Individual teacher training

A systematic map into approaches to making initial teacher training flexible and responsive to the needs of trainee teachers

Review conducted by the Individual Training Review Group

Technical report written by Lynne Graham-Matheson,
Tom Connolly, Sue Robson, William Stow

ePPI CENTRE SSRU Social Science Research Unit IOE LONDON Leading education and social research Institute of Education University of London

The results of this systematic review are available in three formats:

SUMMARY	Explains the purpose of the review and the main messages from the research evidence
TECHNICAL REPORT	**Includes the background, main findings, and full technical details of the review**
DATABASES	Access to codings describing each research study included in the review

These can be downloaded or accessed at **http://eppi.ioe.ac.uk/reel/**

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List of abbreviations

A-level	Advanced level
AEI	Australian Education Index
ASSIA	Applied Social Sciences Index and Abstracts
BEI	British Education Index
CCCU	Canterbury Christ Church University
CPD	Continuing professional development
DfEE	Department for Education and Employment
DfES	Department for Education and Skills
DRB	Designated recommending body
EBR	Employment-based routes
EPPI-Centre	Evidence for Policy and Practice Information and Co-ordinating Centre, Social Science Research Unit, Institute of Education, University of London
ERIC	Educational Resources Information Centre
GCSE	General Certificate of Secondary Education
GTC	General Teaching Council
GTP	Graduate Teacher Programme
HATT	Hyfforddi Athrawon Teacher Training project (HATT 2000)
HEFCE	Higher Education Funding Council for England
HEIs	Higher education institutions
IAP	Individual action plan
ICT	Information and communications technology
ITE	Initial teacher education
ITP	Individual training plan
ITT	Initial teacher training
NQT	Newly-qualified teacher
ODL	Open and distance learning
Ofsted	Office for Standards in Education
OTTP	Overseas Trained Teacher Programme
OTTs	Overseas trained teachers
OU	Open University
PGCE	Professional Graduate Certificate in Education
QTS	Qualified teacher status
RTP	Registered Teacher Programme
SCITT	School-centred initial teacher training
SKIMA	Subject Knowledge in Mathematics Group
SSCI	Social Science Citation Index
TTA	Teacher Training Agency (TDA, Training and Development Agency for Schools, from September 2005)
VLE	Virtual learning environment

Summary

Background

Initial teacher training (ITT) in England has radically changed over decades. There has been a growing emphasis on school-based training and new flexible routes into teaching, from foundation degrees through to the graduate teacher programme (GTP) and modular Professional Graduate Certificate in Education (PGCE). These routes, which are intended to widen access into teacher training, attract trainees with a wide range of qualifications and experience, so providers of teacher training are now required to take account of individual training needs on all routes into teaching. There is therefore a requirement for evidence-informed practice to support training providers in assessing training needs and developing programmes which meet those needs. This review focuses on the ways in which providers of ITT, both higher education institutions (HEIs) and schools can provide training which is flexible and responsive to trainees' specific needs.

Aims

The aims of the review are as follows:

- to undertake a systematic literature review, identifying studies and creating a map of the available literature on ways in which teacher training can be made flexible and responsive to individual needs

- to disseminate research findings to ITT colleagues and school mentors to inform future teacher training

- to make recommendations for further research

Undertaking a systematic review resulting in a set of keyworded studies provides a resource for – in this case – practitioners and others to learn about studies in the field.

The initial aim of the review was to undertake a map of the research and then a synthesis of the findings, and the disparate nature of the research identified meant that a synthesis was not feasible or useful.

Review questions

This review set out to answer one main question:

> *What is the research evidence which considers how providers of initial teacher training might provide flexible and responsive training for trainee teachers?*

Methods

The review was conducted using the procedures for systematic reviews of research in education as developed by the EPPI-Centre. A wide-ranging search was carried out to identify studies which were written and/or published in English, in/since 1998, and concerned with ITT and training which take account of individual training needs. The rationale for including only studies written or published since 1998 is that the provision of flexible routes into teaching is a new concept which followed on from Circular 4/98 (DfEE, 1998).

The first stage of the review involved searching electronic databases and other sources using defined search terms to identify potentially relevant studies. The abstracts (and in some cases full reports) of these studies were then screened, and included or excluded them in accordance with the inclusion and exclusion criteria. The included studies were keyworded, using EPPI-Centre Core Keywording Strategy (version 0.9.7, EPPI-Centre, 2002) and review-specific keywords, to provide a map of the literature.

The initial search identified 5,105 citations,

which reduced to 322 with the application of the inclusion and exclusion criteria to the titles and abstracts and further reduced to 24 after applying the inclusion and exclusion criteria to the full reports. These 24 studies were keyworded and mapped.

The studies were not synthesised because they were disparate in their focus. Although they are concerned with ITT as it affects individual trainees, they were not undertaken to establish the 'how to' of the review question.

Results

Thirteen of the 24 studies included in the map were from the UK, including eight from England, two from Wales and one from Scotland. Five studies were from North America, three from Australia and three from other European countries.

The studies varied in their methods, 12 were coded as descriptions, eight as naturally occurring evaluations and three as explorations of relationships. Only one study was coded as an evaluation of a researcher-manipulated evaluation.

More than half the studies focused on postgraduate teacher training (N=15), while five focused on undergraduate teacher training. In four studies, the focus (undergraduate or postgraduate training) was unclear. The focus of 21 of the studies was student or trainee teachers, but studies also focused on school mentors (N=7) and tutors from HEIs (N=2). Half the studies focused on teacher training for secondary school, six on primary education and one on sixth-form/post-compulsory education.

The aspects of teacher training which featured most often in the studies were school experience (N=15) and mentoring (N=9). The foci of other studies were feedback (N=5), HEI-based training (N=5) and needs assessment (N=4), with other foci featured in a smaller number of studies, including training plans (N=3), portfolio/evidence (N=2) and knowledge audit (N=1).

Mentoring was the most frequently used tool for making training flexible and responsive to individual trainees' needs (N=10) but other methods included feedback (N=4), flexible routes into teaching (N=4) and individual action plans (N=2).

Conclusions

Our review has shown that there are no studies that research the practice and process of, or beliefs about and attitudes towards, flexible and responsive initial teacher education (ITE) at a general level. The searches we conducted generated 24 references which fitted our inclusion criteria. The studies retrieved looked at a disparate range of small-scale research; the available evidence is restricted to studies focusing on specific groups from which it is not possible to generalise. In consultation with the EPPI-Centre and the Training and Development Agency for Schools (TDA), the Review Group decided to detail the studies systematically and bring them together in a database which would have the potential to be updated as more work is done in this field.

The studies included in the systematic map address specific ways of managing ITE to address individual needs, including studies which examine the experiences of particular groups of student teachers which may have particular needs – such as mature or non-traditional entrants to training, male primary trainees or ethnic minority student teachers. The needs of other groups are not explored in the included studies. Some studies consider the use of particular assessment or reflection instruments in ITE programmes. Others probe the beliefs and attitudes of student teachers towards their ITE and education more broadly. One or two explore the benefits, disadvantages and challenges of particular types of programme that in themselves may have been seen as 'flexible and responsive', such as the GTP.

In order to generate data that more clearly illustrates how institutions or training programmes respond flexibly to student need, specific studies would need to be commissioned. It is known that work is being done in this area by ITT providers but it is perhaps too soon for this to be researched and written up. Studies which consider aspects of flexible training, such as the needs of a particular group of student teachers or the role of mentors, provide a useful basis for further research and the Review Group would recommend that this topic is revisited in perhaps a year or two's time.

Strengths and limitations

A particular strength of this review is that it has been undertaken by a team of experienced practitioners using the procedures of the EPPI-Centre for systematic literature reviews.

An obvious limitation of the review is that the Review Group found no studies which specifically answered the review question (What is the research evidence which considers how providers of ITT might provide flexible and responsive training for trainee teachers?). However, we were able to find studies that highlight work which is already being done in teacher training programmes, and areas for further research.

A further limitation of the review is that the studies in the map have not been subject to quality appraisal and some of the findings must therefore be regarded as speculative. Caution needs to be exercised when generalising from the studies in the map. Most of the studies are small scale and some, for example Devereux (2001), are specific to a particular course or institution. Almost all the studies were written by ITT tutors researching

their own programmes or students and few of the studies sought students' views. Although the earliest of the studies was written in 1998, some of the research predates this and, particularly for the reports which relate to the use of information and communications technology (ICT), time has moved on; teacher training programmes have changed and problems or difficulties experienced earlier may not apply in 2005.

The decision not to undertake a synthesis of the research might be perceived as a limitation of the review, but the findings from the 24 included studies did not provide a basis on which this could usefully be done. The included studies examine various aspects of specific training programmes

CHAPTER ONE
Background

This systematic literature review was commissioned by the Teacher Training Agency (TTA, now the Training and Development Agency for Schools (TDA)) to develop a research base for training providers, supporting evidence-informed practice in making initial teacher training in England more flexible and responsive to trainees' needs. Systematic literature reviews involve identifying and screening primary research reports and reviewing them in an explicit and standardised way in order to produce accessible evidence-based recommendations to inform policymakers, practitioners and others. This review was carried out in accordance with the EPPI-Centre (Institute of Education, University of London) procedures for educational research.

This section of the report describes the background to the review, including the aims of, and rationale for, the review, details of those involved in it, and the review question.

1.1 Aims and rationale for current review

Over recent years teacher training in England has undergone significant changes. *Qualifying to Teach,* first published in 2002 (TTA, 2002) removed the curriculum for ITT introduced by Circular 4/98 (DFEE, 1998) and introduced new standards and requirements for ITT in England. Greater responsibility for training has been devolved to schools and the 'one size fits all' approach has disappeared. There are now many different routes to the award of qualified teacher status (QTS): as well as the more traditional BA (QTS), BEd and PGCE courses, employment-based routes into teaching, such as the Graduate Teacher Programme (GTP), Registered Teacher Programme (RTP) and Teach First, provide opportunities to progress towards the award of QTS, while at the same time working as an unqualified teacher. These different routes into teaching accommodate and build on trainees' qualifications and experience by taking into account prior education and experience, with a need to devise an individual training plan (ITP) which has an agreed range of training activities.

With such a wide range of options, there is a need for evidence-informed practice to support providers in assessing training needs and developing programmes which meet them, to ensure that all trainees, whichever training route they follow, receive high quality training and support to enable them to develop their professional expertise and meet the Standards for QTS. This is particularly important for providers who do not offer employment-based routes, and so may not be experienced in analysing training needs and providing training which is responsive to those needs.

This review focuses on the ways in which providers of ITT, both HEIs and schools, can provide training which is flexible and responsive to specific needs.

The aims of the review were as follows:

- to undertake a systematic literature review, identifying studies and creating a map of the available literature on the ways in which teacher training can be made flexible and responsive to individual needs

- to disseminate research findings to ITT colleagues and school mentors to inform future teacher training

- to make recommendations for further research

Undertaking a systematic review resulting in a set of keyworded studies provides a resource for, in this case, practitioners and others to learn about studies in the field.

Although an initial aim of the review was to undertake a map of the research and then a synthesis of the findings, the disparate nature of the research identified meant that a synthesis was not feasible or useful.

1.2 Definitional and conceptual issues

Individualised training is training which is designed to be flexible and responsive to the needs (in this instance) of a student or trainee teacher, taking account of their skills and past experience to determine strengths and weaknesses. All providers of initial teacher training and initial teacher education (ITT/ITE) in England are now required (TTA, 2003) to 'ensure that training takes account of individual training needs' (R2.3, p 16). *Qualifying to Teach* (TTA, 2003) outlines the requirements for ITT. All providers and programmes of ITT are subjected to quality-assurance arrangements to ensure that these regulations are met. Of particular relevance to this review is *Regulation R2: Training and Assessment,* which sets out the expectations for programme design, assessment and individual needs. Within Regulation R2.3, the aim and scope states the following:

> The aim of this requirement is to ensure that, both before and during training, trainees are given the support they need to succeed. This includes taking account both of any prior achievement that might justify exemption from some programme requirements, and of any specific training needs identified during selection or afterwards. Providers will need to develop ways of taking individual needs into account in establishing the exact length, nature, content and mode of delivery of training. This does not mean that every trainee must follow an individual programme, because many will have common needs; but all programmes should be flexible enough to accommodate different training needs even where there are many common elements. (p 73)

Providers work in a number of ways to carry out needs assessments or needs analyses which can form the basis of individual training plans. These are used by schools and HEI training providers, working in partnership, to enable trainees to meet the Standards for QTS. An example of this is a modular PGCE in which students map out their qualifications, skills and experience against the modules making up their particular pathway, in order to assess how far they already meet some of the Standards embedded in the modules. The mapping is carried out by examining the contents of the modules and entering statements of evidence against each unit on the needs analysis database, which is contained within the modular PGCE website. Students who wish to make claims of prior experience and learning have to compile a portfolio of evidence (which can be qualifications,

work experience, schemes of work, lesson plans and continuing professional development (CPD) courses completed) to demonstrate their skills and experience. This portfolio, which is based on the modules, is submitted for assessment and a decision on whether there is sufficient evidence for substantial exemption from aspects of the module.

For the purposes of the review, definitions have been developed as follows:

Individualised training: Individualised training may also be referred to as flexible, tailormade or differentiated training.

Initial teacher training: Initial teacher training is any training course which leads to QTS. In England, this is awarded after trainees have demonstrated their achievement of the Standards for the award of QTS. These are outcome statements that apply to all trainee teachers, whatever route they take to QTS and set out what a trainee teacher must know, understand and be able to do. The Standards allow providers autonomy in deciding how they will organise their training and respond to individual trainee teachers' needs; they do not set a curriculum, nor do they specify how training should be organised or run.

The Standards are organised in three inter-related sections which describe the criteria for the award:

Professional values and practice: These Standards outline the attitudes and commitment to be expected of anyone qualifying to be a teacher, and are derived from the Professional Code of the General Teaching Council for England (GTC(E)).

Knowledge and understanding: These Standards require newly qualified teachers to be confident and authoritative in the subjects they teach and to have a clear understanding of how all pupils should progress and what teachers should expect them to achieve.

Teaching: These Standards relate to skills of planning, monitoring and assessment, and teaching and class management. They are underpinned by the values and knowledge covered in the first two sections.

Once they have been awarded QTS, teachers work for a year as a newly-qualified teacher (NQT), during which time they receive further support and guidance.

Employment-based routes: The traditional route into teaching was through an undergraduate programme - BA (QTS) or BEd - for primary teachers and a PGCE or postgraduate course for secondary teachers but increasing numbers of primary teachers now undertake postgraduate training. New employment-based routes (EBR) into teaching allow trainees to work in school and follow a more individualised training programme leading to QTS

while being paid by the school as an unqualified teacher. These programmes particularly suit mature, well-qualified people who can quickly take on teaching responsibilities and who need to earn a living while they train. Many EBR trainees have relevant experience in other sectors or in a support role in a school. Others are career changers who want to move into teaching.

The three EBR programmes are:

Graduate Teacher Programme (GTP): GTP trainees must have a bachelor's degree or equivalent. The TDA pays a grant to cover training costs and usually pays a grant towards the cost of employing the trainee. The GTP is highly competitive and places are allocated to the best schools and graduates in priority categories. The GTP is usually a one year (three terms) course, although may be shorter depending on the trainee's qualifications and previous experience.

Registered Teacher Programme (RTP): RTP trainees must have undertaken two years of higher education and have to complete a degree while they train. The TDA pays training costs and the school pays the full salary cost. There are no priority categories for the allocation of places.

Overseas Trained Teacher Programme (OTTP): OTTP trainees must have a teaching qualification that is equivalent to a UK bachelor's degree. This programme allows overseas trained teachers (OTTs) to gain QTS while they work in a school, although they may apply for QTS assessment without training. If an OTT needs training to help prepare for QTS assessment, the TDA pays up to £1,250 training grant. The school pays the trainee's salary.

Student and trainee teachers are required to demonstrate how they have met the Standards for QTS. Common practice among providers is to require the trainees and students to compile a portfolio of evidence, which may include lesson plans, examples of pupils' work and other material.

Some providers require trainees to use a reflective journal, which works like a diary. On a weekly or monthly basis, trainees can keep a written record of what they have done, any special achievements, what targets they need to meet, anything they need to work on.

It is common practice for students and trainees to have a school mentor (secondary trainees may also have a subject mentor) who will observe and comment on their teaching and support their training during their time in school.

1.3 Policy and practice background

In England, the predominant location of teacher training - in school or training institution - and the balance between theory and practice has changed over time. During the 1960s and 1970s, the status of teacher education was raised and it was incorporated into colleges, polytechnics and universities. In the 1980s and 1990s, the state took significantly greater control of the entire process of education, including teacher training (Turner and Bash, 1999).

In the very early days of teacher training, there were power struggles between the Church and the state, and such conflicts of interest have continued. While central government has always had final responsibility for licensing teachers in England, this responsibility has only comparatively recently extended to the curriculum in teacher training.

Since 1993, initial teacher training in England has been characterised by a partnership model: providers have been required to develop partnerships with schools, which have been given an increasingly important role in teacher training. According to Circular 14/93 (DfE, 1993), underpinning all ITT reforms was the general principle that 'schools should play a much larger and more influential role in course design and delivery, in partnership as appropriate with higher education institutions' (DfE, 1993 10a, p 5).

The 1994 Education Act was controversial (Ambrose, 1996) and fuelled the debate about the role of higher education in initial teacher training. The changing policy context during the 1990s led to a link between funding and the quality of training, with new accreditation and funding arrangements, and more stringent inspection arrangements.

Other reforms during the early 1990s included the formation of the TDA, the transfer of funding for teacher training from the Higher Education Funding Council for England (HEFCE) to the TDA and the establishment of School-Centred ITT (SCITT) schemes. The establishment of SCITT schemes was intended to allow small groups of schools working together as consortia to receive government funding to run their own training schemes, buying in higher education expertise and accreditation as they wished. According to the government, the aim of the scheme was to allow the teaching profession to control training. Part of the rationale for establishing the TDA under the 1994 Education Act was to fund such schemes.

Circular 4/98 (DfEE, 1998) further strengthened the partnership between schools and HEIs, stating the following:

> 3.1 In the case of all courses of ITT, higher education institutions and other non-school trainers must work in **partnership** with schools ensuring that

> 3.1.1 Schools are fully and actively involved in the planning and delivery of ITT as well as in the selection and final assessment of trainees.' (emphasis as in the original) (Annex 1)'

In the 1990s, training was seen as involving only two elements: subject knowledge, which was largely the responsibility of HEIs, and professional teaching skills, which would be acquired in schools. In an attempt to tighten state control of the curriculum (Furlong et al., 2000), the standards that student teachers needed to achieve in these areas were expressed in the form of a list of competences.

During the middle 1990s, the growing role of school mentors influenced what student teachers learned but policies of the late 1990s sought to formalise control of teacher training by specifying the content of professional education in more detail (Furlong et al., 2000). The introduction of, first, common competences and then standards to be met by all teachers, irrespective of the route through which they had been achieved, reflected a concern to specify the content of professional education in more detail (ibid., p 149). The TDA produced its first draft standards in 1997, published in DfEE Circular 10/97. The main change was to confirm teaching as a graduate profession, although the move from competences to standards meant the definition of the content of training in more explicit detail than before (Furlong et al., 2000) and reflected the move towards more centralised control of teacher training.

The Dearing Report (1997) noted the shift in the balance between HE-based and school-based training, saying it was important that HEIs and schools made 'distinctive but complementary mutually-reinforcing contributions' to the education and training of teachers (National Committee of Inquiry into Higher Education, report 10 paragraph 64). It also stated that 'the quality of entrants to the profession through a diversity of routes should be guaranteed by national standards and by the assessment of trainees before the award of QTS, but the profile of skills, knowledge and understanding will vary depending on the route into the profession taken by the trainee' (ibid., paragraph 65).

In 1998, the graduate route to QTS was established. Following on from the increased involvement of schools in initial teacher training, the Addendum to Circular 4/98, which came into force on 1 September 2000, paved the way for different routes into teaching by setting out the requirements that the new flexible, modular postgraduate provision had to meet. From September 1999, all NQTs had to undertake a statutory induction year (DfEE, 1999).

With the publication of *Qualifying to Teach* in 2003, the commitment to partnership was further emphasised in Requirement R3 as an essential requirement for successful initial teacher training on the basis that: 'training is most effective where practising teachers are directly involved' (p 84). To this end, individual training needs are best met when trainees can feel confident that all those involved in the partnership are making a planned, integrated contribution to their training programme.

It is from this policy and practice background that more flexible routes into teaching have developed.

In 2004, approximately 20% of qualified teachers were trained through flexible and employment-based routes (TTA press release), all of whom would have been trained through the use of individualised training programmes with attendant training plans. These different schemes are subject to the Office for Standards in Education (Ofsted) framework of inspection in the same way as traditional PGCE and undergraduate routes leading to QTS.

The GTP as a whole was inspected between autumn 2000 and spring 2001, with a report published in 2002. Two sections of the report (pp 31-50) are dedicated to individual training plans and training programmes, and offer insights into the issues under consideration in this review. Since the 2002 inspection, Ofsted has commenced a rolling programme of Designated Recommending Body (DRB) inspections taking place between autumn 2003 and summer 2006. Although each DRB will receive a written report, these will not be in the public domain and individual providers will need to rely on their own experiences and contacts to research relevant findings and recommended developments.

The provision of training through flexible and employment-based routes is likely to increase and will continue to influence developments in ITT. Providers of more traditional routes into teaching should be able to utilise the experience and expertise of those more flexible routes. Thus there is a need for evidence-informed practice to support providers in assessing training needs and developing programmes which meet those needs. This will ensure that all trainees, whichever training route they follow, receive high quality training and support to enable them to develop their professional expertise and meet the standards for QTS. This has significant implications for the role of schools and school mentors in teacher training, as the involvement of schools in training affects the work and culture of the school.

1.4 Research background

The provision of flexible routes into teaching is a relatively new concept and the Review Group has been unable to find any other systematic (or non-systematic) reviews of literature on this topic, thus the review is timely.

Recent changes in teacher training - the introduction of flexible and employment-based routes into teaching - paved the way and brought a need for the individualisation of training. Although there have been some studies on the new routes

into teaching and on school-based teacher training, research has largely focused on the division of responsibility for training between HEIs and schools, and the impact this has had on teacher training, rather than specifically on the training of individual teachers.

Furlong et al. (1996) suggest that, although the Government circulars (9/92 and 14/93) describing the new partnership arrangements identified specific requirements, they did not define what actually constituted partnership in teacher education, so partnership means different things within different courses. These researchers had previously found (Furlong et al., 1995) that in the early 1990s partnership meant integration - the student teacher's training experience in the HEI was being integrated with the work of the school. Their later research found that this model of training had all but disappeared and teachers were now significantly involved in training, although the nature of their responsibility varied considerably.

The move towards school-based training presented a dilemma. It did not necessarily mean that schools should be fully responsible for the training of teachers; training institutions had experience and expertise which enabled them to provide trainee teachers with an overview of theoretical issues. Although there was recognition of the importance of the experience of practitioners, not all schools were equipped to participate more fully in teacher training, or wished to do so. Blake et al. (1996) carried out a case study of a PGCE programme. While this found a general view in favour of more school-based training, at the same time there was concern both about the time and resources available to schools and the balance of the training programme. Teachers felt they should not have sole responsibility for training as it would lead to a reduction in 'that critical edge about teaching which results from systematic, HE-based professional work' (ibid., p 34).

Foster's research into the GTP focuses on the overall operation of the programme as experienced by schools, rather than on the way it can be used to meet individual trainee's particular needs. Foster (2000) found that, in the early days of the GTP, there was a generally positive response from schools, but with concern that the graduate teacher route and tailor-made training was suitable only for those who were experienced educators - overseas-trained teachers, peripatetic music and drama teachers, experienced FE teachers - not for beginning teachers. In Foster's 2001 research, he found that four out of five schools in his study were initially attracted by the apparent freedom and flexibility of the GTP training model, welcoming the opportunity to design a training plan that took into account the experience and expertise of the trainee teacher.

Brookes (2003) carried out a small-scale study of GTP mentors, the focus of the study being

informed by an Ofsted study in 2000/2001. Brookes concluded that the GTP was an effective alternative route for training teachers but argued - as did the Ofsted study - that more trainees should be exceeding the standards, rather than just meeting them. Factors contributing to this were said to include the following:

- The trainees' needs assessment, upon which subsequent training is based, often employs informal methods that are of limited effectiveness in identifying all their needs.

- The trainees' individual plans were mostly only adequate, with 25% of primary plans being of poor quality.

- School-based trainers are often not adequately prepared for their role in implementing appropriate training programmes.

- There is inconsistent practice in reviewing trainees' progress (Brookes, 2003).

An example of research looking at ITT from the trainees' viewpoint, particularly their involvement in their own training, is the work done by Lawson and Harrison (1999). They examined individual action planning in initial teacher training from the viewpoint of empowerment of the student teachers. In developing action planning in the Leicester School of Education secondary PGCE course, the concern was that 'student teachers should have control over their own learning, by being able to plan their way through the course to meet the minimum requirements laid down by the government and their own needs for training in competences which they perceived as in need of development' (Harrison and Lawson, 1997, p 75). Individual action plans (IAPs) were seen as a way in which the disparate backgrounds, skills and experiences of the PGCE students could be taken into account, as student teachers could identify their strengths and weaknesses and plan targets to develop particular areas. One of the conclusions of the study was that the student teachers felt in control rather than controlled, although they experienced the process in different ways. They also felt constrained by the need to provide evidence that they were meeting the Standards.

This review will build on earlier research, bringing together work which has been undertaken in the UK and elsewhere, and identifying areas where further research is needed.

1.5 Authors and funders

The authors of the review are Tom Connolly, Lynne Graham-Matheson, Sue Robson and William Stow. The review is funded by the TDA and supported by the EPPI-Centre.

The Review Group includes colleagues from CCCU and Roehampton University. Both institutions are

involved in initial teacher training and continuing professional development.

Members of the Advisory Group were asked for their views at significant stages of the review process, for example determining the review question and the search terms.

1.6 Review questions

The review question is:

What is the research evidence which considers how providers of initial teacher training might provide flexible and responsive training for trainee teachers?

CHAPTER TWO
Methods used in the review

This chapter describes the methodology of the review, including the searching and screening and the descriptive mapping. The review followed the methodology and tools provided by the EPPI-Centre.

2.1 User involvement

At the beginning of the review process, it had been the intention that users of the review would be closely involved in the review process. It was hoped that users would include teacher trainers, both from HEIs and school-based trainers, policy-makers, school-based staff with an interest in teacher training, and student or trainee teachers. In the event, because the review found so little material which was directly related to the original review question (see Chapter 5), it was difficult for this to operate in practice.

2.1.1 Approach and rational

The Advisory Group comprised teacher educators and a teacher. The Group was involved at key points of the review: for example, formulating the review question, and defining the search terms and the inclusion/exclusion criteria.

2.1.2 Methods used

The members of the Advisory Group provided an additional layer of expertise and a sounding board for discussion, and were asked for their views at the early stages of the review process.

2.2 Identifying and describing studies

2.2.1 Defining relevant studies: inclusion and exclusion criteria

When the review began, the Review Group believed, based on knowledge of the topic that they were unlikely to identify many studies focusing exclusively on flexible but non-employment based routes into teaching, because this is a comparatively new area. In order to ensure that only reports focusing on the review question were selected for mapping, a list of inclusion and exclusion criteria was developed.

Inclusion criteria

In order to be *included* in the review a study *must*:

- have been written or published in/since 1998
- have been written or published in English
- be concerned with initial teacher training
- be concerned with the provision of flexible routes into teaching
- take account of trainee teachers' needs
- be empirical research

The rationale for including only studies written or published since 1998 is that the provision of flexible routes into teaching is a new concept which followed on from Circular 4/98 published in 1998 (DfEE, 1998). Although this date does not apply to studies from outside England, this cut-off date was applied to all searches of the electronic databases, and thus to other sources to ensure consistency. The review includes only studies written or published in English because the Review Group did not have the expertise or resources to deal with studies in other languages.

Only empirical research was included in the review. Studies which did not contain empirical research (for example, editorials, book reviews, policy documents, training resources or text books, theoretical papers, bibliographies) were excluded.

Exclusion criteria

Studies were *excluded* from the review if:

- they were written or published before 1998 (exclusion code 1)
- they were not written or published in English (exclusion code 2)
- they were not concerned with initial teacher training (exclusion code 3)
- they were not concerned with the provision of flexible routes into teaching which take account of trainee teachers' needs (exclusion code 4)
- they were not empirical research (exclusion code 5)

The exclusion criteria were applied hierarchically.

Although there was a change in the original review question from:

How can providers of initial teacher training most effectively individualise training for trainee teachers?

to:

How can providers of initial teacher training, particularly non-employment based routes, most effectively provide flexible and responsive training for trainee teachers?

and then to:

What is the research evidence which considers how providers of initial teacher training might provide flexible and responsive training for trainee teachers?

The change in wording is a shift in emphasis rather than a complete change of focus, intended to show that ITT programmes should provide training that can be flexible and responsive to trainees' needs, not that each trainee will have an individually designed programme. Although the sub-clause relating to non-employment based routes was originally intended to emphasise the need for research in this area, it was not necessary as the review did not focus on non-employment based routes. The inclusion and exclusion criteria did not need to be changed to reflect the change of review question.

2.2.2 Identification of potential studies: search strategy

Studies were identified for inclusion in the review by searching a number of sources:

- *Bibliographic databases*: ASSIA, Australian Education Index (AEI), British Education Index (BEI), C2-SPECTR, CERUK, EBSCOhost EJS, Educational Resources Information Centre (ERIC), IBSS, Index to Theses, Ingenta Full Text, Ingenta Select, REEL, Science Direct, Social Science Citation Index, ZETOC.
- Journal publishers' web pages or handsearching key journals (e.g. *Journal of Education for Teaching*)
- E-journals available on the internet
- Citation searches of key authors/reports
- Reference lists of key authors/reports
- References on key web sites
- Personal contacts
- Direct requests to key informants

Searches took place until summer 2004.

Full details of the search strategy are given as Appendix 2.3.

2.2.3 Screening studies: applying inclusion and exclusion criteria

Inclusion and exclusion criteria were applied to the titles and abstracts of the 5,105 identified citations. In arriving at the reports that met or appeared to meet the inclusion criteria, the Review Group erred on the side of calling for the full report. The inclusion and exclusion criteria were re-applied to the full reports and those that did not meet the criteria were excluded.

Ninety-eight reports were not available or did not arrive in time, but these were almost all conference reports from the USA and Australia and it is acknowledged that conference reports are often not in the public domain. After the titles and abstracts of these reports were screened, none of them was thought to meet the inclusion criteria or affect the results of the review.

A database system was set up to keep track of and code reports found during the review. Titles and abstracts were imported and entered manually into the database.

2.2.4 Characterising included studies

The 24 included studies were then keyworded using EPPI-Centre (2003) *Core Keywording Strategy (Version 0.9.7)*, with additional keywords which are specific to the context of the review (see Appendix 2.5). The EPPI-Centre core keywording strategy enables studies to be classified according to a range of criteria, including bibliographic details such as how the study was identified and whether it has been published, and contextual details such as the language in which the study was written/published and the country in which the study was carried out. Key aspects of the study are also coded, such as the topic focus of the study and information about the subjects of the study. The advantages of using the EPPI-Centre keywording are that it provides a basis for coding bibliographic data which can be entered into the database

and used for searching, and it provides a quick summary of the key aspects of the studies.

The review-specific keywords, developed for use in addition to the EPPI-Centre keywords, provided a basis on which the Review Group could describe the research focus and methods/tools for making training flexible and responsive. As there was no in-depth review, the review-specific keywords were used to extract data and information from the studies. The review specific keywords enabled reports to be classified according to the criteria of the review: aspects of ITT and ways in which training can be made flexible and responsive to trainees' specific needs.

Classifying the included reports against the EPPI-Centre generic keywords and the review-specific keywords enabled the Review Group to produce a map of the research in this area. This is described in chapter 3. The mapping stage of the review provides a way of describing the studies found to be relevant, gives an overview of the field of study, and enables reviewers to focus on particular areas of the map. The keyworded studies were added to the larger EPPI-Centre database, REEL, for others to access via the website.

2.2.5 Identifying and describing studies: quality-assurance process

Application of the inclusion and exclusion criteria to titles and abstracts was carried out by members of the Review Group working independently, with a second team member checking the decision on approximately one-third of the reports. A sample of reports was also considered by the EPPI-Centre staff member. Each of the full reports was considered by two members of the team, with a sample of reports considered by the EPPI-Centre staff member.

2.3 In-depth review

2.3.1 Moving from broad characterisation (mapping) to in-depth review

At this stage of the review, the review question changed from emphasising on individualised training to flexible and responsive training, at the request of the TDA, but this did not impact on the search strategy or the results of the mapping.

The mapping enabled the Review Group to focus on the studies which most closely answered the review question.

It was decided that, because the Review Group did not find a cohesive group of studies which looked at similar interventions or approaches to making training more flexible and responsive, there would be little point in synthesising studies which were disparate in their focus and did not specifically respond to the review question. Instead, a decision was made to create a searchable database of the studies in the field; this would allow the Group to generate a rich description of the studies that could be added to over the course of time as more work was produced in this very new area of research.

CHAPTER THREE
Identifying and describing studies: results

This chapter gives details of the search results. Section 3.1 describes studies included from searching and screening, section 3.2 presents the characteristics of studies included in the systematic map and the quality assurance process is discussed in section 3.3.

3.1 Studies included from searching and screening

Figure 3.1 presents a summary of the numbers of reports and studies included in the systematic map. The total of 5,093 citations were identified from electronic searching and a further 12 studies were identified through handsearching journals.

After the initial screening of titles and abstracts and removal of duplicates, 322 citations and studies were considered to be potentially relevant to the review. Full text reports were requested for these studies, of which 224 reports could be obtained. After second stage screening of full text documents, 24 studies were considered to meet the inclusion criteria and were included in the systematic map.

Table 3.1 shows the source of the studies. A total of 5,105 citations were identified, the majority from BEI, AEI and ERIC (N=4,811). 4,710 citations remained for screening after 395 duplicated citations were excluded

Table 3.1 Search results

Citations obtained from:	Number
BEI, AEI, ERIC (Dialogue interface)	4,811
ASSIA	33
SSCI	249
Other databases	–
Handsearching	12
Total citations	5,105
Less duplicates	395
Citations remaining	4,710

Figure 3.1 Filtering of papers from searching to map

STAGE 1
*Identification of
potential studies*

**One-stage
screening**
papers identified
in ways that allow
immediate screening,
e.g. handsearching

**Two-stage
screening**
Papers identified where
there is not immediate
screening, e.g.
electronic searching

5,093 citations identified

**Title and abstract
screening**

4,783 Citations excluded
(including 395 duplicates)

12 citations
identified

310 citations

322 citations
identified in total

STAGE 2
*Application
of exclusion
criteria*

**Acquisition of
reports**

98 reports not obtained

224 reports
obtained

Reports excluded

Criterion 1	0
Criterion 2	1
Criterion 3	50
Criterion 4	148
Criterion 5	1
Total	*200*

**Full-document
screening**

24 studies in 24 reports
included

STAGE 3
Characterisation

Systematic map
of 24 studies

3.2 Characteristics of the 145 included studies (systematic map)

The following section focuses on the characteristics of the 24 studies identified as meeting the inclusion criteria of the review. These studies have been mapped using keywords which provide an overview of the research as described in Chapter 2 (section 2.2.4). In some cases, the totals do not equal 24 as some of the keyword categories are not mutually exclusive.

Table 3.2 shows the source of the 24 studies included in the systematic map after full-text screening. The most productive database was BEI, with half the studies found on this database (N=12). 21 studies were found on electronic databases and three studies were identified through handsearching (Table 3.3).

All studies were published and there are no linked studies (the same study reported in more than one papers) included in the map. Table 3.4 shows that the reviews included in the map came from a number of countries. Most of studies were conducted in the UK (N=13). Of these, eight studies were from England. Five studies were carried out in the USA and Canada, three from other European countries, and three from Australia. As the majority of the studies were carried out in the UK, any conclusions about teacher training in other countries have to be drawn with caution.

Due to the review question, all the studies focused on teacher careers (N=24), and teaching and learning (N=24). Similarly, because the review was concerned with teacher training, it did not relate to curriculum issues, although there were studies in the review which were concerned with teaching specific subjects.

Two studies in the review focused on particular programmes. Goulding (2002) reported on Subject Knowledge in Mathematics Group (SKIMA), a collaboration between researchers in the Universities of Cambridge, Durham, York, and the Insititute of Education, University of London. The other programme, Hyfforddi Athrawon Teacher Training Project (HATT), was reported by Tanner and Jones (2000). The HATT project aims to promote the use of ICT to improve teaching on the PGCE programme.

All the studies in the review were concerned with student or trainee teachers as learners and teaching staff. The age group of the learners in the studies is likely to be 21 years or older (Table 3.5), although some undergraduate students may be younger than 21.

Table 3.6 shows the sex of the learners in the studies. Most studies (N=15) focus on learners of both sexes, with only three studies focused either on female or male learners. All studies took place within higher education institutions (N=24).

As the review question aimed to explore how providers of initial teacher training might provide flexible and responsive training, the majority of the studies (N=12) were descriptive (Table 3.7). Eight studies were evaluations of naturally occurring interventions. One study (Miller and Fraser, 1998) was keyworded as both an exploration of relationships and an evaluation of a naturally occurring intervention. Only one study was coded as non-randomised, researcher-manipulated intervention (Bain et al., 2002).

Table 3.8 shows the form of initial teacher training focused on in the studies. More than half the reviews in the study (N=15, 62.5%) focused on postgraduate teacher training (e.g. the PGCE). Table 3.9 shows that almost all the studies in the review (N=21, 87.5%) focused on student or trainee teachers but some were also concerned with school mentors (N=7) and HEI tutors (N=2).

Table 3.10 shows that 12 studies in the review were concerned with teaching at secondary school level and six studies with primary school level.

Three-quarters of the studies (N=18) in the review did not focus on teaching a particular part of the curriculum. The studies that are known to focus on particular subjects were concerned with the core subjects of English (N=1) and Mathematics (N=4), and English and Mathematics (N=1).

Mentoring (N=9) and school experience (N=15) were the aspects of teacher training which featured most often in the studies (Table 3.11). The other aspects included student support, mentor/mentee relationships, recruitment and retention, student learning styles, and assessment of training needs.

Table 3.12 shows that, in these studies, mentoring was the most frequently used tool for making training flexible and responsive to individual trainees' needs.

3.3 Further details of studies included in the systematic map

The following abstracts of the studies included in the systematic map. These studies are most relevant to the question of this review. Readers should note that these studies did *not* meet the inclusion criteria for in-depth review and therefore the studies have not been critically appraised or quality assessed.

Bain JD, Mills C, Ballantyne R, Packer J (2002) Developing reflection on practice through journal writing: impacts of variations in the focus and level of feedback

This study examines the influence of the focus of journal feedback on reflective writing and thinking, to identify strategies for assisting students who have difficulty reaching the higher levels of reflection. 'Although journal writing has become a

Table 3.2
Source of studies included
in map

Source of study	Number
BEI	12
AEI	3
SSCI	3
ERIC	2
ASSIA	1
Handsearching	3
Total	*24*

Table 3.3
Identification of studies

Source of study	Number
Electronic database	21
Handsearching	3
Total	*24*

Table 3.4
Countries in which the
studies were carried out

Country	Number
England	8
USA	4
Australia	3
Wales	2
UK	2
Netherlands	2
Canada	1
Luxembourg, Germany, Austria	1
Scotland	1
Total	*24*

Table 3.5
Age of learners

Age of the learners	Number
21 and over	23
Unclear	1
Total	*24*

Table 3.6
Sex of learners

Sex of the learners in the studies	Number
Female only	2
Male only	1
Mixed sex	15
Unclear or not stated	6
Total	*24*

Table 3.7
Type(s) of study
described in the reports
(N = 24, not mutually exclusive)

Type	Number
Description	12
Exploration	3
Naturally occurring	8
Researcher manipulated	1

Table 3.8
The type of initial
teacher training

Type of initial teacher training	Number
Undergraduate	5
Postgraduate	15
Not specified	4
Total	*24*

Table 3.9
The population focus
of the studies
(N = 24, not mutually exclusive)

Population focus of the studies	Number
Student/trainee teachers	21
School mentors	7
HEI tutors	2
Other	2

Table 3.10
Age group of studies related
to the ITT programme
(N = 24, not mutually exclusive)

Age group of study	Number
Primary	6
Secondary	12
Sixth form/post-compulsory	1
Other	6
Unknown	3
Total	*28*

Table 3.11
Aspects of initial
teacher training
(N = 24, not mutually exclusive)

Focuses	Number
Feedback	5
HEI-based training	5
Knowledge audit	1
Learner style	3
Mentoring	9
Needs assessment	4
Portfolio/evidence	2
School experience	15
Target setting	2
Training plan	3
Tutor role	3
Other	10

Table 3.12
Training methods and tools used to promote flexibility

Method/Tool	Number
Differentiation	1
Feedback	4
Flexible route	4
Individual action plan	2
Individual training plan	1
Journal/log	2
Mentoring	10
Open and distance learning (ODL)	3
One-to-one tutoring	2
Online resources	3
Portfolio	1
Reflection on practice	3
Self-assessment	1
Subject knowledge development	3
Taking account of prior experience	1
Target setting	2
Virtual learning environment (VLE)	2
Other	4

common technique for encouraging reflection on action during pre-service professional education in teaching, nursing and other disciplines, little is known about the processes and principles that need to be applied if the student journal is to become a tool for learning rather than a simple record of events' (p 171). Student teachers on their second teaching practicum were assigned to four groups depending on pre-practicum questionnaire results, sex and university. Each of the groups was given a different type of feedback on their journals, focusing on the process of reflection demonstrated in the writing or on the teaching issues the entry addressed and differing in the level of challenge within the feedback (providing a low or high level of challenge).

The authors found that focusing tutor feedback on reflective writing, as opposed to issues related to teaching, was generally favourable, but focusing on teaching issues was helpful when it challenged students' presumptions and preferences. Feedback focusing on the reflective writing process – giving guidelines and a suggested framework for moving into higher levels of cognitive activity – is more effective and more easily generalised than feedback focusing on the teaching issues raised by students. Bain et al. argue that the benefits achieved through a focus on the level of reflective writing are not just 'surface' changes to the structure or writing style, but represent real changes in the way students view the relationship between reflective writing and reflective thinking. The students in the study who achieved the highest levels of reflective writing reported that their ideas developed as they wrote; they were not just

recording ideas already developed. It is argued that feedback focusing on the writing process is most effective in encouraging students to move from descriptive to reflective writing, but the provision of 'high challenge' feedback relating to the teaching issue (posing questions, challenging assumptions, suggesting alternative perspectives) also stimulates students' reflective writing. Students receiving 'low challenge' feedback on teaching issues – providing practical advice and teaching suggestions alone – were thought to be at a considerable disadvantage in reflective journal writing. The provision of detailed instructions, examples and self-analysis proformas may be sufficient to enable some students to reflect at a deeper level than they would otherwise have done.

Brookes W (2003) GTP training: is adequate good enough?

Brookes' study follows on from work by Ofsted in 2001 (HMI, 2001) which found that many GTP trainees did not achieve the level of performance of which they were capable, and that the underlying reason for this was the quality of mentoring provided in schools. It was concluded that some school-based trainers are often not adequately prepared for their role in implementing wide-ranging training programmes for trainee teachers.

Brookes asked mentors about the training provision in their school (particularly relating to the assessment of trainees' development needs and final assessment), the extent to which they consider GTP mentoring to be different from that

for the PGCE or the induction year, and their own training needs as mentors. He concludes that higher education is coming to accept the GTP, both for practical reasons and because there is a 'gradual convergence of the two traditions' (p 16) but that there are still issues of adequacy, particularly in terms of consistency, quality assurance and mentoring. Brookes argues that more work needs to be done in training mentors, particularly in developing individual training plans and reviewing trainees' progress against them.

Butcher J (2000) Subject culture, pedagogy and policy on an open learning PGCE: can the gap be bridged between what students need, and what mentors provide?

This study looks at PGCE students preparing to teach the post-16 English curriculum. It focuses on the tension between student teacher needs and mentoring strategies in open and distance learning (ODL) ITT, based on the premise that ODL student teachers are more reliant on support from mentors than students on a conventional ITT course. In relation to this particular course, the authors suggest that the use of ICT, particularly First Class conferencing systems, empowers students, enabling them access to electronical support from tutors, subject and student conferences. As mentors are based in partner schools, they can be disenfranchised from ICT support. The study also considers the requirement for secondary teachers to be able to demonstrate competence to teach across the 11-18 age range, but with limited opportunities for student teachers to work with post-16s, with different policy and pedagogic demands. 'The focus of the study was on the quality of the mentor/mentee interaction in the context of post-16 teaching, drawing on the author's previous research with mentors on a distance-learning PGCE, which highlighted the importance of a paradigm of challenge as a mentor strategy' (p 3).

The author suggests that secondary teacher education in England seems to pay too little attention to the demands of post-16 teaching. It underplays the specific post-16 pedagogic skills that require active mentor support. The most effective mentors were those who helped bridge the students' gap between the Year 11(GCSE)/Year 12 (A level) divide by helping them to differentiate their subject knowledge. The research highlighted two main issues: 1. Post-16 teaching carries high status in English schools but presented a 'culture shock' to student teachers, who had raised expectations about 'quasi-undergraduate pedagogies' (p 5). 2. Tensions are created between mentors and student teachers as mentors are constrained by a centrally imposed Standards framework, but this does not adequately represent post-16 teaching.

Devereux J (2001) Ethnic minority students in initial teacher training: issues in support

This study looks at the recruitment of PGCE students from ethnic minorities on to the Open University (OU) one year-course and asks:

- Who are the OU's ethnic minority students and why have they chosen this course?

- How do these students fare in their training and in entry into employment?

- How do the experiences of these students compare with their expectations?

- How well are they supported and to what extent are their needs met?

The research was initiated in the context of ethnic minority recruitment to ITT becoming 'a prominent national issue' (p 1).

The author concludes that success on school placement can be linked to how well the student is seen to 'fit' into the school environment, how much they have in common with the staff, and how much they share their views on education and the classes they are teaching, as well as on wider issues. There is a wide variety of views and understanding of diversity within the term 'ethnic minority'. Students reported pressure on them to adjust their cultural 'personas' in order to match the culture of the school. The interviewees felt their ethnicity and the lack of understanding of their needs by different parties were not addressed appropriately, and that neither the school nor the ITT course always questioned underlying assumptions about racism, although there was a range of views and reports on how racial abuse was experienced in the schools.

Geen A (2001) Debriefing student teachers: improving current practice

This study examines the debriefing procedures employed by a sample of mentors in South-East Wales and reports the views of students upon their effectiveness. The study considered mentoring practice within the framework of the apprenticeship and reflective practitioner models and aimed to:

- identify the mentoring practices most commonly in operation in a sample of schools

- determine the frequency with which trainees received feedback and the techniques that were employed

- gauge the views of students on the extent to which the debriefing they received was helpful to their developing teaching skills and knowledge

- offer a set of recommendations for future policy on debriefing

The author finds that the students in the study

were critical of mentors' comments, which they reported to be unstructured and presented in a random way. They thought debriefing should be organised so that feedback was presented in a logical order, to enable trainees progressively to develop the understanding and skills they needed. Observation without understanding or explanation was not always useful. Some students had received feedback from different teachers of the same subject which was contradictory, and some had mentors who expected them to follow their example so rigidly that there was little scope for experimentation or originality. The interviews with mentors revealed that they thought discipline and teaching strategies were most important so these should dominate debriefing. This meant that other considerations were not always considered in any depth. Although nine of the Standards are concerned with planning, only 29% of mentors regularly examined and discussed students' lesson preparation files, and the planning undertaken by 16% of trainees was not assessed at any stage during the academic year 1999-2000. Students felt that feedback would be more meaningful, particularly early in their training, if mentors focused on a small number of Standards.

It was evident that many mentors missed opportunities to encourage reflection during debriefings. School staff drew attention to the constraints which limited their ability to use reflective practitioner models: mainly lack of time, but also the limitations imposed by the fact that mentors were usually subject heads or members of the senior management team and thus had to attend to other administrative duties.

Goulding M (2002) Primary teacher trainees' self assessment of their mathematical subject knowledge

This study focused on methods used to assess trainees' mathematical knowledge. Building on earlier work, the researchers devised a self-audit procedure for use with primary trainees, which was designed to assess students' response to the auditing process, to gauge their feelings about the process, and to see how they would assess their own strengths and weaknesses and identify strategies for improvement.

The study finds that, although the numerical coding had asked students to rate each item in terms of how secure their response had been, the written comments revealed a distinction between their feelings of confidence and their assessment of mathematical knowledge. 10% (27) of the sample felt confident in all or most areas, 11% (29) were not confident and 14% (37) were confident they could update 'rusty' areas. 40% felt their knowledge was rusty or out of date and 36% felt their knowledge was patchy. The 5% who felt they were weak or struggling included two students who said they were panicking. 43 students commented on the self-audit process. 4% (nine) said they had

given up or were unable to complete the audit, 5% expressed a negative response and 3% a positive one. 1% of students asked for help, without saying what help they needed, and 80 (29%) said they needed to refresh, revise or practice – 21 (7%) said they were doing this. Almost all the students had something positive to say. A few students commented on how they approached specific items and how they had learned in the past.

'Although only 16 (6%) made such comments, these revealed self-knowledge and reflection which could be helpful in their preparation for teaching' (p 7). The researchers were particularly concerned by weak students or students with negative feelings. Looking at the rating scores for the whole sample of 432 and looking across categories at the comments made by 274 students, the researchers argued that it was possible to identify students with low self-ratings and/or were identifying themselves as concerned through their comments.

Hedrick W B, McGee P, Mittag K (2000) Pre-service teacher learning through one-on-one tutoring: reporting perceptions through email

This study was an investigation of the perceptions of pre-service teachers (reading and mathematics tutors) who were given the opportunity to work with students on a one-to-one basis throughout a semester, on an elementary reading programme and a secondary mathematics programme. The authors were interested in the attitudes and beliefs of the pre-service teachers towards both students with content-area difficulties and their own tutoring experience.

Annis (1983) had found that tutors often learn as much or more than their students, and that were confirmed in this study. The researchers draw out several themes from the data: instructional growth, emotional attachment, why students fail, self-evaluation and using what is learned. A difference between the two groups of tutors was that the mathematics tutors had only their personal method of learning to learn from, whereas the reading tutors had taken and/or were taking reading methods courses. The tutors appeared to experience the non-academic factors, such as socioeconomic status and culture that can create dissonance and barriers between teaching and learning, and were able to understand and respond to these factors in a way that is not possible in a traditional course. One-to-one tutoring enabled the tutors to see their students as 'whole beings'.

The researchers found that the 'practical hands-on nature of their experiences' (p 59) reinforced and illustrated the usefulness of the theory they had learned, and the pre-service teachers grew in terms of practice and also in their ability to reflect on their experiences and teaching behaviours. The use of email for communication and reflection provided information for the tutor and

documented student concerns. Providing students with electronic and face-to-face support during field experiences facilitates discussion about the social and emotional development of tutees, and helps prospective teachers make more conscious connections among their other course work. 'The use of email as a more central axiomatic tool (McGee and Hedrick, 1997) might assist students in co-constructing knowledge' (p 61). There is evidence that students who may not participate in face-to-face sessions will do so in online communications (Harasim, 1993).

Herrington A, Herrington J, Omari A (2000) On-line support for pre-service mathematics teachers in schools

The study focuses on a needs analysis conducted with a focus group of students and the consequent development of a web-based resource designed to support pre-service mathematics teachers on school practice.

There are no results as such; the authors report the setting up of the website, with no analysis of its use. The authors' conclusions are present at the outset of the study: that a web-based resource can support pre-service teachers once they leave university and move to schools for professional practice. Difficulties mentioned by the student teachers include problems with mathematical understanding; disparity between how they are expected to teach and how they learned themselves; disparity between how they are expected to teach and how mathematics is taught in schools; and lack of resources, ideas for lessons plans and strategies for dealing with large classes. Suggestions given by the student teachers regarding support the university might provide include practical exemplars, resources for lesson ideas, support via telephone, web-based resources and easily accessible lesson support. The website has been developed but no research has been done on it yet.

Jones C, Maguire M (1998) Needed and wanted? The school experiences of some minority ethnic trainee teachers in the UK

The study considers the 'school experiences of a small group of black and other minority ethnic student teachers in the UK at key points during their postgraduate initial teacher education (secondary) course' (p 79) within the context of the need to increase the number of teachers from ethnic minority backgrounds and the shift towards more school-based training.

The authors find that 'Many of the minority ethnic respondents said that they met with some initial disquiet, that they constantly had to 'prove' their ability in the classroom and felt they were being treated in an over-judgemental manner, in contrast to their white trainee colleagues' (p 89). 'All the students interviewed argued that minority ethnic

student teachers need support because of their greater susceptibility to being misunderstood' (p 88). Some said that they should be warned of the difficulties they might meet in schools before the placements started. They felt that school placements should consider issues of 'identity' in matching school and students: 'black students in all-white schools had a greater tendency to fail because stereotyping and racist attitudes could depress their work and/or cloud perceptions of their teaching performance' (p 89). As well as the difficulties that they encountered themselves, some of the students also felt that schools and teaching staff did not make sufficient use of their particular skills and experience (e.g. their language skills or ability to relate to minority ethnic pupils).

Kosnik C, Beck C (2000) The action research process as a means of helping student teachers understand and fulfill the complex role of the teacher

The study reports on the effects of participation in action research on the understanding, skills and behaviour of student teachers, and describes the reasons why action research has been included in the teacher training programme. The authors analyse their results under nine headings:

- developing and modifying curriculum and pedagogy

- being a teacher-researcher, teacher-scholar

- observing students closely

- caring for the whole child

- being a positive role model

- empowering students

- modelling and fostering collaboration and co-operative learning

- student assessment and reporting

- continued professional development

The authors report that, through being involved in action research, the students became enthusiastic about their role as teacher-researchers and came to see their role as involving reflection on and improvement of practice. Action research enabled the students to see that enabling learning involves going beyond curricula concerns and taking account of a whole range of student needs. By moving beyond curriculum delivery to interactive involvement with the children, the student teachers came to see that they affect the students on many different levels. The students ceased to view the role of teacher as one of transmitting curriculum in a preset way and saw the need to meet the needs of students in their class and to adapt pedagogy to students' needs

and their own teaching style. Action research helped the student teachers to see school learning as an open-ended process and that their own professional development should be ongoing. They acquired many of the skills and habits – reading and applying research literature, observing students, collaborating with colleagues and participating professionally – that would ensure their continued growth as students.

Lawson T, Harrison JK (1999) Individual action planning in initial teacher training: empowerment or discipline?

This study was set up to 'establish whether the student teachers felt that the Individual Action Planning (IAP) process was one which gave them personal control or one which controlled them' (p 97).

The authors conclude that the main perception of IAPs by the student teachers has more to do with empowerment than discipline, but that neither concept fully encompasses those responses. Students express their experiences with IAPs as being about control rather than being controlled. However, they also 'saw their 'pedagogic identity' as much more than the dossier of standards built up through IAP' (p 102). Most student teachers felt that targets were set both by themselves and their tutor. Student teachers agreed that wider targets were being set, and 'there was not just a focus on standards' (p 100). There was a less common reaction that action planning played a role in controlling the actions of student teachers. There were varied reactions to the role IAP might play in the reflective process, with some student teachers thinking that it had enhanced their critical thinking and others rejecting any link between the two. Most student teachers felt that IAP was positive in terms of personal effectiveness. Student teachers did not report a link between IAP and community aspects of empowerment. Most student teachers did not feel that they were being watched or scrutinised in the process.

Lawson T, Harrison J, Cavendish S (2004) Individual action planning: a case of self-surveillance?

The study explores the Foucauldian concept of self-surveillance in the context of the use of IAP as a central process of a teacher training course. The authors focus on the success of the IAP process in getting student teachers to adopt the government-defined Standards as their own over the year of the PGCE course.

The researchers found a shift towards an acceptance of the legitimacy of the Standards in the group who undertook IAP. Self-surveillance (acceptance of the Standards as legitimate goals) is one of the outcomes of the process, but Foucauldian 'resistances' are present among some students. Through the use of IAPs, there was some

evidence that student-teachers were internalising 'good teaching' as defined by national Standards. There were no significant differences in responses according to students' specialist subjects or between male and female respondents.

Mayotte GA (2003) Stepping stones to success: previously developed career competencies and their benefits to career switchers transitioning to teaching

Mayotte looked at the influence of a previous career on classroom practice, by considering second career teachers' recognition of competencies and attitudes developed within their previous careers, and their transfer to teaching.

The author finds that participants felt that skills from their previous careers transferred to teaching, that their knowledge was enriched by work in another context and their previous careers influenced their teaching philosophy. These capacities include the knowing-why, knowing-how and knowing-whom competencies. Participants noted the need for support (especially mid-career professionals), and felt that previous career success did not guarantee success as a teacher. Second career student teachers need support to take advantage of the connections between their first careers and teaching, and to build on their prior knowledge and experience. Issues for second career student teachers vary depending on their ages, past experience and family circumstances. Age was seen to be both an advantage and disadvantage; it meant that the student teachers were given respect, but also that others forgot that they were students and thus inexperienced.

Metcalf KK, Kahlich PA (1998) Non-traditional pre-service teacher development: the value of clinical experience

This is an examination of the professional growth and development of 18 non-traditional pre-service teachers as they progressed through a 12-month teacher certification programme. The authors find that the thoughts and reflections of the pre-service teachers over the 12 months suggests a 'clearly identifiable and highly consistent pattern of development' (p 73). The developmental changes were mainly associated with the themes of developing an understanding of good teaching, and growth and awareness of one's self-concept as a teacher. The subjects of the study also saw their experiences, particularly their intensive on-campus activities, as having contributed significantly to their development.

However, the authors find that the development of these teachers differed from that of their traditional counterparts in at least two ways. First, the middle stage(s) suggested in earlier studies, in which the teachers' primary focus is on the perceptions of their superiors, was not evident. The second main difference is in the relative

speed with which these teachers moved from the initial stage to a focus on their learners. The particular characteristics of these mature entrants to teaching meant that they pushed themselves and their tutors to focus on the fundamentals of teaching, avoiding what they perceived to be only theory or impractical information.

A striking difference between these teachers and traditional undergraduate students is their openness to learning how to be a teacher. Undergraduate pre-service teachers often enter teacher education with a firm belief in their existing ability to teach. For them, teacher education is usually seen as a series of hoops through which they have to jump, rather than as a useful and important part of learning to teach (Fuller, 1969). In contrast, the mature entrants to teaching in this study were 'hopeful but not always confident' that they would be good teachers.

Miller D, Fraser E (1998) A dangerous age? Age-related differences in students' attitudes towards their teacher training course

This research investigated the views of mature student teachers towards their teacher-training course, looking for evidence of sub-groups within the student body, using categories of direct and non-direct entrants (the latter analysed through biographical data provided in questionnaires).

The authors report differences between the attitudes and concerns of older and younger students, with older students being consistently more negative regarding the difficulty of keeping up with the demands of the course and family commitments, criticisms of aspects of teaching and learning, and issues regarding self-image and self-esteem. The authors found that particular vulnerability to difficulty was experienced by 31-35 year-old students, although the authors say it is not clear whether 'these students are more negative because of home and family pressures, or whether there is a more complex interplay of different factors at work' (p 49). The study points to age-related differences in attitude. 'It may be helpful to consider the findings presented here in the light of work carried out by Powell (1992) in which he drew attention to the way in which non traditional students' previous experiences and existing knowledge differed from that of traditional students, and how these factors influenced their pedagogical constructs' (p 50).

Moyles J, Cavendish S (2001) Male students in primary ITT: a failure to thrive, strive or survive?

Considering why a significantly higher proportion of male students than female students withdraw from, or fail to complete, their initial teacher training successfully, especially at undergraduate level, the overall aim of this research was:

- to determine an overall picture of the recruitment, retention and success rates of male primary trainees in comparison with females since the 1997/98 cohort

- to establish institutional based views on likely reasons for retention and success rates among male students

- to identify obstacles to successful completion and retention among male trainees

- to identify 'good practice' recommendations to ITT providers and disseminate Phase 1 information

The research was planned to be conducted in three stages, with this Phase 1 research undertaken during 2000. The Review Group has been unable to find any reports of, or reference to, further stages of the research.

The authors report that the recruitment and retention of male students is still problematic. The researchers found that data from institutions was often unreliable or incomplete, and some institutions did not see male recruitment and retention as a priority issue. There are also issues of legality, with concerns over what constitutes 'equality' in ITT courses, and course leaders thinking that they could be breaking the law by employing positive discrimination practices.

It was found to be difficult for course leaders to identify factors which were specifically 'male', but it was thought overall that male students seem less likely to seek help (so difficulties often emerge through assessment) and have unrealistic expectations of the demands of ITT courses. School experience periods create the most problems, related to 'mothering' by female staff, feminine cultures of staff rooms and even sexual harassment. Male characteristics were seen to be poor attendance and punctuality. The authors conclude that male student teachers tend to be either very good or very bad at their work, to lack attention to planning and detail, and to be arrogant and over-confident - traits which influence how they are regarded by others in educational settings.

Oosterheert IE, Vermunt JD (2001) Individual differences in learning to teach: relating cognition, regulation and affect

The aim of the study was to describe how student teachers differ in the process of becoming a teacher and to chart how several components of learning are related within individual learners. The study had three research questions:

1. How do student teachers differ with respect to certain learning components (mental models of learning to teach, ideal self as a teacher, cognitive processing activities, regulation,

emotion regulation, concerns)?

2. Is it possible to come to a categorisation with respect to these differences?

3. Can these potentially related categories be considered indicative of particular orientations to learning to teach?

There are, according the authors, 'differences in the way students teachers learn' (p 152). In most cases, their mental models are strongly correlated to their approaches to learning, and neither the students nor their learning environments challenge their existing frames of reference or learning habits.

The authors claimed that there are differences in the way students learn but, for most of them, there is coherence in their learning: mental models are strongly associated with their approaches to learning. They tend to carry out activities they think are important, but – a finding contrary to results among learners in other settings (Slaats et al., 1999; Vermunt, 1996) not all students think it is important to carry out all activities. These students rank knowledge construction activities as being of minor importance. Student teachers have varied attitudes towards the range of learning activities present in their training; many of the student teachers are not directed at changing and developing their existing frame of reference, and the learning environment does not challenge their learning habits.

Student teachers are categorised as having different orientations to learning to teach:

A – survival

B – closed reproduction

C – open reproduction

D – closed meaning

E – open meaning

The study found there is little movement between orientations during the training programme. The authors conclude that most student teachers in the study are not directed to knowledge construction beyond their existing frame of reference.

Oosterheert IE, Vermunt JD, Denessen E (2002) Assessing orientations to learning to teach

The authors investigated in-service student teachers' orientations to learning to teach and how they learn. The aim was to extend the results of the previous study by developing an instrument to assess orientations to learning to teach on a larger scale, to determine whether different patterns of learning can be distinguished and to determine to what extent these resemble the patterns found in the first study. The results, for the most part,

supported those of the earlier study.

It was found that student teachers in the study have three basic concerns – maintenance of discipline in the classroom; teaching methods, materials and approaches (pedagogy), and pupils' thinking and learning – although they differ in terms of their main concern.

The study resulted in the identification of eight scales measuring individual differences in learning to teach: one scale measures a mental model, five scales measure how student teachers use information sources, and two scales measure how students deal with the emotions which follow a bad teaching experience. The authors conclude that the mental model suggests that personal experience is not only a testing ground but also a source for the generation of new questions, which can only come from practice evoking questions such as 'Why?' and 'How does this work?' According to the model, the study argues, the learner-practice interaction is too limited and others must help the student teacher by pointing out blind spots and suggesting alternative interpretations. The scales relating to information sources show how non-deliberate processing plays a role in knowledge growth.

Tanner H, Jones S (2000) Using ICT to support interactive teaching and learning on a secondary Mathematics PGCE course

The study focused on changes in the learning discourse within PGCE mathematics following the introduction of an open and distance learning format. This study is part of a wider collaborative project (HATT 2000) between the constituent colleges of the University of Wales which set out to promote the use of ICT to improve the teaching of mathematics, modern foreign languages, and educational and professional studies on the PGCE programme, and to widen access to teacher training in Wales.

The ODL course, which had been developed, improved access to the mathematics PGCE course and was said to meet the authors' seven underpinning pedagogic principles which underpinned the face-to-face course (p 3):

1. Professional education must be interactive, rather than passive.

2. Although students must construct their own professional knowledge, they should not do so in isolation. They require opportunities to articulate their own emerging theories and generalisations, to formalise their ideas and to test them in the public domain (Von Glaserfeld, 1991).

3. Group discussion which is based on the articulation of emergent hypotheses and generalisations for trial by peers is required to develop both professional judgement and more robust professional knowledge.

4. Tutors should intervene significantly in such discussions to ensure that the debate is based on research and existing professional knowledge rather than unsubstantiated assertion.

5. Such discussions assist in the development of corporate meaning within the group and a sense of professional knowledge against which emergent ideas can be internally judged prior to articulation (Von Glaserfeld, 1991).

6. Tutors need to organise and negotiate the progress of such professional discussions, feeding in appropriate stimuli and resources, driving the debate forwards to cover a planned curriculum. The tutor should not be a neutral chair between a varied range of largely inexperienced opinions, but a key player in an interactive teaching and learning process (Tanner and Jones, 2000).

7. In order to ensure that metacognitive professional knowledge is available for use and application in classroom problem-solving contexts, opportunities for reflection should be available. Collective reflection in plenaries in which students are formally required to summarise key issues and ideas assist students to reify or formalise knowledge through reflected abstraction. Several studies have shown the benefit of such activities for the development of metacognition in mathematics (e.g. Tanner and Jones 1994, 1995, 2000).

The use of web-based materials and email was thought by the authors to have improved the quality of the course, although some aspects of the course could not be reproduced online (e.g. the tutor/seminar group interaction). For this reason, students are required to attend some face-to-face sessions in college. The use of a range of teaching materials means that different learning styles can be catered for. Students making use of the online materials arrive at seminars better prepared and seminars operate at a higher level. Posting summaries of seminars on the web was helpful to students. There were found to be benefits to students from learning and communicating online - such as more considered responses in discussions - and it is possible that making use of a variety of approaches (both on and offline) will allow a wider range of learning styles to be catered for.

Trotman J, Kerr T (2001) Making the personal professional: pre-service teacher education and personal histories

The study focuses on the restructuring of one unit of the Graduate Diploma to allow for the integration of personal life histories with other views and perspectives, in order to facilitate the student teachers' ability to deal with diversity and individuality, and to encourage the growth of 'reflective practitioners'.

As well as analysing the journals, the researchers asked students for their reactions to keeping the journal. A minority of students - usually male and mathematics or science graduates - expressed anger at the task and claimed the assignment unfairly advantaged those with a talent for writing. Apart from this, there was 'overwhelming enthusiasm' and many saw it as the most worthwhile thing they had done while at university. In the first stage of analysis, it was concluded that most students were able to recall aspects of their schooling and link them (with varying degrees of complexity) to the theoretical content of the unit. Evidence was reported to indicate that self-perceived marginality (whether gender, class, ethnicity or a mixture) seemed to contribute to more sociologically insightful reflection. Analysis of their journals suggested an unwillingness to reflect, not an inability to write, perhaps suggesting an anxiety about deconstructing identity based on masculinity and elite disciplines.

The authors conclude that the life-history approach is a 'fruitful means of generating professional growth' (p 168) and also lends itself to the creation and enhancement of culturally sensitive learning and teaching strategies for adults. The journals were seen to be a worthwhile and productive contribution to perspective transformation. Most students were able to place their lives within 'the wider frame afforded by theory' and many were able to reflect critically on their taken-for-granted assumptions.

The authors say that they had under-utilised discussion in the link between journal writing and perspective transformation. They argue that critical thinking does not necessarily lead to critically informed pedagogy: knowledge and insight do not necessarily lead to action (Sikes and Troyna, 1991).

Wile JM (1999) Professional Portfolios: The talk of the student teaching experience

Portfolios are usually regarded as products. This study sets out to explore the ways in which the production of professional portfolios might be used as a process and contribute to dialogue between student teachers and mentors.

Overall, some of the student teachers are reported to have found the portfolios useful, while others did not. 86% of student teachers and 100% of mentors in the study thought the portfolio was useful in the introduction phase. 'Students felt the appearance of professional-looking portfolios, with an array of impressive artifacts, gave them self-confidence as they were introduced to their mentors' (p 222).

Some students and mentors thought the portfolio enhanced their teaching experience while others thought it was time consuming or redundant to the process and relationship that occurs during classroom practice. Comments suggest that the discussion that occurred did focus on specific standards of professional development. The more

frequently the portfolio was used, the more likely it was to generate focused talk between the student teachers and their mentors. 60% of student teachers and 72% of mentors thought the portfolio was useful during goal setting.

The study found that mentors seemed to have difficulty separating mentoring and monitoring. It was reported that mentors generally focused on the product aspect of the portfolio, using it as a monitoring or assessment tool, and not realising its potential as a teaching or mentoring tool for setting goals and planning experiences. The author concludes that, although mentors thought the portfolio could be a great asset, none of them saw its production as a joint responsibility.

Williams EA (1998) Mentors' use of dialogue within a secondary initial teacher education partnership

The study analyses conversations between mentors and students on school placement to consider the different mentor roles and the match between student needs and what is offered by the mentor. The study considers whether an extension of the mentor role and the capacity to vary the style of interaction could help to maximise the potential for student learning.

The study found evidence of a range of mentor roles, categorised as teaching, supporting and assessing. The findings suggest that particular mentoring roles are significant for student progress, although it is not clear whether some roles are more significant than others or whether this depends upon the student. It is suggested that the continued development of more able students might require the mentor to offer a wide range of learning opportunities or to take a lead in setting or negotiating targets. Mentor functions could be categorised (Franke and Dahlgren, 1996) as

- a creative dialogue and co-operative partners

- getting the student teacher to take into consideration the pupils' perspectives in his/her teaching

- a model

- a master who corrects

- a supportive assistant teacher

Franke and Dahlgren suggest that the first two of these indicate a reflective perspective on professional knowledge while the others are based on a taken-for-granted perspective in which professional knowledge is transferred from mentor to student. The authors' use of discourse analysis suggests that any of the categories and any of the functions could be underpinned by a reflective or a taken-for-granted approach, and that the latter is more prevalent. The use of elicitive exchanges, particularly with open questions, enables the

mentor to fulfil any role with a reflective approach, thus to encourage reflection among students the forms of exchange and speech used by the mentor may be as important as their perception and discharge of different mentor roles.

Wolf N (2003) Learning to teach mathematics for understanding in the company of mentors

The research seeks to describe a student teacher's learning and the learning opportunities that changed her thinking and practice, specifically her involvement with her mentors. 'A close-up look at one person's learning can help us gain insights into the possible connections between different learning opportunities and their contributions to a novice's learning, a missing focus in research on teacher learning (Zeichner 1980, Johnston 1994, Feiman-Nemser and Remillard 1995, Ball 2000)' (p 89).

It was concluded that what the subject learned corresponded to the major categories of learning that the National Council of Teachers of Mathematics' Standards argue teachers need in order to teach mathematics: she was reported to have improved her mathematical knowledge, learned about pupils and how they think, and became more reflective about her own learning. Her awareness about her learning increased. Co-planning conversations, instructional interactions with individual pupils followed by explanatory conversations and observations of skilful mathematics teaching and conversations around these observations were thought to have been particularly influential in the learning. It was concluded that co-planning conversations can help experienced teachers diagnose novices' needs.

3.4 Identifying and describing studies: quality-assurance results

The search terms which were used for searching the electronic databases were agreed by the Review Group, with the specialist advice of the librarian and EPPI-Centre staff. Application of the inclusion and exclusion criteria to titles and abstracts was carried out by members of the Review Group working independently, with a second team member checking the decision on approximately one-third of the studies. A sample of studies was also considered by the EPPI-Centre staff member. The full reports were considered by two members of the team, again with a sample of studies considered by the EPPI-Centre staff member. Before the keywording began, the Review Group undertook 'practice keywording' and discussed the results to ensure a common understanding and consistent approach. Keywording was done by two members of the Review Group – all the reports were keyworded by the research fellow and by another member of the team, again to ensure a consistent approach.

3.5 In-depth review

The descriptive map indicated that there were no studies which specifically considered the operation or provision of flexible and responsive ITT as a general issue. The research that was found focused largely on small-scale interventions, and did not consider the question of effectiveness. The wide range of interventions and themes under consideration in the research mean that the retrieved studies, while falling within the scope of the review, did not represent a coherent body of research suited to answering the original review question, so no in-depth data- extraction and synthesis was carried out. Importantly, this also means that none of the studies was subject to quality appraisal.

CHAPTER FOUR
Findings and implications

4.1 Summary of findings

4.1.1 Identification of studies

Searches identified 5,105 citations, which reduced to 322 citations with the application of the inclusion and exclusion criteria to the titles and abstracts, and further reduced to 24 studies after applying the inclusion and exclusion criteria to the full reports. These 24 studies were keyworded and mapped.

4.1.2 Mapping of included studies

Although none of the studies answered the 'how to' of individualising training, 24 studies were identified as having a contribution to make to the review.

13 of the 24 studies included in the map were from the UK, including eight from England, two from Wales and one from Scotland. Five studies were from North America, three from Australia and three from Europe (excluding the UK).

Using EPPI-Centre keywords, 12 studies were coded as description, eight as naturally occurring evaluations and three as explorations of relationships. Only one study was coded as an evaluation of a researcher-manipulated intervention.

Using the review-specific keywords, more than half the studies were coded as focusing on postgraduate teacher training (N=15), while five focused on undergraduate teacher training. In four studies, the focus was not specified. The focus of 21 of the studies was student or trainee teachers, but studies also focused on school mentors (N=7) and tutors from HEIs (N=2). Half the studies focused on teacher training for secondary school, six on primary education and one on sixth- form / post-compulsory education.

The aspects of teacher training which featured most often in the studies were school experience (N=15) and mentoring (N=9). The foci of other studies were feedback (N=5), HEI-based training (N=5) and needs assessment (N=4), with other foci featured in a smaller number of studies including training plans (N=3), portfolio/evidence (N=2) and knowledge audit (N=1).

Mentoring was the most frequently used tool for making training flexible and responsive to individual trainees' needs (N=10), but other methods included feedback (N=4), flexible routes into teaching (N=4) and individual action plans (N=2).

4.2 Strengths and limitations of this systematic review

A particular strength of this review is that it has been undertaken by a team of experienced practitioners using the procedures of the EPPI-Centre for systematic literature reviews.

A potential limitation of the review is the decisions that were taken about the parameters of the review itself. The decision to limit the review to studies published in English may mean that relevant material written in other languages has been excluded. Despite undertaking the electronic and handsearches and the application of the inclusion and exclusion criteria systematically, there is no independent evaluation of the inclusion of all relevant material. There were also 98 potentially relevant reports which could not be obtained.

An obvious limitation of the review is that the Review Group found no studies which specifically answered the review question (How can providers of initial teacher training most effectively provide flexible and responsive training for trainee teachers?). However, we were able to find studies which highlight work which is already being done in

teacher training programmes, and areas for further research.

A further limitation of the review is that the studies in the map have not been subject to quality appraisal and thus findings must be regarded as speculative. Caution needs to be exercised when generalising from the studies in the map. Most of the studies are small scale and some (for example, Devereux 2001) are specific to a particular course or institution. Almost all the reports were written by ITT tutors researching their own programmes or students, and few of the studies sought students' views. Although the earliest of the reports was written in 1998, some of the research predates this and, particularly for the reports which relate to the use of ICT, time has moved on and problems or difficulties experienced then may not apply in 2005. Changes have also been made to the GTP recently.

As stated earlier in the report, the searches we conducted failed to find any research that explicitly considers how ITT can be made responsive to the individual needs and experience of trainee teachers. The 24 studies included in the map all discuss issues and programmes relevant to the flexible provision of ITT, but do not look at the question from a wider perspective.

Perhaps an obvious explanation – and one anticipated from the outset – is that, in England, this is a new venture in terms of teacher training and has not yet been fully researched. This does not, however, explain why we have not found any research from elsewhere – for example, from the USA, a particularly culturally-diverse society and one in which ITT for so-called traditional and non-traditional student teachers has existed for some time. Our suspicion is that teacher trainers differentiate their ITT provision to meet the specific needs and circumstances of individual trainees almost unconsciously, perhaps without really recognising that this is what they are doing, or without seeing a need to research or write up what they do.

There is also a tension about providing flexible and responsive ITT build around reflective practice and students taking responsibility for their own learning, but within the constraints of an ITT curriculum where achievement is governed by the attainment of defined standards and competencies. As Lawson and Harrison (1999) suggest, trainees can vary their route but they cannot alter the direction of travel.

Although none of the studies included in the map fully answers the 'how to' question, they do provide examples of techniques that could be useful in designing flexible and responsive ITT, and also highlight groups of students who might have specific needs. The Review Group would not wish it to be assumed, however, that only students in these groups need flexible and responsive training, or that members of the groups referred to are seen as homogeneous and having the same needs.

4.3 Implications for research

The descriptive map indicated that there were no studies which specifically considered the operation or provision of flexible and responsive ITT as a general issue. The research that was found focused largely on small-scale interventions and did not consider the question of effectiveness. The wide range of interventions and themes under consideration in the research mean that the retrieved studies, while falling within the scope of the review, do not represent a coherent body of research suited to answering the original review question, so no in-depth data-extraction and synthesis was carried out. Importantly, this also means that none of the studies was subject to quality appraisal. The 'findings' outlined below therefore, represent a summary of the main findings propounded by the authors of the various studies, rather than the recommendations of the Review Group.

The principal finding of the *review* was that there is a dearth of research on this topic (further considered below).

The principal findings of the *studies* included in the review (subject to the caveats above) can be summarised as follows:

1. It may be that male primary trainees (Moyles and Cavendish, 2001), minority ethnic student teachers (Devereux, 2001; Jones and Maguire, 1998) and older 'career switchers' (Mayotte, 2003) have particular training and support needs which need to be identified and met. They may also bring to teaching particular skills and experience which is perhaps not always recognised and utilised to the full. These studies also suggest that there may be further questions to be asked about the needs of other groups of trainee teachers. There is a need for qualitative research to explore the needs of all these groups as a necessary prerequisite to considering to what extent ITT is, or can be made to be, responsive to these trainee teachers.

2. Journal writing may be a useful tool for enabling students to reflect on their learning (Bain et al., 2002; Trotman and Kerr, 2001). The type and quality of feedback given by mentors may affect how useful a learning tool a journal is, in that it may impact on whether journals are seen as a product or a process, so that the journal becomes a learning tool rather than simply a record of events. There remains a need for further work to look at how journals are used, and how effective a learning tool they are.

3. Mentors may require training and support in order to be able to identify and meet trainees' needs (Brookes, 2003; Butcher, 2000; Devereux,

2001; Geen, 2001; Williams et al., 1998) - for example, by seeing the trainees as individuals with different needs, and assisting the trainees to meet the Standards for QTS.

4. The use of ICT in teacher training may not be a substitute for face-to-face meetings and teaching, although it may provide an effective teaching resource and support mechanism, especially for distance learning and less confident students (Butcher, 2000; Herrington et al., 2000; Tanner, 2000). More research describing how ICT can be used to make ITT more flexible and responsive would be invaluable. There is also a need for independent evaluation of these schemes from the perspective of students and teacher educators. This should take into account perceptions and evidence of the quality of training that ITT programmes which rely heavily on the use of ICT (in preference to traditional methods) are able to deliver.

5. Teacher training may be more effective when student teachers are empowered to take more responsibility for their own learning: for example, through individual action planning, reflection and action research (Kosnik and Beck, 2000; Lawson and Harrison, 1999; Lawson et al., 2004; Wile, 1998). However, it is crucial that further research employs methods capable of generating reliable indicators of effectiveness.

What our review has clearly revealed is that there are no studies that broadly research the practice and process of, or beliefs about and attitudes towards, flexible and responsive ITE. There are isolated questions within questionnaires that probe schools' methods of addressing individual needs, studies which examine the experiences of particular groups of student teachers which may have particular needs – such as mature or non-traditional entrants to training, male primary trainees or ethnic minority student teachers. The needs of other groups - such as disabled students, gay or lesbian students and those from areas of socioeconomic deprivation - are not explored. Some studies have considered the use of particular assessment or reflection instruments in ITE programmes. Others probe the beliefs and attitudes of student teachers towards their ITE and education more broadly. One or two explore the benefits, disadvantages and challenges of particular types of programme that in themselves may have been seen as 'flexible and responsive', such as the GTP.

In order to generate data that more clearly illustrates how institutions or training programmes respond flexibly to student needs, specific studies would need to be commissioned. In the next section, the Review Group explore possible methodologies and research questions for such studies.

The simplest way to gather data on the processes and principles of flexible and responsive provision would be to survey all providers of ITE by questionnaire. This would aim to probe how ITE programmes were designed to meet Requirement 2.3 of *Qualifying to Teach* (TTA, 2002). Questions would probe areas such as the following:

- application and interview

- induction and needs analysis

- accreditation of prior experience and learning

- action planning and target setting, including the use of journals and professional portfolios

- modes of delivery

- assessment

- focus, timing and nature of school placement

- mentoring practice

Such a survey would give qualitative evidence of the intended approaches of providers and of their interpretation of Requirement 2.3. It would enable institutions to demonstrate a range of approaches and variations between the different routes to QTS they are providing. It would give a broad overview of the types of approach taken by providers to responding flexibly to student teacher need. Quantitative evidence would also be revealed in terms of the number of providers exploring the various possible approaches.

However, the survey would not necessarily reveal the lived experiences of initial training. For that, further research would be required. This could be provided by a review of Ofsted inspection evidence since 2002, looking particularly at response to Requirement 2.3. A further model could combine documentary Ofsted data on the extent of flexibility and responsiveness of provision with questionnaires or a sample of focus group interviews with student teachers from a range of providers. An additional strand of evidence could be provided by surveying or interviewing staff from partnership schools. However, it would be challenging, and possibly unethical and intrusive, to attempt to triangulate closely in this way in order to provide reliable data on provision institution by institution. A preferable model would be to explore the programme of chosen institution/institutions via case study. This could examine the intentions of a provider to respond flexibly to need, in collaboration with partner schools, and probe the perceptions of the student teachers who experience the programmes within that institution. Samples could be drawn to reflect national characteristics of student teachers, in terms of age, sex, ethnicity and disability status. This could provide comparative perspectives on fulltime, part-time and flexible or employment-based routes to QTS.

A more ambitious study, and one which could be rooted more firmly in an established tradition of researching student teachers' experience of training, would be to construct a typology of student teachers currently engaging in ITE. This would be provided from an initial large-scale survey of entrants to ITE programmes across several institutions. From this typology, a longitudinal case study approach could track the experience of a sample group of student teachers, from their training programme through to their NQT year and beyond, examining their experience of training and the extent to which it met their needs. This study would also shed interesting light on how the student perceives her/his needs at different points of training.

Methodological studies could focus in detail on the use of particular instruments or processes to respond to student need (such as reflective journals and professional portfolios), and various needs analysis or audit tools, including online audits and professional development tools.

None of the above could incorporate controlled trials or randomised control trials. Too many variables might affect the experience of student teachers, or the outcomes of their training, to provide reliable comparative evidence on the effectiveness of particular instruments or processes. Studies would be illustrative and indicative of particular approaches. Change of perception over time within or across institutions could be measured.

In order to widen the scope of practice, a comparative study could be undertaken of methods and approaches to 'flexibility' in a range of professional education programmes. These could be drawn from health, policing, social care and teacher education. This study could focus most effectively on particular processes that are common to the various programmes, such as needs analysis, professional placement, and assessment of practice and mentoring.

CHAPTER FIVE
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5.1 Papers included in map and synthesis

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Appendix 1.1: Authorship of this report

This work is a report of a systematic review conducted by
the Individual Training Review Group

The authors of this report are

Lynne Graham-Matheson (Canterbury Christ Church University)
Tom Connolly (Canterbury Christ Church University)
Sue Robson (Roehampton University)
William Stow (Canterbury Christ Church University)

They conducted the review with the benefit of advice active participation from
the members of the review group.

For further information about this review, please contact:

Lynne Graham-Matheson
Department of Educational Research
Canterbury Christ Church University
Canterbury
Kent CT1 1QU
Tel: +44 (0)1227 782126
Email: lcg7@cant.ac.uk

For further information about the work of the EPPI-Centre, please contact

EPPI-Centre
Social Science Research Unit
Institute of Education, University of London
18 Woburn Square
London WC1H 0NR
Tel: +44 (0)20 7612 6131
Fax: +44 (0)20 7612 6800
Email: EPPIAdmin@ioe.ac.uk

Review Group

Andrea Carlson (Canterbury Christ Church University)
Tom Connolly (Canterbury Christ Church University)
Lawrence Dean (Canterbury Christ Church University)
Lynne Graham-Matheson (Canterbury Christ Church University)
Sue Robson (Roehampton University)
William Stow (Canterbury Christ Church University)

Advisory Group

Claire Alfrey (Canterbury Christ Church University)
Lynne Colman (Fulston Manor School)
John Moss (Canterbury Christ Church University)

Conflicts of interest

There were no conflicts of interest for this review

Acknowledgements

Appendix 2.1: Inclusion and exclusion criteria

Inclusion criteria

In order to be *included*, in the review a study *must*:

- have been written or published in/since 1998

- have been written or published in English

- be concerned with initial teacher training

- be concerned with the provision of flexible routes into teaching which take account of trainee teachers' needs

- be concerned with empirical research

Exclusion criteria

Studies were *excluded* from the review if:

- they were written or published before 1998 (exclusion code 1)

- they were not written or published in English (exclusion code 2)

- they were not concerned with initial teacher training (exclusion code 3)

- they were not concerned with the provision of flexible routes into teaching which take account of trainee teachers' needs (exclusion code 4)

- they were not concerned with empirical research (exclusion code 5)

Appendix 2.2: Free text search terms used with electronic databases

Advanced skills teachers
Analysis of training needs
Articled teachers
Audit of needs
Beginning teacher induction
Beginning teachers
Buddy system
Buddy teaching
Continuing education
Development plan
Education work relationship
Educational experience
Employment-based route
Experiential learning
Extended teacher education programs
Field experience programs
Graduate teacher programme
Individual action planning
Individual action plans
Individual development
Individual needs analysis
Individual training plan
Initial teacher education
Initial teacher training
In-service education
In-service teacher education
In-service teacher induction
In-service teacher training
In-service teaching experience
In-service training
In-service training for teachers
In-service training of teachers
In-service training of teachers
INSET
Internship program/me
Job placement
Licensed teachers
Management of teacher training
Master teachers
Mentors
Needs audit
Off the job training
On the job training
Personal development plans
Placement
Post-experience education
Post-experience vocational education

Pre-service teacher education
Probationary period
Probationary teachers
Professional continuing education
Professional development
Professional education
Professional mentors
Professional training
Professional tutor
School based in-service education
School based program/me
School based training
School experience
School mentor
Student experience
Student placement
Student teacher relationship
Student teacher supervisors
Student teachers
Student teaching
Subject mentor
Supervising teachers
Teach for America
Teacher administrator relationship
Teacher certification
Teacher development
Teacher education
Teacher educator education
Teacher educators
Teacher experience
Teacher improvement
Teacher induction
Teacher interns
Teacher orientation
Teacher supervision
Teacher trainee/s
Teacher-student relationship
Teaching experience
Teaching experience
Teaching practice
Trainee teacher/s
Training needs
Training needs analysis
Training plans
Vocational education
Vocational training
Work-education relationship

Appendix 2.3: Search strategy

Reports were identified from the following sources:

- *Bibliographic databases*, including Australian Education Index, BEI, C2-SPECTR, CERUK, ERIC, Index to Theses, Ingenta Select, Ingenta Full Text, ZETOC, EBSCOhost EJS, Science Direct, IBSS, ASSIA, Social Science Citation Index, REEL.

- Search of journal publishers' web pages or handsearching key journals (e.g. *Journal of Education for Teaching*)

- E-journals available on the internet

- Citation searches of key authors/reports

- Reference lists of key authors/reports

- References on key websites

- Personal contacts

- Direct requests to key informants

The following journals were searched, either on the internet or as printed copy. All issues were searched from January 1998 to summer 2004:

> *British Educational Research Journal*
> *British Journal of Education and Work*
> *British Journal of Educational Studies*
> *British Journal of Sociology of Education*
> *British Journal of Special Education*
> *Cambridge Journal of Education*
> *Education* 3-13
> *Educational Management and Administration*
> *Educational Researcher*
> *Educational Research*
> *Educational Review*
> *Journal of Education for Teaching*
> *Research in Post-Compulsory Education*
> *Teachers and Teaching: Theory and Practice*
> *Teaching and Teaching Education*

Search terms used for searching electronic databases were determined by the Review Group, with the support of the specialist librarian. A list of suggested search terms (Appendix 2.2) was used with the three education databases on Dialog (British Education Index, Australian Education Index and ERIC) and each term checked in its respective thesaurus, looking for related terms. The Review Group then agreed the search

terms, as listed and grouped as follows. Care was taken to ensure that appropriate terminology was used to capture studies undertaken outside the UK.

Group 1 contained all the alternative terms for **trainee teachers**.

Group 2 contained all the terms for **training needs/development plans**, etc.

Group 3 contained all the terms for **initial teacher education**.

DIALOG education databases

In order to search the databases, the groups of terms were combined into search strings, using the boolean operator 'OR' to connect them all. Where possible, they were truncated by use of the question mark (?) wildcard character (e.g. 'TEACHER TRAINEE?' instead of 'TEACHER TRAINEE OR TEACHER TRAINEES'). The search string for Group 1 (see below) was pasted into the 'Enter Search Term' box into the Advanced search option on British Education Index (on Dialog).

ADVANCED SKILLS TEACH? OR ARTICLED TEACH? OR BEGINNING TEACH? OR GRADUATE TEACH? OR LICENSED TEACH? OR PROBATIONARY TEACH? OR STUDENT TEACH? OR TEACHER TRAINEE? OR TEACHER INTERN? OR TRAINEE TEACHER?

This produced a disappointing number of hits, but, after a little experimentation, it was discovered that by placing parentheses around each search term the number of hits increased by a factor of about 15. Using the same strategy on AEI, the difference between including brackets and leaving them out was a factor of nearly 50. On ERIC, it was closer to a factor of 100.

The search string for Group 1, complete with parentheses

(ADVANCED SKILLS TEACH?) OR (ARTICLED TEACH?) OR (BEGINNING TEACH?) OR (GRADUATE TEACH?) OR (LICENSED TEACH?) OR (PROBATIONARY TEACH?) OR (STUDENT TEACH?) OR (TEACHER TRAINEE?) OR (TEACHER INTERN?) OR (TRAINEE TEACHER?)

As the use of parentheses produced many more hits, it was decided to proceed with this method, after consultation with the EPPI-Centre.

The search string for Group 2, with parentheses

(ANALYSIS OF TRAINING NEEDS) OR (DEVELOPMENT PLAN?) OR (INDIVIDUAL ACTION PLAN?) OR (INDIVIDUAL DEVELOPMENT) OR (INDIVIDUAL NEEDS ANALYS?) OR (INDIVIDUAL TRAINING PLAN?) OR (NEEDS AUDIT?) OR (PERSONAL DEVELOPMENT PLAN?) OR (TRAINING NEED?) OR (TRAINING NEEDS ANALYS?) OR (TRAINING PLAN?)

The search string for Group 3, with parentheses

(BEGINNING TEACHER INDUCTION) OR (CONTINUING EDUCATION) OR (EDUCATION WORK RELATIONSHIP) OR (EMPLOYMENT-BASED ROUTE?) OR (EXPERIENTIAL LEARNING) OR (EXTENDED TEACHER EDUCATION PROGRAM?) OR (FIELD EXPERIENCE PROGRAM?) OR (GRADUATE TEACHER PROGRAMME?) OR (IN SERVICE TRAINING OF TEACHERS) OR (INITIAL TEACHER EDUCATION) OR (INITIAL TEACHER TRAINING) OR (IN-SERVICE EDUCATION) OR (INSERVICE EDUCATION) OR (IN-SERVICE TEACHER EDUCATION) OR (INSERVICE TEACHER EDUCATION) OR (IN-SERVICE TEACHER INDUCTION) OR (INSERVICE TEACHER INDUCTION) OR (IN-SERVICE TEACHER TRAINING) OR (INSERVICE TEACHER TRAINING) OR (IN-SERVICE TEACHING EXPERIENCE) OR (INSERVICE TEACHING EXPERIENCE) OR (IN-SERVICE TRAINING) OR (INSERVICE TRAINING) OR (IN-SERVICE TRAINING FOR TEACHERS) OR (INSERVICE TRAINING FOR TEACHERS) OR (IN-SERVICE TRAINING OF TEACHERS) OR (INSERVICE TRAINING OF TEACHERS) OR (INSET) OR (INTERNSHIP PROGRAM?) OR (MANAGEMENT OF TEACHER TRAINING) OR (OFF THE JOB TRAINING) OR (ON THE JOB TRAINING) OR (ON-THE-JOB TRAINING) OR (PLACEMENT?) OR (POST EXPERIENCE EDUCATION) OR (POST EXPERIENCE VOCATIONAL EDUCATION) OR (PRESERVICE TEACHER EDUCATION) OR (PROBATIONARY PERIOD?) OR (PROFESSIONAL CONTINUING EDUCATION) OR (PROFESSIONAL DEVELOPMENT) OR (PROFESSIONAL EDUCATION) OR (PROFESSIONAL TRAINING) OR (SCHOOL BASED INSERVICE EDUCATION) OR (SCHOOL BASED PROGRAM?) OR (SCHOOL BASED TRAINING) OR (TEACHER DEVELOPMENT) OR (TEACH FOR AMERICA) OR (TEACHER CERTIFICATION) OR (TEACHER EDUCATION) OR (TEACHER EDUCATOR EDUCATION) OR (TEACHER INDUCTION) OR (TEACHER ORIENTATION) OR (TEACHING EXPERIENCE) OR (TEACHING PRACTICE) OR (VOCATIONAL EDUCATION) OR (VOCATIONAL TRAINING) OR (WORK EDUCATION RELATIONSHIP)

In order to avoid any duplication of hits within a given database, the results of the three groups of search terms were combined as follows:

> Group 1 AND Group 2 AND Group 3 (combined search 1)
> Group 1 AND Group 2 NOT Group 3 (combined search 2)
> Group 1 AND Group 3 NOT Group 2 (combined search 3)
> Group 2 AND Group 3 NOT Group 1 (combined search 4)

After each combined search was carried out, the search was limited to the date range 1998-2004. The same search method was used on Australian Education Index. On ERIC, unlike BEI and AEI, there is also the option to limit to English language only, so this was used.

A similar search was performed using Applied Social Sciences Index and Abstracts (ASSIA). On this database, accessed via the Cambridge Scientific Abstracts web page, it was possible to build in the 1998-2004 date limit and also the English-language-only limit at the start of the search. Social Science Citation Index (SSCI) was searched, via the Web of Knowledge interface. Again, the date and language limits were applied from the start. Of course, there was some overlap in hits between databases. Conducting searches on the other databases (ZETOC, Ingenta Full Text and EBSCO EJS) produced no potential studies; the search facilities for these are not sufficiently sophisticated or robust as to be able to handle such large search strings as the one used above for Group 3.

Details of the search results are given as Appendix 2.4.

Appendix 2.4: Identifying and describing studies: results

The results from Dialog were as follows:

Combined search 1	BEI	AEI	ERIC
Group 3 + Group 2 + Group 1	6	23	97
Group 3 + Group 2 + Group 1 (1998-2004)	**2**	**8**	18
As above, but English language only			**18**

Combined search 2	BEI	AEI	ERIC
Group 1 + Group 2 not Group 3	2	18	17
Group 1 + Group 2 not Group 3 (1998-2004)	**0**	**11**	6
As above, but English language only			**6**

Combined search 3	BEI	AEI	ERIC
Group 1 + Group 3 not Group 2	1,474	2,129	6,193
Group 1 + Group 3 not Group 2 (1998-2004)	**719**	**731**	2,565
As above, but English language only			**2,556**

Combined search 4	BEI	AEI	ERIC
Group 2 + Group 3 not Group 1	180	348	1,755
Group 2 + Group 3 not Group 1 (1998-2004)	**70**	**125**	566
As above, but English language only			**565**
Sub-totals:	*791*	*875*	*3,145*

Grand total from Dialog education databases = 4,811

ASSIA:

Combined search 1

| Group 1 + Group 2 + Group 3 Limits: 1998-2004; journal articles only; English only | **1** |

Combined search 2

| Group 1 + Group 2 not Group 3 Limits: 1998-2004; journal articles only; English only | **0** |

Combined search 3

| Group 1 + Group 3 not Group 2 Limits: 1998-2004; journal articles only; English only | **15** |

Combined search 4

| Group 2 + Group 3 not Group 1 Limits: 1998-2004; journal articles only; English only | **17** |

ASSIA total = 33

SSCI:

Combined search 1

| Group 1 + Group 2 + Group 3 Limits: 1998-2003; journal articles only; English only | **1** |

Combined search 2

| Group 1 + Group 2 not Group 3 Limits: 1998-2003; journal articles only; English only | **1** |

Combined search 3

| Group 1 + Group 3 not Group 2 Limits: 1998-2003; journal articles only; English only | **215** |

Combined search 4

| Group 2 + Group 3 not Group 1 Limits: 1998-2003; journal articles only; English only | **32** |

SSCI total = 249

APPENDIX 2.5   EPPI-Centre keyword sheet, including review-specific keywords

V0.9.7   *Bibliographic details and/or unique identifier*

A1. Identification of report
Citation
Contact
Handsearch
Unknown
Electronic database (please specify) ....

A2. Status
Published
In press
Unpublished

A3. Linked reports
Is this report linked to one or more other reports in such a way that they also report the same study?
Not linked
Linked (please provide bibliographical details and/or unique identifier)
....
....
....

A4. Language (please specify) ....

A5. In which country/countries was the study carried out? (please specify)
....

A6. What is/are the topic focus/foci of the study?
Assessment
Classroom management
Curriculum*
Equal opportunities
Methodology
Organisation and management
Policy
Teacher careers
Teaching and learning
Other (please specify) ....

A7. Curriculum
Art
Business studies
Citizenship
Cross-curricular
Design and technology
Environment
General
Geography
Hidden
History
ICT
Literacy – first language
Literacy further languages
Literature
Mathematics
Music
PSE
Physical education
Religious education
Science
Vocational
Other (please specify) ....

A8. Programme name (please specify)
....

A9. What is/are the population focus/foci of the study?
Learners
Senior management
Teaching staff
Non-teaching staff
Other education practitioners
Government
Local education authority officers
Parents
Governors
Other (please specify) ....

A10. Age of learners (years)
0–4
5–10
11-16
17-20
21 and over

A11. Sex of learners
Female only
Male only
Mixed sex ....

A12. What is/are the educational setting(s) of the study?
Community centre
Correctional institution
Government department
Higher education institution
Home
Independent school
Local education authority
Nursery school
Post-compulsory education institution
Primary school
Pupil referral unit
Residential school
Secondary school
Special needs school
Workplace
Other educational setting (please specify)
....

A13. Which type(s) of study does this report describe?
A. Description
B. Exploration of relationships
C. Evaluation
   a. naturally-occurring
   b. researcher-manipulated
D. Development of methodology
E. Review
   a. Systematic review
   b. Other review

Review-specific keywords

16. What is/are the research question(s) or what is the focus of the report?

Please give brief details.

Coding is based on (a) author's description or (b) reviewer's inference.

17. What methodology was used in the research?

Please give brief details of the methods used for gathering data (e.g. interviews, questionnaires) and the type of study (e.g. case study, longitudinal study).

Coding is based on (a) author's description or (b) reviewer's inference.

18. What form of initial teacher training (ITT) does the report focus on?

Undergraduate – *Please use this keyword if the report is concerned with an undergraduate programme (e.g. BA or BEd in the UK).*

Postgraduate – *Please use this keyword if the report is concerned with a postgraduate programme (e.g. PGCE in the UK).*

Employment-based route – *Please use this keyword if the report is concerned with an employment-based route into teaching (e.g. the GTP in the UK).*

Programme name (*Please write in.*) ………..……………
…………………………………….

Unknown – *Please use this keyword if the type of ITT programme is not clear from the report.*

19. What is/are the population focus/i of the report?

Student/trainee teachers – *Please use this keyword if the report focuses on student or trainee teachers.*

School mentors – *Please use this keyword if the report focuses on mentors based in school.*

HEI tutors – *Please use this keyword if the report focuses on tutors based in HEIs or colleges.*

20. Does the ITT programme in the report relate to a particular age group or groups?

Early years – *Please use this keyword if the report focuses on training to teach children aged 3-5.*

Primary – *Please use this keyword if the report*

focuses on training to teach at primary level (ages 5-11 in the UK).

Secondary – *Please use this keyword if the report focuses on training to teach at secondary level (ages 11-16 in the UK).*

6th form/post compulsory – *Please use this keyword if the report focuses on training to teach at 6th form/post compulsory level.*

Other (specify) – *Please use this keyword if the report focuses on training to teach an age group not listed above, and specify the age group.*

Unknown – *Please use this keyword if it is not clear what age group the report relates to.*

21. Does the report focus on teacher training for a specific part of the curriculum?

No – *Please use this keyword if the report is concerned with a general teacher training programme not related to a specific part of the curriculum.*

Unknown – *Please use this keyword if it is not clear whether the report relates to teacher training related to a specific part of the curriculum.*

Art – *Please use this keyword if the report is concerned with training to teach art.*

Business studies – *Please use this keyword if the report is concerned with training to teach business studies.*

Citizenship - *Please use this keyword if the report is concerned with training to teach citizenship.*

Cross-curricular – *Please use this keyword if the report is concerned with training to teach across the curriculum.*

Design and technology – *Please use this keyword if the report is concerned with training to teach design and technology.*

EFL – *Please use this keyword if the report is concerned with training to teach English as a foreign language.*

English – *Please use this keyword if the report is concerned with training to teach English.*

Environment – *Please use this keyword if the report is concerned with training to teach environment.*

Geography – *Please use this keyword if the report is concerned with training to teach geography.*

History – *Please use this keyword if the report is concerned with training to teach history.*

ICT – *Please use this keyword if the report is concerned with training to teach ICT.*

Literature – *Please use this keyword if the report is concerned with training to teach literature.*

Mathematics – *Please use this keyword if the report is concerned with training to teach mathematics.*

Modern foreign languages – *Please use this keyword if the report is concerned with training to teach modern foreign languages.*

Music and performing arts – *Please use this keyword if the report is concerned with training to teach music, drama or performing arts.*

PSHE – *Please use this keyword if the report is concerned with training to teach personal, health or social education.*

Physical education – *Please use this keyword if the report is concerned with training to teach physical education or sport.*

Religious education – *Please use this keyword if the report is concerned with training to teach religious education or philosophy.*

Science – *Please use this keyword if the report is concerned with training to teach science.*

Vocational – *Please use this keyword if the report is concerned with training to teach vocational courses.*

Other (specify) – *Please use this keyword if the report is concerned with training to teach a subject not listed above, and specify the subject.*

22. What aspect(s) of initial teacher training does the report focus on? Please use as many keywords as apply.

Assessment – *Please use this keyword if the report is concerned with the assessment of a student/trainee teacher's work.*

Feedback – *Please use this keyword if the report is concerned with giving feedback to a student/trainee teacher on their work.*

HEI-based training – *Please use this keyword if the report is concerned with those aspects of training which take place within an HEI or college (i.e. not school experience).*

Knowledge audit – *Please use this keyword if the report is concerned with an audit of a student/trainee teacher's knowledge.*

Learner style – *Please use this keyword if the report is concerned with the learning style of the student/trainee teacher (i.e. individual*

differences in studying and learning).

Mentoring – *Please use this keyword if the report is concerned with mentoring, e.g. the relationship between a mentor and the student/trainee teacher, with a particular form of mentoring or the way in which the mentor carries out the role.*

Needs assessment or analysis – *Please use this keyword if the report is concerned with the assessment or analysis of a student/trainee teacher's needs in relation to the programme, and having regard to their skills and previous experience.*

Portfolio/evidence – *Please use this keyword if the report is concerned with the portfolio and/ or collecting evidence of tasks undertaken and progress towards meeting the Standards for QTS.*

School experience – *Please use this keyword if the report is concerned with school experience or the school placement.*

Target setting – *Please use this keyword if the report is concerned with target setting.*

Training plan – *Please use this keyword if the report is concerned with devising or implementing a training plan.*

Tutor role – *Please use this keyword if the report is concerned with the role of the HEI or college tutor.*

Other (specify) – *Please use this keyword if the study is concerned with other aspects of teacher training, and give details.*

23. What method(s) and/or tools for making training flexible and responsive is/are used in the study?

Please use as many keywords as apply.

Please provide the author's description (up to approximately 100 words) of the aim(s) and method(s) of the approach.

Diary – *Please use this keyword if the report focuses on the student/trainee teachers' use of a diary.*

Differentiation – *Please use this keyword if the report focuses on the use of differentiation within the programme.*

Feedback – *Please use this keyword if the report focuses on the use of feedback.*

Flexible route – *Please use this keyword if the report focuses on flexible routes into teaching.*

Individual action plan – *Please use this keyword if the report focuses on the student/trainee teachers' use of an individual action plan.*

Individual training plan – *Please use this keyword if the report focuses on the development or use of an individual training plan.*

Journal/log – *Please use this keyword if the report focuses on the keeping of a journal or log to aid reflection.*

Mentoring – *Please use this keyword if the report focuses on mentoring.*

ODL – *Please use this keyword if the report focuses on open and distance learning.*

One to one tutoring – *Please use this keyword if the report focuses on one to one tutoring.*

On-line resources – *Please use this keyword if the report focuses on the use of on-line resources (e.g. teaching materials provided on the internet).*

Portfolio – *Please use this keyword if the report focuses on the development or use of a portfolio.*

Reflection on practice – *Please use this keyword if the report focuses on the student/trainee teachers' reflection on practice.*

Review – *Please use this keyword if the report focuses on the student/trainee teachers' use of a review.*

Self-assessment – *Please use this keyword if the report focuses on the student/trainee teachers' self-assessment.*

Subject knowledge development – *Please use this keyword if the report focuses on the student/trainee teachers' subject knowledge development.*

Taking account of prior experience – *Please use this keyword if the report focuses on taking account of the student/trainee teachers' prior experience or learning.*

Target setting – *Please use this keyword if the report focuses on the use of target setting (e.g. tasks a student teacher needs to undertake or standards which need to be achieved, usually within a defined timescale).*

Virtual learning environment (VLE) – *Please use this keyword if the report focuses on a virtual learning environment (i.e. learning which takes place almost entirely through use of the internet).*

Other (specify) – *Please use this keyword if the report focuses on another method of making training flexible and responsive, and specify the method(s).*

Details

24. What is known about the subjects of the report?

Are there any defining characteristics of the sample? What is known, for example, about the gender, age, ethnicity or socio-economic status of the subjects of the study?

25. What is the theoretical/ideological framework of the study.

Coding is based on (a) author's description or (b) reviewer's inference.

26. How were the results of the study analysed? Was a particular analytical framework used?

Coding is based on (a) author's description or (b) reviewer's inference.

27. What were the results of the study?

Please provide a summary of the results as reported by the author.

28. What conclusions were drawn by the author? What, according to the author, are the implications of the study?

Appendix 3.1: Summary of the studies included in the map

Study	Country in which study carried out	Type of study	Aspects of ITT study focuses on	Methods for making training flexible and responsive
Bain et al. (2002)	Australia	Evaluation (researcher manipulated) Non-randomised	Feedback	Feedback Journal
Brookes UK (2003)	England	Evaluation naturally occurring	Mentoring Needs assessment or analysis School Experience Training plan	Flexible route Individual training plan Mentoring
Butcher (2000)	UK, England	Evaluation naturally occurring	Mentoring School experience Training needs of a particular group of students	Flexible route ODL Subject knowledge development
Devereux (2001)	UK	Evaluation naturally occurring	Feedback Mentoring School experience Student support	Feedback Flexible route Mentoring ODL
Foster (2001)	UK, England	Evaluation naturally occurring	Mentoring Needs assessment or analysis School experience	The study focuses on the GTP, which is itself a flexible route into teaching.
Geen (2001)	UK, Wales	Evaluation naturally occurring	Feedback Mentoring School experience	Feedback Mentoring One-to-one tutoring Reflection on practice
Goulding (2002)	UK, England	Description	Knowledge audit	Self-assessment
Hedrick et al. (2000)	USA	Description	School experience	Online resources Reflection on practice

Study	Country in which study carried out	Type of study	Aspects of ITT study focuses on	Methods for making training flexible and responsive
Herrington et al. (2000)	Australia	Description	Needs assessment or analysis School experience	Online resources Subject knowledge development Virtual learning environment
Jones and Maguire (1998)	UK	Description	Needs assessment or analysis Mentor/mentee relationship School experience Tutor role	Mentoring Taking account of individual needs for support
Kosnik and Beck (2000)	Canada	Description	HEI based training School experience Tutor role	Action research
Lawson and Harrison (1999)	UK, England	Description	Portfolio/evidence Target setting	Individual action plan Target setting
Lawson et al. (2004)	UK, England	Description	Target setting Training plan	Individual action plan Target setting
Mayotte (2003)	USA	Description	Mentoring Student support	Mentoring Subject knowledge development Taking account of prior experience
Metcalf and Kahlich (1998)	USA	Evaluation naturally occurring	HEI based training Mentoring School experience	Flexible route Mentoring Reflection on practice
Miller and Fraser (1998)	UK, Scotland	Exploration of relationships	School experience Training plan	Assessing training needs Mentor/mentee relationship School experience Individual training plan
Moyles and Cavendish (2001)	UK, England	Evaluation naturally occurring	HEI based training Learner style Mentoring School experience Tutor role	Support needed by male primary trainees
Oosterheert and Vermunt (2001)	Netherlands	Description	Individual differences in learning	Differentiation
Oosterheert et al. (2002)	Netherlands	Exploration of relationships	Learner style School experience	Differentiation
Tanner and Jones (2000)	UK, Wales	Exploration of relationships	HEI based training Learner style	ODL Online resources VLE
Trotman and Kerr (2001)	Australia	Evaluation naturally occurring	HEI based training Use of a journal	Journal/log

Study	Country in which study carried out	Type of study	Aspects of ITT study focuses on	Methods for making training flexible and responsive
Wile (1998)	Luxembourg, Germany, Austria	Description	Feedback Mentor/mentee relationship Portfolio School experience	Mentoring
Williams et al. (1998)	UK, England	Description	Feedback Mentor/mentee relationship Student learning style	Feedback Mentoring
Wolf (2003)	USA	Description	Mentoring School experience Assessing training needs Mentor/mentee relationship	Mentoring

Appendix 3.2: Keywording and details of studies

Bain JD, Mills C, Ballantyne R, Packer J (2002) Developing reflection on practice through journal writing: impacts of variations in the focus and level of feedback

Identification of report
Electronic database: Australian Education Index (AEI)

Status
Published

Linked reports
Not linked

Language
English

Country of study
Australia

Topic focus
Teacher careers
Teaching and learning

Curriculum area
The material does not focus on curriculum issues

Population focus
Learners
Teaching staff

Age of learners
21 and over
Professional education 18+

Sex of learners
Mixed sex

Educational setting
Higher education institution

Study type
Evaluation: researcher-manipulated
Controlled trial (non-randomised)

Research question/focus
Coding is based on author's description.

'Although journal writing has become a common technique for encouraging reflection on action during pre-service professional education in teaching, nursing and other disciplines, little is known about the processes and principles that need to be applied if the student journal is to become a tool for learning rather than a simple record of events.' The study examines the influence of the focus of journal feedback on reflective writing and thinking. The aim was to identify strategies for assisting students who have difficulty reaching the higher levels of reflection. Student teachers on their second teaching practicum were assigned to four groups, depending on pre-practicum questionnaire results, gender and university. The journal feedback given to the different groups varied the type of feedback received (focusing on the process of reflection demonstrated in the writing or on the teaching issues the entry addressed) and the level of challenge within the feedback (providing a low or high level of challenge).

Form of initial teacher training
Undergraduate

Aspect of training on which study focuses
Feedback

Method/tool for making training flexible and responsive
Feedback
Journal/log

'.. such findings have led some to question not only the value of journal writing as a learning technique but also the viability of 'teaching' reflective skills within the traditional pre-service education context (Calderhead and Gates 1993, Smith and Hatton 1993, LaBoskey 1994). Self-report evidence, however, consistently suggests that journal writing is a helpful tool, both in encouraging reflective activity in students and in providing educators with a window to their students' learning (Carroll 1994, Hoover 1994, Ballantyne and Packer 1995, Francis 1995, Button and Davies 1996, Harland and Myhill 1997, Hughes et al. 1997, Goldsby and Cozza 1998). Moreover, theorists and researchers alike continue to maintain that reflective skills can be taught and learned, despite

initial difficulties (Goodman 1989, Smyth 1989, Edwards 1992, Von Wright 1992, Francis 1995, Paterson 1995). One aim of the present research is to reconcile these literatures by enhancing reflective writing in accordance with students' and educators' experiences of its efficacy. If journal writing is to be used as a means to develop reflective practice in pre-service professionals, research is needed to establish the conditions under which it is most likely to be successful …'

What is known about the subjects of the study?
The subjects were student teachers, mixed gender (8 male, 27 female), who volunteered to participate in the study.

Theoretical/ideological framework of the study, Paterson (1995) identifies four factors that impact on an individual's willingness and ability to reflect – the individual's developmental level of reflection, their perception of the trustworthiness of the mentor teacher, the clarity and nature of expectations associated with the journal writing assignment, and the quantity and quality of feedback. This research focuses on the last of these, with attention to the developmental level of the students and the clarity of the requirements for journal writing.

Method
Journal writing by student-teachers. Post practicum interview (semi-structured, using open-ended questions). Students submitted weekly journal entries during their six-week practicum, each entry accompanied by a self-analysis. Students received individual written feedback on each entry, according to the particular feedback condition to which they had been assigned. Students' perceptions of the benefits and difficulties of journal writing, the role of self-analysis and feedback in enhancing their journal writing, and reflection on teaching were obtained through an in-depth interview on completion of the practicum, written comments submitted with each journal entry and a rating scale completed at the time of the interview. Students whose feedback focused on the writing process were asked to rate their entries on a five-point scale of reflectivity, ranging from reporting through responding, relating and reasoning to reconstructing. The groups whose feedback focused on the teaching issues discussed in their entries were asked to rate the extent to which they had changed their approach to the incident or issue (low challenge) or the extent to which they had considered the reasons underlying their approach, alternative approaches and interpretations, and relevant research and theory (high challenge).

Analysis
Regression analysis and Fisher exact test. The writers analysed the students' self-analysis, comments and interviews. Four conditions were analysed. Student teachers were asked to focus their writing either on 'process of reflection' or on 'teaching issues'. Feedback was given as either 'low challenge' or 'high challenge', depending on the degree of questioning the tutor engaged in.

Results
Focusing tutor feedback on reflective writing, as opposed to issues related to teaching, was generally found to be favourable. However, focusing on teaching issues was found to be helpful when it challenged students' presumptions and preferences (authors' description). Feedback focusing on the reflective writing process

– giving guidelines and a suggested framework for moving into higher levels of cognitive activity – is more effective and more easily generalised than feedback focusing on the teaching issues raised by students. The benefits achieved through a focus on the level of reflective writing are not just 'surface' changes to the structure or writing style but represent real changes in the way students view the relationship between reflective writing and reflective thinking. Students who achieve the highest levels of reflective writing report that their ideas develop as they write; they are not just recording ideas already developed. Feedback focusing on the writing process is the most effective in encouraging students to move from descriptive to reflective writing, but the provision of high challenge feedback relating to the teaching issue (posing questions, challenging assumptions, suggesting alternative perspectives) also stimulates students' reflective writing. Students receiving low challenge feedback on teaching issues – providing practical advice and teaching suggestions alone – are at a considerable disadvantage in reflective journal writing. The provision of detailed instructions, examples and self-analysis proformas may be sufficient to enable some students to reflect at a deeper level than they would otherwise have done.

Conclusions
The research confirms the valuable influence of journal writing in the development of reflection on practice and advances understanding of the role of journal feedback in improving and extending students' journal-writing skills. The writers infer that the most effective strategy for moving students from descriptive to reflective journal writing, with a consequent engagement in higher order reflective and cognitive abilities, is the provision of feedback which combines a focus on the reflective writing process, with comments and questions designed to open up different and challenging perspectives on the incident or issues addressed in the journal.

Brookes W (2003) GTP training: is adequate good enough?

Identification of report
Electronic database: British Education Index (BEI)

Status
Published

Linked reports
Not linked

Language
English

Country of study
UK, England

Topic focus
Teacher careers
Teaching and learning

Curriculum area
The material does not focus on curriculum issues.

Population focus
Learners
Teaching staff

Age of learners
21 and over
Professional 18+

Sex of learners
Mixed sex

Educational setting
Higher education institution

Study type
Evaluation: naturally occurring

Research question/focus
Ofsted (2001) found that many GTP trainees did not achieve the level of performance of which they were capable, the underlying reason being the quality of mentoring provided in schools. It was concluded that some school-based trainers are often not adequately prepared for their role in implementing wide-ranging training programmes for trainee teachers. In this study, mentors were asked about the training provision in their school, particularly relating to the assessment of trainees' development needs and final assessment; the extent to which they consider GTP mentoring different from that for the PGCE or the induction year; and their own training needs as mentors.

Form of initial teacher training
Postgraduate employment-based ITT (GTP)

Aspect of training on which study focuses
Mentoring
Needs assessment or analysis
School experience
Training plan

Method/tool for making training flexible and responsive
Flexible route
Individual training plan
Mentoring
Details

The GTP is itself a flexible route into teaching. Trainees are not students, but are employed by schools. Each trainee's needs are assessed and an individual training plan drawn up and implemented by schools.

What is known about the subjects of the study?
Six experienced GTP mentors

Theoretical/ideological framework of the study
Trainees engaged in employment-based routes into teaching require to have their individual needs analysed and monitored by experienced mentors specifically trained for this purpose.

Method
Survey of six experienced GTP mentors (3 primary, 3 secondary). Questionnaire by 46 GTP mentors. Interviews (informal, guided conversations) with mentors. Trainees were interviewed by means of informal, but guided, 'conversations' that were then analysed and out of which initial findings emerged. Interviewees were invited to consider 14 questions which provided a wide range of responses. The questions covered areas such as reasons for the trainee choosing this route, the preparation they received, identification of training needs, time allocated for mentoring, arrangements for observation and feedback, arrangements for final assessment and the second school placement, and the additional support and guidance they might have wanted to improve aspects of their training.

Analysis
The writer analysed the mentors' comments and interviews.

Results
Higher education is coming to accept the GTP, both for practical reasons and because there is a 'gradual convergence of the two traditions'. There are, however, still issues of adequacy, particularly in terms of consistency, quality assurance and mentoring. More work needs to be done training mentors, particularly in developing individual training plans and reviewing trainees' progress against them.

Conclusions
Most mentors value the external support that a partnership (HEI/school) provides and the evidence suggests that they are not disposed to 'go it alone'. HEIs need to provide additional and more focused training for mentors engaged on employment-based routes.

Butcher J (2000) Subject culture, pedagogy and policy on an open learning PGCE: can the gap be bridged between what students need, and what mentors provide?

Identification of report
Electronic database: BEI

Status
Published

Linked reports
Not linked

Language
English

Country of study
UK, England

Topic focus
Teacher careers
Teaching and learning

Curriculum area
The material does not focus on curriculum issues.

Population focus
Learners
Teaching staff

Age of learners
21 and over
Professional education 18+

Sex of learners
Mixed sex

Educational setting
Higher education institution

Study type
Evaluation: naturally occurring

Research question/focus
This report looks at PGCE students preparing to teach the post-16 English curriculum. It focuses on the tension between student teacher needs and mentoring strategies in open and distance learning ITT, based on the premise that ODL student teachers are more reliant on support from mentors than students on a conventional ITT course. In relation to this particular course, 'The ODL context has been one in which ICT, particularly the potential of First Class conferencing systems, has empowered students, enabling them access to support electronically from generic tutors, subject specialist conferences and student conferences. Mentors are based in individual partner schools and are not able to access electronic support or training networks. They are thus disenfranchised from the ICT potential provided by the ODL context.' The study also considers the requirement for secondary teachers to be able to demonstrate competence to teach across the 11-18 age range, but with limited opportunities for student teachers to work with post-16s, with different policy and pedagogic demands. 'The focus of the study was on the quality of the mentor/mentee interaction in the context of post-16 teaching, drawing on the author's previous research with mentors on a distance-learning PGCE, which highlighted the importance of a paradigm of challenge as a mentor strategy.'

Form of initial teacher training
Postgraduate ITT (PGCE)

Aspect of training on which study focuses
Mentoring
School experience
Other (*Please specify.*)

The need for training aimed at a particular group of students, in this case post-16s

Method/tool for making training flexible and responsive
Flexible route
Mentoring
ODL
Subject knowledge development

Details: This distance learning course particularly attracts mature entrants to teaching. The support offered by the course and by mentors in schools is intended to meet the individual needs of students.

What is known about the subjects of the study?
Fifty-seven students from all over England undertook a distance learning PGCE.

Theoretical/ideological framework of the study
'The key underpinning idea is the Daloz (1986) model as adapted by Maynard and Furlong (1995) locating student growth as a teacher within a context of support and challenge. This research set out to discover if a model of mentoring, in which a dynamic process of challenge tailored to the needs of the learner to go beyond competence, is present and effective when student teachers are engaged with the post-16 curriculum. The importance of researching 'a community of practice' (Lave and Wenger 1991) in order to explore the personal constructs mentors possessed in their different settings impacted on the methodological design.'

Method
The author draws upon ethnographic research on a sample group of mentors and distance learning student teachers across England over a six-month period. The data is based on an analysis of student contributions to a post-16 English teaching electronic conference, an electronic questionnaire administered to English students through the same conference, group interviews with 12 students at two day schools, observation of post-16 teaching and interviews with students and mentors. The author developed a staged methodology, 'in which each finding fed iteratively into the next set of questions'. Electronic data was gathered, analysed and used as prompts for group interviews, the content of which was then used to explore issues arising in individual interviews. Data from mentors was used to critique and confirm other findings.

Analysis
The findings of the study were analysed by the author, but it is not clear on what basis this was done.

Results
In England, it seems that secondary teacher education pays too little attention to the demands of post-16 teaching. It underplays the specific post-16 pedagogic skills that require active mentor support. The most effective mentors were those were those who helped bridge the students' gap between the Year 11(GCSE) / Year 12 (A-level) divide by helping them to differentiate their subject knowledge. The research highlighted two main issues: (1) Post-16 teaching carries high status in English schools but presented a 'culture shock' to student teachers, who had raised expectations about 'quasi-undergraduate pedagogies'. (2) Tensions are created between mentors and student teachers as mentors are constrained by a centrally imposed Standards framework, but this does not adequately represent post-16 teaching.

Conclusions
Student teachers therefore need specific input from their mentor. The tension in the relationship between the mentor and their trainee arises because mentors are constrained by a centrally imposed Standards Framework, which insufficiently highlights post-16 teaching. Mentors need more time to develop confidence explicitly to pursue their professional understandings of post-16 pedagogy as it has a profound impact on the students' subject knowledge across the whole of the curriculum.

Devereux J (2001) Ethnic minority students in initial teacher training: issues in support

Identification of report
Electronic database: BEI

Status
Published

Linked reports
Not linked

Language
English

Country of study
UK

Topic focus
Teacher careers
Teaching and learning

Curriculum area
The material does not focus on curriculum issues.

Population focus
Learners
Teaching staff

Age of learners
21 and over
Professional education 18+

Sex of learners
Mixed sex

Educational setting
Higher education institution

Study type
Evaluation: naturally occurring

Research question/focus
This report looks at the recruitment of PGCE students from ethnic minorities on to the Open University (OU) one-year course and asks: Who are the OU's ethnic minority students and why choose this course? How do these students fare in their training and in entry into employment? How do the experiences of these students compare with their expectations? How well are they supported and to what extent are their needs met? The research was initiated in the context of ethnic minority recruitment to ITT becoming 'a prominent national issue'.

Form of initial teacher training
Postgraduate
Postgraduate ITT (PGCE)

Aspect of training on which study focuses
Feedback
Mentoring
School experience
Student support

Method/tool for making training flexible and responsive
Flexible route
Feedback
Mentoring
ODL
Student support

The study focuses on a flexible route into teaching – the Open University's PGCE course. 'It reports on the students' needs for support and the extent to which these were met, and discusses issues in support that may be specific to the contexts of mature trainees and part-time, distance education.'

What is known about the subjects of the study?
27 student teachers in 1998 and 24 student teachers in 1999. All students were from ethnic minorities.

Theoretical/ideological framework of the study
'Published research into the experiences of ethnic minority trainee teachers has tended to concentrate (for good reasons) on difficulties in support. While this research continues to address these issues, it also looks at good practice in the successful support of ethnic minority students, and reports on ethnic minority students who felt they did not experience difficulties, or who dealt successfully with the problems they encountered. The possible implications of the findings for training institutions, for school-based mentors and for mentor training are discussed.'

Method
Questionnaire, focus group, follow-up semi-structured interviews. The author prepared questionnaires for all ethnic minority students who underwent training in 1997-98 and 1998-99, analysing their gender, pass rates, and attitudes to training and teaching. Responses to the questionnaires were recorded on a qualitative basis within the headings of student fit and success on school placement, ethnicity and identity, experiences of racism, student support, and improving the course. The report includes a brief discussion of interviewer perspectives and the need for objectivity, as the three researchers are white-British.

Analysis
The findings were considered by the three researchers, but the way in which the results were analysed is not made clear.

Results
Success on school placement can be linked to how well the student is seen to 'fit' into the school environment, how much they have in common with the staff, how much they share their views on education, and the classes they are teaching, as well as wider issues. There is a wide variety of views and understanding of diversity within the term 'ethnic minority'. Students reported pressure on them to adjust their cultural 'personas' in order to match the culture of the school. The interviewees felt their ethnicity and the lack of understanding of their needs by different parties were not addressed appropriately, and that neither the school nor the ITT course always questioned underlying assumptions about racism, although there was a range of views and reports on how racial abuse was experienced in the schools. Students were asked to state how they thought the course could be improved and there was a common belief that all those responsible for training should set out to understand more fully the needs and circumstances of those from ethnic minorities.

Conclusions
The important outcome of any ITT course is to ensure that, in course design and delivery, every effort has been made to ensure that all students have equal access. For those from ethnic minorities, courses need to be more supportive over a range of issues which should include prejudice, the multicultural classroom and use of language. The course should clearly express expectations and explicit mentor roles, with support as necessary for written and spoken English. ITT courses must ensure that, in course design and delivery, every effort has been taken to ensure that all students have equal access, and, if this is not happening, the course is falling short in its responsibility. The author suggests that whether or not school placements are being properly managed, it is the student teachers' perceptions that are important.

Foster R (2001) The graduate teacher route to QTS: motorway, by-way or by-pass?

Identification of report

Electronic database: BEI

Status
Published

Language
English

Country of study
UK, England

Topic focus
Teacher careers
Teaching and learning

Curriculum area
The material does not focus on curriculum issues.

Population focus
Learners
Teaching staff

Age of learners
21 and over
Professional education 18+

Sex of learners
Mixed sex

Educational setting
Higher education institution

Study type
Evaluation: Naturally occurring

Research question/focus
This report examines the development in schools of the employment-based graduate teacher programme (GTP) as an alternative to the more traditional college-based Post Graduate Certificate in Education (PGCE) programme. As yet, very little research has been undertaken to determine the GTP's effectiveness as an alternative route into teaching.

Form of initial teacher training
Postgraduate
Postgraduate employment-based initial teacher training (GTP)

Aspect of training on which study focuses
Mentoring
Needs assessment or analysis
School experience
Method/tool for making training flexible and responsive

The study is concerned with the GTP, which is a flexible route into teaching. 'The programme is for mature graduates whose degrees and other educational and working backgrounds provide the basis for teaching in their chosen phase and/or subject.' The school or training provider takes responsibility 'for assessing training needs, devising and monitoring a training plan and assessing and recording the Graduate Teacher's progress'. Schools in the study said they were 'initially attracted by the apparent freedom and flexibility of the training model. They welcomed the opportunity to design a training plan that took into account the experience and expertise of the Graduate Teacher.'

What is known about the subjects of the study?
School mentors in schools delivering the GTP

Theoretical/ideological framework of the study
Trainees engaged in employment-based routes into teaching must have their individual needs analysed and monitored by experienced mentors specifically trained for this purpose. The use of an individual training plan geared to the experience and needs of the trainee is vital to the success of the training.

Method
Questionnaire, followed by semi-structured interviews with 50% of respondents. All schools that worked with the Lancashire Consortium as their Recommending Body were invited to participate (106 schools, 93% response rate), plus 30 other schools in the North West involved with the GTP (24 schools, 80% response rate). The schools which participated included primary, secondary and special schools in the state and independent sectors.

Analysis
The basis for analysis of the results is not fully described but 'the analysis takes the form of a brief commentary on the key principles on which the GTP was established, in order to explore the extent to which current practice is consistent with the purposes of the programme expresses at policy level: GTP trainees must meet the same standards as those on all other accredited ITT programmes before they can be awarded QTS. It must not be seen as an easy route into the profession.' The writer analysed the mentors' comments and interviews through a series of questions that focused on recruitment, government policy, ability to employ trainees, recruitment shortages, and the training model utilised.

Results
Schools had mixed reactions to the GTP. At one end of the spectrum, some schools reported satisfaction with the GTP, noting that student teachers benefit from a rigorous training plan; while, at the other end, some schools felt that graduate teachers were being used as fulltime members of staff and were not being properly trained. There was concern that as there is no formal quality assurance in the GTP, it is not as rigorous as the PGCEs. There was a view that the GTP is suited for people with teaching experience and there was concern that the move towards GTP having salary-funded places had brought more applicants who had little or no experience, and schools were prepared to take trainees 'off the streets'. Some newly recruited schools felt confident that they could deliver the training, and liked the flexibility of the GTP model in preference to the more rigid PGCE model. However, other schools were concerned about the burden on mentors and the possibility of having no escape from a student teacher who did not fit well in the school.

Conclusions
This research revealed differences from the earlier (2000) research. In the earlier study, almost all respondents said they were not interested in taking main or total responsibility for ITT. Most schools involved in training a graduate teacher had done so 'for pragmatic reasons rather than from a commitment to the principle of training their own teachers. On the contrary, most were concerned that 'on the job' training was a difficult model to manage successfully.' This was still the case for many respondents, but a significant minority' of schools recruited to the revised training process said they liked the training and welcomed the opportunity to take control of the training process. 'The principle of an individually tailored training plan based on a needs assessment made for better and more focused

training that the 'one size fits all' approach of typical PGCE programmes.' It was felt that the issue of striking a balance between meeting the training needs of the graduate teacher and securing the graduate teacher's contribution to the needs of the school is an ongoing challenge. The intention of the revised scheme was that trainees would be supernumerary so that their training needs would take priority and there was 'substantial evidence of excellent training practice, with an appropriate and imaginative training plan being effectively delivered and graduate teachers having a range of teaching and observation opportunities, good mentoring support and placements in other contexts' but some graduate teachers were simply regarded as additional members of staff. This was a cause for concern, as was the workload involved in school-based training. 'There was an increasing recognition that, unless resources, particularly time, were made available to enable mentors to provide appropriate support to trainees, such as lesson observation and feedback, the quality of training would inevitably suffer.'

Geen A (2001) Debriefing student teachers: improving current practice

Identification of report
Electronic database: BEI

Status
Published

Linked reports
Not linked

Language
English

Country of study
UK, Wales

Topic focus
Teacher careers
Teaching and learning

Curriculum area
The material does not focus on curriculum issues.

Population focus
Learners
Teaching staff

Age of learners
21 and over
Professional education 18+

Sex of learners
Mixed sex

Educational setting
Higher education institution

Study type
Evaluation: naturally occurring

Research question/focus
This report examines the debriefing procedures employed by a sample of mentors in South-East Wales and reports the views of students upon their effectiveness. Specifically, the study aimed to: (a) identify the mentoring practices most commonly in operation in a sample of schools, (b) determine the frequency with which trainees received feedback and the techniques that were employed, (c) gauge the views of students on the extent to which the debriefing they received was helpful to their developing teaching skills and knowledge, and (d) offer a set of recommendations for future policy on debriefing.

Form of initial teacher training
Postgraduate teacher training

Aspect of training on which study focuses
Feedback
Mentoring
School experience

Method/tool for making training flexible and responsive
Feedback
Mentoring
One-to-one tutoring
Reflection on practice

Details: 'The vast majority of students in this sample received regular feedback on their teaching. 34% were provided with comments on every lesson they taught, 19% on at least one lesson each day and 39% on at least one lesson a week. In only 8% of cases was debriefing conducted at intervals of a fortnight or longer. Most of these sessions were of between 5 and 15 minutes' duration and took place immediately after the class (66%). 20% of students had to wait up to 2 days before they received a formal critique, 13% a week and 1% a month. Both oral and written comments were available for 86% of respondents and 54% who also attended weekly meetings at which their overall progress was reviewed.'

What is known about the subjects of the study?
Mentors and student teachers on a secondary PGCE course

Theoretical/ideological framework of the study
The competence model has, to a large extent, been imposed on all ITT courses in England and Wales, since the award of QTS is dependent upon the acquisition of competences, or standards. This model emphasises 'observation, imitation and learning from tips and rules... although the essence of the approach is the construction of a list of skills and underlying items of knowledge, mastery of which is necessary for anyone seeking entry to the teaching profession (Hargreaves 1990, Whitty and Willmott 1991).' '...the mentor's principal function is to assist students through appraisal of their teaching to reach the standards laid down by central government.' 'These 'technical rational' views of teacher education have sometimes been contrasted with the philosophy of the 'reflective practitioner' in which it is argued that learning is best promoted by encouraging students critically to analyse their own performance (e.g. Schon 1983, LaBoskey 1993). Various models of reflection for use in lesson debriefing have been proposed in recent years'. These include 'follow me' in which the mentor 'not only responds to a student's attempts to imitate an experienced teacher, but also helps him/her to construct meaning from action'. Another is 'hall of mirrors' in which the teaching of both is constantly analysed as they assume the role of 'on-line researchers, each enquiring more or less consciously into his (sic) own and the other's changing understandings' (Schon, 1987, p 298).

Method

The author dispatched copies of a questionnaire in March 2000 to 304 mentors in 120 schools who were in partnership with seven HEIs. The response rate was 44.4%. Interviews were conducted with 34 mentors at 17 schools. At the end of their training programme a questionnaire was answered by all 237 students on the secondary PGCE course at the University of Wales, Cardiff.

Analysis

The debriefing techniques used by the mentors were analysed using three models of ITE: the apprenticeship model, the competence model and the reflective practitioner models.

Results

Apprenticeship model: Many of the practices associated with the apprenticeship model were frequently employed in this sample of schools. 98% of mentors 'engaged in pragmatic discourse by means of traditional 'lesson crits' consisting of tips and hints by virtue of which students might improve their teaching'. In 20% of schools 'this advice was supplemented with demonstrations of specific pedagogic skills'. 86% of students thought the guidance they received was generally constructive and the 'recipes' and 'formulae' had been valuable, especially early in their training. Observations of lessons given by mentors where a precise focus had been agreed was also thought to be worthwhile. Criticisms included students thinking that mentors' comments were unstructured and presented in a random way. They thought debriefing should be organised so that feedback was presented in a logical order, to enable trainees progressively to develop the understanding and skills they needed. Observation without understanding or explanation was not always useful. Some students had received feedback from teachers of the same subject which were contradictory, and some had mentors who expected them to follow their example so rigidly that there was little scope for experimentation or originality.

Competence model: 37% of students said their mentors made little systematic reference to the Standards during their feedback, and 36% received no regular appraisal of their progress in relation to the Standards during weekly reviews. Where Standards were addressed, they did not receive equal emphasis. 79% mentors were primarily concerned with teaching and class management, while knowledge and understanding were the dominant themes in 13% of feedback sessions. Discussion of assessment and other professional requirements featured in only 8% of lesson observations. The interviews with mentors revealed that they thought discipline and teaching strategies were most important so these should dominate debriefing. This meant that other considerations were not always considered in any depth. Although nine of the Standards are concerned with planning, only 29% of mentors regularly examined and discussed students' lesson preparation files, and the planning undertaken by 16% of trainees was not assessed at any stage during the academic year 1999-2000. Students felt feedback would be more meaningful, particularly early in their training, if mentors focused concentrated on a small number of standards.

Reflective practitioner models: Few of the students had heard the phrase 'reflective practitioner' during their training, and less than one-third of mentors had attended training courses where reference was made to techniques such as the hall of mirrors. Many different ideas emerged when mentors were asked to define the term. 70% of students said they had been encouraged to reflect upon their teaching at at least some of their debriefings, usually in the form of Ghaye and Ghaye's deconstruction, and the identification of strengths and areas for development. 43% of lesson critiques were seen to be of a discursive nature, although this was usually used by members of the management team (e.g. deputy head) whose role was directly concerned with school policies. Fewer than half the students had experienced Schon's follow-me approach, and 38% hall of mirrors. Reflection was seen to be an important element of ITE by 56% of the students, especially when it assisted them to clarify their thinking about future goals and strategies. Strands of reflection were seen as particularly useful for reviewing blocks of school experience, and 53% of the students whose mentors used this technique appreciated feedback sessions in which they could contemplate the assumptions and beliefs within which they had begun their training. 40% also valued debriefing in which educational concepts derived from their reading were discussed in the context of classroom practice. Although there were positive comments, it was evident that many mentors missed opportunities to encourage reflection during debriefings. A third of them failed to read students' evaluations of lessons and to use their perceptions as a starting point for discussion. Scope for reflection was restricted in the case of 19% of students whose mentors regularly opened the conversation with a statement of their views on a lesson and permitted only a brief response once they had finished. Even worse was the experience of 7% of the sample, since their opinions were ignored by mentors who dominated the entire proceedings and imposed their judgments on students in total disregard for their feelings. Sessions of this type, it was contended, were unlikely to foster a spirit of reflection and self-appraisal. Moreover, 53% of those students who engaged in discursive dialogue noted that the concepts explored did not always correlate with the content of their course of study at the HEI. School staff drew attention to the constraints which limited their ability to use reflective practitioner models, mainly lack of time but also the limitations imposed by the fact that mentors were usually subject heads or members of the senior management team and thus had to attend to other administrative duties.

Conclusions

95% of students believed that it would be beneficial if mentors in partnership schools were to draw up a policy on debriefing, which made their aims explicit and listed key strategies that could be employed at each stage of a student's placement. This could lead to improvements in building students' confidence, providing feedback to take account of QTS standards, involving students in the assessment of their own performance and setting targets, and promoting students professional development. Debriefing procedures used by mentors were considered to be helpful by most students, however deficiencies were identified. Some mentors did not link their feedback to government standards or competencies and missed opportunities to help students learn from critical reflection. Mentors need more time to develop confidence and expertise in order to carry out their role effectively on behalf of student teachers. HEIs need to be more proactive in ensuring that the lead mentor in schools is continuously updating their training and skills for mentoring so as to support the role of subject mentors across the school. A key constraint experienced by mentors is the lack of time to carry out their duties. Mentors need to be given 'protected' time to carry out their role. A positive step forward for students will only be achieved when a coherent debriefing policy

has been established across the partnership. Further training is needed in order that mentors are aware of the importance of meeting government requirements and of linking their comments to student teachers to the QTS standards.

Goulding M (2002) Primary teacher trainees' self assessment of their mathematical subject knowledge

Identification of report
Electronic database: BEI

Status
Published

Linked reports
Not linked

Language
English

Country of study
UK, England

Topic focus
Teacher careers
Teaching and learning

Curriculum area
The material does not focus on curriculum issues.

Programme name
Subject Knowledge in Mathematics Group (SKIMA)

Population focus
Learners
Teaching staff

Age of learners
21 and over
Professional education 18+

Sex of learners
No details given

Educational setting
Higher education institution

Study type
Description

Research question/focus
Building on earlier work, the researchers devised a procedure for use with primary trainees. Using self-audit, it was designed to access students' response to the auditing process, to gauge their feelings about the process, and to see how they would assess their own strengths and weaknesses and strategies for improvement.

Form of initial teacher training
Postgraduate
Postgraduate (primary PGCE)

Aspect of training on which study focuses
Knowledge audit

Method/tool for making training flexible and responsive
Self-assessment

Prospective primary teachers in England need to obtain certain minimum qualifications in English and Mathematics (grade C or above at GCSE or its equivalent) before entry to a course of teacher training. Students with this minimum qualification could have obtained it years ago when the syllabus was different, or perhaps be more confident with parts of the syllabus than others. 'So there may well be gaps in their knowledge which could be of significance to the primary curriculum. Additionally, the knowledge required to meet the public qualification standard, even if it is judged to be very good by that standard, may need to be transformed and enriched in order to support the act of teaching.' The SKIMA is a collaboration between researchers in the universities of Cambridge, Durham and York, and the Institute of Education, University of London. It grew out of a common interest in trainees' subject knowledge in Mathematics, predating the introduction of the National Curriculum in ITT (1998) which required teacher training institutions in England to audit subject knowledge and to fill in any gaps which were identified by the end of the training course.

What is known about the subjects of the study?
No information given

Theoretical/ideological framework of the study
Subject knowledge was conceptualised as Shulman's (1986, p 9) construct of subject matter knowledge, 'the amount and organisation of the knowledge per se in the mind of the teacher', later refined by Shulman and Grossman (1988) to substantive knowledge (the key facts, concepts, principles and explanatory frameworks in a discipline) and syntactic knowledge (the rules of evidence and proof within a discipline). Earlier research (Aubrey, 1997; Askew et al., 1997; Rowland et al., 2000, 2001) had shown a positive correlation between teacher's subject knowledge and teaching performance.

Method
Over 400 primary trainees at Cambridge, Durham and London were given an early self-audit, a period when specific teaching was given and/or students could follow up areas of weakness, an audit in formal conditions and a follow-up period when peer teaching was used.

Analysis
The quantitative data was analysed statistically. The analysis of the students' comments was done by reading the comments, drawing up categories and coding responses according to the categories. This was done for the cohort from one institution, with categories and coding then modified after discussion. Refined categories were used to code data for second and third institutions, with 'slight modifications' made after further discussion.

Results
Although the numerical coding had asked students to rate each item in terms of how secure their response had been, the written comments revealed a distinction between their feelings of confidence and their assessment of mathematical knowledge. 10% (27) of the sample felt confident in all or most areas, 11% (29) were not confident and 14% (37) were confident they could update 'rusty' areas. 40% felt their knowledge was rusty or out of date and 36% felt their knowledge was patchy. The 5% who felt they were weak or struggling included two students who said they were panicking. 43 students commented on the self-audit process. 4% (9) said they had given up or were unable to complete the audit, 5% expressed a negative response and 3% a positive one. 1%

of students asked for help, without saying what help they needed, and 80 (29%) said they needed to refresh, revise or practice; 21 (7%) said they were doing this. Almost all students had something positive to say. A few students commented on how they approached specific items and how they had learned in the past. 'Although only 16 (6%) made such comments, these revealed self-knowledge and reflection which could be helpful in their preparation for teaching.' The researchers were particularly concerned by weak students or students with negative feelings. Looking at the rating scores for the whole sample of 432 and looking across categories at the comments made by 274 students it was possible to identify students with low self-ratings and/or were identifying themselves as concerned through their comments.

Conclusions

Items which students found difficult on the self-audit did not correspond to areas of weakness identified in the earlier research. It was difficult to know whether the problems arose from lack of subject knowledge or difficulties with terminology. Conclusions generally relate to mathematical subject knowledge, but some points are more general. It is suggested that the process may be particularly helpful to those students who expressed concern and articulated their fears about their subject knowledge, since tutors were then sensitised to them and could respond accordingly. The authors suggest that, for all students, identifying weaknesses does not necessarily mean that students will then start to address them independently, and will almost certainly need to rely on focused tutor input and/or structured peer support.

Hedrick WB, McGee P, Mittag K (2000) Pre-service teacher learning through one-on-one tutoring: reporting perceptions through e-mail

Identification of report
Electronic database: BEI

Status
Published

Linked reports
Not linked

Language
English

Country of study
USA

Topic focus
Teacher careers
Teaching and learning

Curriculum area
The material does not focus on curriculum issues.

Population focus
Learners
Teaching staff

Age of learners
21 and over
Professional education 18+

Sex of learners
No details given

Educational setting
Higher education institution

Study type
Description

Research question/focus
This study was an investigation of the perceptions of pre-service teachers who were given the opportunity to work with students on a one-to-one basis throughout a semester. The authors were interested in both the attitudes and beliefs of the pre-service teachers towards students with content-area difficulties and towards their own tutoring experience.

Form of initial teacher training
Undergraduate

Aspect of training on which study focuses
School experience

Method/tool for making training flexible and responsive
Online resources
Reflection on practice

Details: The study was designed to examine commonalities and/or differences in what pre-service teachers gained from working in an intimate, one-to-one tutoring situation with students having difficulty with maths and English. The authors say it is important to 'discuss the potential learning from field-based courses as it pertains to the experience that the tutors received since they tutored out in the schools, not at a university setting'.

What is known about the subjects of the study?
Ten secondary pre-service teachers, eleven primary pre-service teachers, all in their final semester of course work before their student teaching semester. The article notes that pre-service teachers were selected on the basis of an initial profile (which included as factors ethnic background, age, gender, and experience with computers) to provide 'a maximum variable sample' but no other details regarding this profile are given.

Theoretical/ideological framework of the study
It is known that changes occur in teacher's beliefs about learning when they have the opportunity to work with children one-to-one for extended periods of time (Pinnell et al., 1994; Woolsley, 1991). The researchers wanted to establish whether similar changes would occur at university level with trainee (pre-service) teachers. Email messages provided a medium through which the students could reveal perceptions of their own learning during the semester-long tutoring experience. 'Research with pre-service and novice teachers indicates that e-mail communication enhances the learning experience by providing a venue for moral support and reducing isolation (Merseth 1991)' for students in field-based experiences. Students feel instructors are available and willing to communicate, and email increases the responsibility of the students to take an active role in their learning. Field-based course experience has been shown in earlier research to be beneficial for student teachers. Goodman (1986) found that most students saw these experiences as the most substantive part of their training. Hollingsworth (1988) found that pre-service

teachers gained from expert modelling and field-based practices when supported with peer-peer and student-teacher dialogue which enhanced pedagogical learning.

Method
An elementary (primary) reading programme and a secondary mathematics programme were the focus of this investigation. A qualitative approach was used, in order to determine unseen beliefs and attitudes of the pre-service teachers, provide information that might improve the experiences of future tutors (pre-service teachers), and provide an unobtrusive approach to collecting data (Patton, 1990). Data was collected from (a) three open-ended email surveys, (b) solicited and unsolicited email correspondence from instructors or pre-service teachers, (c) videotaped focus groups (loosely structured), and (d) instructors reporting of events and perceptions. Attention was paid to triangulating data.

Analysis
Data from the various sources (email, videotaped transcripts) was reviewed and categorised into topical labels allowing similarities and differences between informants to emerge (Patton, 1990). A second reading was then used to categorise/confirm themes. Agreed categories were entered into a qualitative software programme (not named), and accuracy of the thematic coding was verified. When the researchers were satisfied that the data truly reflected the themes, a descriptive narrative was written. Formative evidence from data sources was triangulated in a range of ways.

Results
Similarities were found between the reading and mathematics pre-service teachers, although the two groups had never communicated. Several themes emerged from the data: instructional growth, emotional attachment, why students fail, self-evaluation and using what is learned. The researchers found that the 'practical hands-on nature of their experiences surely reinforced and illustrated the usefulness of theoretically based strategies and practices', and the pre-service teachers grew both in terms of practice but also in terms of being able to reflect on their experiences and teaching behaviours. The use of email may also have assisted pre-service teachers in co-constructing knowledge. 'Field-based experiences may benefit students as they are provided (sic) varied and regular support systems including both electronic and face-to-face. This support would facilitate discussions about the social and emotional development of tutees and help prospective teachers make more conscious connections among their other course work.' 'The use of e-mail as a more central axiomatic tool (McGee and Hedrick, 1997) might assist students in co-constructing knowledge. There is evidence that students who may not participate in face-to-face sessions will do so in on-line communications (Harasim, 1993).'

Conclusions
The researchers conclude that the tutors learned as much or more than those being tutored (Annis, 1983). 'The nature of the field-based practices and the support of email both contributed to the tutors' developing body of knowledge about tutoring and their hypothesizing about learnings applicable to their future classroom experiences... The practical, hands-on nature of their experiences surely reinforced and illustrated the usefulness of theoretically based strategies and practices.' The student teachers became more aware of aspects of their students other than the cognitive

area of development, i.e. social and emotional, and thus to think about 'the whole student'. The results suggest that the three elements incorporated into this programme – field based course design, one-on-one practical experiences and email support – should be given consideration for inclusion by other programmes.

Herrington A, Herrington J, Omari A (2000) Online support for preservice mathematics teachers in schools

Identification of report
Electronic database: AEI

Status
Published

Linked reports
Not linked

Language
English

Country of study
Australia

Topic focus
Teacher careers
Teaching and learning

Curriculum area
The material does not focus on curriculum issues.

Population focus
Learners
Teaching staff

Age of learners
21 and over
Professional education 18+

Sex of learners
No details given

Educational setting
Higher education institution

Study type
Description

Research question/focus
The study focuses on a needs analysis conducted with a focus group of students and consequent development of a web-based resource designed to support pre-service mathematics teachers on school practice.

Form of initial teacher training
Postgraduate

Aspect of training on which study focuses
Needs assessment or analysis
School experience

Method/tool for making training flexible and responsive
Online resources

Subject knowledge development
Virtual learning environment (VLE)

Details: The authors comment that, although technology

has been used to help trainee teachers, 'the tendency has been to neglect these powerful resources to support pre-service teachers once they leave the confines of university and move to schools for professional practice'. The purpose of the study is to develop a website to provide support during school placements.

What is known about the subjects of the study?
No information given

Theoretical/ideological framework of the study
The authors suggest that 'the use of multimedia and the internet have provided educators with powerful tools to create effective and immersive learning environments' (Wilson, 1996; Jonassen and Reeves, 1996; Jonassen, 1995), and that these have been productive in giving pre-service teachers authentic and realistic contexts before they move into real classrooms. Cutbacks in resources have led to students having less contact with university tutors while they are on school placement. 'Other problems with the professional practice system have been identified in the literature: the disparity between the theory students learn at university and the practical realities of the classroom (Goodlad 1991), the removal of students' 'web of support' while on practice (Roddy 1999), supervising teachers' inability to relate practical teaching episodes to general pedagogical principles (Kennedy 1991), the concern that students' exposure to a small number of supervising teachers limits the value of the experience (Richardson-Koehler 1988) and the practical focus on how to teach at the expense of having to make decisions about why and what to teach (Zeichner 1981). Many students also find themselves in schools with limited resources for lesson planning, particularly the type that reflect the teaching approaches developed in methods courses, such as concept development through problem solving and investigation.'

Method
Focus group discussions with eight students 'to determine their perceived needs on school practice and their views on how a web resource could assist'. Discussions transcribed and analysed, and grouped to reflect common themes. Specific recommendations used to inform design of website.

Analysis
Qualitative: The focus group interview was transcribed and then analysed using data reduction, data display and conclusion drawing and verification. Student comments were grouped by themes, and recommendations regarding a web-based resource were formulated by the researchers.

Results
There are no results as such; the report describes the setting up of the website, with no analysis of its use.

Conclusions
The authors' conclusions are at the outset of the study – that a web-based resource can support pre-service teachers once they leave university and move to schools for professional practice. Difficulties mentioned by the student teachers include problems with mathematical understanding; disparity between how they are expected to teach and how they learned themselves; disparity between how they are expected to teach and how mathematics is taught in schools; and lack of resources, ideas for lessons plans and strategies for dealing with large classes. Suggestions given by the student teachers regarding support the university might provide include practical exemplars, resources for lesson ideas, support via telephone, web-based resources, and easily accessible lesson support. The website has been developed but no research has been done on it yet.

Jones C, Maguire M (1998) Needed and wanted? The school experiences of some minority ethnic trainee teachers in the UK

Identification of report
Electronic database: BEI

Status
Published

Linked reports
Not linked

Language
English

Country of study
UK

Topic focus
Teacher careers
Teaching and learning

Curriculum area
The material does not focus on curriculum issues.

Population focus
Learners
Teaching staff

Age of learners
21 and over
Professional education 18+

Sex of learners
Mixed sex

Educational setting
Higher education institution

Study type
Description

Research question/focus
The study considers the 'school experiences of a small group of black and other minority ethnic student teachers in the UK at key points during their postgraduate initial teacher education (secondary) course' within the context of the need to increase the number of teachers from ethnic minority backgrounds and the shift towards more school-based training.

Form of initial teacher training
Postgraduate

Aspect of training on which study focuses
Needs assessment or analysis
School experience
Tutor role
Mentor/mentee relationship

Method/tool for making training flexible and responsive
Mentoring

Student support and taking account of individual student needs. The study is concerned with the need to move away from a 'one size fits all' approach and ensure that all student teachers are given the support they need while on school placement.

What is known about the subjects of the study?

13 black and other minority ethnic student teachers were selected for the study, although the report focuses on 7 of them (3 female and 4 male) in their 20s and 30s.

Theoretical/ideological framework of the study

The PGCE is a 'vivid intense and stressful time' (Head et al., 1996) for all trainee teachers in the UK. School teachers may not regard training trainees as their major role, so it is relatively easy for misunderstandings to occur in a situation which is stressful for all. For minority ethnic students 'there are factors which are less frequently considered'. The authors suggest that 'becoming a teacher has been normalized in a deracialised discourse which privileges practical skills and competencies in a 'professionalised' and individualised manner, which works to marginalise and render invisible many of the power relations and structural issues which exist'. They suggest that a range of factors may lead to the under-representation of minority ethnic groups in teaching.

Method

Case study of a small group of black and other ethnic minority (PGCE) student teachers, using the accounts of the student teachers. 13 student teachers were selected for the study, although the report focuses on seven of them. The students were selected to include 'some of the major heritages represented within the institution' as well as to provide a gender balance. Six white students 'were also tracked in order to obtain greater purchase on the experiences of minority ethnic trainees'. Data was collected through semi-structured in-depth interviews with the students held at three key points during the course: at the end of the first term; at the midpoint of the second term, when most students had received their first reports and knew whether their progress was causing concern; and near the end of the course, after their second placement was over.

Analysis

There was no analysis of results per se, as this report describes the school experiences of ethnic minority student teachers, but does not do so within a research paradigm.

Results

'Many of the minority ethnic respondents said that they met with some initial disquiet, that they constantly had to 'prove' their ability in the classroom and felt they were being treated in an over-judgemental manner, in contrast to their white trainee colleagues. 'All the students interviewed argued that minority ethnic student teachers need support because of their greater susceptibility to being 'misunderstood.' Some said that they should be warned of the difficulties they might meet in schools before the placements started. They felt that school placements should consider issues of 'identity' in matching school and students – 'black students in all-white schools had a greater tendency to fail because stereotyping and racist attitudes could depress their work and/or cloud perceptions of their teaching performance.' As well as the difficulties that they encountered themselves, some of the students also felt that schools and teaching staff did not make

sufficient use of their particular skills and experience (e.g. their language skills or ability to relate to minority ethnic pupils).

Conclusions

Although a small scale study, the researchers suggest that the findings indicate that the underlying issue is a complex one, and the same old issues and concerns still prevail. Against this background, attracting minority ethnic trainees into the profession is unlikely to improve. The concerns voiced by the respondents are unlikely to disappear, and need to be addressed from a deeper and broader intercultural perspective. 'Whatever the rhetoric, social relations in the majority of schools do not reflect the implementation of the idea of a universality of natural human rights; the practice is to grudgingly admit to the mainstream after minority ethnic have proven, usually by higher standards than the norm, that they deserve membership. Even then the wary eye is turned to any mistake, this is the regime of the penitentiary. Such suspicion, indifference and tacit condemnation do not make for happy workplace relationships.' (Adelman, 1993, pp 103-104).

Kosnik C, Beck C (2000) The action research process as a means of helping student teachers understand and fulfil the complex role of the teacher

Identification of report
Electronic database: BEI

Status
Published

Linked reports
Not linked

Language
English

Country of study
Canada

Topic focus
Teacher careers
Teaching and learning

Curriculum area
The material does not focus on curriculum issues.

Population focus
Learners
Teaching staff

Age of learners
21 and over
Professional education 18+

Sex of learners
No details given

Educational setting
Higher education institution

Study type
Description

Research question/focus
The study reports on the effects of participation in action research on the understandings, skills and

behaviour of student teachers, and describes the reasons why action research has been included in the teacher training programme.

Form of initial teacher training
Canada: 1 year BEd

Aspect of training on which study focuses
HEI-based training
School experience
Tutor role

Method/tool for making training flexible and responsive
Other: student action research

Using action research, 'student teachers learn the methodology of action research and see its challenges, advantages and rewards. They acquire a radically different set of understandings and skills within the relatively safe and supportive environment of the teacher education programme. They see graphically the extent to which programme modification and a different teacher-student relationship are possible within existing structures and curriculum guidelines, while also recognising ways in which these structures and guidelines need to be changed. In many ways, the added responsibility and opportunity for initiative that action research provides bring the experience of being a 'real' teacher forward into the pre-service year but in a context such that they feel free to take risks. Initiating pre-service teachers into an action research approach is not just important from a purist theoretical point of view; it is also an effective way to prepare them for the complex role they will face in today's world.'

What is known about the subjects of the study?
60 students preparing to teach primary/junior (grades K-6) or junior/intermediate (grades 4-10) in Toronto. The students were described as 'relatively highly education and motivated' due to the selection process for the course.

Theoretical/ideological framework of the study
The authors suggest that action research is valuable because ''ordinary' teachers can do important research through observation and programme modification in their own schools and classrooms (Elliott 1991, Carr 1995, Zeichner 1995)...Assuming the soundness of this action research perspective, it follows that teacher educators should foster the development of such an approach in preservice teachers.'

Method
Qualitative methods, with approximately 30 students in cohorts over two successive years. Individual, small and large group interviews with students; written questionnaires to students; and interviews with tutors and teachers in schools. Review of student journals at two points during the year. Observations of students in HEI and school, and at final action research conference.

Analysis
Participant observation, open-ended interview and observation sessions, with 'theory that emerged as we went along' (Punch, 1998). 'Wherever possible we noted percentages of responses and whether all, most, some or merely a few held a particular view or exhibited a particular behaviour.'

Results
The authors analyse their results under nine headings:

Developing and modifying curriculum and pedagogy: The students ceased to view the role of teacher as one of transmitting curriculum in a pre-set way and saw the need to meet the needs of students in their class and to adapt pedagogy to students' needs and their own teaching style. They had previously seen teachers having a full year plan laid out for them but now thought in terms of a constantly developing process, open-ended and flexible.

Being a teacher-researcher, teacher-scholar: Through being involved in action research, the students became enthusiastic about their role as teacher-researchers and came to see their role as involving reflection on and improvement of practice.

Observing students closely: All students included detailed observation of one or more students in their project research. Observation of students is important because we cannot work out what and how to teach just from theoretical principles or by consulting a syllabus.

Caring for the whole child: Action research enabled the students to see that enabling learning involves going beyond curricula concerns and taking account of a whole range of student needs.

Being a positive role model: By moving beyond curriculum delivery to interactive involvement with the children, the student teachers came to see that they affect the students on many different levels.

Empowering students: When the student teachers gained autonomy and confidence from the action research process, they saw that their students had more to offer and should experience similar opportunities.

Modelling and fostering collaboration and co-operative learning: Initially, some students were suspicious of group assignments in action research but were surprised to see how enjoyable it could be to work in a group and how much they learned from each other. Most students worked with their associate teacher on their action research or discussed it with them. The work the student teachers did showed that they were already professionals with a capacity for inquiry and much to contribute.

Student assessment and reporting: Assessment is an important aspect of teaching and action research enables students to make progress towards fulfilling this role. Observing students, assessing their needs, devising ways to meet their needs and reporting on their results are a model of the detailed assessments and reporting that is needed.

Continued professional development: Action research helped the student teachers see school learning as an open-ended process and that their own professional development must be ongoing. They acquired many of the skills and habits – reading and applying research literature, observing students, collaborating with colleagues and participating professionally – that would ensure their continued growth as students.

Conclusions
The authors suggest that 'the action research process appears well suited to preparing trainee teachers for the complex demands placed on them in today's world. Many of the activities and skills beginning teachers need

to fulfil the complex role of the teacher', although 'it is difficult to separate entirely the effects of the action research process from the effects of other features of the pre-service programme'. The action research process helped initiate pre-service teachers into the tasks of: developing and modifying curriculum and pedagogy; being a teacher-researcher, teacher-scholar; observing students closely; caring for the whole child: being a positive role model; empowering students; modelling and fostering collaboration and co-operative learning; assessing and reporting on student progress; continuing their own professional development. 'The present study suggests that the action research process is a powerful tool in developing better new teachers.'

Lawson T, Harrison J, Cavendish S (2004) Individual action planning: a case of self-surveillance?

Identification of report
Electronic database: SSCI

Status
Published

Linked reports
Linked
Lawson T, Harrison J K (1999) Individual action planning in initial teacher training: empowerment or discipline?

Language
English

Country of study
UK: England

Topic focus
Teacher careers
Teaching and learning

Curriculum area
The material does not focus on curriculum issues.

Population focus
Learners
Teaching staff

Age of learners
21 and over
Professional education 18+

Sex of learners
Mixed sex

Educational setting
Higher education institution

Study type
Description

Research question/focus
The study explores the Foucauldian concept of self-surveillance in the context of the use of individual action planning (IAP) as a central process of a teacher training course. The authors focus on the success of the IAP process in getting student teachers to adopt the government-defined Standards as their own over the year of the PGCE course.

Form of initial teacher training
Postgraduate (PGCE)

Aspect of training on which study focuses
Target setting
Training plan
Training plan (Individual action plan)

Method/tool for making training flexible and responsive
Individual action plan
Target setting

Details: Using IAP, student teachers draw up their own action plans for achieving the standards for QTS. This involves a cycle of reviewing performance, setting targets, identifying strategies, and recording evidence of achievement at six points in the year.

What is known about the subjects of the study?
21 and over, mixed sex, ethnicity unknown

Theoretical/ideological framework of the study
'The theoretical impetus for our interest in empowerment and discipline came from the tension between those such as Hodkinson (1994) with a focus on the concept of empowerment in postmodern societies, and the followers of Foucault (1977) such as Dwyer (1995) with an emphasis on the idea of a surveillance society.'

Method
A case study of more than one institution. A questionnaire based upon the results of the 1999 study was distributed as a pre-test questionnaire to all (171) the student teachers on one programme, with a control of 27 student teachers in a second PGCE programme at another institution. The returns for the post-test questionnaire were down by approximately 30% in each case. Questionnaires were distributed to trial and control groups at the beginning and end of the year to determine if there was a shift in what the student teachers believe constitutes a 'good teacher'. Some students received the same questionnaire twice; others received different questionnaires. The trial group was from University of Leicester (where IAPs were in place in the PGCE programme) and Loughborough (which did not have IAPs in place for that particular year).

Analysis
The quantitative questionnaires were analysed using SPSS. Questionnaire items were ranked and scored, and the pre- and post-test responses analysed using the Wilcoxon matched-pairs signed-ranks test.

Results
The researchers found a shift towards an acceptance of the legitimacy of the Standards in the group who undertook IAP. Self-surveillance (acceptance of the Standards as legitimate goals) is one of the outcomes of the process, but Foucauldian 'resistances' are present among some students. Through the use of IAPs, there was some evidence that student-teachers were internalising 'good teaching' as defined by national Standards. There were no significant differences in responses according to students' specialist subjects or between male and female respondents.

Conclusions
There is 'a shift in attitudes towards what constitutes a good teacher towards the officially defined view by those student-teachers who were subject to action planning and no significant shift for those who were not', so there is a self-surveillance outcome associated

with IAP. To develop 'a more nuanced understanding of the processes of self-surveillance further research is required. 1. The use of this experimental technique has established an initial position that there is movement towards self-surveillance during the PGCE year. However in order to capture a more detailed understanding of these processes, archaeological and genealogical methodologies need to be deployed. 2. We would want to explore using these techniques the precise relationship between the IAP process and any self-surveillance outcomes. For a number of control student-teachers, the self-surveillance effect also occurred, without their being subject to that specific disciplinary regime. Do all PGCE courses have self-surveillance effects? 3. The focus of the study has been on attitudinal changes. Further research is needed on the changes in actions that might follow exposure to the disciplinary regime of IAPs. 4. Would exposure to further experiences of action planning through the Career Entry Profile of the induction year (the first year of teaching that includes a formal system of IAP) lead to greater self-surveillance among the cohort?'

Lawson T, Harrison J K (1999) Individual action planning in initial teacher training: empowerment or discipline?

Identification of report
Electronic database: ASSIA

Status
Published

Linked reports
Linked
Lawson T, Harrison J, Cavendish S (2004) Individual action planning: a case of self-surveillance?

Language
English

Country of study
UK: England

Topic focus
Teacher careers
Teaching and learning

Curriculum area
The material does not focus on curriculum issues.

Population focus
Learners
Teaching staff

Age of learners
21 and over
Professional education 18+

Sex of learners
Mixed sex

Educational setting
Higher education institution

Study type
Description

Research question/focus
To establish whether the student teachers felt that the individual action planning (IAP) process was one which

gave them personal control or one which controlled them.

Form of initial teacher training
Postgraduate

Aspect of training on which study focuses
Portfolio/evidence
Target setting

Method/tool for making training flexible and responsive
Individual action plan
Target setting

Details: Teacher training has moved towards a system of discipline through the introduction of 'competency-led Standards as the benchmark against which individuals are measured and classified according to their differences' and the switch to school-based training means that student teachers are more directly introduced to the mundane routines of the school and to the practicalities of national examining (Hall and Millard, 1994). The student teachers have little contact with more critical reflections on the mundane practices of schools. 'Central to the action planning scheme in the study is that student teachers are given the freedom to self-monitor their own progress towards the achievement of the Standards.' This freedom is couched in terms of empowerment, so that the routeways chosen are done so 'freely' and to 'prioritise your personal development needs'.

What is known about the subjects of the study?
Female and male, over 21. Six students from each of six subject areas were selected by university subject tutors to represent a range of experiences, competence and gender.

Theoretical/ideological framework of the study
The authors set out two concepts in relation to IAP: empowerment, as a 'strategy for individuals to retain control of key aspects of their lives' (Cunningham et al., 1996, p 144) and discipline, with particular reference to Foucault's (1977) suggestion that self-governance can also be seen as a system of discipline.

Method
Half-hour structured group discussions in subject groups, managed by university tutor, audiotaped and 'subsequently annotated by the authors'. The questions were chosen to try and elicit the feelings of the student teachers concerning whether they felt in control of, or controlled by, the process of IAP.

Analysis
The authors' intention was 'not to provide a precise statistical analysis, but to gather the predominant feelings of the student teachers about the IAP process. The annotated accounts displayed a rich and detailed account of the differing reactions of the student teachers to their experiences of IAP. These accounts were systematically reviewed by the authors with respect to the key themes of empowerment and discipline, and with the aim of drawing out the most common and less common feelings expressed by the groups as a whole.'

Results
The authors conclude that the main perception of IAPs by the student teachers has more to do with empowerment than discipline, but that neither concept

fully encompasses those responses. Students express their experiences with IAPs as being about control rather than about being controlled. However, they also 'saw their 'pedagogic identity' as much more than the dossier of standards built up through IAP'. 1. Most student teachers felt that targets were set both by themselves and their tutor. 2. Student teachers agreed that wider targets were being set, and 'there was not just a focus on standards'. 3. There was a less common reaction that action planning played a role in controlling the actions of student teachers. 4. There were varied reactions to the role IAP might play in the reflective process, with some student teachers thinking that it had enhanced their critical thinking and others rejecting any link between the two. 5. Most student teachers felt that IAP was positive in terms of personal effectiveness. 6. Student teachers did not report a link between IAP and community aspects of empowerment. 7. Most student teachers did not feel that they were being watched or scrutinised in the process.

Conclusions

The results indicated that IAP empowers more than disciplines, although student teachers experienced the process in different ways. 'The dominant response from the student teachers was that they were making real choices in their planning decisions, and the IAP process helped to develop their personal effectiveness and their critical autonomy. They believed that choices were made, in the main, through a process of real negotiation with significant others in the schools. But they also felt constrained by the needs to provide evidence that they were meeting the Standards.' The authors suggest that a conception such as 'directed autonomy' (Waterman, 1988) might be an accurate description of what happens in practice. 'This is where individuals are empowered to make choices but have a direct but have a direction in which they have to travel. It would seem the role of the university tutors to establish that direction within the context of the system which is operating (currently with DfEE Standards) and then leave them to it as much as possible. Student teachers are, therefore, both controlled and free at the same time, rather than just being empowered or disciplined.' The question remains 'whether these feelings of control are an 'illusion of freedom' which help to legitimate the normalising judgements of the Standards. The task, therefore is to find ways of evaluating whether the feelings of real choice expressed by the student teachers are also manifestations of self-surveillance, in that they have so successfully absorbed the objectives of the disciplinary regime that they have taken them as their own.'

Mayotte GA (2003) Stepping stones to success: previously developed career competencies and their benefits to career switchers transitioning to teaching

Identification of report
Electronic database: SSCI

Status
Published

Linked reports
Not linked

Language
English

Country of study
USA

Topic focus
Teacher careers
Teaching and learning

Curriculum area
The material does not focus on curriculum issues.

Population focus
Learners
Teaching staff

Age of learners
21 and over
Professional education 18+

Sex of learners
Female only

Educational setting
Higher education institution

Study type
Description

Research question/focus
The influence of a previous career on classroom practice, by considering second career teachers' recognition of competencies and attitudes developed within their previous careers and their transfer to teaching.

Form of initial teacher training
No details given

Aspect of training on which study focuses
Mentoring
Other (please specify)
Other – student teacher support

Method/tool for making training flexible and responsive
Mentoring
Subject knowledge development
Taking account of prior experience

Details: The study focuses on the particular needs of mature student teachers who have moved into teaching following at least one other career.

What is known about the subjects of the study?
Mature students (career switchers), all female, ethnicity unknown

Theoretical/ideological framework of the study
The know-why, know-how, know-whom career competencies (Defillippi and Arthur, 1994)

Method
Case study of learners - followed four student teachers through in-depth interviews (3-5 with each), surveys, observation field notes and teacher artefacts

Analysis
Researcher attempted to check and double-check findings, using multiple sources and modes of evidence (Huberman and Miles, 1994). Data placed in database files for qualitative analysis to consider emerging themes.

Results

The participants felt that skills from their previous careers transferred to teaching, that their knowledge was enriched by work in another context and their previous careers influenced their teaching philosophy. These capacities include the knowing-why, knowing-how and knowing-whom competencies. Participants noted the need for support (especially mid-career professionals), and felt that previous career success did not guarantee success as a teacher. Second career student teachers need support to take advantage of the connections between their first careers and teaching, and to build on their prior knowledge and experience. Issues for second career student teachers vary depending on their ages, past experience and family circumstances. Age was seen to be both an advantage and disadvantage – it meant that the student teachers were given respect, but also that others forgot that they were students and inexperienced.

Conclusions

Important to provide career switchers with support structures and mentors who recognise and build upon previous career influences. Additional training may be necessary for mentors (for example, in adult learning theory). Student teachers coming to teaching from other careers need mentors who help them to build upon their previous career experiences and who recognise that there are difficulties inherent in changing careers and they need 'stepping stones' to move into teaching.

Metcalf K K, Kahlich P A (1998) Nontraditional preservice teacher development: the value of clinical experience

Identification of report
Electronic database: ERIC

Status
Published

Linked reports
Not linked

Language
English

Country of study
USA

Topic focus
Teacher careers
Teaching and learning

Curriculum area
The material does not focus on curriculum issues.

Population focus
Learners
Teaching staff

Age of learners
21 and over
Professional education 18+

Sex of learners
Mixed sex

Educational setting
Higher education institution

Study type
Evaluation: naturally occurring

Research question/focus
Examination of the professional growth and development of 18 non-traditional pre-service teachers as they progressed through a 12-month teacher certification programme

Form of initial teacher training
Postgraduate
Teacher certification programme (USA)

Aspect of training on which study focuses
HEI-based training
Mentoring
School experience

Method/tool for making training flexible and responsive
Flexible route
Mentoring
Reflection on practice

Details: This study focuses on a teacher training programme designed specifically for mature entrants to teaching.

What is known about the subjects of the study?
22-45, mean age 29.4; 11 women, 7 men; five African American, one Iranian, others unknown ethnicity. All subjects are career switchers.

Theoretical/ideological framework of the study
The researchers suggest that mature entrants to teaching bring with them 'a) greater determination, task-orientation and commitment to teaching than their 'traditional' counterparts (Cornett 1990, Glass and Rose 1987, Knowles 1984, Shulman 1987), b) additional, often substantial non-academic responsibilities (Chronicle of Higher Education 1991) and c) more experience with schools or teaching either as parents or as a result of voluntary or work related instructional responsibilities (US Department of Education 1991)'. Fuller (1969, 1975) 'aggregated the results of her own and others' investigations of beginning teacher concerns and concluded that there existed clear and consistent patterns of development across the studies. She suggested that pre-service teacher development can be considered to take place in three stages. In the preteaching phase, teachers' ideas about teaching are vague and often stereotypical, largely based upon their own experiences as learners. In the early teaching phase, teachers become concerned primarily with their own ability to perform adequately, particularly in the eyes of their superiors, but these concerns tend not to reflect direct or primary concern with their students. After considerable teaching experience, teachers enter a late concerns phase, wherein they tend to make judgements about their own performance and adequacy in terms of their students' learning and progress.'

Method
Case study of 18 student teachers in one institution on an 'intensive program of secondary teacher education specifically for non-traditional students'. The study used semi-structured interviews and guided written reflection, gathered during the programme.

Analysis
'Ongoing data analysis, using constant comparative analysis (Glaser and Strauss 1967, Lincoln and Guba 1985) was conducted throughout the period of the study. After each set of data was gathered, interns' written reflections were combined with the interviewer's notes and systematically and concurrently examined for categories or recurring ideas reflected in the interns' comments and for patterns that reflected change or development in the interns' thinking over the 12 month period.'

Results
'The interns' thoughts and reflections over the 12-month period suggest a clearly identifiable and highly consistent pattern of development. These developmental changes were primarily associated with two themes: developing conceptions of good teaching and growth and awareness of one's self-concept as a teacher. A third, interrelated and extremely powerful theme suggests that the interns perceived the clinical experiences, particularly their intensive on-campus activities, to have contributed significantly to their development…The teachers' development seems, however, to differ from that of their traditional counterparts in at least two ways. First, the middle stage or stages suggested in earlier studies, wherein teachers' primary focus is on the perceptions of their superiors was not evident…The second principal difference in development between the interns in this study and more traditional pre-service teachers is in the relative quickness with which they moved from the initial stage to a focus on their learners.' The particular characteristics of these mature entrants to teaching led them 'to push themselves and their instructors to focus on the fundamentals of informed teaching and to avoid what they view as 'only theory' or impractical information. A striking difference between these teachers and traditional undergraduate students is their openness to learning how to be a teacher. Undergraduate pre-service teachers often enter teacher education with a firm belief in their existing ability to teach. For them, teacher education is commonly viewed as a series of hoops through which they must jump rather than as an important or useful dimension of learning to teach (Fuller 1969). In contrast, the adult teachers in this study entered their program hopeful but not always confident that they would be good teachers.'

Conclusions
The researchers concluded that non-traditional student teachers' development is similar to that of traditional student teachers, although these students demonstrated greater openness to learning how to be a teacher. Their development seems to progress more quickly (they do not focus on the perceptions of their superiors in the middle stages of development); their conceptions of good teaching and of themselves as teachers develop in highly predictable ways; and on-campus clinical experiences seem to provide unique and valuable opportunities for self-reflection and professional growth. They highlighted the need for further research into the special characteristics and needs of this group. 'These students have the potential to make a substantial and valuable contribution to our profession. In order to best help them do so, we must better understand the special characteristics and needs they bring with them to professional education.'

Miller D, Fraser E (1998) A dangerous age? Age-related differences in students' attitudes towards their teacher training course

Identification of report
Handsearch

Status
Published

Linked reports
Not linked

Language
English

Country of study
UK: Scotland

Topic focus
Teacher careers
Teaching and learning

Curriculum area
The material does not focus on curriculum issues.

Population focus
Learners
Teaching staff

Age of learners
21 and over
Professional education 18+

Sex of learners
Mixed sex

Educational setting
Higher education institution

Study type
Exploration of relationships
Evaluation: naturally occurring

Research question/focus
Investigating the views of mature student teachers toward their teacher-training course, looking for evidence of sub-groups within the student body, using categories of direct and non-direct entrants (the latter analysed through biographical data provided in questionnaire)

Form of initial teacher training
Undergraduate
BEd

Aspect of training on which study focuses
School experience
Training plan

Method/tool for making training flexible and responsive
Assessing training needs
Mentor/mentee relationship
School experience
Individual training plan
The study focuses on the specific needs and experiences of mature student teachers.

What is known about the subjects of the study?
Ages range from 17 to over 45, and both male and female for questionnaire; 31-35 year-olds for interviews; ethnicity and socio-economic status unknown

Theoretical/ideological framework of the study
There is a lack of research on mature, 'non traditional' entrants to teaching. 'As Gallagher and Wallis (1993) explain 'the limited extent of this research, combined with the different questions explored by different methods, leave a substantial number of issues on which it is difficult to make definitive statements'. It should be noted that, although some of the larger scale studies (for example, Walker, 1974; Woodley, 1984) have analysed student performance by age groups, most researchers have adopted a simple two-fold categorisation of students as young or mature. While this may have proved useful in providing a basic framework for the investigation of differences, and in so doing helped to highlight important issues, it would seem unlikely that mature students can be categorised as a single, homogeneous group. One of the aims of this study therefore was to investigate further the possible existence of identifiable subgroups within the cohort of mature students and to examine their particular characteristics. It is this aspect of the findings which is reported on in this study

Method
A case study in one institution, using an anonymous questionnaire survey (items identified from literature, from authors' own experience, and from concerns raised by students) distributed to 256 students. Items related to teaching and learning, self-esteem and personal factors, and used the Likert scale of agreement. A group of 10 students from the 31-35 age group were interviewed using a structured schedule: questions explored pressures on the course, styles of teaching and learning, self-esteem and specific probes on the results of the questionnaire analysis.

Analysis
Raw data was tabulated and the categories 'agree/agree strongly' and 'disagree/disagree strongly' were conflated and percentage figures calculated for inter-group comparisons. Data from DEs (direct entrants, joining the course straight from school) and NDEs (non- direct entrants) were then analysed and percentage figures calculated to provide inter-age group comparisons. Initial comparisons were made between direct and non-direct entrants, then within the NDE band. Qualitative data from the interviews was categorised into three themes: family commitments, aspects of teaching and learning, and self-image and self-esteem.

Results
There were differences in terms of attitudes and concerns between older and younger students, with older students being consistently more negative regarding the difficulty of keeping up with the demands of the course and family commitments; criticisms of aspects of teaching and learning; and issues regarding self-image and self-esteem. Particular vulnerability to difficulty was experienced by 31-35 year-old students, although the authors say it is not clear whether 'these students are more negative because of home and family pressures, or whether there is a more complex interplay of different factors at work'. The study points to age-related differences in attitude. 'It may be helpful to consider the findings presented here in the light of work carried out by Powell (1992) in which he drew attention to the way in which non traditional students' previous experiences and existing knowledge differed from that of traditional students, and how these factors influenced their pedagogical constructs.'

Conclusions
Many of the students in the 31–35 age range appear to be at risk or to have special needs. Within the institution, tracking of students through the programme to identify particular events and their effect on self-esteem could be 'instructive'. Further data should be gathered from other institutions, as classification of mature and traditional students may be unhelpful. Institutions themselves should aim to take account of student teachers' prior experience, learning style and conceptual understanding, and to be responsive to the organisational needs of different students.

Moyles J, Cavendish S (2001) Male students in primary ITT: a failure to thrive, strive or survive?

Identification of report
Electronic database: BEI

Status
Published

Linked reports
Not linked

Language
English

Country of study
UK: England

Topic focus
Teacher careers
Teaching and learning

Curriculum area
The material does not focus on curriculum issues.

Population focus
Learners
Teaching staff

Age of learners
21 and over
Professional education 18+

Sex of learners
Male only

Educational setting
Higher education institution

Study type
Evaluation: naturally occurring

Research question/focus
Why a significantly higher proportion of male students than female students withdraw from, or fail to complete, their initial teacher training successfully, especially at undergraduate level

The aim of the research was:

- to determine an overall picture of the recruitment, retention and success rates of male primary trainees in comparison with females since the 1997/98 cohort

- to establish institutional based views on likely reasons for retention and success rates amongst male students

- to identify obstacles to successful completion and retention amongst male trainees

- to identify 'good practice' recommendations to ITT providers and disseminate Phase 1 information

The research was planned to be conducted in three stages, with this Phase 1 research undertaken during 2000.

Form of initial teacher training
Postgraduate, undergraduate PGCE, BA Ed / BEd, SCITT (school-based training)

Aspect of training on which study focuses
HEI-based training
Learner style
Mentoring
School experience
Tutor role
Other (*Please specify.*)

The study focuses on the issue of the recruitment and retention of male trainees, and their needs during the ITT course.

Method/tool for making training flexible and responsive
The study identifies a number of ways in which institutions have tried to provide male trainees with the support they need. (See the results section below.)

What is known about the subjects of the study?
Male trainee teachers on undergraduate and postgraduate courses, mixed age, ethnicity and socio-economic status unknown

Theoretical/ideological framework of the study
'Whilst recruitment of males into all phases of education has received significant focus, and several pieces of research have been undertaken potentially to improve the situation, the issue of retention and success has received less attention and yet must be of equal and parallel concern. Brief earlier discussion with tutors on primary initial teacher training (ITT) courses suggested that retention and success are important issues (inter alia) for the following reasons:

i. There is already an image (and a reality) of a female-dominated profession and views that it is somehow less than 'masculine' to want to enter such a territory.

ii. If those who are recruited to courses promptly fail or enter the induction year at lower levels of competence than many of their female counterparts, this will discourage potential recruits from perceiving primary teaching as a career worth pursuing.

iii. Too few males completing courses and moving on into primary teaching perpetuates a female dominated profession and could deter further recruitment.

iv. If males who are recruited to courses fail to complete satisfactorily, overt and covert messages can be carried forward about the potential of males to 'succeed' on primary ITT courses.

v. ITT providers who find that male students require significantly greater support within diminishing resources may be deterred from extending their recruitment drives towards all minority groups.

vi. Time and money spent on recruitment of male students is wasted if they are not retained on the courses.

vii. Female students are, in themselves, likely to perceive the primary teaching profession as a female-only domain and, consciously or sub-consciously, influence young children in considering future careers in teaching.

viii. Current societal concerns about the lack of appropriate male role models for young boys may or may not be proven but it seems self-evident that, if boys do not experience being taught by male teachers in the primary school, it is unlikely that they will be able to perceive themselves in that role.

Method
Comparative study: survey of all primary ITT courses in England, to gain quantitative data regarding retention and completion rates of institutions, follow-up interviews to probe quantitative data

Questionnaires were sent to 63 teacher training institutions and 17 SCITTs. 81 questionnaires were returned (60% response rate). Statistical information was collected through questionnaires.

A sample of 25 institutions was selected for in-depth interview; however, due to the late return of questionnaires, etc., the sample was self-selected, but still covered a range of different types of institution and courses, age range of students, high/low withdrawal and completion rates.

Analysis
Closed factual information was entered as written or by nominal coding. Responses to open questions were coded using a descriptive coding scheme. Questionnaire data were analysed using SPSS – general frequencies were obtained for all variables. All interviews were transcribed and analysed question by question to identify key concepts. They were then cross-referenced and followed through systematically until categories became 'exhausted'. This provided a series of subheadings upon which the major themes and issues are predicated.

Results
The recruitment and retention of male students is still problematic. Data from institutions was often unreliable or incomplete - institutions do not keep accurate records which would reveal the extent of the problem of male recruitment and retention. Some institutions did not see it [male recruitment and retention] as a priority issue and efforts to improve the situation were sparked by government initiative rather than by institutions seeking their own solutions.

There are also issues of legality, with concerns over what constitutes 'equality' in ITT courses and course leaders thinking that they could be breaking the law by employing positive discrimination practices. It was difficult for course leaders to identify factors which were specifically 'male' but it was thought overall that male students seem less likely to seek help (so difficulties often emerge through assessment) and have unrealistic expectations of the demands of ITT courses. School experience periods create the most problems, related to 'mothering' by female staff, feminine cultures of staff rooms and even sexual harassment. Male characteristics were seen to be poor attendance and punctuality. Male student teachers tend to be either very good or very bad

at their work, to lack attention to planning and detail, and to be arrogant and over-confident - traits which influence how they are regarded by others in educational settings. There are limitations to the research. The research rests wholly on the perceptions of ITT course leaders and the hard data available from institutions. While the latter represents a clear picture of the issues within responding institutions, by no means all course data was available or all course leaders' views obtained, despite all being surveyed. Similarly, it would now be interesting to have the views of both male and female students, and of partnership heads and teachers in order to substantiate or challenge these course leaders' perspectives.

Conclusions
The authors conclude that institutions need to keep better statistical data in order to have a clearer picture of male student teacher recruitent and retention. Many figures were seen to hide the true number of male trainees who withdraw from teacher training because transfers to other courses are not included in the statistics.

Males do not readily seek help and so more should be done to monitor progress and identify problems. Perceived arrogance and over-confidence is thought by ITT staff to be hiding weaknesses, but can be misinterpreted by school staff and female students, affecting males' relationships with potential sources of support. Solutions to males' problems with planning and writing assignments might come through ICT, an area of perceived strength for male students. Courses might include timetabled study time, to help males structure their time.

Educational settings should clarify their expectations of the role and behaviour of male teachers working with young children.

Researching the impact of male and female role models is 'overdue and vital'. While male primary ITT students do not tend to do exceptionally well, neither do they 'fail to thrive or survive'. More research is needed, particularly into the perspectives of students (male and female) and partnership schools.

Oosterheert IE, Vermunt JD (2001) Individual differences in learning to teach: relating cognition, regulation and affect

Identification of report
Electronic database: BEI

Status
Published

Linked reports
Linked
Oosterheert IE, Vermunt JD, Denessen E (2002) Assessing orientations to learning to teach

Language
English

Country of study
The Netherlands

Topic focus
Teacher careers
Teaching and learning

Curriculum area
The material does not focus on curriculum issues.

Population focus
Learners
Teaching staff

Age of learners
21 and over
Professional education 18+

Sex of learners
Mixed sex

Educational setting
Higher education institution

Study type
Description

Research question/focus
The aim of the study was to describe how student teachers differ in the process of becoming a teacher and to chart how several components of learning are related within individual learners. The study had three research questions:

1. How do student teachers differ with respect to certain learning components (mental models of learning to teach, ideal self as a teacher, cognitive processing activities, regulation, emotion regulation, concerns)?

2. Is it possible to come to a categorisation with respect to these differences?

3. Can these potentially related categories be considered indicative of particular orientations to learning to teach?

Form of initial teacher training
Not stated

Aspect of training on which study focuses
Other (please specify)
Individual differences in the way student teachers learn

Method/tool for making training flexible and responsive
'It can be considered a major goal of teacher education that student teachers learn to develop and change their existing frame of reference in accordance with current understanding of what constitutes good teaching and learning. Given the effects of their own (educational) socialisation (Sugrue 1997), this basically means that many student teachers have to change their understanding of teaching and learning, and that they have to learn to change and develop their teaching practive accordingly.'

What is known about the subjects of the study?
30 Dutch secondary student teachers from different subject areas and four different institutions. Mixed gender, ethnicity, age and socio-economic status unknown.

Theoretical/ideological framework of the study
'Attention to individual differences in the learning-to-teach process is of recent date. Over the past 10

years, a number of categories have emerged from research on reflection, such as 'alert novices' and 'common-sense thinkers' (Kubler LaBoskey 1993) and 'internally oriented' and 'externally oriented' student teachers (Korthagen 1988). In these and other studies (e.g. Kourilsky et al. 1996 and Robinson et al. 1989), differences in student teachers' learning are often described as being differences in attitudes. Student teachers differ, for example, in their 'willingness to take risks', the extent to which they are 'philosophically inclined', 'enterprising' or 'motivated to do well' or in their 'reflective attitude'. The present study investigates which learning activities are related to such differences and how they are related to other components of learning to teach.'

Method
This is a case study of learners at four different institutions (from four different parts of the Netherlands, having an initial in-service programme). All 30 interviewees had been teaching for about three months – in each institution, the sample selection involved two teachers recommended as 'strong' by tutors.

Interviews were generally conducted at students' homes, with the explanation that it 'was to learn how student teachers think about and experience learning to teach'. Interviews were semi-structured, lasting roughly one hour. The schedule consisted of several open-ended core questions and suggested follow-up questions.

Analysis
Interviews were fully transcribed (with a total of 750 pages), read and quotes were coded and categorised according to the components of learning, with 'categories emerging from a constantly improved overview of the essence of a component in all 30 subjects'. This was followed by descriptive analysis using homogeneity analysis, or multiple correspondence analysis, in order to examine how different categories related to one another. The analysis has no generalisability.

Results
There are, according to the authors, 'differences in the way students teachers learn'. In most cases, their mental models are strongly correlated to their approaches to learning, and neither the students nor their learning environments challenge their existing frames of reference or learning habits.

Student teachers have differences in the way they learn and have coherence on the whole in their learning. They tend to carry out activities they think are important, but do not all carry out all activities. These students rank knowledge construction activities as being of minor importance. Student teachers have varied attitudes towards the range of learning activities present in their training - many of the student teachers are not directed at changing and developing their existing frame of reference, and the learning environment does not challenge their learning habits.

Student teachers are categorised as having different orientations to learning to teach:

A. survival

B. closed reproduction

C. open reproduction

D. closed meaning

E. open meaning

There is little movement between orientations during the training programme. Most student teachers are not directed to knowledge construction beyond their existing frame of reference.

Conclusions
The study found that most of the student teachers 'are not directed to knowledge construction beyond their existing frame of reference'. This has implications for teachers being prepared for lifelong learning in terms of needing to reconsider 'existing interpretations and action repertoires and to construct knowledge on their own accord'. The focus in teacher training needs to be more on changing student teachers' mental models of learning to teach and their associated learning habits. 'Teacher educators need knowledge of the 'learning-to-teach process' and their learners.'

Further research on a larger scale, directed at developing a better understanding of what it takes for different student teachers to learn to construct knowledge, is required. A large-scale study of this is in preparation. Orientations and transitions between orientations, as well as skipping orientations, should be researched during and post teacher education.

Oosterheert IE, Vermunt JD, Denessen E (2002) Assessing orientations to learning to teach

Identification of report
Electronic database: SSCI

Status
Published

Linked reports
Linked
Oosterheert IE, Vermunt JD (2001) Individual differences in learning to teach: relating cognition, regulation and affect

Language
English

Country of study
Netherlands

Topic focus
Teacher careers
Teaching and learning

Curriculum area
The material does not focus on curriculum issues.

Population focus
Learners
Teaching staff

Age of learners
No information given

Sex of learners
No information given

Educational setting
Higher education institution

Study type
Exploration of relationships

Research question/focus
The authors investigate in-service student teachers' orientations to learning to teach and how they learn. The aim was to extend the results of the previous study by developing an instrument to assess orientations to learning to teach on a larger scale, to determine whether different patterns of learning can be distinguished and to what extent these resemble the patterns found in the first study.

Form of initial teacher training
No details given

Aspect of training on which study focuses
Learner style
School experience

Method/tool for making training flexible and responsive
Differentiation – taking account of individual differences in learning

What is known about the subjects of the study?
169 secondary student teachers from three institutions which had adopted an initial in-service model of learning to teach. 80% of the students were between 21 and 26 years of age, with a 2:1 ratio of women to men. At the time of the study, all the participants had at least 2-3 months independent teaching experience.

Theoretical/ideological framework of the study
In research on academic learning, differential effects of curricular changes are predominantly explained in terms of students' actual learning preferences and orientations. The way students experience and interpret aspects of their learning environment depends on their views of, preferences for and orientations towards learning in a given context (Oosterheert and Vermunt, 2001; Vermetten et al., 1999). There is also growing evidence that the origin of learners' orientations towards learning is largely affective (Niemvirta, 1999; Thompson, 1994). If learners in a given learning environment differ with respect to the learning activities they tend to employ, the question for teacher educators is not only 'what works' but 'what works at this moment for this student teacher'. It is important for teacher educators to understand what it 'takes for different student teachers to learn to teach' and which activities are most successful in helping individual learners to develop.

Method
Building on the authors' previous research, a questionnaire 'was developed to assess individual differences to learning to teach'. Items on the questionnaire were constructed in four steps. Firstly, category descriptions were used to construct items. This initial set of items was piloted with four students, and the students' feedback was used to inform the further development of the questionnaire. A similar pilot study was done with nine more students, which again contributed to the questionnaire's development. Within each category, three to six items were finalised (for a total of 103 items in total). Interviews were also used.

Analysis
Factor, reliability and nonparametric sociability analyses were performed to identify reliable scales. Cluster analysis was used to identify groups of students with

similar orientations to learning to teach. The answers provided by the student teachers to the questionnaires were analysed using principal component analysis for the three parts of the questionnaire. A reliability analysis and scalability coefficients were used to 'select homogeneous sets of items from the questionnaire'.

Results
It was found that student teachers have three basic concerns: maintenance of discipline in the classroom; teaching methods, materials and approaches (pedagogy), and pupils' thinking and learning – although they differ in terms of their main concern.

The study resulted in the identification of eight scales measuring individual differences in learning to teach: one scale measures a mental model; five scales measure how student teachers use information sources; and two scales measure how students deal with the emotions which follow a bad teaching experience. The mental model suggests that personal experience is not only a testing ground but also a source for the generation of new questions, which can only come from practice evoking questions such as Why? and How does this work? According to the model, the learner-practice interaction is too limited and others must help the student teacher by pointing out blind spots and suggesting alternative interpretations.

The scales relating to information sources show how non-deliberate processing plays a role in knowledge growth.

The results, for the most part, supported that of a previous study by these authors.

Conclusions
The study indicates that many student teachers are not actively directed at and do not succeed in knowledge construction beyond their own existing frame of reference. This is said to be because students tend to approach and interpret their learning experiences using their existing mental models and learning repertoire (Vermunt, 1996). Given the different ways of learning found in similar contexts, the authors believe that students may need guidance towards orientations which foster knowledge growth. This implies different measures for different learners, and an integrated approach; modifying a student's way of learning requires measures at a cognitive level but also at the more fundamental affective level.

A longitudinal study would be useful to see how students change their way of learning over time. Further research is also needed using a less one-sided instrument, as in this study items representing constructive and self-regulative ways of learning dominate. (Because many student teachers 'tend to approach and interpret their learning environment using their existing mental models and learning repertoire', many student teachers 'do not succeed in knowledge construction beyond their own existing frames of reference, despite the relatively innovative educative context they find themselves in'.)

Tanner H, Jones S (2000) Using ICT to support interactive teaching and learning on a secondary Mathematics PGCE course

Identification of report
Electronic database: AEI

Status
Published

Linked reports
Not linked

Language
English

Country of study
UK: Wales

Topic focus
Teacher careers; teaching and learning

Curriculum area
Mathematics

Programme name
Hyfforddi Athrawon Teacher Training Project (HATT)

Population focus
Learners; teaching staff

Age of learners
21 and over (professional education 18+)

Sex of learners
Mixed sex

Educational setting
Higher education institution

Study type
Exploration of relationships

Research question/focus
The study focuses on changes in the learning discourse within PGCE mathematics following the introduction of an open and distance learning format This study is part of a wider collaborative project (HATT, 2000) between the constituent colleges of the University of Wales which set out to promote the use of ICT to improve the teaching of mathematics, modern foreign languages and educational and professional studies on the PGCE programme, and to widen access to teacher training in Wales.

Form of initial teacher training
PGCE

Aspect of training on which study focuses
Learner style
Open and distance learning

Method/tool for making training flexible and responsive
Online resources
Virtual learning environment

What is known about the subjects of the study?
The researchers report on the implementation of computer supported ODL techniques to teach the college-based element of the PGCE course, in order to widen access to the course and support students.

Computer-based technology enables student communication through email (First Class conferencing was used initially but abandoned) and access to teaching materials, such as lecture notes, summaries and readings.

Theoretical/ideological framework of the study
The development of ODL materials for teacher training in shortage subjects is set in the context of theories of learning based on participation and active construction rather than acquisition (Askew, 1999), and a socio-constructivist viewpoint concerned with the construction of professional knowledge and evaluation of its viability, the development of corporate meanings within the group, the development of metacognitive awareness and the development of a disposition to reflect on professional issues to develop higher levels of meaningful practice.

Method
Students were asked to provide feedback, and to complete evaluation questionnaires (measuring attitudes to web-based ODL teaching) using the Likert scale at the end of the term. Tutors also observed students' behaviour and attitudes towards the new materials.

Analysis
Statistical and factor analysis (Mann-Whitney, principal components with varimax rotation and Kaiser normalisation) was used to evaluate the responses to the questionnaires (Likert scale).

'Overall univariate analysis of variance on attitude revealed a considerable interaction effect between sex and age ($p<.001$) with younger women being the least positive and older men being the most positive about the use of web based ODL.'

Results
The ODL course which was developed was said to meet the authors' seven underpinning pedagogic principles and improved access to the PGCE Mathematics course. The use of web-based materials and email was thought to have improved the quality of the course, although some aspects of the course could not be reproduced online (e.g. the tutor/seminar group interaction). For this reason, students are required to attend some face to face sessions in college. The use of a range of teaching materials means that different learning styles can be catered for. Students making use of the online materials arrive at seminars better prepared and seminars operate at a higher level. Posting summaries of seminars on the web was helpful to students.

There were found to be benefits to students learning and communicating online – such as more considered responses in discussions - and it is possible that making use of a variety of approaches (both on and offline) will allow a wider range of learning styles to be catered for.

Conclusions
The use of ICT can increase access, cater for different learning styles, give students a voice through email and facilitate access to a wide range of readings.

Some aspects of the course (e.g. face-to-face student/tutor interaction) cannot be reproduced completely asynchronously so students are still required to attend the institution during the course.

The use of email tutorials and web-based learning was thought to have improved the quality of the course.

Trotman J, Kerr T (2001) Making the personal professional: pre-service teacher education and personal

histories

Identification of report
Electronic database: ERIC

Status
Published

Linked reports
Not linked

Language
English

Country of study
Australia

Topic focus
Teacher careers
Teaching and learning

Curriculum area
The material does not focus on curriculum issues.

Population focus
Learners
Teaching staff

Age of learners
21 and over
Professional education 18+

Sex of learners
Mixed sex

Educational setting
Higher education institution

Study type
Evaluation: naturally occurring

Research question/focus
The study focuses on the restructuring of one unit of the Graduate Diploma to allow for the integration of personal life histories with other views and perspectives, in order to facilitate the student teachers' ability to deal with diversity and individuality and to encourage the growth of 'reflective practitioners'.

Form of initial teacher training
Postgraduate (Graduate Diploma of Education)

Aspect of training on which study focuses
HEI-based training
The use of a journal

Method/tool for making training flexible and responsive
Journal/log

The authors suggest that pre-service teachers 'tend to use their personal experiences as critical filters in accepting and integrating course content that is intended to develop professional decision-making frameworks. This may restrict their abilities to deal with pedagogical issues associated with the acceptance of diversity and individuality, and encourage an unthinking acceptance of the status quo in classrooms, schools and society.' Journals were used to facilitate the integration of knowledge acquired through personal life history and experience with knowledge derived from sociological and psychological studies of adolescence and schooling.

What is known about the subjects of the study?
120 student teachers, mostly coming into teaching from other careers or raising a family, and so older than most BEd students (who tend to be school-leavers) and with a greater proportion of ethnic minority students.

Theoretical/ideological framework of the study
Pre-service teachers tend to use their personal experience as critical filters in accepting and integrating course content intended to develop professional decision-making frameworks. This may restrict their ability to deal with pedagogical issues associated. The school contexts in which teachers exercise critical reflection are those in which learners are valued as individuals, and the curriculum reflects their needs and aspirations. They provide environments in which adults feel safe to challenge each other's views and leave their views open to challenge (Brookfield, 1986).

Following Knowles and Holt-Reynolds (1991), 'we bow to the superior pedagogy of experience, and we chose to co-operate with pre-service teachers' habitual patterns of learning from it (p 103). This did not mean that we wished to accept, uncritically, that biography determines pedagogy. Rather, our position was that of recognising that a reflective and sceptical professional is not created through a total 'amputation' of an uncritical and taken-for-granted early life-history. Such a view is mechanistic and denies the complexity of the subject. Instead, we were searching for an alternative process in teaching the course, one that created a 'sociological break in educational transmission' (Miles and Furlong 1988) by encouraging students to become aware of the intersection of their personal histories and the wider social context. As long ago as the 1950s, C Wright Mills was pointing to the emancipatory potential of locating oneself in history, and to thereby be enabled to participate and respond to the social forces that directly shape lives. Personal history or life history methods gave us the means to apply such insights to this course.'

Method
The subjects were asked to keep journals, focusing on different themes each week, and connecting with lectures, readings and discussion.

Analysis
The journals were analysed by three of the teaching staff. The first stage of analysis scanned the journals' descriptive accounts of memories of schooling and family as well as reflective comments on biographical experience. The second stage of analysis was to identify evidence that the journals had facilitated perspective transformation: for example, some of the female students wrote about the way in which gender had constrained them.

Results
As well as the analysis of the journals, the students were asked for their reactions – apart from the negative comments noted, there was 'overwhelming enthusiasm' and many saw it as the most worthwhile thing they had done while at university.

In the first stage of analysis, it was concluded that most students were able to recall aspects of their schooling and link them (with varying degrees of complexity) to the theoretical content of the unit. There was evidence that self-perceived marginality (whether gender, class, ethnicity or a mixture) seemed to contribute to more sociologically insightful reflection. A minority of students

expressed anger about the task; these were usually male and mathematics or science graduates who complained that the task unfairly advantaged those students with a talent for writing. Analysis of their journals suggested an unwillingness to reflect, not an inability to write, perhaps suggesting an anxiety about deconstructing identity based on masculinity and elite disciplines.

'It seems that the life-history approach is not only a fruitful means of generating professional growth, it also lends itself to creation and enhancement of culturally sensitive learning and teaching strategies for adults…….the journals seemed to form a worthwhile and productive contribution to perspective transformation. Most students were able to place their lives in the wider frame afforded by theory and many exhibited the capacity to reflect critically on the taken-for-granted assumptions they acknowledged.'

Many of the more insightful journals were written by those who were not Anglo-Celtic middle class Australians, perhaps suggesting that the chance to write about the experience of being 'the other' had produced these journals.

The authors say that they had under-utilised discussion in the link between journal writing and perspective transformation. Critical thinking does not necessarily lead to critically informed pedagogy. Knowledge and insight do not necessarily lead to action (Sikes and Troyna, 1991).

Conclusions
The journal activity described was found to be a valuable means of generating critical reflection as a basis for changes in practice because it introduces ideas, information and arguments that challenge students to think 'otherwise'. Journal writing created a space in which it was possible to link life histories, recognising the complexity of the process of becoming a teacher, of integrating the personal with the professional and of working with life histories rather than against them. Journal writing, the authors feel, permits students to become more engaged with what they might otherwise regard as 'contentious theoretical content', and provides a means for using critical reflection as a 'basis for changes in practice'.

Wile JM (1999) Professional portfolios: the talk of the student teaching experience

Identification of report
Handsearch

Status
Published

Linked reports
Not linked

Language
English

Country of study
Luxembourg, Germany and Austria

Topic focus
Teacher careers
Teaching and learning

Curriculum area
The material does not focus on curriculum issues.

Population focus
Learners
Teaching staff

Age of learners
21 and over
Professional education 18+

Sex of learners
No details given

Educational setting
Higher education institution

Study type
Description

Research question/focus
Portfolios are usually regarded as products. This study sets out to explore the ways in which the production of professional portfolios might be used as a process and contribute to dialogue between student teachers and mentors.

Form of initial teacher training
Undergraduate
Postgraduate

Aspect of training on which study focuses
Feedback
Portfolio/evidence
School experience
Mentor/mentee relationship

Method/tool for making training flexible and responsive
Mentoring

The student teachers in the study were placed in American schools in Luxembourg, Austria and Germany; the location of the schools meant that university tutors could not provide the usual level of support. The schools were often unfamiliar with the programme and the teachers were inexperienced as mentors. The students developed portfolios before their placements as a way of introducing themselves to their mentors. Through the different stages of the placement (introduction, goal-setting, monitoring progress and final assessment), the students and mentors carried out different activities and used the portfolios collaboratively. At time of the study, portfolios were not used for university graduation or licence to teach in the USA.

Portfolio

What is known about the subjects of the study?
American undergraduate and postgraduate student teachers, and inexperienced mentors at American schools in Luxembourg, Austria and Germany. No further details given.

Theoretical/ideological framework of the study

Portfolios can be used as a product to assess performance (Nagel 1992) and as a process (Wile and Tierney, 1995).

Method
Data was collected using a post-semester survey, open-ended interviews and questionnaires.

'At the end of the semester, student teachers and their mentors completed similar questionnaires. Participants were asked to rate the portfolio process as 'very useful', 'somewhat useful' or 'not very useful' during each phase (i.e. introduction, goal-setting, monitoring progress and final evaluation) of the student teacher semester. Participants were asked to select from the same choices to describe how confident the portfolio process enabled them to feel in their roles as either student teachers or mentors. Participants also were asked to describe how frequently the portfolios were used during the semester.

'In addition, mentor teachers and student teachers completed open-ended questionnaires concerning the portfolio process. The questionnaires encouraged student teachers and their mentors to offer suggestions for modifying the portfolio process to make it more useful.'

Analysis
Responses from the questionnaires were sorted into topical groups by constant comparison (Glaser and Strauss, 1967).

Results
Overall, some of the student teachers found the portfolios useful; others did not. 86% of student teachers and 100% of mentors in the study thought the portfolio was useful in the introduction phase. 'Students felt the appearance of professional-looking portfolios, with an array of impressive artifacts, gave them self-confidence as they were introduced to their mentors.' Some students and mentors thought the portfolio enhanced their teaching experience, while others thought it was time-consuming or redundant to the process and relationship that occurs during classroom practice. Comments made suggest that the discussion that occurred did focus on specific standards of professional development. The more frequently the portfolio was used, the more likely it was to generate focused talk between the student teachers and their mentors.

60% of student teachers and 72% of mentors thought the portfolio was useful during goal-setting.

Mentors seemed to have difficulty separating mentoring and monitoring. Generally, mentors focused on the product aspect of the portfolio, using it as a monitoring or assessment tool and not realising its potential as a teaching or mentoring tool for setting goals and planning experiences. Although mentors thought the portfolio could be a great asset, none of them saw its production as a joint responsibility.

Conclusions
In some cases, the professional portfolios were very rich documents and produced rich student teaching experiences, promoting meaningful talk between mentor teachers and student teachers. Others found the unstructured nature of portfolios bewildering so a process needs to be devised that will support student teachers and mentors in the discussion that surrounds professional development. More research is needed to compare the type and topic of teacher talk in classrooms where teachers develop professional portfolios and where they do not.

Williams EA (1998) Mentors' use of

dialogue within a secondary initial teacher education partnership

Identification of report
Handsearch

Status
Published

Linked reports
Not linked

Language
English

Country of study
UK: England

Topic focus
Teacher careers
Teaching and learning

Curriculum area
The material does not focus on curriculum issues.

Population focus
Learners
Teaching staff

Age of learners
21 and over
Professional education 18+

Sex of learners
Mixed sex

Educational setting
Higher education institution

Study type
Description

Research question/focus
The study analyses conversations between mentors and students on school placement to consider the different mentor roles and the match between student needs and what is offered by the mentor. The study considers whether an extension of the mentor role and the capacity to vary the style of interaction could help to maximise the potential for student learning.

Form of initial teacher training
Postgraduate
PGCE

Aspect of training on which study focuses
Feedback
Mentor-mentee relationship
Student learning style

Method/tool for making training flexible and responsive
Feedback
Mentoring
'The requirement to transfer both responsibilities and funding [for many elements of teacher training in England and Wales] to schools has changed and, in many cases, diminished the role of the higher education tutor and enhanced the role of the mentor. Most partnerships require regular meetings between mentor and student to review progress, give feedback about lessons taught

and set targets for the future development of the student's competence. A major issue of all providers is that of ensuring the student experience and support is of consistently good quality.

'The importance of an improved understanding of mentoring as a process lies in the potential significance of a match between mentoring style and the learning needs of individual students. This has implications for student learning at two levels. First, a serious mismatch may lead to the withdrawal of a student from initial teacher education altogether. Second, it may limit opportunities for students to reach an optimum level of competence, which is clearly important in the context of a perceived need to improve the classroom performance of newly qualified teachers.'

What is known about the subjects of the study?
8 mentors and 15 students

Theoretical/ideological framework of the study
The study is carried out within the context of earlier work on mentoring which identifies the multiplicity and complexity of the roles of mentors, and the potential conflict between them. There are said to be three common strands in the ways in which mentor roles have been characterised within teacher education: the mentor's assessment role, the teaching or training role and the personal support role. Tensions are noted between the supporting and assessing roles of the mentor (Hill et al., 1992; Jacques, 1992; Dart and Drake, 1995), between the needs of the pupils and those of the students (DES/HMI, 1991; Back and Booth, 1992) and between the need to support and challenge (Daloz, 1986; Martin, 1996).

Method
Conversations between mentors and students were recorded. After analysis of the transcripts, interviews were held with the students and mentors. The work is described as exploratory with a descriptive focus using a qualitative approach (Maykut and Morehouse, 1994). Mentors taperecorded their conversations with students. The recordings were transcribed, and analysed: 'First readings of the transcripts identified key words/phrases related to a range of possible mentoring roles.' Semi-structured interviews (following a process of hierarchical processing) were then conducted with the students and the mentors to 'locate the weekly conversations in the context of the whole mentoring process and to assess their significance for both student and mentor.'

34 discussions were transcribed, involving eight mentors and 15 students. Six mentors and 11 students were subsequently interviewed.

Analysis
Discourse analysis was used to consider the tapes and transcripts of conversations.

Results
The study found evidence of the range of mentor roles, categorised as teaching, supporting and assessing. The findings suggest that particular mentoring roles are significant for student progress, whether some roles are more significant than others or whether this depends upon the student. It is suggested that the continued development of more able students might require the mentor to offer a wide range of learning opportunities or to take a lead in setting or negotiating targets. Mentor functions could be categorised (Franke and Dahlgren,

1996) as:

- a creative dialogue and co-operative partners

- getting the student teacher to take into consideration the pupils' perspectives in his/her teaching

- a model

- a master who corrects

- a supportive assistant teacher

Franke and Dahlgren suggest that the first two of these indicate a reflective perspective on professional knowledge, while the others are based on a taken-for-granted perspective in which professional knowledge is transferred from mentor to student. The authors' use of discourse analysis suggests that any of the categories and any of the functions could be underpinned by a reflective or a taken-for-granted approach, and that the latter is more prevalent. The use of elicitive exchanges, particularly with open questions, enables the mentor to fulfil any role with a reflective approach, thus to encourage reflection among students the forms of exchange and speech used by the mentor may be as important as their perception and discharge of different mentor roles.

There was little evidence of a change in the nature of the relationship as the student progresses. Extending the roles mentors are able to play along with the capacity to vary interaction may help to maximise the potential for student learning within the mentoring context. The findings support those found elsewhere (Hawkins and Shohet, 1989; Back and Booth, 1994; Nolder et al., 1994), in that significant differences were found to exist between mentors.

Furlong and Maynard (1995) suggest that the mentor begins by acting as a model and moves through phases as coach, critical friend and co-enquirer, mirroring the developmental phases of the student. If this is the case, the researchers suggest, it would be expected that the nature of the dialogue would also change, consistent with Guillaume and Rudney's (1993) hypothesis that mentors and students would continue to talk about the same things but would talk about them in different ways. There was no evidence of this.

Conclusions
Further work is needed to consider the relationship between what mentors say and the role they are fulfilling, and whether mentor roles need to change to accommodate the progress or ability of the student. This study has focused on the role of the mentor, thus more research is needed on the role of the student.

Wolf N (2003) Learning to teach mathematics for understanding in the company of mentors

Identification of report
Electronic database: BEI

Status
Published

Linked reports
Not linked

Language
English

Country of study
USA

Topic focus
Teacher careers
Teaching and learning

Curriculum area
The material does not focus on curriculum issues.

Population focus
Learners
Teaching staff

Age of learners
21 and over
Professional education 18+

Sex of learners
Female only

Educational setting
Higher education institution

Study type
Description

Research question/focus
The researcher seeks to describe a student teacher's learning and the learning opportunities that changed her thinking and practice, specifically her involvement with her mentors.

'A close-up look at one person's learning can help us gain insights into the possible connections between different learning opportunities and their contributions to a novice's learning, a missing focus in research on teacher learning (Zeichner 1980, Johnston 1994, Feiman-Nemser and Remillard 1995, Ball 2000).'

Form of initial teacher training
Details not given

Aspect of training on which study focuses
Mentoring
School experience
Assessing training needs
Mentor/mentee relationship
Method/tool for making training flexible and responsive
Mentoring
One-to-one tutoring

'If we want teachers to be able to assist children in their learning, researchers argue, the teachers themselves need opportunities to have their own learning assisted by more experienced teachers and teacher-educators (Duckworth 1987, Tharp and Gallimore 1988). This assistance can best occur in the context of practice where novices might have a chance to participate in 'authentic activity' (Brown et al. 1989) with the support of others, more skilled practitioners.... If we want to assist novices' learning in the context of practice, we need to know what novices can and need to learn in the field, how they make sense of the learning opportunities available to them (Ball 2000) and what roles mentors may play to support their learning.'

What is known about the subjects of the study?
The primary subject of the study is a 22 year-old student teacher. She is described as enthusiastic, articulate and bright, a product of traditional teaching, with a routine experience of mathematics characterised by memorisation. The other participants are two university tutors and the researcher acting as mentors.

Theoretical/ideological framework of the study
The study is set in the context of mathematics 'teaching for understanding', which emphasises pupils' conceptual understanding as opposed to memorising facts and procedures. This kind of teaching promotes pupils' active engagement with mathematical ideas through exploration, problem-solving and classroom discourse. The model for learning teaching for understanding is that, if teachers are to be able to assist children in their learning, the teachers themselves need opportunities to have their own learning assisted by more experienced teachers and teacher-educators (Duckworth, 1987).

Method
Descriptive, participant observation. The study is a case study of one student teacher.

Analysis
The researcher observed the subject in three different situations with her three mentors. Data was also gathered from self-reports.

Results
What the subject learned corresponded to the major categories of learning that the National Council of Teachers of Mathematics' Standards argue teachers need for teaching mathematics. She improved her mathematical knowledge, learned about pupils and how they think and became more reflective about her own learning. Her awareness about her learning increased. Co-planning conversations, instructional interactions with individual pupils followed by explanatory conversations and observations of skilful mathematics teaching and conversations around these observations were particularly influential in the learning.

Co-planning conversations can help experienced teachers diagnose novices' needs.

Conclusions
Novices need many and varied opportunities to learn, including observation of skilled practice, participation (with support) in teaching-related activities (such as planning for instruction, and instruction and instructional conversations with individual or small groups of pupils). Novices need to talk with more experienced practitioners to make sense of the learning opportunities available to them and mentors need to help novices learn from what they experience. This involves helping novices see and hear what there is to see and hear as well as helping them with teaching activities. Novices can also learn to set goals for their own learning and how to go about reaching those goals.

The results of this systematic review are available in three formats:

SUMMARY	Explains the purpose of the review and the main messages from the research evidence
TECHNICAL REPORT	Includes the background, main findings, and full technical details of the review
DATABASES	Access to codings describing each research study included in the review

These can be downloaded or accessed at **http://eppi.ioe.ac.uk/reel/**

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telephone: +44 (0)20 7947 9556   email: info@ioe.ac.uk