, how did the mentor challenge your subject knowledge? Perhaps you could give an example.

(10) If "Challenge" in Question 8, at what stage of the course did your mentor challenge your subject knowledge?

At the start of the course		From the middle of the course	
At the end of the course		Throughout the course	

(11) If "Support" in Question 8, how did the mentor support your subject knowledge? Perhaps you could give an example.

(12) If "Support" in Question 8, at what stage of the course did your mentor support your subject knowledge?

At the start of the course		From the middle of the course	
At the end of the course		Throughout the course	

(13) What difference was there, if any, between the theories of knowledge students receive in college and what you needed for teaching purposes?

(D) MENTORING & CHILDREN'S LEARNING

(1) How do you think that children learn best? Please place in order from 1-10.

Didactic teaching (whole group)		Rote learning		Analogy	
Challenge pupils' existing knowledge/beliefs		Investigation		Demonstration	
Differentiated work		Discussion		Role play	
Innate ability in subject					

(2) What strategies do you use to increase pupils' learning? Please place in order from 1-9.

Didactic teaching (whole group)		Rote learning		Analogy	
Challenge pupils' existing knowledge/beliefs		Investigation		Demonstration	
Differentiated work		Discussion		Role play	

Other		Please explain

(3) To what extent does your teaching focus on children's learning?

High		Average		Low	

(4) At what stage of the course have you focused on children's learning? Please place in order from 1-5.

At college		Start of school experience	
Main teaching practice		Towards the end of the course	
Throughout the course			

(5) What do you focus on when teaching children?

Getting pupils to understand the subject		Knowledge to pass tests/exams	
The pupils' learning experience		Pupils to enjoy the lessons	
Class control/discipline		Other	

If "Other", please explain

(6) Which of the following have influenced your views on pupil learning? Please place in order from 1-6.

National Curriculum/ Standards		College assignments	
Your Mentor		Your Teaching Practice	
College Tutors		Your own school experience	

(7) How often is pupils' learning discussed in mentor/student (feedback) conversation.
Please tick only 1 box.

Always		Often		Fairly often		Seldom		Never	

(8) In what ways (if any) does your mentor help you to focus on pupils' learning?

(9) What resources do you use in planning your teaching? Please place in order from 1-9.

Your own subject knowledge		Advice from other teachers		Mentor Advice	
Your own experience		Educational magazines, etc		College Tutor Advice	
Advice from Fellow students		Non-teaching friends		Internet	
Others		Please specify:			

(10) How have your beliefs/views of how pupils learn affected the way you teach?

APPENDIX 3

Name: **School:**

MENTOR QUESTIONNAIRE

I am an ex-Secondary school teacher who retired on ill-health in July 2001. I am, at present, studying for a Doctorate in Education with the Open University. My particular interest is the mentoring of trainee teachers and I was a Chemistry subject mentor for many years in Kingstone High School, Herefordshire.

There are four main themes of my study:-

Mentoring and Teacher Professional Development;
Mentors and Student Teachers' Beliefs about Teaching;
Student Teachers' Subject Knowledge;
Mentoring and Children's Learning.

I would very much appreciate it if you could spend a few minutes answering the following questions. All information provided will be treated confidentially & anonymously. Thank you.

Phillip Handscomb.

(A) MENTORING AND TEACHER PROFESSIONAL DEVELOPMENT

(1) What were your student's main concerns about teaching at the start of the course?

(2) Do you think these concerns were removed? Yes/No. Please explain your answer.

(3) What things do you consider are important for trainees to learn about teaching?

(4) Below are examples of 12 roles tht a mentor may exhibit with student teachers, together with an example of what each role might exhibit. From your experience as a mentor, please place the 12 roles in order (1=most important feature, 12=least important feature).

Assessor:	e.g. said what you thought about the student's work,	
Challenger:	e.g. made the student examine his/her ideas about teaching, subject knowledge, etc.,	
Energizer:	e.g. very enthusiastic, 'gingered them up',	
Feedback-giver:	e.g. giving positive/negative feedback after lesson observation,	
Idea-bouncer:	e.g. discussing professional ideas, moral & ethical issues, etc.,	
Investor:	e.g. put a lot into the student's training,	
Model:	e.g. learning by observing/following mentor's teaching, etc.,	
Problem Solver:	e.g. helped the student to think things through, solve difficulties,	
Prodder:	e.g. pushed the student to improve; kept him/her up to the mark,	
Provider:	e.g. provided materials, resources, etc.,	
Supporter:	e.g. willing to listen, help, encourage...	
Tutor:	e.g. gave advice on subject matter, the course, etc.,	

(5) How was the decision made about what the student taught in his/her placement?

(6) What things were discussed with your student following one of his/her observed lessons? Please place in order from 1(most often) to 8(least often).

His/her teaching performance		His/her subject knowledge	
His/her teaching style		Future plans/targets	
General philosophy of teaching		Class management	
Children's learning		Moral/ethical teaching issues	

(7) What do you think were the main constraints on the student's learning to teach this year?

(8) Some research suggests that trainee teachers' learning is enhanced by a combination of support and challenge in their course. Which of the following best describes your relationship with your student? Please tick one box below.

High level of both support & challenge		More support than challenge	
Low level of support & challenge		Less support than challenge	

(9) In what way(s) did you think you gave (a) support or (b) challenge to your student?

(B) TEACHERS' BELIEFS

(1) What do you think makes a good teacher?

(2) Do you have strong beliefs/ideas on teaching? Yes/No. Could you briefly summarise these beliefs/ideas?

(3) Were your beliefs/ideas discussed with your (a) student or (b) training manager?

(4) Are your beliefs/ideas similar to any of the following? (Please tick as many of the boxes as apply)

Your student		Other teachers in your dept.		The school norms	
Training manager		The course ethos/ character		Other	

If "other", please explain

(5) Do your beliefs/ideas contrast with those of any of the following? (Please tick as many of the boxes as apply)

Your student		Other staff in your dept.	
The school norms		The course ethos/character	

(6) Could you explain any differences that you have highlighted in Question 5? Particularly if these were differences in beliefs/ideas between you and the student.

(7) What problems have any differences in beliefs/views caused during the student's placement?

(8) Does the course encourage the student to examine their beliefs/ideas on teaching? Yes/No.

(9) If yes to Question 8, how does the course encourage students to examine their beliefs/ideas?

(10) Is your teaching style similar to what you received in your schooldays? Yes/No. Please briefly explain your answer.

(C) STUDENT TEACHERS' SUBJECT KNOWLEDGE

(1) What do you think influenced the student teacher's subject knowledge? Please place the following in order of importance (1=most important, 8=least important).

Nature of the task to be done		Mentor expectations or advice	
Need for deeper understanding		College Theory Units/College Tutors	
DfEE standards		Previous university/college studies	
School expectations		Enhancing children's understanding	

(2) What gaps (if any) were there in the knowledge of the subject(s) that the student taught?

(3) What do you think influenced the student teacher's practical knowledge ("how to teach")?
Please place in order (1-7).

Mentor advice		Observing other teachers	
College Tutors' advice		College assignments	
Observing Mentor teaching		Student's own experience/background	
The student – learning by mistakes, etc.			

(4) Do you feel that there is an emphasis on subject knowledge in the course?

High emphasis		Average emphasis	
Low emphasis			

(5) Does formal instruction in subject knowledge help students to teach?

Helps a lot		Helps a little		Does not help	

(6) Does formal instruction on 'how to teach' (e.g. discipline, class management, etc.) help students to teach?

Helps a lot		Helps a little		Does not help	

(7) What type of knowledge was most discussed in mentor/student conversations? Please place in order from 1-4.

Subject knowledge		Knowledge of how to teach	
Knowledge of other teacher responsibilities		Little discussion of knowledge	

(8) Do you consider that you supported and/or challenged the student's subject knowledge?

Supported		Challenged		Support & Challenge		Neither	

(9) If "Challenge" in Question 8, how did you challenge the student's subject knowledge? Perhaps you could give an example.

(10) If "Challenge" in Question 8, at what stage of the course did you challenge the student's subject knowledge?

At the start of the course		From the middle of the course	
At the end of the course		Throughout the course	

(11) If "Support" in Question 8, how did you support the student's subject knowledge? Perhaps you could give an example.

(12) If "Support" in Question 8, at what stage of the course did you support the student's subject knowledge?

At the start of the course		From the middle of the course	
At the end of the course		Throughout the course	

(13) What difference was there, if any, between the theories of knowledge students receive in college and what they needed for teaching purposes?

(D) MENTORING & CHILDREN'S LEARNING

(1) How do you think that children learn best? Please place in order from 1-10.

Didactic teaching (whole group)		Rote learning		Analogy	
Challenge pupils' existing knowledge/beliefs		Investigation		Demonstration	
Differentiated work		Discussion		Role play	
Innate ability in subject					

(2) How have your beliefs/views of how pupils learn affected the way you teach?

(3) To what extent does your teaching focus on children's learning?

High		Average		Low	

(4) To what extent did your student's teaching focus on children's learning?

High		Average		Low	

(5) What do you focus on when teaching children?

Getting pupils to understand the subject		Knowledge to pass tests/exams	
The pupils' learning experience		Pupils to enjoy the lessons	
Class control/discipline		Other	

If "Other", please explain

(6) What did your student teacher focus on when teaching children?

Getting pupils to understand the subject		Knowledge to pass tests/exams	
The pupils' learning experience		Pupils to enjoy the lessons	
Class control/discipline		Other	

If "Other", please explain

(7) What strategies do you use to increase pupils' learning? Please place in order from 1-9.

Didactic teaching (whole group)		Rote learning		Analogy	
Challenge pupils' existing knowledge/beliefs		Investigation		Demonstration	
Differentiated work		Discussion		Role play	
Other		Please explain			

(8) What strategies did your student teacher use to increase pupils' learning? Please place in order from 1-9.

Didactic teaching (whole group)		Rote learning		Analogy	
Challenge pupils' existing knowledge/beliefs		Investigation		Demonstration	
Differentiated work		Discussion		Role play	
Other		Please explain			

(9) How often was pupils' learning discussed in mentor/student (feedback) conversation.
Please tick only 1 box.

Always		Often		Fairly often		Seldom		Never	

(10) What aspects of pupils' learning were most often discussed in mentor/student conversations?

(11) In what ways (if any) did you help your student to focus on pupils' learning?

APPENDIX 4

Developing Student Teachers' Understanding of Teaching and Pupils' Learning:- The Role of Support and Challenge in The Mentoring of Student Teachers

Interview Schedule for Student Teachers

(A) MENTORING AND TEACHER PROFESSIONAL DEVELOPMENT

(1) What were your main concerns about teaching when you started the course? (Q.1 in student questionnaire)

(2) How have your concerns about teaching developed throughout the course? (Q.2)

(3) What things did you consider were important for trainees to learn about teaching at the start of the course and what do you think now? (Q.4)

(4) Could you explain the reasoning behind the mentor roles you considered most and least important in the questionnaire? (Q.5)

(5) What type of relationship did your mentor try to build with you?

Support/Challenge

(1) I am interested in the proportion of support compared with challenge that the mentor may have used during the course.
Can you comment on the relative proportion of each? (Q.9)

(2) What were the reasons for lack of support/lack of challenge?

(3) In what ways did the mentor use support/challenge in your relationship? (Q.10)
e.g.- discussing/challenging your views/perceptions of teaching.

(4) In what area did the mentor challenge you?
E.g.- Subject Knowledge
National Curriculum Knowledge
Classroom Management
Other areas?

(5) What did you usually discuss in feedback sessions after one of your observed lessons?
e.g.- Your performance / Your Subject Knowledge / General Philosophy of teaching / Class Management / Children's Learning / Moral & Ethical issues / Future Plans. (Q.7)

(B) STUDENT TEACHERS' BELIEFS

(6) What kind of teacher would you like to be?

(7) Can you compare your ideas/beliefs on teaching now with the ideas/beliefs with which you started the course?

(8) Who or what has been the major influence on your ideas about teaching during the course?
e.g.- Your Mentor / the course structure / college tutors / the Training Manager / Yourself /
Anyone else.

(9) How are your ideas/beliefs on teaching similar to / different from:-
a) your mentor?
b) the course ethos? (Q.5, 6)

(10) Does the course encourage you to identify or examine your ideas on teaching? (Q.9)

C) STUDENT TEACHERS' SUBJECT KNOWLEDGE

(1) Could you explain/elaborate your choice of the most important influences on your Subject Knowledge in the Questionnaire? (Q.1)

(2) Similarly, could you elaborate on your idea of what has been the major influence(s) on your Practical Knowledge (Q.3)

(3) How much emphasis on Subject Knowledge is there in the course? (Q.4)

(4) Does instruction in a) Subject Knowledge (Q.5) or b) Practical Knowledge (Q.6) help students to teach?

(5) Was Subject Knowledge an important part of discussions with your mentor?

(6) Was Practical Knowledge an important part of discussions with your mentor?

(7) Was your Subject Knowledge supported or challenged by your mentor? (Q.8)
– Examples?
– At what stage of the course?

(8) What differences were there, if any, between the theories of knowledge you received at college and what you needed for teaching? (Q.13)

(D) MENTORING & CHILDREN'S LEARNING

(1) What are your views on how pupils learn best?

(2) Who or what has been the main influence on your views of children's learning? (Q.6)
e.g.- National Curriculum / Your Mentor / College Tutors / Teaching Practice / Your own School Experience / Other.

(3) Was discussion of children's learning a major part of discussion with your mentor? (Q.7)

(4) Did you have similar views to your mentor on the issue of children's learning?

(5) Were your ideas on children's learning supported or challenged-
a) by your Mentor?
b) by the course?
c) by College Tutors?

(6) In what ways were your views supported or challenged?

(7) How, if at all, have your views on children's learning changed during the course?

(8) At what stage of the course have you focused on children's learning? (Q.4)

(9) What do you do to focus on children's learning? (Q.5)

APPENDIX 5

Developing Student Teachers' Understanding of Teaching and Pupils' Learning: The Role of Support and Challenge in The Mentoring of Student Teachers

Interview Schedule for Mentors

(A) MENTORING AND TEACHER PROFESSIONAL DEVELOPMENT

(1) What were the student teacher's main concerns about teaching when he/she started their school experience?

(2) How did you try to alleviate the student's concerns?

(3) What things do you consider are important for trainees to learn about teaching?

(4) How would you describe your role as mentor with your student?

(5) What type of relationship did you try to build with your student?

(6) Did the student develop his/her own teaching style or model himself/herself on your teaching style?

(7) What has been the value of your role as a mentor to yourself?

Support/Challenge

(1) I am interested in the proportion of support compared with challenge that you may have used with the student.
Can you comment on the relative proportion of each?

(2) What were the reasons for lack of support/lack of challenge?

(3) In what ways did you use support/challenge in your relationship?
e.g.- discussing/challenging your views/perceptions of teaching.

(4) In what area did you challenge the student?
E.g.- Subject Knowledge
National Curriculum Knowledge
Classroom Management
Other areas?

(5) What did you usually discuss in feedback sessions after one of the student's observed lessons?
e.g.- Student's performance / Student's Subject Knowledge / General Philosophy of teaching / Class Management / Children's Learning / Moral & Ethical issues / Future Plans.

(B) TEACHERS' BELIEFS

(1) Could you summarise your views/beliefs about teaching?

(2) How are your ideas/beliefs on teaching similar to / different from:-
a) your student?
b) the course ethos?

(3) Does the course encourage students to identify or examine their ideas on teaching?
What effect (if any) did any differences in ideas/beliefs between you and your student have?

(C) STUDENT TEACHERS' SUBJECT KNOWLEDGE

(1) What do you think are the most important influences on student teachers' Subject Knowledge?

(2) Similarly, what are the major influence(s) on students' Practical Knowledge?

(3) How much emphasis on Subject Knowledge is there in the course?

(4) Does instruction in a) Subject Knowledge or b) Practical Knowledge help students to teach?

(5) Was Subject Knowledge an important part of discussions with your student?

(6) Was Practical Knowledge an important part of discussions with your student?

(7) Did you support or challenge your student's Subject Knowledge?
– Examples?
– At what stage of the course?

(D) MENTORING & CHILDREN'S LEARNING

(1) What are your views on how pupils learn best?

(2) Who or what do you think was the main influence on the student's views of children's learning?
e.g.- National Curriculum / The Mentor / College Tutors / Teaching Practice / Student's own School Experience / Other.

(3) Was discussion of children's learning a major part of discussion with your student?

(4) Did you have similar views to your student on the issue of children's learning?

(5) Did you support or challenge your student's ideas on children's learning?

(6) In what ways did you support or challenge the student's views on children's learning?

(7) At what stage of the student's school experience was he/she able to focus on children's learning?

APPENDIX 6

TABLES AND CHARTS

Table 4.1 - Mentor Roles

Role	Student Responses															Total/ Mean		Pos	Mentor Responses			Total/ Mean		Pos
Assessor	1	4	6	1	9	4	5	7	5	12		8		3	1	103	7.9	*3rd*	11	6	4	18	6	*7th*
Challenger	1	9	11	6	7	7	10	8	6	10		9		10	1	74	5.7	*11th*	5	3	1	30	10	*2nd*
Energiser	1	8	10	5	8	2	12	6	1	3		5		11	1	96	7.4	5th=	6	10	8	15	5	9th
Feedback-giver	1	5	1	4	2	1	3	4	7	1		4		2	1	133	10.2	2nd	7	2	9	21	7	5th
Idea-bouncer	1	12	8	12	6	10	4	5	3	11		3		12	1	81	6.23	*9th*	1	8	3	27	9	*4th*
Investor	1	6	12	11	5	9	9	1	9	2		10		9	1	84	6.5	8th	8	12	12	7	2.3	12th
Model	1	3	2	10	3	11	2	2	10	9		11		4	1	100	7.7	*4th*	2	4	5	28	9.3	*3rd*
Problem-solver	1	11	7	3	11	3	11	10	4	5		1		5	1	96	7.4	5th=	9	9	10	11	3.7	10th
Prodder		2	3	8	12	5	6	9	12	7		6		6	1	92	7.1	*7th*	3	11	6	19	6.3	*6th*
Provider	1	7	4	7	10	8	8	11	8	5		12		7	1	80	6.15	10th	12	7	11	9	3	11th
Supporter	1	1	5	2	4	6	1	3	2	4		2		1	1	136	10.5	1st	4	1	2	32	10.	1st
Tutor	1	10	9	9	1	12	7	12	11	8		7		8	1	73	5.6	*12th*	10	5	7	17	5.7	*8th*

Chart 4.1a - Student Responses

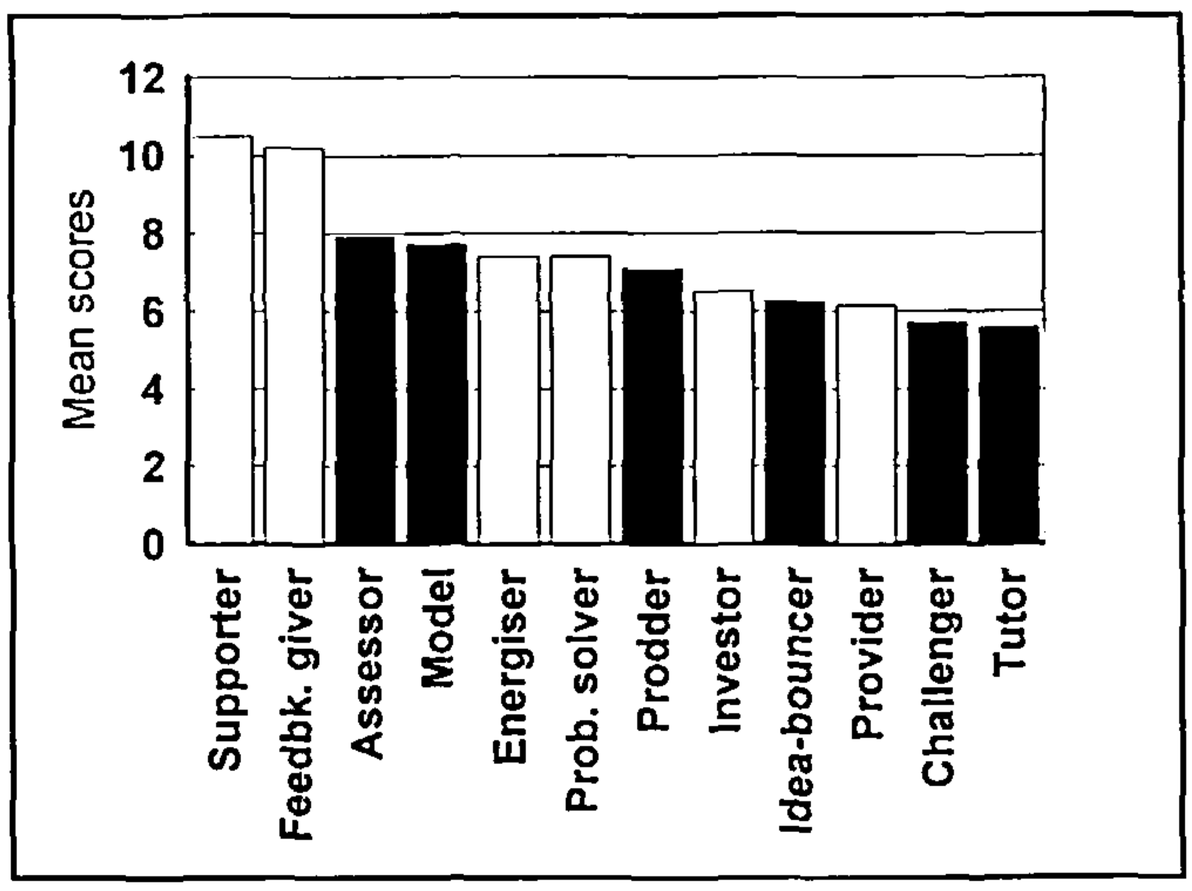
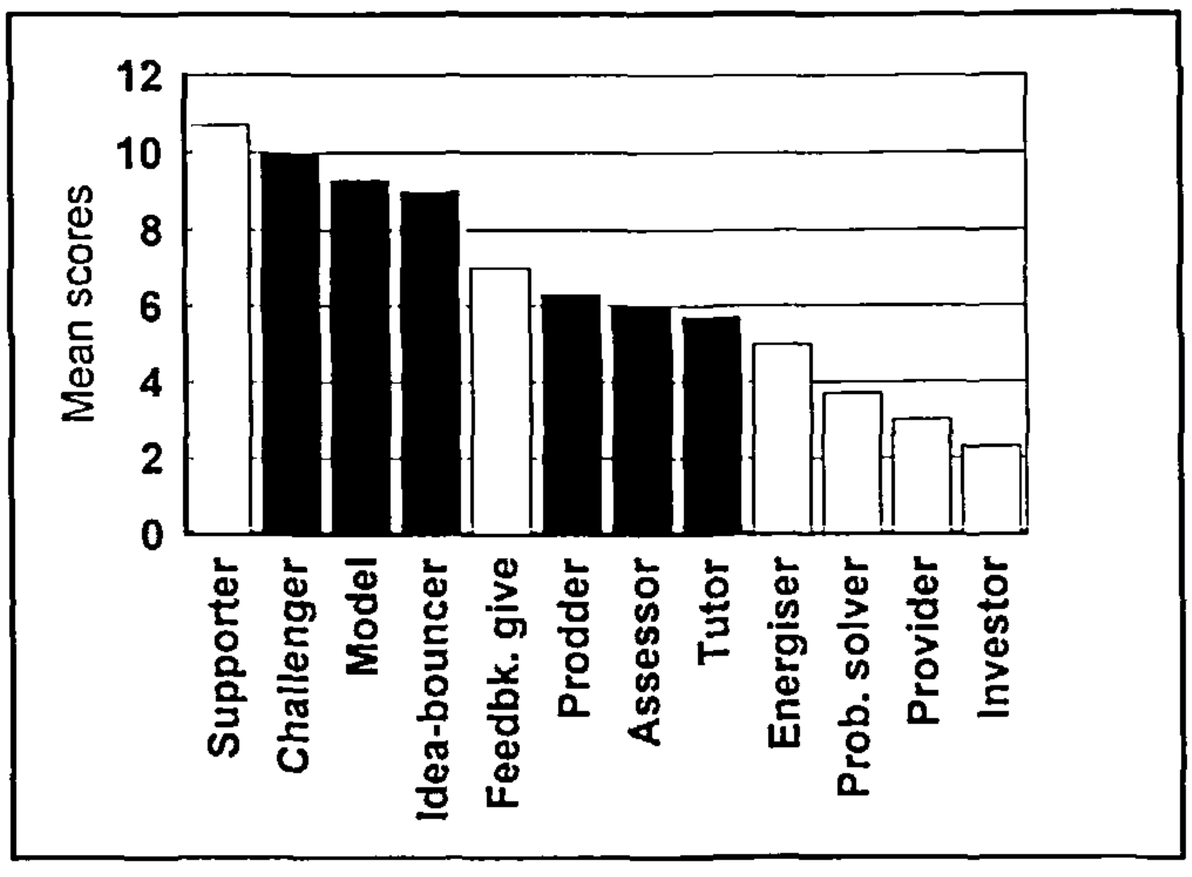


Chart 4.1b - Mentor Responses



The white bars in the above charts represent the Supporting roles.

The black bars represent the Challenging roles.

Table 4.2 - Discussions with Mentor

Subject	Student Responses															Total/ Mean		Pos	Mentor Responses			Total/ Mean		Pos
Teaching Performance	1	1	1		1	1		2	2	1	7	1	4	1	3	91	7	*1st*	4	1	1	21	7	*1st=*
Teaching Style	3	5	5		1	4		3	3	1	6	5	5	4	4	68	5.2	*4th*	5	4	8	10	3.3	*5th=*
Philosophy of teaching	8	6	7		7	6		5	8	5	5	6	7	7	6	34	2.6	*7th*	6	8	6	7	2.3	*7th*
Children's Learning	2	2	3		2	5		4	4	4	3	4	3	2	1	78	6	*2nd*	1	2	3	21	7	*1st=*
Subject Knowledge	7	7	8		5	7		7	7	6	2	8	2	6	8	37	2.8	*6th*	7	6	4	10	3.3	*5th=*
Future plans/targets	6	4	4		4	3		8	1	6	4	2	6	3	2	64	4.9	*5th*	3	5	5	14	4.7	*4th*
Class Management	4	3	2		3	2		1	5	3	1	3	1	5	7	77	5.9	*3rd*	2	3	2	20	6.7	*3rd*
Moral/Ethical Issues	5	8	6		6	8		6	6	8	8	7	8	8	6	27	2.1	*8th*	8	7	7	5	1.7	*8th*

Chart 4.2a - Student Responses

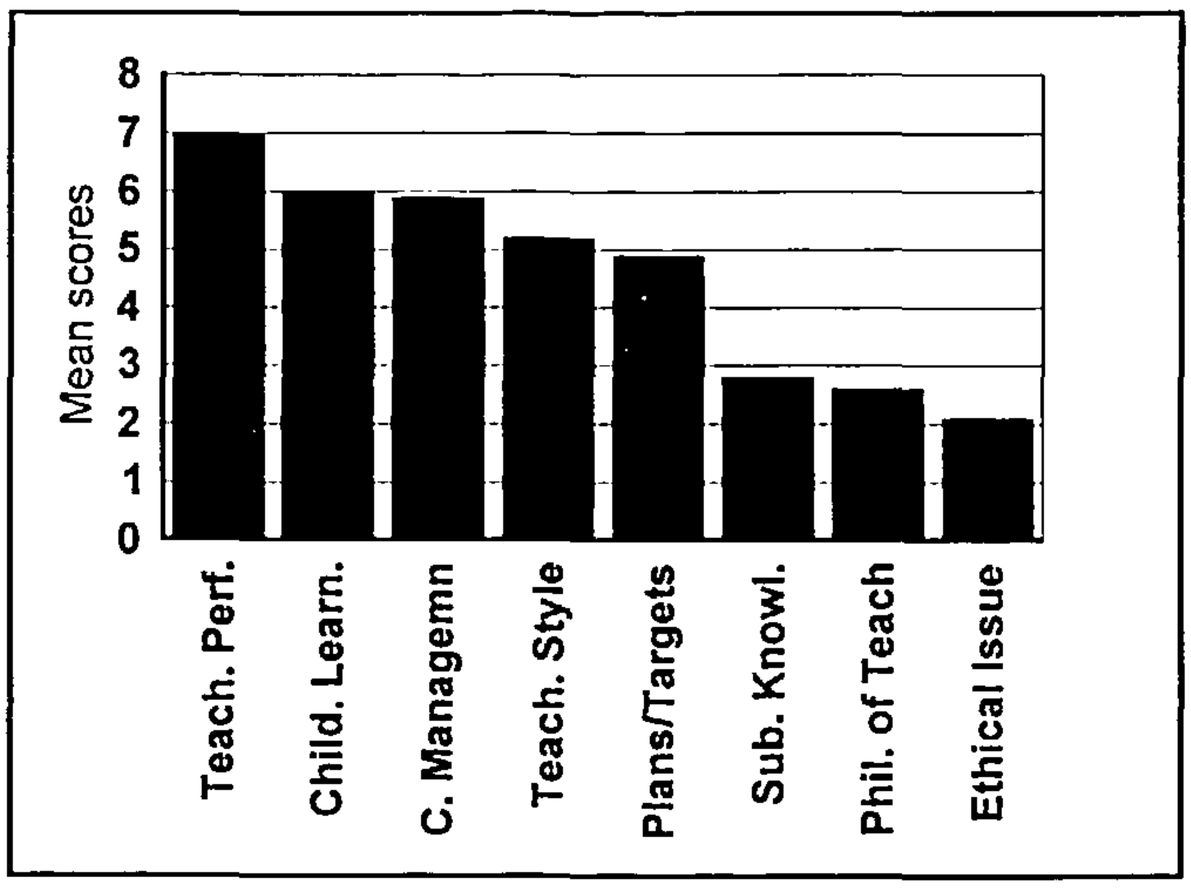


Chart 4.2b - Mentor Responses

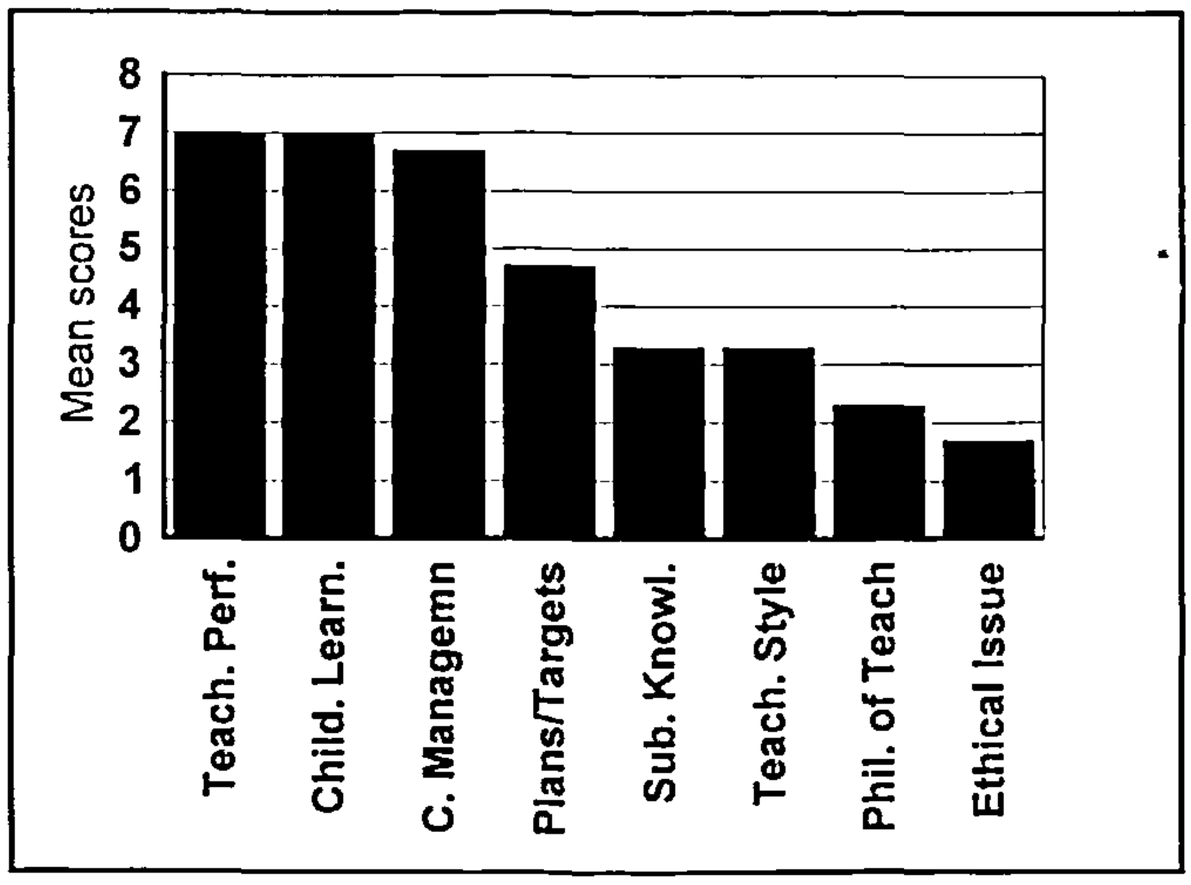


Table 6.1 - Influences on Student's Subject Knowledge

Influence	Student Responses															Total/ Mean		Pos	Mentor Responses			Total/ Mean		Pos
Nature of the task	4	2	2	7	2	3	1	4	2	1	1	1	6	3	7	89	5.9	*2nd*	3	1	2	21	7	*1st=*
Need for deeper understanding	7	6	3	6	3	1	4	2	5	4	2	6	1	1	3	81	5.4	*3rd*	5	4	4	14	4.7	*4th*
DfEE standards	8	3	4	2	7	7	7	1	8	7	5	4	8	4	4	56	3.73	*6th*	4	8	5	10	3.3	*6th*
School expectations	5	5	5	3	6	8	3	6	7	5	6	2	4	7	8	55	3.67	*7th*	6	3	6	12	4	*5th*
Mentor expectations or advice	1	4	6	1	4	5	5	5	4	2	4	5	5	5	2	77	5.1	*4th*	1	2	3	21	7	*1st=*
College Theory Units/ College Tutors	6	8	7	4	8	6	8	1	6	8	8	7	7	8	6	37	2.5	*8th*	8	7	7	5	1.7	*8th*
Previous university/ college studies	3	7	1	8	5	4	6	8	1	6	7	8	3	6	1	61	4.1	*5th*	7	5	8	7	2.3	*7th*
Enhancing children's understanding	2	1	8	5	1	2	2	3	3	3	3	3	2	2	5	90	6	*1st*	2	4	1	20	6.7	*3rd*

Chart 6.1a - Student Responses

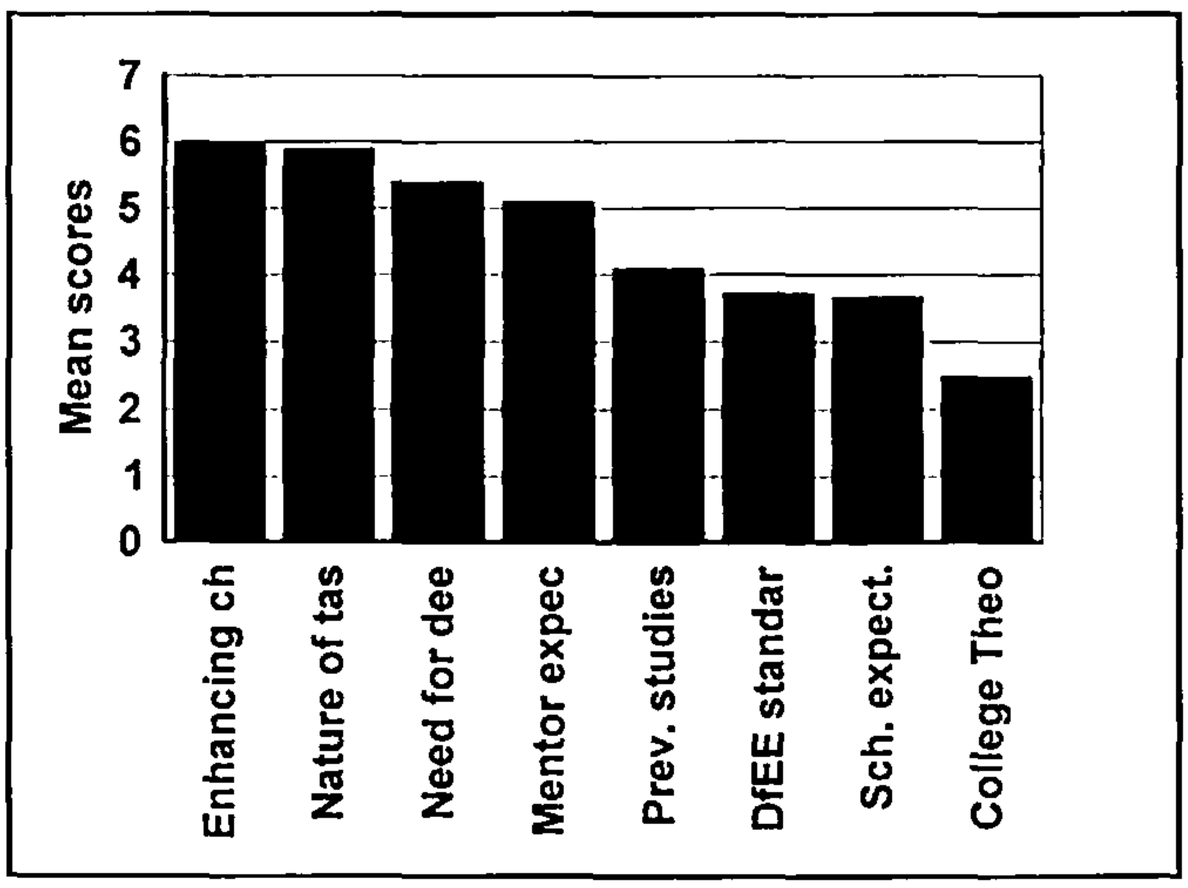


Chart 6.1b - Mentor Responses

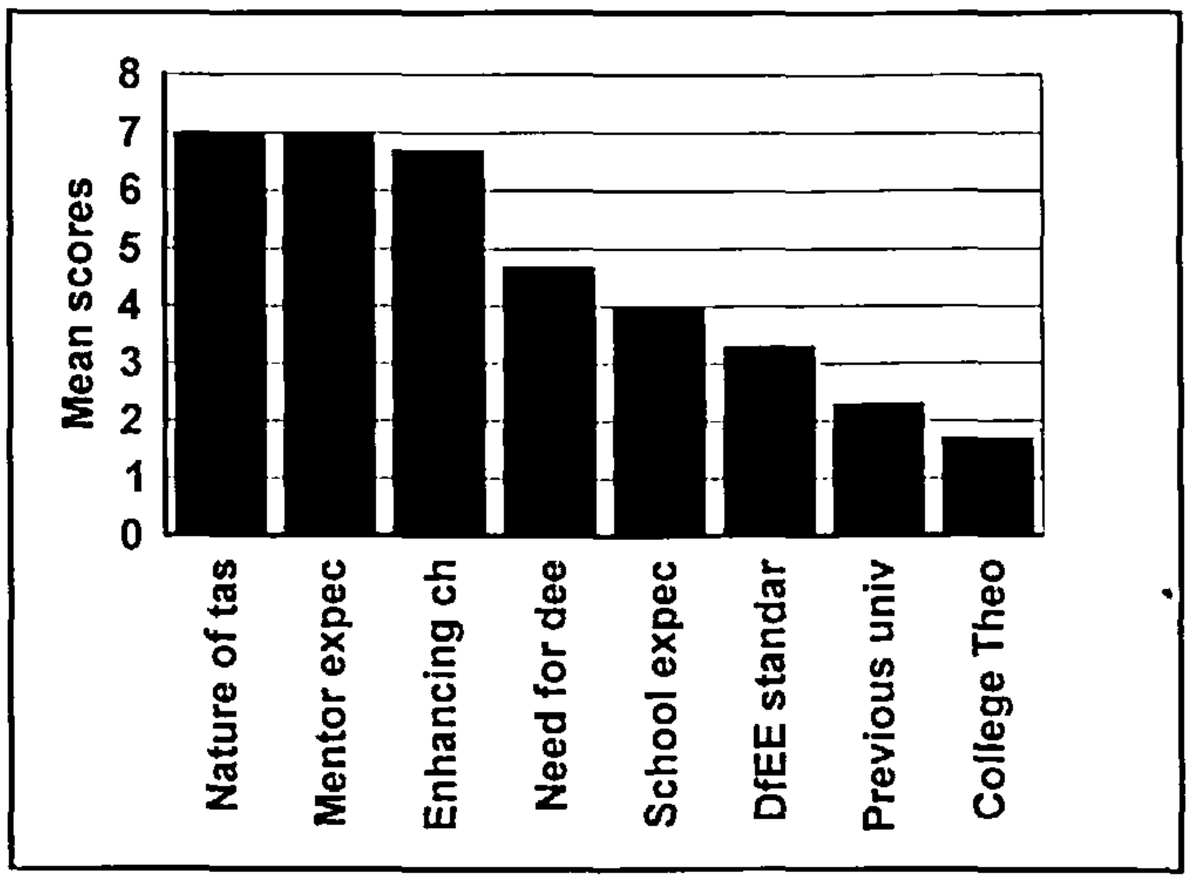


Table 6.2 - Influences on Students' Practical Knowledge

Influence	Student Responses															Total/ Mean		Pos	Mentor Responses			Total/ Mean		Pos
Mentor advice	2	3	4	4	1	3	4	2	5	3	4	1	3	1	1	79	5.3	*2nd*	4	5	2	13	4.3	*4th*
College Tutors' advice	6	4	5	5	6	4	1	5	4	6	5	5	5	7	6	46	3.1	*6th*	6	7	5	6	2	*6th*
Observing Mentor teaching	4	5	6	3	3	5	5	3	6	4	6	2	2	2	2	62	4.1	*4th*	1	3	3	17	5.7	*1st=*
Observing other teachers	4	1	2	1	2	6	3	1	1	1	3	4	1	5	3	82	5.5	*1st*	2	4	1	17	5.7	*1st=*
College assignments	7	6	7	7	7	7	2	7	7	7	7	6	6	6	5	26	1.7	*7th*	7	6	7	4	1.3	*7th*
Own experience/ background	3	7	1	6	5	1	6	6	3	5	2	7	4	4	7	53	3.5	*5th*	5	1	6	12	4	*5th*
Yourself - learning by mistakes, etc.	1	2	3	2	4	2	7	4	2	2	1	3	3	3	4	77	5.1	*3rd*	3	2	4	15	5	*3rd*

Chart 6.2a - Student Responses

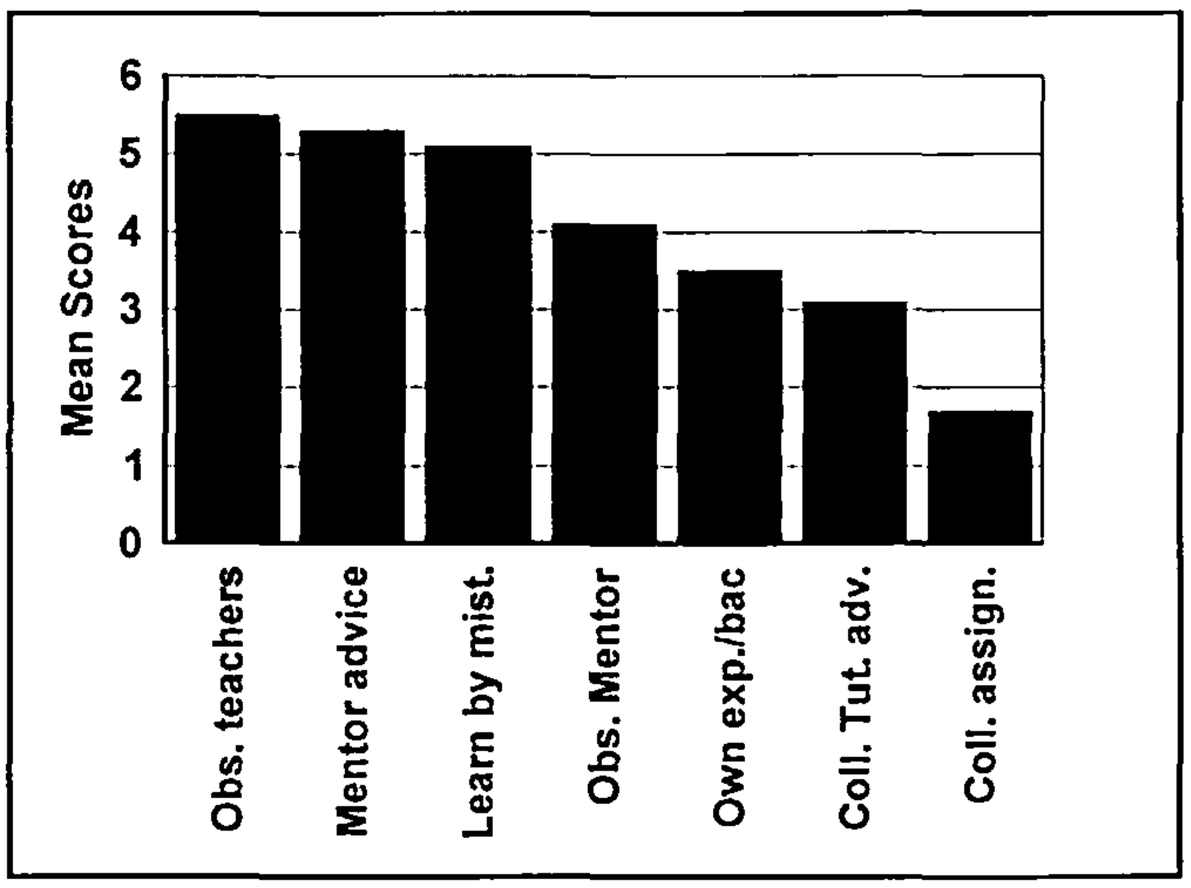


Chart 6.2b - Mentor Responses

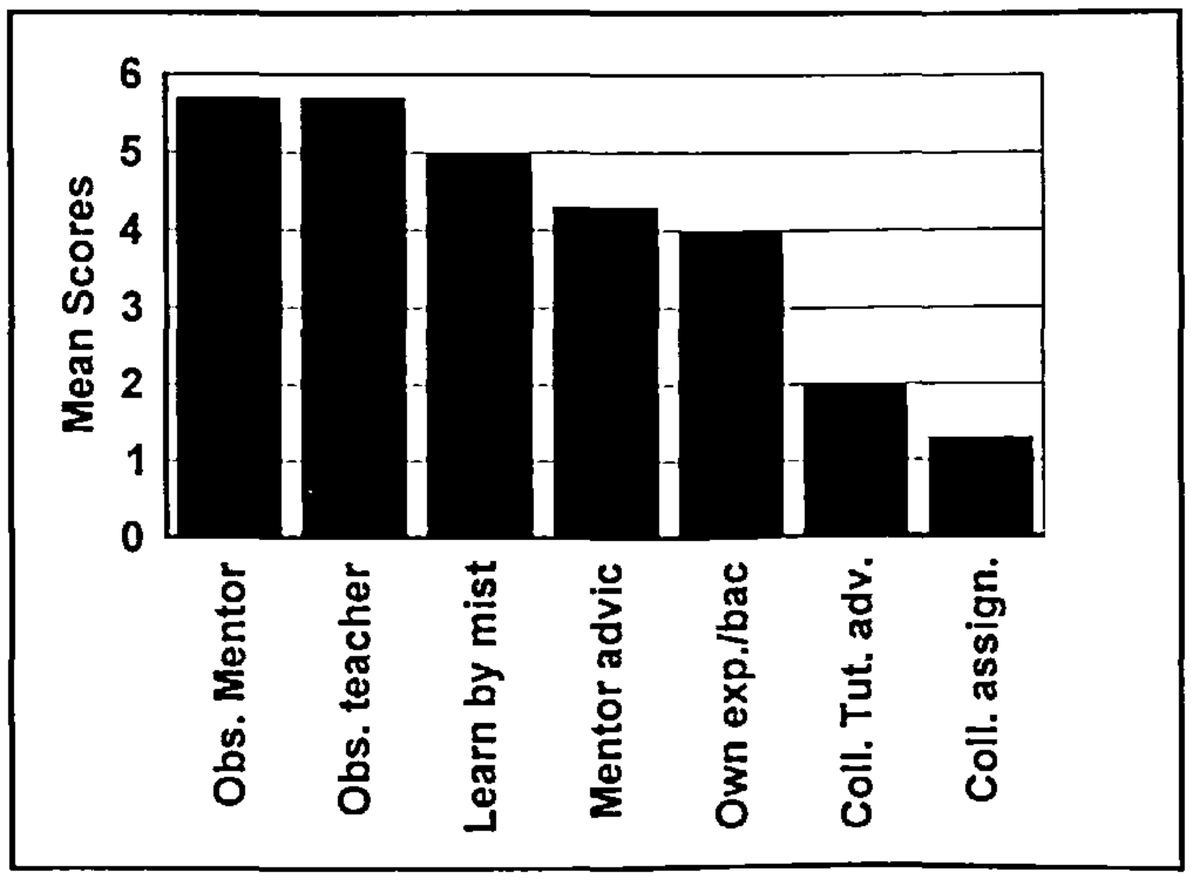


Table 7.1 - How do children learn best?

Reason	Student Responses (2 abstentions)															Total/ Mean		Pos	Mentor Responses			Total/ Mean		Pos
Didactic learning	8	10	9	2	6	5	6	5	9	10	4	9	7			53	4.1	*8th*	4	4	9	16	5.3	*6th*
Challenge pupils' beliefs	1	6	7	7	2	1	3	1	6	6	5	2	3			93	7.2	*2nd*	1	5	8	19	6.3	*4th*
Differentiated work	9	5	1	1	5	4	7	8	1	8	1	5	4			84	6.5	*5th*	6	2	2	23	7.7	*2nd=*
Innate ability in subject	10	7	8	5	7	8	10	9	8	7	10	7	8			39	3	*9th*	2	10	10	11	3.7	*9th*
Rote learning	2	9	10	8	10	9	8	7	10	9	9	10	9			33	2.5	*10th*	10	9	7	7	2.3	*10th*
Investigation	3	1	2	4	4	3	1	4	2	2	8	1	1			107	8.2	*1st*	8	1	1	23	7.7	*2nd=*
Discussion	6	2	5	6	3	7	2	2	4	3	2	8	2			91	7	*3rd*	3	3	3	24	8	*1st*
Analogy	7	4	4	3	8	6	9	6	7	4	7	4	10			64	4.9	*7th*	7	8	6	12	4	*7th=*
Demonstration	4	3	3	9	1	2	5	4	3	5	3	6	5			90	6.9	*4th*	9	7	5	12	4	*7th=*
Role play	5	8	6	10	9	10	4	3	5	1	6	3	6			67	5.2	*6th*	5	6	4	18	6	*5th*

Chart 7.1a - Student Responses

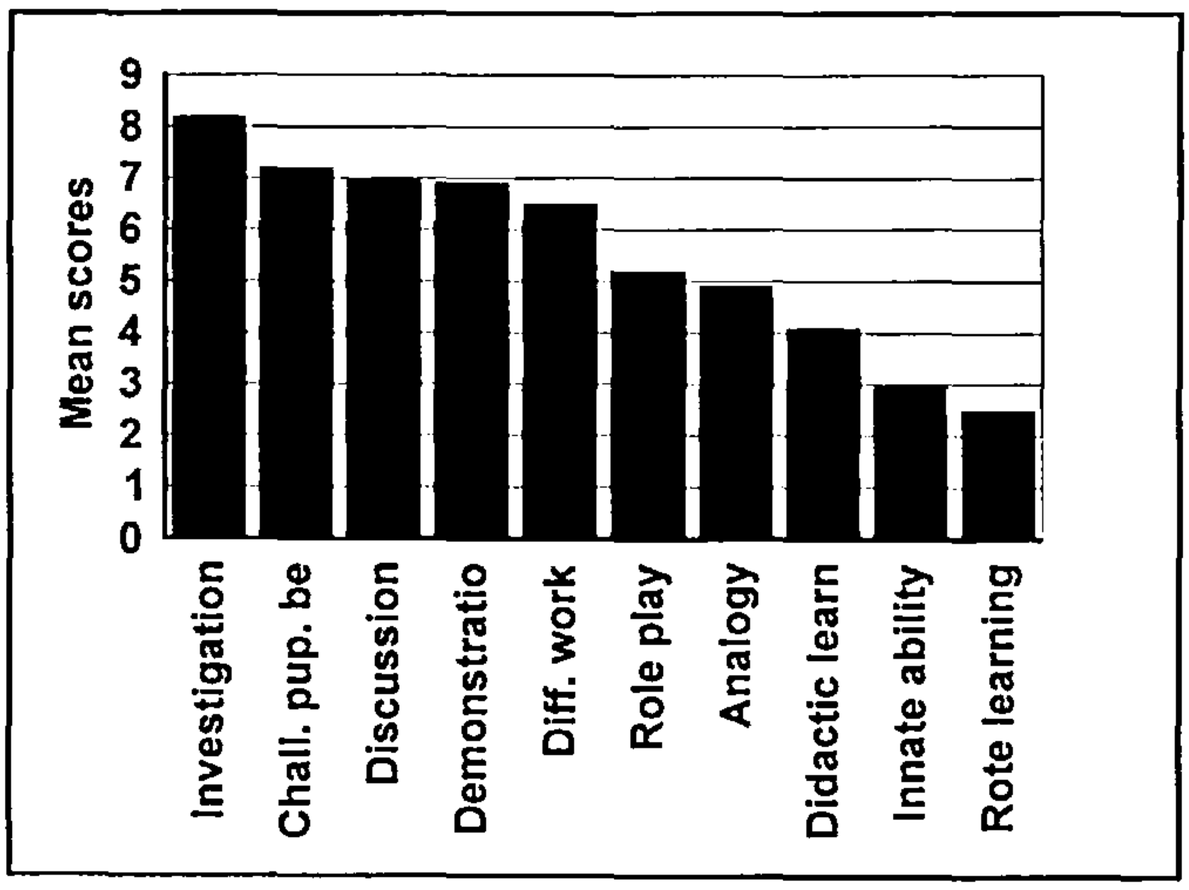


Chart 7.1b - Mentor Responses

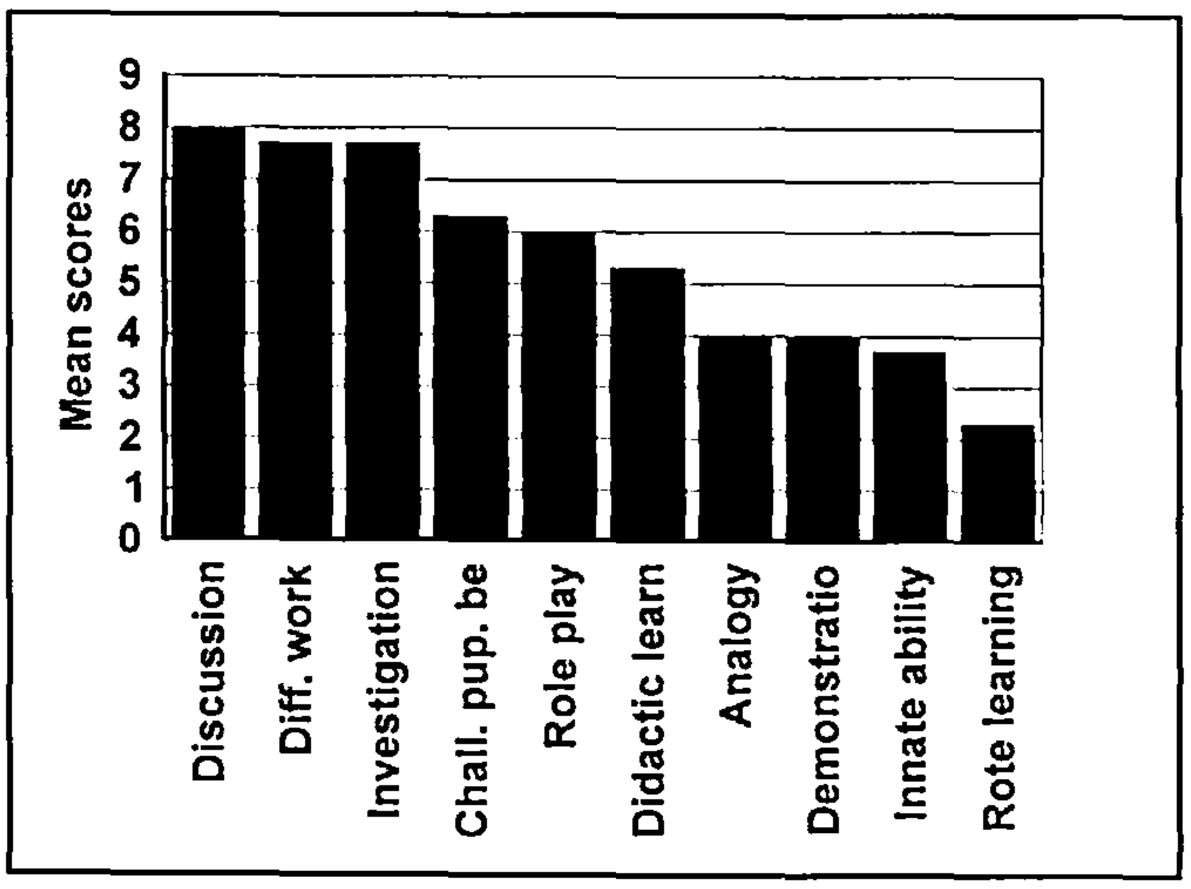


Table 7.2 - Strategies used to increase pupils' learning

Strategy	Strategies used by students (5 abstentions)															Total/ Mean		Pos	Mentor strategies			Total/ Mean		Pos
Didactic learning	7	3	8	8	5	4	7	2	7	8						41	4.1	*6th*	9	6	4	11	3.7	*7th*
Challenge pupils' beliefs	3	2	6	7	1	3	1	8	5	7						57	5.7	*5th*	6	7	1	16	5.3	*5th*
Differentiated work	4	1	7	1	3	5	2	3	1	6						67	6.7	*2nd=*	3	1	5	21	7	*2nd*
Rote learning	8	7	9	9	7	9	8	9	8	9						17	1.7	*9th*	7	9	9	5	1.7	*9th*
Investigation	1	8	3	2	4	1	4	5	2	2						68	6.8	*1st*	1	3	7	19	6.3	*3rd*
Discussion	2	4	1	3	2	7	5	4	4	1						67	6.7	*2nd=*	2	2	2	24	8	*1st*
Analogy	9	6	5	6	6	6	6	9	9	5						33	3.3	*8th*	8	8	6	8	2.7	*8th*
Demonstration	5	5	4	5	3	2	3	6	3	3						61	6.1	*4th*	5	5	3	17	5.7	*4th*
Role play	6	9	2	4	4	8	8	9	6	4						40	4	*7th*	4	4	8	14	4.7	*6th*

Chart 7.2a - Student Responses

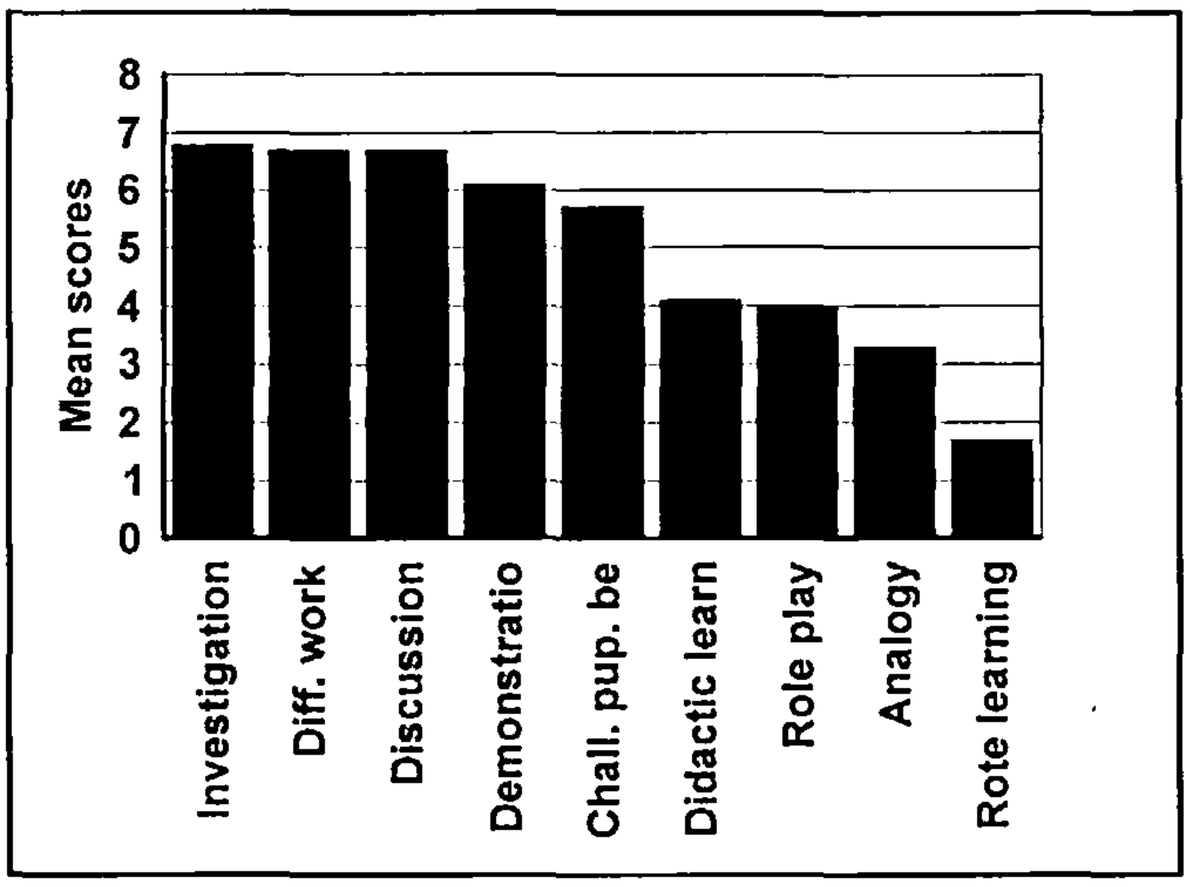


Chart 7.2b - Mentor Responses

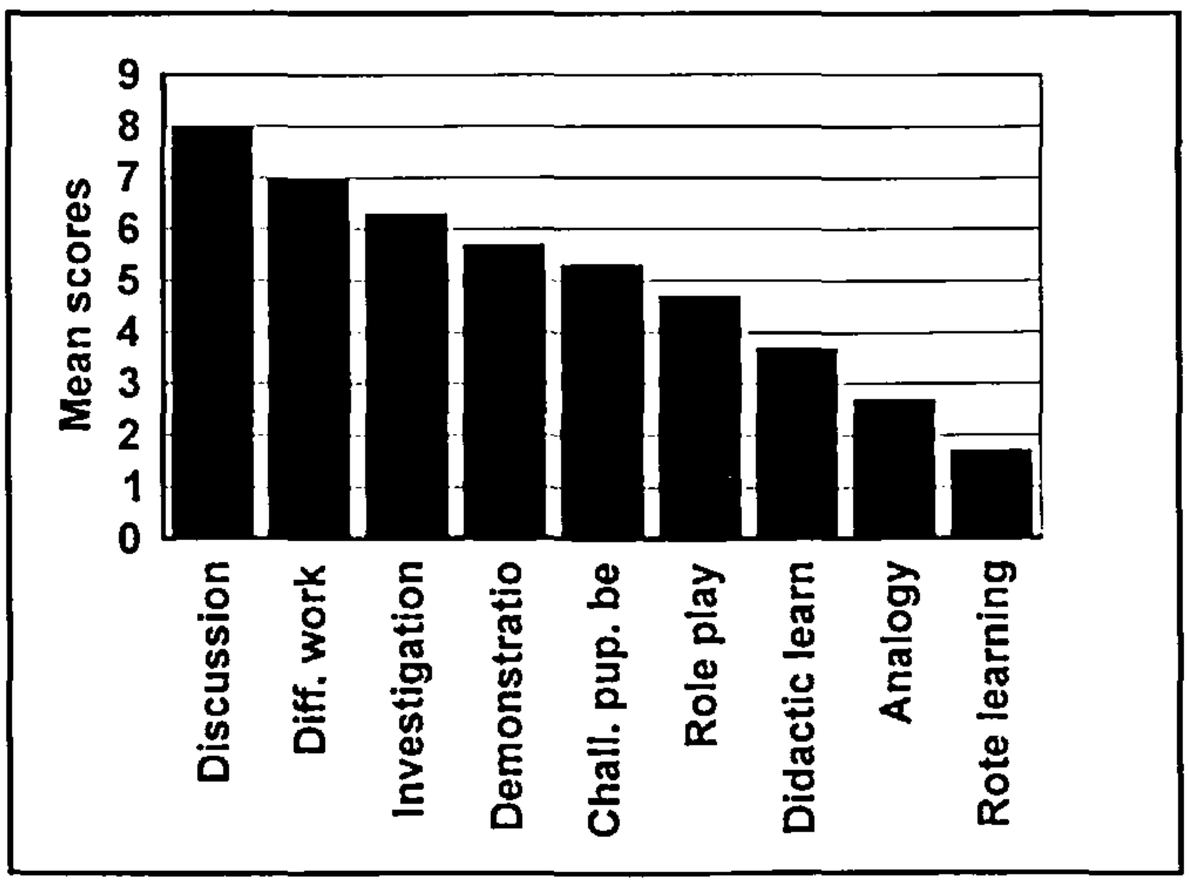


Table 7.3 - Strategies your student used to increase pupil learning

Strategy	Mentor Responses			Total/ Mean		Pos
Didactic learning	1	1	9	19	6.3	*4th*
Challenge pupils' beliefs	3	9	5	13	4.3	*6th*
Differentiated work	4	5	1	20	6.7	*2nd=*
Rote learning	9	8	8	5	1.7	*9th*
Investigation	5	3	2	20	6.7	*2nd=*
Discussion	4	2	3	21	7	*1st*
Analogy	8	4	7	11	3.7	*7th*
Demonstration	6	6	4	14	4.7	*5th*
Role play	7	7	6	10	3.3	*8th*

Chart 7.3 - Strategies your student used to increase pupil learning - Mentor Responses

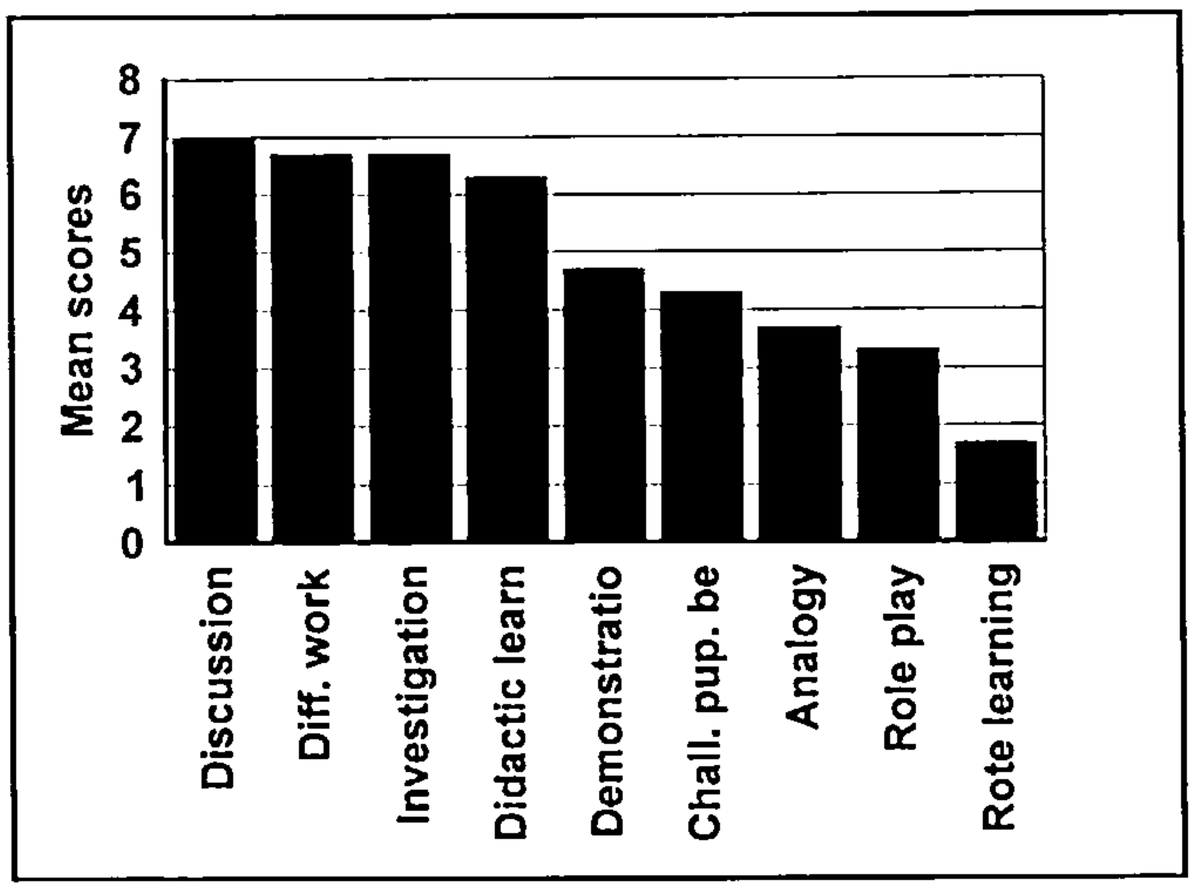


Table 7.4 - Influences on students' views of pupils' learning

Influence	Student Responses																Total/ Mean		Pos
National Curriculum/ Standards	4	5	4	6	1	6	5	4	4	4	3	3	5	5	5		41	2.7	*5th*
Your Mentor	1	2	1	2	3	3	3	2	2	3	2	2	4	2	3		70	4.7	*2nd*
College Tutors	5	3	5	1	4	4	4	3	5	2	6	6	6	4	4		43	2.9	*4th*
College assignments	6	6	3	3	6	5	6	5	6	5	4	5	1	6	6		32	2.1	*6th*
Your Teaching Practice	2	1	2	4	2	1	1	1	1	1	5	1	2	1	1		79	5.3	*1st*
Your own school experience	3	3	6	5	5	2	2	6	3	6	1	4	3	3	2		51	3.4	*3rd*

Chart 7.4 - Influences on students' views of pupils' learning-

Student Responses