Title An investigation into how ICT is used is teaching and learning by Initial Teacher Educators on the Primary BEd and PGCE courses in the School of Education at a British University

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I. Contents

II. Glossary of Abbreviations

BECTA	British Educational Computer Technology Agency
B Ed	Bachelor of Education degree
BREO	Bedfordshire Resources for Education Online
CPD	Continuing Professional Development
DCSF	Department for Children, Schools and Families
DFEE	Department of Education and Employment
DFES	Department of Education and Standards
DIUS	Department for Industry, Universities and Skills
ECM	Every Child Matters
FE	Further Education
GTC	General Teaching Council
HE	Higher Education
HEFCE	Higher Education Funding Council for England
HMI	Her Majesty's Inspectorate
ICT	Information and Communication Technology
IT	Information Technology
ITT	Initial Teacher Training
ITE	Initial Teacher Education
NCSL	National College School Leadership
NOF	New Opportunities Fund
NQT	Newly Qualified Teacher
Ofsted	Office for Standards in Education
PC	Personal Computer
PD	Professional Development
PGCE	Post Graduate Certificate in Education
QCA	Qualifications and Curriculum Authority
QTS	Qualified Teacher Status
SE	School Experience
SLICT	Strategic Leadership of Information Communication Technology
TDA	Teacher Development Agency
TTA	Teacher Training Agency
UCET	Universities' Council for the Education of Teachers
UoB	University of Bedfordshire

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V. Acknowledgements

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I can reassure you all that as this will be my last lengthy project, at least for a while, I have put my heart and soul into it!

For Grandad.

VI. Abstract

The purpose of this study was to explore the use of ICT in teaching and learning by initial teacher educators, on Primary PGCE and BEd courses, in one British university. The aim was to determine what and where good practice with ICT already existed on the Primary education courses and to identify points of action to make improvements. The world now is technology-rich and as such beginning teachers need to be prepared for the ever-changing demands of ICT in their future careers in schools, especially as their pupils are becoming ever-more digitally 'native'.

This study wanted to find out what it meant to use ICT well in teaching and learning on an Initial Teacher Education course for the primary age ranges. It also wanted to ascertain the barriers to the successful embedding of ICT into the curriculum of the Primary education course. Finally, it sought to make recommendations to the case study institution as to what and how improvements could be made.

The research was carried out through a thorough review of current literature as well as an analysis of the policy documents at both a local and national level. Staff who taught on the Primary education courses completed a questionnaire which allowed them to comment on their attitudes, views and usage of ICT in their teaching and learning. These results were then cross-referenced to PGCE students' evaluations of the ICT on their course, from the previous year.

It was found that ICT in teaching and learning should be made explicit through the sharing of aims for learning. These aims should include as a minimum, coverage through subject areas of national curriculum for ICT for Key Stages 1 and 2, allowing students to see how ICT is supported in a particular field. Also, the curriculum should include the explicit modelling of ICT for teaching and learning in university sessions and also including activities for school experience which will strengthen students' understanding further. This will involve a curriculum review.

In order to ensure that staff are competent, both at a personal level and for their embedding of ICT in their curriculum planned CPD at an appropriate level and in a meaningful context will be necessary, on an ongoing basis to keep up with the changes in technology. This would be supported by time for collaboration between colleagues to develop ideas for the curriculum.

Technical support, reliable equipment and easy access to resources needs to be developed and be '*sympathetic*' to the needs of ITE courses. A framework, supported by the whole department, for the development of all aspects of ICT in teaching and learning in ITE is advocated in order to keep pace with developments in the future.

This was a case-study and therefore results are not generalisable, however, there are elements of good practice which may be applicable to other, similar scenarios.

Chapter 1 – Introduction

1.1 Title

A case study to investigate how ICT is used in teaching and learning by teacher educators on the Primary BEd and PGCE courses in the School of Education at a British university.

1.2 National Context

Following the Education Reform Act, the National Curriculum was introduced in 1988. A report a year later by the ITT expert group (DfES, 1989) noted that the implication of the National Curriculum for ITT would be considerable as it highlighted the growing wider use of new technologies having a profound effect on the way teachers work; including the impact on individual children's learning and delivery of content in the classroom. This was early acknowledgement of what was to come. At the same time HMI was advocating that methods taught in ITE should be the same as those students were required to employ in school (Murray, 2002). This meant encouraging ITT providers to work closely with schools to provide a synthesis of practice; resulting in increased standards in ITT according to Emery, 1998.

Ten years later 2 initiatives were to drive ICT further to the forefront of teaching and learning. The TTA had issued a National Curriculum for ICT in Teacher training, linked to standards of performance (DfEE Circular 4/98 op cit, Davis and Tearle, 1999), and there were plans for ICT training for all existing teachers, provided by the New Opportunities Fund, which were about to begin (Dawes, 2001). The aims of these 2 ICT initiatives were to enhance learning and teaching, ensuring that key skills were developed by all who were involved in education, including the development of the pedagogical skills required to make the use of ICT successful in children's learning (Davis and Tearle, 1999). The advantage of a 'standards' based definition of requirements for ITT is that it can evolve with evaluation and research – indeed these standards were rewritten for September 2007 and a draft has been produced by the TDA of the Characteristics of ICT in ITT (March 2007) reflecting the need to change as a result of evaluation. The National Curriculum 2000 re-emphasised the use of ICT across the curriculum and not just in discreet skills sessions. Training providers clearly have a central role to play, under increasing pressure, from a variety

of sources including students, schools, pupils and the Government, to ensure that the educational workforce of the future is effectively prepared (Simpson et al, 1999).

As early as 1992, Somekah pointed out that lecturers in ITE are uniquely placed to carry out the evaluation of ICT in education because they recognise that it is the pupil's learning that is central to the reasons behind certain teaching strategies; thus being able to see-through to the heart of the benefits or weaknesses of resources like ICT. However, she also acknowledges that lecturers often do not support students in this way, for reasons such as their own anxieties about not having enough ICT knowledge or the reliability of ICT. Therefore, lecturers do not '*model the message*' that they are trying to instil. Littlejohn (2002) stresses the importance of CPD as one of the major influencing factors which enable teaching staff to make more effective use of ICT in learning and teaching; however, the main focus of ICT has traditionally been on ICT skills, and ignored the need to consider the skills required to deliver course material in such a way that students can see the processes to be used in their own teaching. Pan (2000) explains that teacher educators will need support to integrate technology into curricula to enable this vision of pedagogy to happen. Pan (2000) goes on to explain that the benefits from improving the integration of ICT into teaching and learning goes beyond the students as it enables the School of Education to become a centre of excellence for local partners too.

In recent years, ICT skills have risen, reflecting among other things, the rapid advancement of ICT in the home. Very soon the computer literacy of incoming students to ITT will be able to be taken for granted. The focus of teaching the use of ICT will then need to become more sophisticated to empower teachers in training to use ICT in expert and specialist ways, secure in the range of potential pedagogical uses (Simpson et al, 1999). Therefore the purpose of this study will investigate how tutors are preparing trainee teachers to use these resources and the range of ICT skills and strategies they deploy to do so.

1.3 Local Context

At outset there are two differing definitions of E-learning (i.e. using ICT in teaching and learning) which need highlighting – one constructed by the DFES and one used in Higher Education. The former, as Preston and Cuthell (2005) point out is an all embracing term including all the elements of ICT seen in schools, from PCs to Whiteboards, and cameras to interactive toys; whereas the latter refers only to web

technologies. For the purposes of this study, as an ITT provider must prepare teachers for school, the DFES definition will be used.

The thinking behind this study began as a result of evaluating the use of ICT by Primary PGCE students during their course between September 2006 and June 2007 (Appendix P). In summary the results of this evaluation found that students need more time to learn about ICT, more access to the resources available, more interaction with each other and experts in order to develop their expertise.
"We are still in a position where new teachers can be awkwardly unfamiliar with technology – possibly only seeing it as threatening... the opportunities for teachers to gain confidence with new technology across the period of ITT are often limited."
Whilst these comments by Crook (1996: 4) are from 12 years ago, they are still as pertinent today as the evaluation of the PGCE course showed, and should be rectified. Scrimshaw (1997) adds that new teachers need to know how to interpret the uses of ICT to fit their philosophy of education and the best interests of their learners.

The University already prides itself on the high quality teachers it produces.
"*The School of Education is a large national provider of teacher training and the quality of our provision is based upon a long and established history of teacher education. The Ofsted report congratulated the School of Education on the expertise and enthusiasm of its teaching staff and the significant support given to students. This is reflected in the excellent retention rates on our programmes, in which each student is valued and offered individual support. The School of Education has also recently been rated 30th out of 73 universities/colleges in a recent Centre for Education and Employment Research league table, as reported in the Guardian: education.guardian.co.uk/higher/specialreport.*" (UoB, 2007:online)
However, as an ITT provider it should be confident that it's graduates have developed into teachers who can use expertly ICT, at a personal level e.g. for administration and record keeping, but also so that they use ICT as a teacher for teaching their pupils and as a teachers for the benefit of their pupils learning (Kennewell et al, 2000).

The University has many ICT resources. There are PC and laptop facilities available for use in and out of lesson time, with a variety of software, both general and education specific. Many teaching rooms are equipped with an Interactive Whiteboard and projector. Most lecturers have personal access to a laptop;

however, if they do not, these can be borrowed from the University's Audio Visual department, along with digital cameras, video equipment and the like. Additionally, some curriculum areas have subject specific ICT equipment and software, for example, sensors used in science. The University has an established Learning Platform (BREO), which is used to share information with students and has the facility for Web 2.0 technology such as e-portfolios, WIKIs, discussion forums etc. There is technical support for the ICT in the University, provided by diverse teams, with varying responsibilities, and a recently drafted strategy for Technology-Enhanced Learning from 2008 to 2011 (UoB, 2008) demonstrates a commitment to moving ICT in teaching and learning forward.

As part of this commitment to developing and evolving appropriate curricula, there is a review in progress of the current provision across the Primary BEd course. The changes, when agreed will be implemented in September 2008. This study will also serve as an audit of ICT across the existing programme therefore will be used to inform, shape and plan for the provision of, and for, ICT across the new BEd programme. Currently, handbooks for each area of the curriculum, in each year group should detail the use of ICT according to the unit template for the subject.

1.4 Purpose and Aims

The two main recommendations from the evaluation of the Primary PGCE students have led to the main research questions of this study (detailed below).

a. University teaching should serve as a role model from which students can imitate practice during their school experience. An objective of the School of Education should be to become ICT capable (Kennewell et al, 2000). It is imperative that change of this nature has support from 'the top' (p33) and staff understand the reasons for using ICT judicially to replace or enhance existing learning activities. The OECD report (2001) accentuates that the expectations of teachers in terms of ICT and their on-going professional development with ICT are imperative to the future success of classroom teaching. Therefore, the School of Education should encompass this as part of its ethos.

b. Build on and disseminate existing good cross curriculum practice. It is clear from the qualitative comments made by the PGCE students, that there are

areas of the curriculum, e.g. science, that are encouraging the use of ICT on school experience in a very positive way. This practice should be shared across other departments to ensure it can be developed through other curriculum areas. Also a review of the way that ICT is currently expected to be taught, i.e. by the specialist teacher, should be moved towards a cross curricular approach; to enhance the way that learning for students takes place. This would mean that they would have more time and opportunities to practice and see the possibilities of ICT if a more proactive cross curricular approach was adopted. These sessions for ICT will need to be carefully planned, in order to ensure that maximum benefits can be gained and at a minimum, the statutory National Curriculum requirements for ICT in each subject is covered.

1.5 Key Research Questions

- How is ICT used in teaching and learning across the Primary BEd and PGCE courses?
- Where and what is the existing good practice that can be shared with all members of the School of Education?
- How can teaching and learning with ICT be improved across the Primary BEd and PGCE courses?
- What is needed to ensure that improvement can happen? E.g. training, resources etc

Chapter 2 – Literature Review

"Teacher educators teaching ITE (pre-service) courses in English HE institutions are nearly always qualified school teachers, with considerable experience of teaching and middle or senior management in the school sector. Entering HE they bring with them a wealth of professional knowledge and expertise accrued in and through school teaching" (Murray1, 2005:69) , including the classroom ICT skills they have developed. In the current climate, all teaching staff are facing rapidly changing skill requirements and rising expectations with regard to ICT. ITE clearly has a central role to play in this and are under increasing pressure that the educational workforce of the future is effectively prepared which was pointed out by DfES in a Report of the IT and ITT Expert Group (1989), as they recognised then that ITT would need to change as a result of changes in technology.

"It is difficult to argue that technology isn't affecting all aspects of our everyday lives: the way we carry out business, go about our shopping, our banking, buying holidays, booking travel; it even affects the way we meet new people and maintain our relationships with family and friends. The pervasiveness of computers, access to broadband and the use of mobile devices are all driving these changes around us, and education, in all its forms, is not immune from this." (Guic, 2008:1)

Technology is now firmly embedded in daily life (Vibert and Place, 2006), and raises questions about how far ICT contributes to learning and delivery and about the skills and confidence teachers need to apply ICT in the classroom. This was identified by the DfES report in 1989. However, ten years later, Simpson et al (1999) go on to express their concern that the staff in ITE is unprepared to deliver the appropriate training and education to their students. It is with this in mind that this literature review will consider how ICT is being incorporated into ITE and how, in turn, ITE is helping future teachers to incorporate ICT into their teaching and learning. Several aspects will be considered; the role of ITE, the role of ICT, the requirements of HE and the role that CPD has to play.

2.1 The Role of Higher Education in Initial Teacher Education

ITE and HE have developed together over a long history. They have gone through distinct phases of development over the last 50 years finally being brought into line with other professions in the 1980's with the university departments of education

becoming prominent and students being taught by 'expert' university tutors (Murray 2, 2002, Taylor, 2008). However there are conflicts of interests and aims between different groups in HE (Hatt, 2001).

ITE balances between an academic study of education (HE aspect) and a professional study (teaching in schools aspect). Each aspect has its own specific demands, policies, language etc, each controlled by different bodies, namely TDA, UCET, DCSF, DIUS, HMI, BECTA, HEFCE, GTC and OFSTED (Leask, 2001) and is frequently therefore required to fulfil opposing requirements. In the future these relationships will become increasingly complex as under the ECM agenda teachers will inhabit a very different professional world, integrating with other lead professionals in associated fields (Kirk and Broadhead, 2007). Taylor (2008) also raises the point that students have to view themselves as both teachers and learners, bringing a duality, and an added pressure to their role. Taylor's (2008) research goes on to show that teacher educators themselves face challenges about their identity in terms of needing to balance university expectations for academia and school expectations for professional expertise. These dualities are a very important consideration as there can be conflict created if the expectations of each part are not clearly delineated.

Murray and Male (2005, John, 1996, Murray2, 2002) note that teacher educators are generally expected to be effective facilitators of learning from their experience in schools . They outline that the teacher educator must have the knowledge and understanding in the subject to be taught and the capability to teach it in an HE setting (Clegg, 2002). However, as they are removed from the school setting it is essential that teacher educators continue to enhance and generalise their existing knowledge base of schooling. Murray and Male (2005) (supported by Boyd et al, 2006) go on to explain that it is this understanding of the profession and how to teach, as well as knowledge of contemporary school contexts that gives credibility to their role as teacher educator and enables them to support and empathise with students. This could be true of any academic teaching on an HE course in their field. However, teacher education is unique because the teacher educator has to manage what is taught with how it is taught. This requires a deeper knowledge of self-consciousness in practice, which is communicated to students. Both the Dutch and American standards for teacher educators stress the pedagogical roles in modelling practice (Murray and Male, 2005).

However, in England the Government has reformed and legislated over the last 10 years the content of HE courses for teacher education. Initially standards for QTS were brought in for 1998 (DFEE, 4/98) and subsequently revised, most recently in September 2007. This firmly embeds into the HE system a model which requires particular outcomes to be met. This necessitates establishing and growing partnerships between universities and schools.

The HE Academy (c. 2004) also have a framework for standards for teaching and learning in HE. Their aims are to support professional development for staff, creative approaches to learning, consistency and quality for education and to demonstrate the professionalism that staff bring to their roles. These standards include *"appropriate methods of teaching and learning in the subject area"* (p4) and a commitment by lecturers to incorporate research into professional practice, for example, using Interactive Whiteboards to manipulate the information taught, using techniques appropriate for a Primary classroom. These are directly relevant to ITE courses as the expectations here are that the knowledge of the teacher educator should be supported through research and practice, and be up to date. However, this is where a conflict can be clearly seen – that of academic with that of professional expert.

Teaching is essentially a practical activity and Taylor (2008) raises the point that students need their time in the classroom in order to begin to develop their own views and opinions about theory behind what actually goes on in the classroom. However, it should be remembered that knowledge from the experienced mentor cannot be simply transmitted to the student, it is a more complex situation than that and both the Partnership school and the HE establishment are responsible for its successful implementation.

2.2 The Role of the Teacher Educator

In this ever-changing environment Lunenberg et al (2007) explain that approaches are needed in teacher education that will help future teachers to translate theories about learning into actual teaching practices in schools. They stress the importance of teacher education being congruent with the current ideas of learning in schools – students being active constructors of their own understandings. However, in teacher education, the teacher educator is always an example of how a teacher should be; consequently creating a complex dual role of supporting student's learning through teaching and through modelling the role of the teacher. Lunenberg et al (2007) go on

to emphasise that the way a teacher educator teaches could be a more important factor in shaping the behaviour of student teacher's than the content that they deliver and so if the world is changing, so teacher educators must change their practice to accommodate this.

Ducharme and Ducharme (1996) emphasise the important function that teacher educators play in preparing the nation's next generation of teachers. Loughran and Berry (2005:193) support these views and develop them to include a specific professional competency of teacher educators; *"the ability to explicitly model for their students, the thoughts and actions that underpin one's pedagogical approach."* They go on to explain that explicit modelling is about the teacher educator doing in their practice what they expect students to do in their teaching; both in terms of the transmission of knowledge, from teacher to student, and the internal discussions that teachers have with themselves about the pedagogical reasons and feelings that underpin their practice. Loughran (2006: 194) go on to suggest that this is achieved through a variety of methods, such as *'thinking aloud'*, discussions and probing questions (Loughran and Berry, 2005). This encourages student teachers to grasp the possibilities of teaching and learning. Rather than seeing learning about teaching as a list of instructions or recipes for practice, Lunenberg et al (2007) and Boyd et al (2006) suggest making connections between exemplary behaviour and theory.

Building on his works of 2005 with Berry, Loughran (2006) explains that there are two aspects to learning about teaching – phronesis and episteme. Phronesis is the practical wisdom, the 'hints and tips' of teaching (Lunenberg et al, 2007); whereas the episteme is the expert knowledge, the theory behind the practice. They explain that phronesis is what students require and this should be explicitly modelled through talking about the thoughts and actions which underpin certain classroom practices. It is this, that then leads to more powerful teaching and learning about pedagogy as it is also through this discussion, that the 'bigger picture', the episteme, is then progressed in order to understand and implement the practical elements of being a teacher. There is obviously a balance of which to be aware, that discriminating decisions need to be made about what is helpful to highlight (or not) in certain situations, and how to highlight those points that are particularly relevant and this is an ongoing dilemma. However, it also enables the difficulties, complexities and problematic nature of teaching to be exposed through the discussion about different types of teaching decisions being made, for example highlighting the difference

between what is intended (planned) and what actually happens in the classroom (reality).

From their research Loughran (2006) found that student teachers need to be in situations where they can '*feel what it is like to be in a given situation*' (p198) (Loughran and Berry, 2005). By explicitly modelling this, students can watch how they are being taught as well as what they are being taught. This is particularly important with ICT as it is a visual and kinaesthetic media which necessitates being involved with it in order to gain understanding. To truly develop their understanding, rather than simply trying to copy (Lunenberg et al, 2007), they need time to reflect on why they were taught in this way; thus developing reflective practice from their own learning which they can then implement in their teaching. This collaborative approach to learning helps students to reframe their thoughts and access ideas that they would not have achieved from working alone. A social constructivist style of learning (Ashton, 1999); that is, knowledge developed in a collaborative and 'hands-on' way.

From the teacher educator's point of view this does have its disadvantages too. This explicit dissection of practice takes valuable time. Also exposing one's own practice to critique by students leaves the educators in a vulnerable position as the role of the expert might be perceived as lost. However, Lunenberg et al (2007) believe that failure to draw explicit attention to their practice by teacher educators means that student teacher's views of learning and teaching do not change. Emery (1998) agrees adding that without these opportunities to critically examine practice, students are likely to adopt practices they experienced as children in schools which might reinforce poor models. Also, Loughran (2006) see this as an opportunity to model professional feedback and to allow student teachers to see into the practice along with seeing the good things practised (Loughran and Berry, 2005). Equally, if this modelled process of explaining and exploring perspectives was not done, then there would be a danger of simply offering knowledge – "*telling as opposed to teaching*" (p201).

Sinkinson (1997) witnessed that an added advantage is a 'team-teaching' approach where two or more colleagues work together to teach a group of students in this way; thus modelling the practices required of the students in another way, reinforcing the techniques and principles essential for working in a classroom. Goos and Moni (2001) stress this too, advocating that the teaching and learning approaches in

workshops and tutorials should model strategies that can be used in classrooms, for example a teacher with Learning Support Assistant, or teacher with teacher. Berry and Loughran, (2002, op cit. Lunenberg et al 2007:591) suggest encouraging this collaboration and cooperative learning forces teacher educators to articulate and justify their own principles in the process of reaching a common ground for teaching the students. Indeed, they go on to point out, that this is a quality that the students are expected to demonstrate when working alongside their mentors in school, thus modelling how to work with the wider professional community. Lunenberg et al (2007) suggest that this practice also helps teacher educators to improve their own repertoire through reflection of their own and of colleagues practice and develop their teaching as a result.

However, this modelling in teacher education is not common according to the research of Lunenberg et al (2007). They note that these types of explanations are done in passing or as a response to a question rather than it being explicitly planned as an activity for learning. From their research there appeared to be a lack of understanding by teacher educators of how to use these modelling skills effectively to make the connections between practice and theory explicit. They found that one reason for this might be that the expectations about, and the assessments of, the performance of teacher educators often focus on aspects other than their teaching practice. A second reason concurs with Loughran (2006) that modelling demonstrates vulnerability and therefore teacher educators do not wish to be exposed to scrutiny as this feels risky (Loughran and Berry, 2005). A final reason might be that 'the apprentice' style of teacher education is currently out of favour and modelling may appear to imply that style, although as explained here, it is far from that.

Whilst there are pros and cons to aspects of modelling in ITE, overall it can be seen that these are exemplars of good practice to which all teaching and learning, in a wide variety of subjects can be adhered.

2.3 Teaching with Technology in Teacher Education

"...children and young people are active and competent in the important areas of ICT. They use the media and the new digital communication tools naturally and with great success. And this process is outside the control of teachers and parents, not all of whom are as yet technically competent.... This generation gap will create

internal pressure in the school system and lead to a new pedagogical revolution." (Eriksen, 2004:202). This can be seen in the increased usage of social networking websites. ICT has come to the forefront in education over the last 10 years and nothing is 'cooler' than technology for children (Robertson, 2003). In response to this, DfEE initiatives such as the National Grid for Learning (1997), New Opportunities Fund training schemes (1999 op cit. Simpson et al, 1999:247) and the Lap-tops for Teachers schemes have raised the profile for the need for teachers to be ICT literate. In schools, budgets have been 'ring-fenced' to ensure that the money is spent on certain equipment, for example interactive whiteboards. Also, ICT *"is given importance in the National Curriculum, both as a cross-curricular theme and within the core and foundation subjects"* (Somekah, 1992:2). Overall this has led to a hugely increased profile for ICT in education.

At the same time, during the 1990's the Macfarlane report (COSHEP, 1992, op cit. Simpson et al, 1999:248) considered the implication for ICT in HE. The findings promoted a series of developments which included training and access to equipment for all HE staff. Additionally, over this timeframe, studies in a number of countries indicated that there was a rise of student skills in ICT in entry to HE (Simpson et al, 1999). Prensky (2001, op cit. Guic, 2008:4) described this as becoming *'digitally native'*; meaning that increasingly young people belong to a society that operates with and through technology, as opposed to being *'digitally immigrant'*; meaning that new technologies are incorporated in lifestyle but are not essential to the way that lifestyle operates.

Ultimately this progress will mean that students will have an acceptable general computer literacy and therefore teacher educators will be expected to teach the use of ICT as a *'sophisticated and empowering tool'* (Simpson et al, 1999:248, Eriksen, 2004, Granger et al, 2002) embedded in the pedagogy of teacher education (McDonald 2, 1993), rather than teaching the hardware and software operations (Pianfetti, 2001). However if this is to happen, teacher educators, Simpson et al (1999) go on to point out, will need to be more than basic users of ICT; they will need to be secure in the pedagogical understanding of the use of ICT as required by students and NQTs. Equally, with such rapid changes in technology, teacher educators can feel overwhelmed as they attempt to keep up (Matthew et al, 2002). Yildirim (2000) suggests, educational institutions struggle with how to teach ICT given the vast array of technologies available, and that the biggest obstacle to teachers using technology in their classrooms is the lack of adequate teacher training

(Yelland et al, 2000); and yet teachers need to be digitally literate so they can prepare students to be successful in a workplace which is dominated by technology (Yelland et al, 2000, Pianfetti, 2001, Robertson, 2003, Eriksen, 2004); a situation that student teachers already recognise (Pritchard, 2001). There is no doubt that, *"in order to prepare tomorrow's teachers as technology-using teachers, faculty department is the critical enabler."* (Judge and O'Bannon, 2008:26)

Jones' (1998) researched the feelings of students towards learning technologies with increasing demands for the use of ICT in the classroom. Overall, his study found that students of education believed that teachers knew a lot about computers before they used them in the classroom and as a result they felt that they would have trouble using them with their pupils. He found that ICT skill is not a pre-requisite for acceptance onto teacher education courses; therefore there is no general base level on entry as there is in English and Maths, for example. Yildirim (2000) supported this in his findings stating that experience prior to the teacher education course contributes to students' competency in using ICT.

Jones (1998) explains that by the end of the course students are expected to become competent personal users as well as teachers capable of integrating technology into their pupils learning (Stevens and Lonberger, 1998) and there is no natural progression to do this (McDonald2, 1993). Jones (1998) also noted that being personally competent with ICT does not mean that they will be able to use ICT in the classroom. Yildirim (2000) agreed that ICT usage needs to be taught in order to increase competency and reduce anxiety adding that more competent students should have differentiated assignments to develop their ICT understanding further; those who are less competent should have tailored sessions to develop skills. Pritchard (2001) takes this view a step further by encouraging a truly personalised approach; progress should be measured against the development from each individual's own starting point; a shift away from the teacher towards the learner (Jones, 2002, Sandholtz 2001).

The most significant factor from Jones' (1998) study was that the students felt that there was not enough time spent during the teacher education course on modelling and using ICT to develop their understanding and skill with ICT in practice in the classroom (Ertmer et al, 2000, Yelland et al, 2000, Davis and Tearle, 1999, Somekah, 1992); thus causing them to be anxious when using ICT in schools. He concluded that one important aspect for student teachers is to have the use of ICT

role-modelled for them during their training period by teacher educators; supported by Judge and O'Bannon (2008), Pianfetti (2001) Goos and Moni (2001), Sandholtz (2001), Matthew et al (2002), McDonald2 (1993) and Yelland et al (2000). Again Yildirim's (2000) research supports this view as he makes the point that teacher educators should demonstrate the use of ICT and be role models for prospective teachers in integrating technology into the classroom (Eriksen, 2004, Murray 2, 2002) as teachers learn from those more experienced colleagues (Dawes, 2001). Stevens and Lonberger (1998:341) describe this as *'technology-teachers need to be trained by technology-using faculty'*. This modelling provides the foundation for students to develop the skills and competence in their own classroom. It is through seeing the benefits and limitations of using technology that students can begin to evaluate and integrate its use (Matthew et al, 2002). Sandholtz (2001), Yelland et al (2000) and Dawes (2001) develop this further by adding that this is particularly true when the students are on School Experience as they really see the educational technology in action. There are issues about how all students get the same experience of technology during their School Experience and this should be borne in mind. She also recommends that teacher educators should spend time in classrooms observing specifically the use of educational technology in action in their field.

Simpson et al (1999) conducted research to ascertain the range of ICT skills and strategies used by teacher educators. They found that teacher educators generally used ICT for administration tasks and to produce traditional resources, for example, handouts. About a third used it for presenting information and incorporated CD-ROMs. A major finding was also that although the teacher educators were experienced in differentiating for their students, the range of skills in ICT was widely diverse – this problem is likely to continue as new waves of technology arrive, for example Web 3.0 (Hughes and Brace, 2008). Simpson et al (1999) go on to explain that teacher educators have always encouraged a constructivist approach to learning and in terms of ICT they should model this with their students as the students will face the same dilemma as new waves of technology arrive and their pupils have skills and understandings in ICT which overtake their own. The 'let's find out together' approach is to be strongly recommended when adopting ICT in teaching and learning. This exploring notion also fits more closely with the development of creating reflective practitioners as teacher educators will show that teachers learn as they teach, using the pedagogical principles to plan engaging learning with ICT – a student-centred classroom (Robertson, 2003, Goos and Moni 2001, McDonald 1, 1993). It also transforms teachers into active builders of knowledge as it takes place

in the context of the student and the teacher educator; answering their curiosity and needs (Granger et al, 2002). Eriksen's (2004) findings suggest this is a big change for teacher educators as they had to adjust their views of teaching and learning. However, his project appeared to improve the relationships between student teachers and teacher educators; enhancing motivation, questioning and attendance.

Pritchard (2001) also advocates from his research that a collaborative and experimental approach to learning about ICT is beneficial for both student and teacher educator, although he acknowledges that some participants are more comfortable with this approach than others (Mitchell and Wakefield, 2001, Dexter et al, 2002). Uys (2007) recognises the importance of discourse surrounding concerns about ICT as part of the key to changing and developing practice. Additionally, Prtichard (2001) promotes a view that ICT in teacher education courses should focus on children's learning in schools and how the use of the technology can support and enhance that learning (Judge and O'Bannon, 2008, Sandholtz, 2001, Davis and Tearle, 1999).

Furthermore, individual subject areas should devote time to elements of how ICT is incorporated into their field. Sandholtz (2001) and Yelland et al (2000) also suggest that personal portfolios be kept and that peer support and assessment should be encouraged (Goos and Moni, 2001), along with additional support which could be technical or in the form of help sheets (McDonald2, 1993). This could apply to both the teacher educator and the student in terms of their development (Mitchell and Wakefield, 2001). Developing this idea is the research of Stevens and Lonberger (1998) which states that it is no good offering a single core course in ICT as this implies that it is an extra feature rather than an integral part of the teacher education course as originally recommended by DfES Report (1989). Judge and O'Bannon (2008) suggest that ICT needs embedding in the curriculum. ICT skills need to be taught, together with a level of practical knowledge, however the true understanding develops from embedding ICT across the curriculum. This provides the context for learning, increases the opportunities to use ICT and provides a level of appropriate training (Sandholtz, 2001); transforming practice rather than translating existing practices (Uys, 2007).

Pianfetti (2001) and Matthew et al (2002) raise the issue of administrative support being an essential component to teachers integrating technology. This provides time for teacher educators to 'play' (explore, reflect, discuss, experiment) with and learn

about new technology, with the support of colleagues and experts (Dawes, 2001, Dexter et al, 2002, Sandholtz, 2001, McDonald2, 1993), safe in the knowledge that their workload is being supported. These sessions should not just focus on the technical aspects of ICT but most importantly, how to integrate ICT into subject areas (Uys, 2007, Matthew et al, 2002, Sandholtz, 2001, McDonald 1, 1993, Somekah, 1992). They found that these times of collegiality, a community working together, developed understanding and confidence and increased the use of technology in the classroom as they recognised the links to the curriculum from the explorations they experienced. Uys (2007) adds the dimension of using colleagues as role models which has a similar positive effect on the integration of ICT as the students benefit from having a teacher educator modelling the use of ICT.

Granger et al (2002) and Matthew et al (2002) add to this by highlighting the need to have access to ICT that works and has the appropriate technical support (Judge and O'Bannon, 2008, Dexter et al, 2002, Sandholtz, 2001, Yelland et al, 2000, Somekah, 1992). Workshops without the ongoing support or easy access to equipment did not encourage ICT integration afterwards. As technology changes so rapidly, these sessions should be on-going and as regular as is required (Uys, 2007). They provide the opportunity to think about teaching with technology in both practical and pedagogical senses to find creative ways to integrate ICT into practice (Sandholtz, 2001).

Moreover, Matthew et al (2002) found that that impetus was given to the whole initiative of integrating ICT, if it was a whole department goal (Judge and O'Bannon, 2008, Dexter et al, 2002). McDonald (2, 1993) agreed explaining that as the management team controls the budget and makes the decisions, it is essential that they are committed to the development of ICT in this way (Sandholtz, 2001, Gijslaers and Hanedza, 2006). Uys (2007) explains that without this 'top-down' support funding and resources may be controlled in a less than positive way, thus creating a further barrier to the use of ICT. Wheeler and Winter (2005) highlight the need for the sensitive handling of change as being imperative, as it causes uncertainty. *"The main objective of the education of teachers is to meet the increasing pressure from social and technological change. We have to acknowledge the need to develop a new role as teachers, where the future teacher is technologically competent, has a good grasp of different subjects, possesses the social skills needed to develop professional relationships and can engage in constructive teamwork in active communities of practice and learning."* (Eriksen, 2004:210)

2.4 Continuing Professional Development with Technology in Teacher Education

Edmonds (2007) points out that, teacher educators should continually engage as learners, to reflect upon their own practice and professional development and so to model good teaching practice. Lavonen et al (2006) found that although there had been many ICT developments in many countries associated with education, the one common area where progression had been slow was in the use of ICT in teacher education. Consequently, many young school teachers have felt unconfident with the use of ICT in their classrooms. *"Changing, or restructuring, classroom practice cannot occur without significant changes to the way... teachers teach, and the way students learn...one agent of change in classroom practice: the professional development of both beginning and experienced* (that is, those that teach them) *teachers."* (Jones, 2002:51) Littlejohn (2002:170) adds that pace is essential as too *rapid change will be confrontational; incremental implementation* through CPD is essential to success. It is the way to develop new knowledge and skills (Edmonds, 2007).

Jones (2002) goes on to say CPD in the effective use of educational technologies requires that participants can return to their classroom and implement the knowledge straight away. However, as Lavonen et al (2006) note, it is not always effective to organise whole group staff development in teacher education as the differences in ability and need are wide ranging. Also the adoption of new ICT knowledge will mean a change in teaching style and approach which can be uncomfortable for some; they may have to unlearn some practice and relearn new ideas (Dawes, 2001). Nevertheless, Littlejohn (2002) stresses that from his National Consultancy studies CPD is the one major influencing factor which, potentially, enables teaching staff to make more effective use of ICT for learning and teaching.

The 'Intel Teach to the Future' programme (Tearle and Dillon: 2003) which was designed to develop teachers' ability to use ICT to the approximate level required for QTS, showed that as teacher confidence improved through the training, so did their ability to use ICT in educational situations. Participants found it particularly useful as it was relevant to the school context with subject specific ideas (Lavonen et al, 2006), and they were working in collaboration with one another, in small groups, but at their own pace (Edmonds, 2007). They found that participants reaped these positive

benefits associated with the programme, notwithstanding an additional time commitment (Littlejohn, 2002). However, they also found that sessions run outside of working hours meant there was a less positive attitude towards the training than if it occurred during the normal day; they also noted that incentives to attend sessions were effective. Judge and O'Bannon (2008) also advocated the use of incentives to develop the use of and the integration of ICT, thereby rewarding members by providing the time and finances to allow experimentation. Lavonen et al (2006) go on to say that time allocated for co-operation and reflection between teacher educators has an influence on the success of the CPD; without it progress in implementing new ideas is slow.

One of Simpson et al's (1999) outcomes was that teacher educators did not have the up to date knowledge of what ICT was happening in schools – again this problem is likely to continue as new waves of technology arrive. They raise their concern that teacher educators need to be able to seamlessly incorporate ICT into their curriculum as part of the means of learning. Indeed, schools will expect this of their students and NQTs. With rapidly changing technology, this immediately implies a commitment to the development of professional ICT knowledge by teacher educators and students; something which the new 'Standards' (DCFS, 2007) advocates strongly Pritchard (2001) points out the philosophy behind the standards for ICT being introduced originally is sound as it supports the work of children across the curriculum. Yildirim (2000) adds as his final finding that teacher education institutions should collaborate with their partner schools and design training to meet both student and teacher needs. Certainly, as Pritchard (2001) states, the schools are where the pedagogy is put into practice and where the students begin to integrate the technology into the classroom (Fidler, 1994). This collaborative approach was utilised by Goos and Moni (2001) in their research to the great benefit of ICT with all parties; school, students and university/teacher educators. Judge and O'Bannon (2008) also highlight the use of lunchtime discussion sessions, as well as more formal training sessions as helpful to the development of staff. Littlejohn (2002) emphasises that too frequently the CPD is decided before the participants arrive to the session and therefore personal needs of understanding from the session are not met. Sandholtz (2001) emphasises that involving teachers in their CPD is significant for several reasons; it gives value to teacher's opinion, it increases the relevance of the program and therefore it fosters ownership and commitment (Uys, 2007).

Pianfetti (2001) supports this view, highlighting the notion of professional development in technology being key to teaching today, so long as it does not focus on the technology but on the pedagogy behind (Sandholtz, 2001); those that receive this training are more likely to integrate ICT into their teaching and so model good practice for their students. CPD should encourage teacher educators to concentrate on designing good educational opportunities for their students (Littlejohn, 2002). Knight et al (2006:319) state that *'the Government are taking teaching quality and its enhancement very seriously'* in HE. They believe that the importance of CPD lies in importance to teachers, at all levels, to learn new ways of teaching and assessing, just in order to keep working; Edmonds (2007) adds that it ultimately improves instruction. HE needs to supply spaces and encourage collegiality in order for this to happen, in order that best practice can be shared (Edmonds, 2007, Miranda Net Ltd, 2004). They emphasise the real world but do not preclude this from happening in a virtual one. However, they do highlight that wherever it takes places it should be a priority for the department and the team and support should be in place for the formation of learning; making use of national initiatives where necessary and providing time for reflection (Edmonds, 2007). Whilst CPD should impact on student learning, it is also CPD that keeps staff *'fit to practise as supporters of student learning in HE'* (Knight et al, 2006:337).

2.5 Conclusion

In conclusion there are several common themes to all the aspects considered here.

- There is a dichotomy in teacher education between the demands of schools and the demands of HE.
- There are rapid changes to technology and therefore pedagogy in both teacher education and schools needs to develop accordingly; although development needs to happen in context and in manageable amounts.
- The role of the teacher educator has many dimensions, including teacher, professional expert and most importantly role model.
- The student teacher has to balance being both a learner and a prospective professional who requires ICT skills for both aspects.
- Seeing good practice modelled has positive benefits on the practice of the observer. This can be student to teacher educator, student to teacher, teacher

educator to teacher, teacher educator to student, student to student, teacher educator to teacher educator (Loughran, 2006).

- Time and support for development need to be allocated for both students and teacher educators to collaborate and reflect on practice if changes are to be implemented. Personalised progress is essential, rather than "blanket" expectations.
- Teacher educators need to keep up to date with current practice in schools, especially with evolving technology demands, and this means establishing strong links in partnership with schools. CPD plays a beneficial role here.

Pan (2000) summarises that whilst many people criticise teacher education for not preparing students to use ICT effectively in teaching and learning there are a number of obstacles that can prevent this from happening effectively; funding, staff development, time allocation to reflect, reluctant participants, out of date knowledge and poor planning. The literature from 18 years ago, when ICT came to the forefront, is saying the same as it is now; there is a sense here of being in a 'hamster wheel', as progress made is only to keep up with the latest developments and never really to develop an in depth understanding. To overcome this Pan (2000) advocates a technology rich environment where students can learn and learn to teach, CPD should be appropriately implemented to ensure that the teacher educators can model good practice, students should have a basic level of digital literacy before joining the courses and time for both students and teacher educators to reflect and collaborate needs to be allocated.

Chapter 3 – Research Methodology

3.1 Focus

The focus of this study are the current staff of the School of Education at a British University that teach on the Primary BEd and the Primary PGCE courses, and the ICT that is taught throughout the curriculum on these courses at the time of this study.

The study follows an evaluation of responses from the students of the Primary PGCE in July 2007, which concluded that they needed more time to learn about ICT, more access to resources and more interaction with tutors and each other in order to develop their ICT as a teacher. Deeper analysis of the responses indicated that there were some areas of the curriculum that provided the opportunity for students to develop their ICT understanding in learning and teaching however the replies also suggested that this was not always the case and that;

a) University teaching should serve as a role model from which students can imitate practice during their School Experience
b) Existing good ICT practice should be built on and disseminated across the curriculum.

This being the case the focus of the study, through documentary analysis and responses of a staff questionnaire (Appendix A) is to find out the following, linked to the Key Research Questions on page 5:

1. What is the view of the staff about ICT generally?
2. What is the view of the staff about ICT available for access at the University?
3. What is the view of the staff about ICT and teacher education?
4. What is the view of the staff about ICT and Learning and Teaching and how do they demonstrate this to their students?
5. What teaching techniques and learning activities are used, incorporating ICT, on the programmes currently?
6. What are the ICT skills of the staff?
7. What CPD opportunities would the staff welcome in the future?

3.2 The Survey Using a Questionnaire

The principle tool to be used in this research is a questionnaire (Appendix A) to be completed by the staff of the University's School of Education that teaches on the Primary BEd and PGCE courses. The purpose of the questionnaire is to gather data which will be both qualitative, through open questions, allowing a free response from the participant; and quantitative, through closed questions, which are quick and straightforward to answer. A balance of the two types of data has been chosen in order to ensure that remarks and explanations from the participants can be taken into account as suggested by Cohen et al (2000). The data can then be used to describe how ICT is being used in learning and teaching and measure, statistically, the views and perceptions of the staff. In turn, the outcomes can be used to make recommendations, for example about the CPD required in ICT, or the areas for review in the curriculum.

Cohen et al (2000) state that is important not to use leading, highbrow, complex or irritating questions as this may prevent a participant from engaging with the questionnaire. This is supported by Bell (2005). Every effort has been made to ensure this advice has been adhered to.

A variety of types of closed questions, as described by Cohen et al (2000), have been employed in the questionnaire.

a) Dichotomous (YES/NO) – these are straightforward to answer, however there is room to qualify and explain in a more open format following this set of questions.
b) Rating Scales – These allow for a degree of sensitivity and differentiation of response whilst still allowing for statistical data to be collected (Cohen et al 2000 and Bell, 2005). However, there can be problems of interpretation by the respondents as one person's 'strongly agree' may be another's 'agree'. Also there is no assumption of equal intervals between the categories as the respondent may carry a different weight of feeling between 'strongly agrees' and 'agree' and 'strongly disagree' and 'disagree'. Equally, according to Cohen et al (2000), most people do not like to answer in extremes and prefer to take a more middle ground and for this reason the middle point has been removed.

The open-ended questions rely on the honesty of the respondent. They catch the data that is not expressed through replies to closed questions and are useful to ascertain the attitudes, perceptions and opinions of the participants. However, there can be problems with the data handling due to the difficulties with comparison between answers (see later in the chapter about validity and reliability of data) and they can be more time-hungry for the participants. It should also be borne in mind that the literacy levels of the respondents may affect the way these questions are answered (Cohen et al, 2000). In this case, that is not considered to be a problem due to the nature of the roles of the participants.

The second part of the questionnaire is the actual tool used during the SLICT training (Appendix A part B) by NCSL and BECTA to ascertain a self evaluation of the level of ICT skills held by school leaders. It is also used by schools in their review of staff skills in order to develop training opportunities. It has therefore a very real use here in ascertaining, in line with schools, what the teacher educators of this School of Education can already do and where their ICT understanding needs to be taken forward.

The advice of Cohen et al (2000) has been borne in mind with regard to the layout and administration of the questionnaire. The questionnaire will be piloted (Appendix C) on a small number of School of Education staff who do not teach on the Primary BEd or PGCE programmes (Bell, 2005). This will provide the opportunity to work though any inconsistencies and identify weaknesses, thus saving time later (McMillan and Weyers, 2007). The questionnaire has been sequenced to make completion easier, beginning with factual questions, moving into closed questions before finally ending with open questions. Each section is labelled and simple instructions are included where appropriate. Coloured pages have been used to emphasise the 2 part structure of the questionnaire. Its appearance is clear and clutter free, using an easy to read font as suggested by Cohen et al (2000).

The questionnaire will be placed in the participant's pigeon holes together with a pen and envelope for return (Bell, 2005). This will hopefully ease the completion and return of the questionnaire for the participants. Also an email copy will be sent to the participants for those who would prefer to complete it digitally. Follow up reminders will be sent as necessary. On return, the questionnaires will be checked for completeness, any information that is deliberately there to mislead and uniformity in following instructions (Cohen et al, 2000).

3.3 Acknowledgement of the Case Study Approach as Relevant to This Study

It is for the following reasons that the case study was selected as the method for this study which intends to gain a deeper understanding into the learning and teaching of ICT on the Primary education courses at this specific time at a particular University in order to find a way forward that is beneficial for all parties. Taber (2007: 74) describes the case study as an "*enquiry into a phenomenon in context*" and seeks to answer the questions how and why. The principle aim of a case study is to describe what it is like to be in a particular situation at a particular time. It is often used to review a situation with a means to making appropriate changes to achieve set goals (Cohen et al, 2000). Cohen et al (2000) go on to explain that it is investigating real people and real situations and the uniqueness of that. It looks at a specific aspect in depth and describes and analyses a situation, focussing on the participants' perceptions (Bell, 2005). It is bound by time, geography and the individuals (characteristics, roles etc) that are involved. It is also shaped by the ethos of the organisation in which it takes place at the time (Schostak, 2002). It treats all participants equally and seeks to genuinely create a better understanding for the future, with an over-riding interest in the people involved (Cohen et al, 2000 and Schostak, 2002).

The advantages of this approach are that it will provide an awareness of the reality of the current situation of ICT in the primary curriculum and allow an understanding of the complexity of the situation of learning and teaching with ICT to begin to be unravelled. It will also provide an idea of some future steps of action (Bell, 2005). The data is readily accessible and the results will be meaningful and understood by those who utilise them because they belong to the case (here, the School of Education) which is being analysed (Cohen et al, 2000).

However, there are also disadvantages to this approach namely that this type of study can be biased as the researcher is often a participant of the organisation, as is the case in this study, and as a result, it can be difficult to cross check data avoiding being selective and subjective (Bell, 2005). These aspects will be dealt with further on in the chapter when the reliability and validity of the study will be considered. As this approach is interpretive, the results are not able to be generalised, which could be considered to be another disadvantage. On the other hand, as this is a case study the research is only interested in the realities of this case (the School of

Education) and therefore comparing and contrasting with other institutions to generalise the findings is not essential (Cohen et al, 2000).

3.4 Documentary Evidence

Duffy (2005) explains the importance of analysing documentary evidence as it is primary evidence. In this case it will be the handbooks for the units taught on the Primary PGCE and BEd, together with the University's current learning and teaching policy, ICT policies and its newly drafted strategy document for Technology-Enhanced Learning. They are 'inadvertent' documents, that are used in the research but not produced specifically for the research and therefore they can withstand criticism because they are genuine and authentic records.

The documents will be scrutinised to ascertain the use of ICT in learning and teaching across the curriculum. Duffy (2005) states that the intended purpose and audience of the audience should be taken into account.

3.5 Sample

Cohen et al (2000) explain that there are several factors to consider when selecting a sample population for study; size, representativeness and access. They go on to say that a generally accepted minimum sample size is 30 and there should be a balance of groups within the sample that represent total population of the organisation. However, they do recognise that the sample is constrained by the organisation which is certainly the case here.

In this case the population will be all listed tutors in the School of Education who teach on the Primary BEd or PGCE courses a total of 31 participants. The sample a specific group that is easily accessible. This is non-probability sampling. There is no chance of a wider population being selected or represented because the approach here is that of a case study. This may lead to biased or skewed results which cannot be generalised, however as this is a case study the context is to examine the one case and not be concerned with the generalising of results. This method is often used in small scale research projects and therefore the results from this sample are considered adequate for the intended purpose as generalisation is considered to be beyond the remit of this study.

3.6 Reliability and Validity

According to Bell (2005) reliability is the extent to which a procedure can be replicated with the same results every time; although it is not 100% possible as even factual questions can produce different types of answers. Validity is the measure of a certain tool to do the job for which it was intended; that is the design of the research to provide credible conclusions.

It has already been explained that the principle tool, the questionnaire will be piloted (Appendix C). This adopts what Bell (2005) describes as a test/re-test situation. In other words it is a checking mechanism to ensure that the questionnaire will provide reliable, valid results. This also ensures what Cohen et al (2000) describe as content validity, as the instrument (questionnaire) is tested prior to use for fairness and comprehensiveness.

External validity shown through generalising the findings from the data cannot be obtained in this case study, however, internal validity will be as the research will be sustained by data (Cohen et al, 2000). The data collected from the questionnaire will be triangulated through the use of the documentary evidence and in turn against the literature reviewed, thus providing theoretical validity too, moving the study closer towards finding a real truth. The final part of the triangle will be the matching of the data against the findings from the existing completed student questionnaire of July 2007. This will achieve the aim of seeing the situation from all the angles of those whom the situation affects and thus create a more rounded understanding of the situation which will mean that the results are more reliable.

Whilst cross-checking is difficult in a case study, as already acknowledged, by using these few methods to cross check data, bias should be minimised and therefore a distorted picture from the data is less likely.

In order to prevent invalid results further, the questionnaire has been tailored to the respondents personally through finding out about their background, their perceptions and then their actual methods of working. Drop out rates will be minimised by sending reminders and also the way in which the questionnaire is administered in the first place. This will maximise responses and therefore the data will be more

representative. The data will be gathered and analysed in a standardised systematic way (Cohen et al, 2000), which is critical to reducing bias.

Cohen et al (2000) describe the 'reactivity effect' as being the respondents behaving differently when subjected to scrutiny. This is certainly possible in this case study as the researcher is the also a colleague of the participants. There is a danger here that answers will be given which they believe the researcher is looking for due to her role within the institution. They may feel threatened. Accurate, honest completion will hopefully be catered for in the letter accompanying the questionnaire, explaining the voluntary nature, anonymity and confidentiality aspects of the questionnaire and the purpose of the report being for academic reasons rather than instigated by the institution for professional reasons. Equally, the researcher is aware that she will need to take care to avoid subjective interpretations of the responses collated; avoiding tunnel vision and inferring the truth.

3.7 Ethics

According to McMillan and Weyers (2007) ethics is the protection of human rights, dignity and health and safety of the participants and observers to a situation. There are 3 basic principles: voluntary involvement, confidentiality of data and do no harm to those involved. In this study, this is explained through the letter accompanying the questionnaire (Appendix A) which provides 'informed consent' (p213) to those participating in the study. As well as this, it outlines the purpose of the study, advantages of participation and information about results and the procedures in place (Bell, 2005). Ideally, this consent should be signed, but as the participants are known to the researcher this would negate the anonymity aspect. Therefore, consent is given if the questionnaire is completed and returned, thus a 'contractual relationship' is established between the participants and the researcher (Cohen et al, 2000:52).

No unethical practice is intended, however, it may be inadvertently so. For example, as the researcher is known to the participants 'vulnerable groups' may feel pressured into participating; conversely some may feel they will gain an advantage through participation (McMillan and Weyers, 2007:214). Hopefully, this is negated by the explanation in the informed consent aspect of the questionnaire and the personal/professional understanding of the participants of research methods as this should provide enough details for volunteers to decide whether to participate and

recognise the limitation of the study (Taber, 2007). Schostak (2002) describes this as reciprocity and equality of status; that is, those involved should be informed about how and why the study is being done and what access to results they will have.

In terms of the researcher's role in the research, there is a need to balance her presence in the research with the equally important goal of not conducting research that was more about her than the other participants as she is effectively a participant observer. She is aware that she does not just have one role – that of the researcher – but performs a variety of roles within the organisation as well, which may influence the study. She will endeavour to be especilly sensitive to the differences in between the participants which may raise ethical issues during the course of the research. She is aware of the potential clashes in ethical principles, will ensure that these are dealt with appropriately.

Permission has been sought (Appendix B) from the Head of the School of Education to undertake this study. Also, this study will be approved by the University's Ethics Committee prior to commencement of the study.

The final summary will follow Cohen et al's (2000) recommendation to be a fair accurate and relevant report; a positive evaluation which is beneficial to the researcher, the participants and the organisation, thus minimising the risks to all concerned.

Chapter 4 – Data Analysis

4.1 The Direction of the Study

From the initial survey last year, of the Primary PGCE students, it was found that University teaching should serve as a role model so that students can derive best practice and inform their own teaching experiences. Also it highlighted that there is some good practice with ICT, however, this is patchy and is not seen across the curriculum. Therefore this study wanted to investigate: What is happening with ICT in teaching and learning on the Primary BEd and PGCE courses? How can it be improved? And what is required to ensure that improvement happens?

Through analysing the responses of the questionnaire, and linking to the theory, these questions will be answered by unpicking attitudes towards and access to ICT; and the skills and opportunities for needed development, both in terms of resources and training.

4.2 Effectiveness of the Questionnaire

Following the pilot study (Appendix C) amendments were made to the questionnaire in order to accommodate identified discrepancies and difficulties with completion (Cohen et al, 2000). Question 2 needed the age brackets amending as there was an overlap, Question 12, part 'f' had the wording altered in order to clarify the intended meaning; lastly, a uniformed response method of circling answers was adopted in order to give the process of answering the questionnaire greater cohesion. It was then distributed through the staff 'pigeon holes' and by email (Appendix A). There was one 'chaser' email sent (Appendix A) and a total response rate of 84% was obtained, demonstrating the success of the method and providing a very good overview of the staff in the University department involved.

4.3 General Findings from the Questionnaire

4.3.1 Type of Respondent

Following the successful rate of response to the questionnaire, the views of a wide cross-section of the target population (lecturers on Primary BEd and PGCE courses) were obtained. As shown in the figure below, 58% of the population were female and 42% were male.

The age range of respondents is:

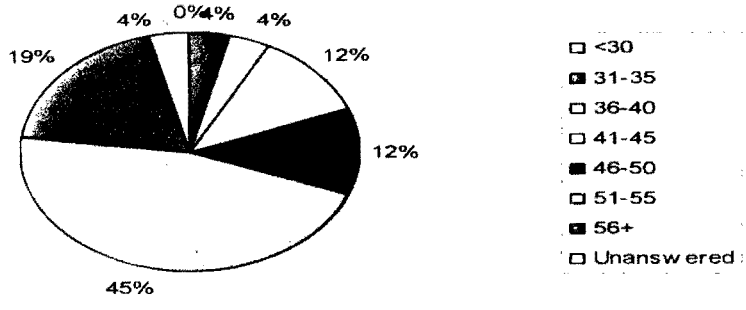

Figure 4.3.1 Ages of Staff in Years

4.3.2 Experience

With 64% of staff being over the age of 50, and in conjunction with the 3 box and whisker diagrams below, a conclusion can be drawn here that there is a wealth of experience in Primary education to be taken into account. This is important as this adds to the validity to the answers provided as it suggests a deep understanding of the subject of ICT in Primary education. Indeed this is supported by spread of experiences shown in the figures below, where it is emphasised that between them, staff have experience in all aspects of Primary education.

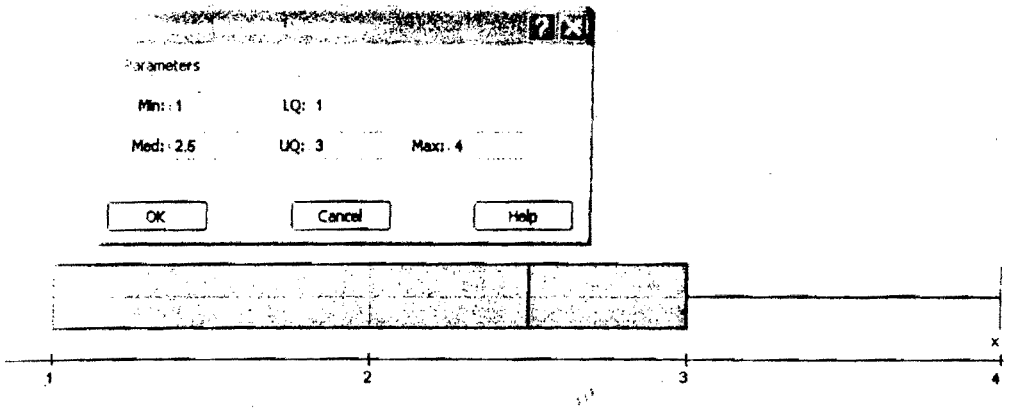

Figure 4.3.2 Early Years Experience in Years

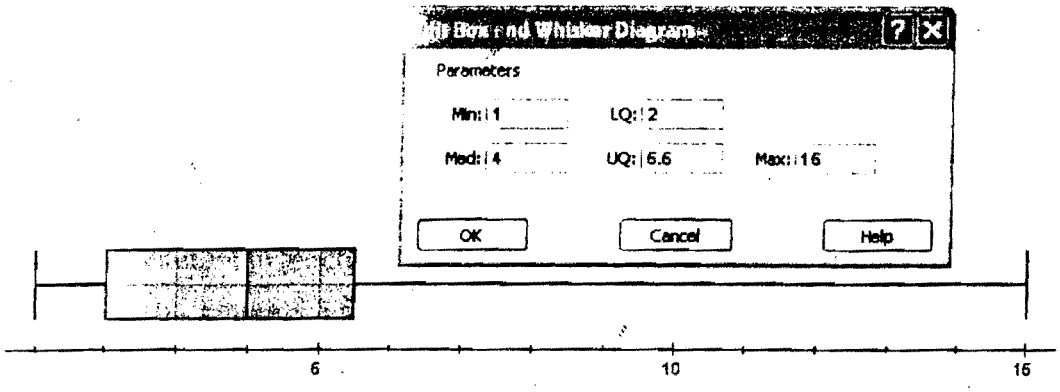

Figure 4.3.3 Early Years / Key Stage 1 Experience in Years

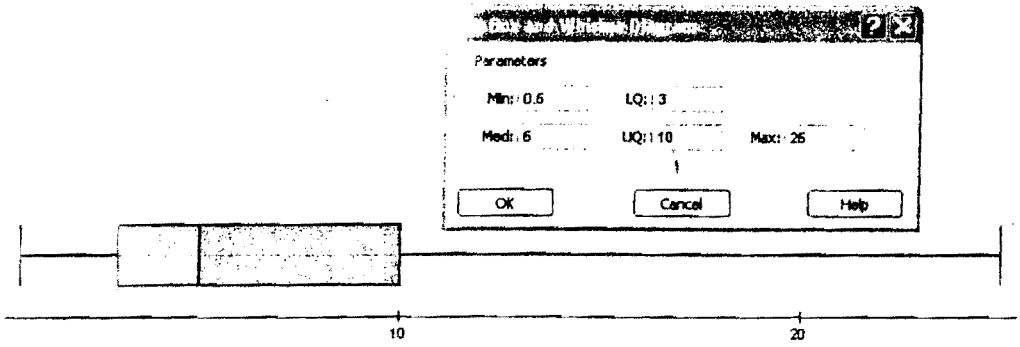

Figure 4.3.4 Key Stage 1 / Key Stage 2 Experience in Years

However, it should be acknowledged that not all of their experiences have been recent in a Primary setting. Figure 4.3.5 shows that approximately 50% of staff have been in Initial Teacher Education for 10 years or more, thus meaning that they have

been removed from teaching in a Primary classroom for that length of time, although may undertake observations.

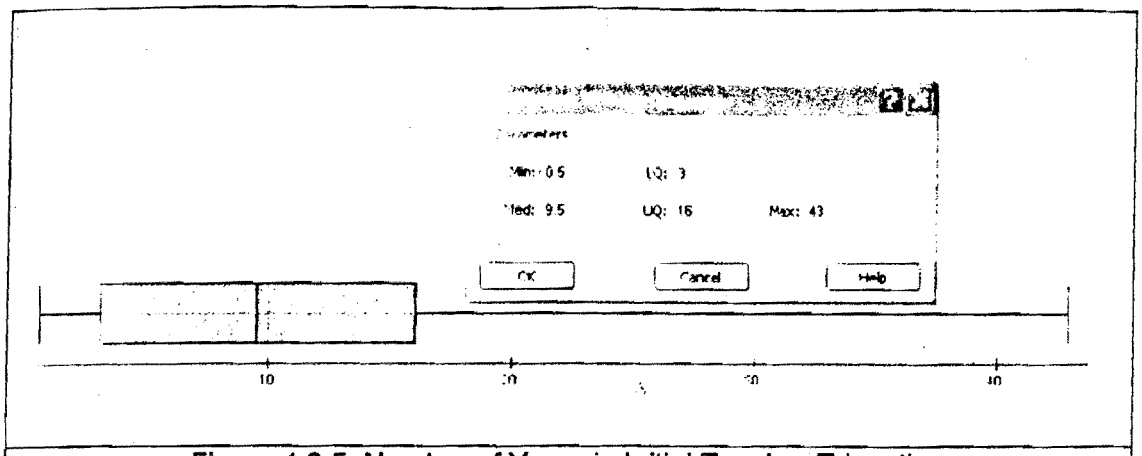

Figure 4.3.5 Number of Years in Initial Teacher Education

This can lead to a tainted view of what it is really like to be a Primary teacher in the current climate and may have some impact on views of ICT in schools, as they may not have been involved in recent initiatives in Primary Education with ICT as the focus. The positive aspect here is that there is a wealth of experience in ITE, which means that there is strong understanding of what it makes to create beginning teachers, competent to teach in today's world; this being some of the main reasons for entering ITE. Figure 4.3.6 highlights creating teachers, sharing experiences and working with adult learners as some of the main reasons for entering ITE, as well as their own Continuing Professional Development.

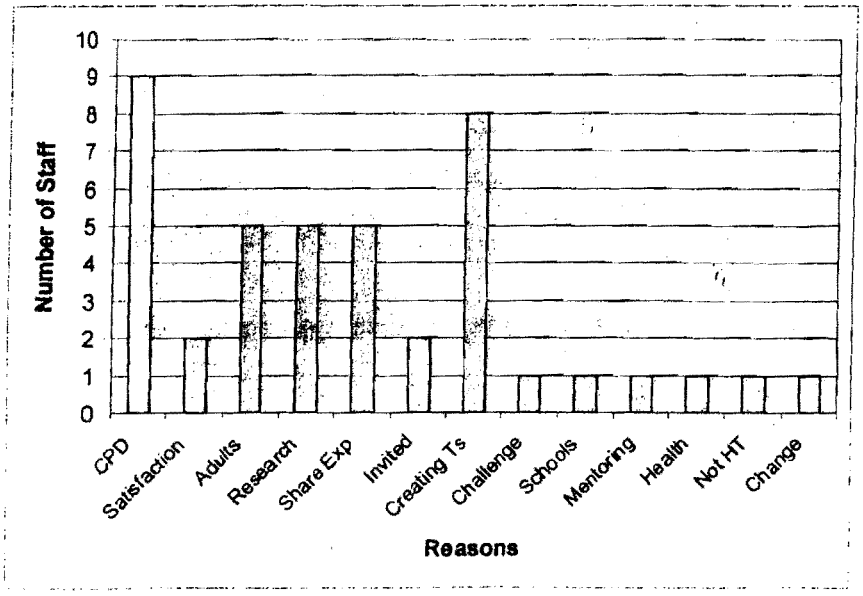

Figure 4.3.6 Reasons for Staff Entering Initial Teacher Education

This is an important aspect to recognise as it demonstrates an understanding by staff that there is a need to continually grow in knowledge and skill in order to cope with

the rigours of working in education. This is important to this study as one of the key questions relates to the CPD required in order to improve ICT and this result demonstrates that it can be assumed that staff would be amenable.

In addition to this aspect of personal development, there is a commitment by staff to teach and to support those they teach both in a school setting (link tutoring) and in a traditional teaching arena (Figure 4.3.7).

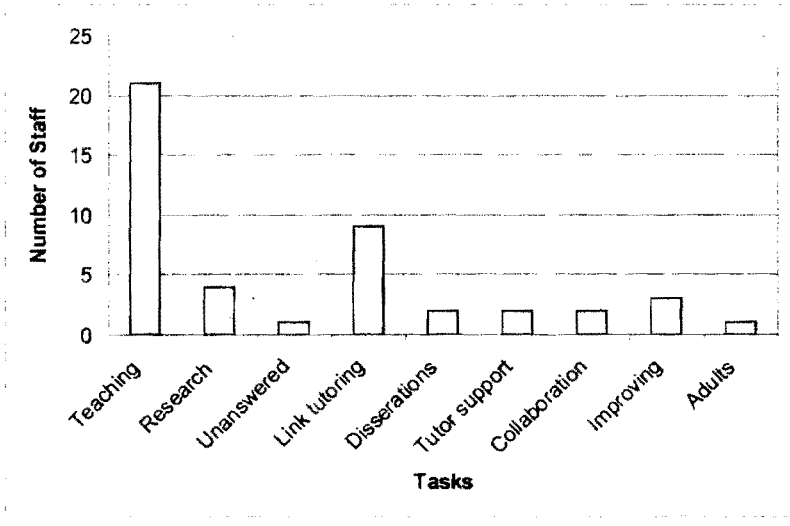

Figure 4.3.7 Most Satisfying Elements of Staff Roles in Initial Teacher Education

It can also been seen from this chart that there is some satisfaction derived from researching and deepening the understanding of the processes of education, both individually, in collaboration with one another and through supporting students to deepen their understanding by undertaking dissertations. Again this is important to this study as it demonstrates a willingness to improve the quality of teacher education and of the quality of beginning teachers. Undoubtedly in the current ever-changing climate, this must include ICT.

4.4 The Importance and Meaning of ICT in ITT

"*Good teaching matters*" (Bates, 1997:12 and figure 4.3.7). To almost every teacher, this statement is incontrovertible. Bates goes on to explain that the learning objectives, materials used, differentiation employed together with the chosen medium for learning makes teaching good. Each medium requires different skills and appeals to different learners. The advantage of ICT, as he perceives it, is that it is flexible and can be used widely. For the purpose of this study effective teaching is considered from two perspectives; ICT used with students in University and also ICT

used by students in schools. For an ITT establishment the two are inextricably linked.

"*By law, teachers have to teach ICT, which is given the status of a separate subject in the National Curriculum.*" (McFarlane, 1997: 5) The pace of technological development today is such that everyone, but particularly children, need to be able to face the world competent with ICT. The capacity to communicate and access information is, as Leask and Williams point out, a "*vital extension of the ability to read and write*" (cited in Leask and Pachler, 2005: 61).

Therefore we should understand the aspects of ICT in primary education with which teachers must engage.

ICT the Subject i.e. National Curriculum programmes of study and attainment targets	**ICT for Teaching** e.g. Interactive Whiteboards, use of shared resources (Virtual Learning Platforms/ networked resources)
ICT for Administration e.g. Management Information, Virtual Learning Platforms, Email	**ICT for Learning** i.e. Planned use by the teacher, cross curricula, out of school learning, Virtual Learning Platforms (e-learning – both pupil and student teacher)

Table 4.4.1 What ICT means in Primary Education (A diagrammatic interpretation from the author's perspective)

The extent and the variety of ICT for teaching and learning are clearly shown in the results from the PGCE questionnaire.

ICT in School	%
OHP	92.21
TV	98.70
VHS	94.81
DVD	87.01
Video Camera	67.53
Still Camera	100.00
Radio Cassette	97.40
Photocopier	100.00
Digital Projector	87.01
Whiteboard	97.40
Desktop	87.01
Laptop	77.92
PDA	7.79
Printer	97.40
Toys	71.43
Scanner	51.95

Table 4.4.2 ICT available for Use in Schools During School Experience Shown in Percentage of Schools Where Resources Found According to PGCE Survey July 2007

Subject	% Always Used
ICT	77.92
Maths	15.58
Science	14.29
History/Geography/RE	12.99
Modern Languages	6.49
Literacy	16.88
Art/D&T	7.79
PE	2.60
Music	6.49

Table 4.4.3 Frequency of usage of ICT on School Experience in Different Subject Areas

Table 4.4.3 demonstrates how valuable ICT is in Primary Education and the vast array of tools that are available for use. However, it very much emphasises the role of teaching and learning with ICT that the student utilises with their pupils, it does not show how the student uses ICT for their own learning. This is relevant because, the personal skills of students need to be strong in order to cope with the demands of the variety of ICT in school and the level of usage across the curriculum. This is further supported by levels of experience of staff both in school and ITE (figures 4.3.3, 4.3.4, 4.3.5 and 4.3.6).

Additionally, Spendlove and Hopper (2006: 178) add weight to the importance of this way of working for ITT establishments. They stress that it is imperative to provide the best model of teaching and learning to ultimately influence students' practice in schools. Also the more opportunities that the students have to be reflective, helps them to engage in the underlying theories and perspectives influencing their practice. It should also be remembered that with the insistence of the DfES for all schools to have an on-line learning platform by spring 2008, not only does this way of working support their own development but also provides an insight into the kinds of activities in which children will be expected to engage in the very near future. They need to be ICT capable.

Initial Teacher Education Staff demonstrate their understanding of the relevance and importance of ICT to students (Table 4.4.4).

		Strongly Agree	Agree	Disagree	Strongly Disagree	Unanswered
Question 11 g	It is essential that a lecturer shows a positive attitude towards ICT	50%	42%	8%	0%	0%
Question 13 a	ICT provides an insight into new and different learning and teaching environments	58%	42%	0%	0%	0%
Question 13 b	ICT enriches/enhances courses or programmes of work	50%	42%	4%	0%	4%
Question 13 c	ICT introduces students to a range of techniques they are likely to meet in their future work	62%	38%	0%	0%	0%

Table 4.4.4 Staff Attitudes toward Teaching and Learning with ICT

100% of staff agree or strongly agree that ICT incorporated into their teaching and learning not only provides an insight into different teaching and learning environments, but it also introduces students to techniques that students will experience in schools, as discussed in the literature review (Ducharme and Ducharme, 1996). 92% also acknowledge the need to model positive attitudes towards ICT as they believe that it enriches and enhances the experiences of their learners.

Powerpoint	CD Rom
Video camera	Curriculum appropriate software
Word Processing	Data logging
Movie maker	Microscope
VLE passive (collecting information)	Scanning
VLE active (engaging with / adding material)	Digital photos
Interactive White Board	Visualiser
Internet	Probes
Publisher	Recording equipment
Excel	Data handling
Video clips	Robots

Table 4.4.5 Types of ICT Used by Staff in Teaching and Learning

Table 4.4.5 clearly shows that there is a commitment by staff to incorporate ICT into the curriculum. It also shows the variety of types of ICT used; much of which is similar to the ICT available in schools as stated by the PGCE students (Table 4.4.2). This is positive as it demonstrates an understanding of what ICT students are expected to understand when in school. It also shows an attempt, by some, to use the VLE to engage with e-learning at the student level. However, it also demonstrates that the VLE is only a small part of ICT within ITE.

An understanding of the definition of ICT for Primary education is essential as there are tensions pulling ITE students in many directions, particularly in the area of 'ICT for Learning' as they are considering ICT for pupils learning and ICT for their own learning. This was uncovered during the analysis of documentation.

4.5 Analysis of Policy Documentation

For the purpose of this study the following documentation was considered (Appendices D - L):

- University's Curriculum Review for 2008 (CRE08)
- University's Education Strategy 2005-2008: Education for Life
- University's Draft Technology-Enhanced Learning Strategy 2008-2011
- Primary PGCE and BEd Action Plans for 2007-2008
- University's IT Policies
- DCFS Professional Standards for QTS 2007
- DfES Circular 4/98 Annex B – ITT for the Use of ICT in Subject Teaching
- TDA Draft Characteristics of ICT in ITT 2007
- The UK Professional Standards Framework for Supporting teaching and learning in HE (unknown year)

All of these documents provide information and insight into the teaching, learning and ICT usage for HE. There are elements of this that support the Primary BEd and PGCE courses, there are also elements which demonstrate a dichotomy between ICT in Primary education and ICT in HE; or possibly a lack of appreciation for the wide variety of ICT incorporated into Primary education courses, by those who support ICT in HE.

There are Professional Standards for QTS (Appendix I) which all trainee teachers should meet. These include the explicit use and development of ICT in learning and teaching. It is therefore important that the University provides opportunities for development in these areas, covering all aspects of the National Curriculum as well as encouraging the use of ICT as one of a range of methodologies and understanding the pedagogy behind the practice (Loughran, 2006). This means that ITE students should understand how to encourage learning through the use of ICT, also what it means to teach and learn with ICT. A view supported by Robertson (2003), Goos and Moni (2001) and McDonald (1993).

The University's ICT policies do not cover aspects or principles of using ICT in teaching and learning. They focus solely on the merits of literal use of hardware and software. This is contrary to other educational establishments e.g. schools, where a

policy for ICT and teaching and learning would be in place. However, the Education Strategy (2005-2008) does include learning environments which utilise ICT and that support the work place setting and life experience. It also highlights a need to be responsive to students needs and provide an effective learning experience for all The TDA (Draft 2007) Characteristics of ICT in ITT concurs (Appendix K). This is important for an ITE course as it is vocational in its essence. However, the ICT that is stressed in this document relates to the use of e-learning, laptops in workshops and 'hubs' of PCs where students can gain access to work.

The Education Strategy (2005-2008), is becoming outdated. It is to be replaced with the CRE08 (2007) agenda, which emphasises the teaching of the appropriate use of technology for learning. This focus is beneficial to the ITE courses as has already been seen. It goes on to explain that subject knowledge and understanding, vocational relevance and applicability, contextualisation and meaningful and active learning on courses should be key foci. Therefore the Primary education courses will need to be supported and resourced to meet the needs of the students on an ITE course. Importantly, CRE08 (2007) recognises that students are 'digital natives' in a technology-rich and changing world, and indeed this is true of their school pupils, as discussed earlier in the literature review.

CRE08 (2007) is to be supported by the University's Technology Enhanced Learning Strategy 2008-2011 (Draft 2008). The main focus of this is e-learning. It acknowledges learning and development with ICT, including CPD for staff and enhanced provision, including robust systems – all of which are essential to the integration of ICT into learning and teaching (Eriksen, 2006). However, it does not take into account any other forms of ICT for teaching and learning which are clearly essential to ITE courses and the leaders of the Primary BEd and PGCE provision have recognised and planned for the increased embedding of ICT into their programmes and increased CPD opportunities through their Action Plans 2007-2008. There is no dispute that e-learning is essential, as already seen, this is a technology-rich climate, however, the TDA (Draft 2007), Characteristics of ICT in ITT, states that this form of ICT should be modified for ITE purposes and be 'sympathetic' to the needs of ITT. It goes on to emphasise the importance of other aspects of ICT, for example, digital capture, whiteboards, National Curriculum relevant applications and PDAs etc, all of which were highlighted in the survey of PGCE students as being utilised in schools (see Table 4.4.2).

Judge and O'Bannon (2008) and Uys (2007) both recognised a need for top-down support, but not dictatorial edict, as being important to the success of the integration of ICT. Therefore, there needs to be recognition in the University's strategies for integrating ICT the need to be 'sympathetic' to ITE as the TDA (Draft 2007) suggests. This would therefore meet the requirements of the CRE08 (2007) agenda providing ITE students with a personalised and meaningful ICT learning environment. The TDA (Draft 2007) also advocates adopting the BECTA Self Review Framework for the development and structuring of future ICT needs (Appendix M). This would support the opinions of Judge and O'Bannon (2008) and Uys (2007).

4.6 Analysis of Curriculum Handbooks

In order to gain a rounded understanding of the ICT in teaching and learning, the course handbooks for each subject, in each year were examined. There were found to be 12 common characteristics of ICT mentioned in the course documentation.

	Characteristic
1	Learning objectives include ICT
2	Useful websites supplied
3	VLE/BREO highlighted for information
4	Useful reading includes ICT
5	Video used
6	CD ROMS highlighted
7	Tasks involve ICT
8	ICT assessed
9	Academic consideration of ICT in subject
10	Workshops on ICT skills in subject
11	QTS ICT standards
12	Submissions to BREO

Table 4.6.1 Characteristics of ICT in Curriculum Handbooks (Appendix N)

There was a wide range of differences between subjects and year groups. As can be seen in Appendix N, whilst there is evidence that there is some good practice, there is no consistency in what is included and nor does there appear to be progression

from year to year. This could be because some subjects are not taught every year to all students. In the current teaching arrangement, all subjects are taught in Year 1, with students opting for specialist areas in Year 2, and narrowing this further in Year 3. It can be noted that in Year 3, as a result, that Core Maths and Core Science, Art, ICT, History, English, Science and Early Years all increase the characteristics of ICT in the subject area, thus indicating that in the students focus studies, ICT for teaching and learning is made explicit and integrated.

However, it is concerning that there is, on occasion, no Learning Objective including ICT and yet some of the assessment involves ICT, e.g. Year 2 Maths. Biggs (2003) explains that sharing the learning objective is beneficial because then both student and teacher can see where they are meant to be going. It establishes the teaching context and models good practice that is encouraged in school. It also provides a structure to the topic with the teacher ensuring that learning activities will enable the reaching assessment goals. Without this form of guide, it will mean a lack of direction and this may also add to the lack of consistency in including ICT. The same could also be argued with the lack of consistency in making clear in the documentation which standards for QTS will be developed through the unit, as effectively they are professional learning objectives. This may lead to a lack of understanding on the students' part about how the University curriculum related in a meaningful way to the School Experience aspect of their context; thus leading to a conclusion that the two are separate and irrelevant to one another.

There is also an anomaly - D&T. This subject is taught by one of the ICT lecturing staff. Interestingly there is a considerable lack of ICT made explicit in the curriculum handbook. It is believed that this is because ICT is so integrated into practice, that it is omitted to be made explicit to the students. However, this is not acceptable as it will lead to a 'surface approach' to learning rather than a deep understanding (Biggs, 2003: 32) as discussed earlier in the literature review with the benefits of modelling.

The problems identified here could easily be rectified if all course documentation included the 12 characteristics identified as a 'checklist' to ensure that teaching and learning with ICT is made explicit and integrated into course requirements.

A further analysis of the handbooks revealed that coverage of the ICT recommended in the National Curriculum for each subject area was also lacking (Appendix O). The core subjects (English, Maths and Science) have 4 years to develop their ICT in

teaching and learning, because every student currently studies these units every year. However, from the documentation this idea is not developed consistently. Some aspects are covered regularly e.g. Maths – using a variety of ICT resources to explore, whereas another e.g. representing and interpreting discrete data, is not addressed at all. This is most concerning in the ICT subject specific National Curriculum where there are significant gaps in teaching and learning about the subject of ICT itself (Appendix O).

When considering the current structure of the course, all foundation subjects are taught in Year 1; the National Curriculum ICT required for those subjects should therefore also be covered in Year 1 because there is no other opportunity to cover them for some students. This is equally true for the 1 year PGCE course.

	Question 14	I encourage my students to do this	I cover this with my students	I do not cover this; it is covered elsewhere in the course	I feel this is best covered on school experience	Unanswered
a	How ICT supports learning	62%	23%	15%	0%	0%
b	How to integrate ICT into the curriculum	69%	8%	19%	4%	0%
c	How to differentiate tasks using ICT	50%	8%	38%	0%	4%
d	Management of ICT resources in the classroom	35%	15%	31%	15%	4%

Table 4.6.2 How Staff Integrate ICT into their Curriculum

The responses to question 14 of the staff questionnaire support the findings from the handbook analysis. There is a lack of consistency here too. There seems to be a lot of encouraging students to use and engage with ICT, but a considerable lack of actual coverage. This would indicate that although staff may feel that they are highlighting the use of ICT, the reality is that they are in fact not making it explicit enough to students in order to develop their understanding. Lunenberg et al (2007) suggest that with this approach modelling is therefore done in passing, and not directly to students.

In order for students to become discerning users of ICT, good teachers of and promoters of learning with ICT, they need to feel what it is like to be in the situation of learning with ICT. It needs to be modelled for them (Loughran, 2006). In this way they can watch what is being taught as well as how it is being taught. It also means that the learning objectives of ICT are made more explicit (Biggs, 2003). Without explicitly drawing students' attention to this in practice, according to Lunenberg et al (2007), their understanding will not change.

Although developmental, this can be rectified by reviewing current course materials and ensuring ICT is integrated, creating opportunities if and where necessary. This would address the PGCE survey feedback (Appendix P) that stated more cross-curricular opportunities were required to see ICT modelled in each area of the curriculum as well. Murray and Male (2005) identify that there is an expectation that lecturers can facilitate all aspects of learning on ITE courses, however, it should be recognised at this point that there may be a lack of staff capability to complete this review and think of activities to incorporate into their curriculum area. Examples of these could be supplied and discussed as part of a CPD initiative (Appendix Q).

4.7 Staff ICT Skills

The analysis of the self evaluation of ICT skills revealed that there was in fact a lack of capability in some areas. The Action Plans for the Primary BEd and PGCE also highlight this through making CPD an aim (appendix G). However, overall the majority of staff skills were either Advanced or Established (Figure 4.7.1).

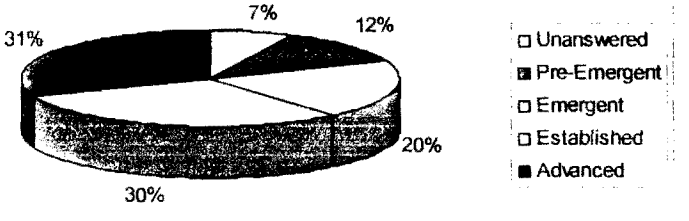

Figure 4.7.1 Total Skills across Staff Responses

However, when this is broken down further, it leads to some interesting conclusions. There are areas of strength here that are common to most of the staff. They are

personal access, file management, internet and email, word processing and presenting information. This is no great surprise as they are key tools for preparing, presenting and arranging teaching activities. However, there are significant weaknesses in the areas of spreadsheets, databases and scheduling. All of which are National Curriculum areas for Key Stage 1 and Key Stage 2 (Appendix R).

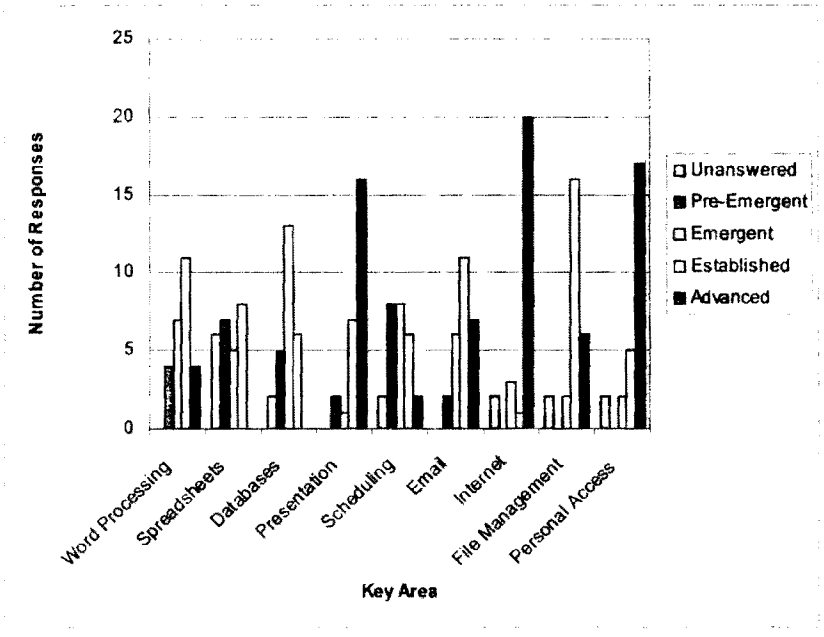

Figure 4.7.2 Self Evaluation of Personal ICT Skills

The relevance of this is important. Firstly, it would appear in comparison to the handbook analysis that staff are avoiding teaching the areas which they find most challenging personally. This means, that because they are unconfident, they are unprepared to model their practise to students (Simpson et al, 1999), thus leaving a gap in students understanding. Secondly, when linked to the PGCE self assessed skills levels of last year, the results are the same, that is to say that the same strengths and weaknesses are present in the student too. This agrees with the findings of Jones (1998), who identified that where there is teacher strength, so to there is student strength. This of course may be because of the nature of skills required for teaching with ICT, however, it could also point to the fact that where they have seen techniques modelled, the students skills are greater and vice versa.

%	Excellent	Very Good	Good	Fair	None
WP	45.45	33.77	16.88	2.60	1.30
Spreadsheets	10.39	14.29	29.87	36.36	9.09
Presentation	25.97	29.87	27.27	15.58	1.30
Email	54.55	36.36	9.09	0.00	0.00
Internet	45.45	40.26	12.99	1.30	0.00
Graphics	9.09	16.88	28.57	29.87	15.58
Web Pages	0.00	0.00	18.18	32.47	49.35
Database	1.30	1.30	19.48	29.87	42.86
Simulations	1.30	1.30	19.48	29.87	41.56
Collaboration	1.30	7.79	27.27	24.68	31.17
Whiteboards	22.08	31.17	25.97	18.18	2.60

Table 4.7.1 PGCE Students Self Assessment of Skills

This can be considered from another viewpoint – that of the subjects.

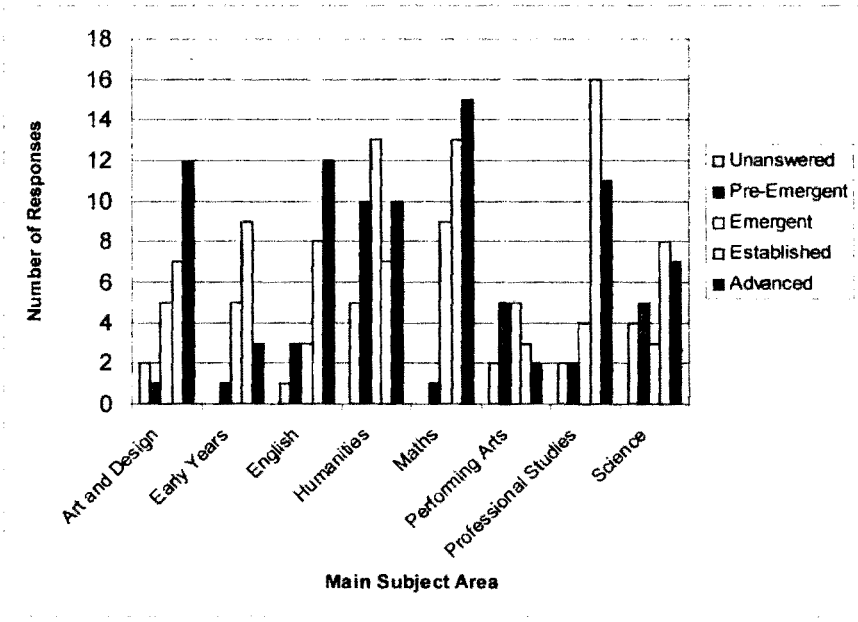

Figure 4.7.3 Staff Self Evaluation of Personal ICT Skills by Main Subject Area

From the evaluation staff have been categorised according to ability and their primary subject area. Maths, English and Science are where the major ICT strengths of staff are. When comparing this to the students' data of which subject areas they most frequently use ICT in, the answer is the same.

%	Always	A lot	Sometimes	Rarely	Never
ICT	77.92	18.18	3.90	0.00	0.00
Maths	15.58	38.96	38.96	3.90	2.60
Science	14.29	24.68	44.16	11.69	3.90
History/Geography/RE	12.99	23.38	48.05	11.69	3.90
Primary Languages	6.49	10.39	12.99	5.19	38.96
Literacy	16.88	23.38	38.96	15.58	5.19
Art/D&T	7.79	6.49	36.36	28.57	20.78
PE	2.60	0.00	6.49	22.08	68.83
Music	6.49	2.60	20.78	23.38	40.26

Table 4.7.2 ICT Usage in Teaching and Learning by PGCE Students

Again this could demonstrate the fact that where they have seen techniques modelled the students' skills are greater and so they make greater use of ICT when teaching them and vice versa (Loughran and Berry, 2005). However, it also needs to be borne in mind that English, Maths and Science in schools are taught more predominantly than other subjects, so it may be that they just have more opportunity to use ICT within them, simply because there is more opportunity to teach the subject and learn from their school mentor. This is an avenue which is yet to be fully explored.

Table 4.6.2 shows that very few staff believe that School Experiences can be beneficial to understand the pedagogy and practice of teaching and learning ICT by students. Additionally the School Experience handbooks (Appendix N) do not place an emphasis on exploring ICT in schools, and yet this is where the students will use it most. They will see it in practice and what is practised (Loughran and Berry, 2005). It is also a way of increasing the amount of modelled ICT usage that the student experiences. Sandholtz (2001), Dawes (2001) and Yelland et al (2000) all support this as a way of exploring the use of ICT in teaching and learning.

Finally staff skills, appearing most frequently in the Established and Advanced categories were compared to subject usage of e-learning devices through BREO.

Characteristic of E-Learning Levels	Technology Enhanced Learning Strategy 2008-2011
Content and Support on VLE	Core English, D&T, Geography, History, PE, RE, School Experience, Foundation-Year 2
	Art, Early Years, Professional Studies
Wraparound (VLE+ E portfolio)	Core Maths, Core Science, Core Year 4, English, Primary Language, Science
	ICT
Integrated	
Distance	

Table 4.7.3 Subjects Containing Characteristics of E-Learning as described in the University's Technology Enhanced Learning Strategy 2008-2011

2-3 times	4-5 times	6-8 times
9	8	9

(Names of individuals in each category are anonymous here, just totals provided)

Table 4.7.4 Frequency of Appearances in Established/Advanced Personal ICT Skills from Self Evaluation

It was found that where staff confidence is generally high with a range of ICT skills, the subjects for which they are responsible are more likely to include Characteristics of E-Learning Levels as described in the University's Technology Enhanced Learning Strategy 2008-2011. This is important as it identifies the staff and subject areas readiness to take on board new teaching and learning initiatives in line with the start date of 2008.

Also identified are staff who require personal ICT skills training in order to increase confidence before undertaking new initiatives with learning and teaching with ICT.

		Pre-emergent	Emergent
	Training Level 1	Training Level 2	Buddying
Word Processing	0	4	7
Spreadsheets	6	7	5
Databases	2	5	13
Presentation	0	2	1
Scheduling	2	8	8
Email	0	2	6
Internet	2	0	3
File Management	2	0	2
Personal Access	2	0	2

Table 4.7.5 Numbers Required for Training at Each Level

The training levels were identified from the staff responses. Training Level 1 can be defined as needing an introduction to a particular application. Training Level 2 can be defined as requiring subject specific training that is meaningful and in context of their role and responsibilities (Lavonen et al, 2006). The Buddying level means that staff skills would benefit from seeing how others incorporate ICT in a particular area, into their practice, so that they can share ideas. Clegg (2002) recognises these CPD needs as essential to being able to improve ICT in their own teaching and learning as there needs to be an understanding of what is to be taught.

4.8 Benefits and Barriers of Staff Using ICT in Teaching and Learning

From the responses to the staff questionnaire, there are positive and negative attitudes towards ICT in teaching and learning.

	Question 11	Strongly Agree	Agree	Disagree	Strongly Disagree	Unanswered
b	The more I use ICT the more I am enthused/ motivated by it	35%	54%	12%	0%	0%
e	I am confident that I'll be able to keep up with future developments in ICT	15%	27%	46%	12%	0%
f	I question whether the time and effort required to master the use of ICT is worth it in term of the returns	0%	15%	50%	35%	0%
i	The more I use ICT the more I can see how it can extend and enhance learning	46%	46%	0%	0%	8%
j	I would like to learn more about ICT	58%	42%	0%	0%	0%
k	ICT skills ought to be taught by specialist ICT lecturers	4%	27%	54%	12%	12%

Table 4.8.1 Staff Attitudes towards ICT in General

85% of staff believe that ICT is worth the time and effort learning and mastering skills to include in their practice; with 100% agreeing that they would like to learn more about ICT. This is a very positive note, as staff recognise that ICT is an aspect of their teaching and learning role, which needs development. Additionally, 66% see it as the job of all staff to be incorporating ICT, rather than leaving it to ICT specialist. However, there is a concern amongst over half of the staff (58%) that they will not be able to keep up with the rapid changes that occur in ICT. This shows that the majority of staff appreciate that ICT is an area which needs to be continually reviewed and are generally supportive of ICT as a tool for teaching and learning. Additionally, 92% can see more benefits of ICT the more they use it; and 89% become more motivated and enthused by ICT the more that they use it. This finding concurs with the work of Eriksen (2006) and Lunenberg et al (2007) who explain that generally teachers have supportive views towards the use of ICT for teaching and learning. Further remarks were made about the need to understand '*ICT as part of a range of methodologies*', both in terms of teaching and in modelling so that students understand the need to be discerning about reliability and prepared to analyse, evaluate and synthesise the information obtained using ICT, '*ICT is as good as it's user*'. Pianfetti (2001) agrees. Matthew et al (2002) add that in order to become discerning users, students must see the benefits and limitations of ICT modelled for them.

If staff generally have positive attitudes towards ICT, then there must be reasons why there is a lack of inclusion of ICT into their programmes. This will be considered now.

	Question 12	Yes	No	Unanswered
a	Do you feel you have adequate ICT equipment to support the work you do with your students?	46%	54%	0%
b	Do you have technical support?	58%	38%	4%
c	Do you have support during your planning for ICT use?	35%	62%	4%
d	Do you have time allocated to plan, prepare and practice using ICT?	4%	96%	0%
e	Does ICT support your delivery of the curriculum?	100%	0%	0%
g	Do you have an 'ICT buddy' (peer/mentor/partner) who will discuss ICT with you supportively?	19%	73%	8%
h	Is ICT use fluent and unproblematic for you?	27%	69%	4%

Table 4.8.2 Factors Affecting the Use of ICT in Teaching and Learning

100% of staff agree that ICT supports their delivery of the curriculum; however, the majority feel that they do not have the time (96%), the resources (54%) or the support (62%) to plan ICT into their teaching and learning. Additionally 73% responded that they have no one to collaborate with over the use of ICT in their practice. Moreover, whilst the majority did acknowledge that there was technical

support available (58%), 69% said that ICT brought problems with it that hampered their practice. Comments made to elaborate on this included having to *'set up rooms'*, *'lack of resources'* or *'access to equipment'*, all of which added to the burden of teaching and learning with ICT, particularly for those who are less confident users.

	Question 13	Strongly Agree	Agree	Disagree	Strongly Disagree	Unanswered
g	ICT is going to be essential for continuing professional development	62%	35%	0%	0%	4%
h	ICT should be avoided because it is unreliable	0%	0%	38%	62%	0%

Table 4.8.3 Staff Views on the Requirements for ICT use in the Future

More positively however, the staff are in 100% agreement that there is a need for CPD with ICT and that despite not being the most reliable resource available in their methodologies, ICT should not be avoided. This is important because it continues to indicate the staff intention to use ICT as far as possible.

Staff also commented that their use of ICT in teaching and learning could be facilitated by:

- increased availability and reliability of resources including standardised room set ups
- Greater technical support and time to share with colleagues ideas and best practice
- CPD activities to strengthen understanding

The need for more robust systems is acknowledged in the new Technology Enhanced Learning Strategy 2008-2011 (Draft 2008) for the University, however, it must be remembered, from earlier in the discussion, that this only focuses on e-learning aspects of ICT, and not the broader ICT discussed by PGCE students and the TDA (Draft 2007). Access to ICT that works is of paramount importance (Uys, 2007). This, therefore, will only go some of the way to improving ICT in teaching and learning. Pan (2000) highlights that the obstacles to good use of ICT include a lack

of time, funding, planning and CPD, with Eriksen (2006) adding that a lack of technical support can hamper good practice too. Overall this situation leads lecturers to feel unprepared (Jones, 1998). However, the studies of Lavonen et al (2006) found that through the development of a strong infrastructure and CPD activity skills of staff increased from 20% being competent users of ICT to 40%, in the short period of 18 months. They also added that before making these changes 69% of staff felt that they had no support or opportunities to collaborate, whereas after the 18 months later this reduced to only 39% feeling that way. Littlejohn (2002) says that CPD is the single most contributing factor to improved practice with ICT. The TDA (Draft 2007) also recognises that ITE institutions should look to the Self-Review Framework for ICT (BECTA) as a means of ensuring structure is in place for future development. This evidence should be a guide to the development of future practice with ICT in this University as the merits have already been seen in other studies.

4.9 Summary of Findings

It is important to reiterate that there are pockets of good practice already in place across the Primary BEd and PGCE courses; however this is inconsistent. Therefore the main objectives of action taken from this report will be to make small, yet effective changes to practice, rather than instigate radical change. This a strong starting point on which to build good practice with ICT in all its varied forms for Primary education.

1. Make explicit the use of ICT in Teaching and Learning – The sharing of aims for learning with and about ICT has been highlighted as important. This can be included in course handbooks and should include elements the Characteristics of ICT in Table 4.6.1, as applicable.

2. Minimum Coverage in Subject Areas of National Curriculum ICT for Key Stages 1 and 2 – This would currently be ideal in Year 1 of the BEd and throughout the PGCE year and would ensure that all students had an understanding of ICT in the ages ranges for which they will qualify, across the curriculum. This will allow students to see how ICT is supported in a particular field (Sandholtz, 2001 and Yelland et al, 2000). This will involve a curriculum review and there are resources (Appendix O) to start the process moving forward. Stevens and Lonberger (1998) emphasise the importance of this explaining that ICT cannot just be a subject in its own right and should be shown through the curriculum. This point is supported by Judge and O'Bannon (2008) and the views of staff (Table 4.8.1) and students. Additionally a curriculum review of ICT as a subject in its own right is important to ensure specific skills for encouraging learning with ICT and for teaching with ICT are developed as appropriate for Key Stages 1 and 2.

3. Continuing Professional Development of Staff (Table 4.8.3) – This would develop staff skills in weaker areas, both at a personal level and for their embedding of ICT in their curriculum (Edmonds, 2007). This has already been highlighted as a need in the Action Plans 2007-2008 for the BEd and PGCE courses (Appendix G). This will allow confidence to grow at a progressive rate and, in turn, improve the modelling of ICT as a methodology in teaching and learning. This will then lead to greater strength in practice of the students. Individual skill levels and requirements for development activities have been identified specifically, as well as areas of strength that can now be built on to incorporate the University's new Technology-Enhanced Learning Strategy 2008-2011 (Draft 2008) and the CRE08

(2007) agenda. However, it must also be recognised that there are different levels of 'readiness' amongst staff which must be taken into account if change is to be successful. Equally, there is more to ICT in Primary education than e-learning and this needs to be considered at all times.

3a. Time Allocated for Collaboration and Development of Ideas – This would involve opportunities to discuss specific aspects about ICT in a subject e.g. set up and organisation, management or the development of ideas. Goos and Moni (2001) advocate a 'team-teaching' approach, which Sinkinson (1997) also favours explaining that staff can work together to model practices and reinforce principles according to their own strengths. Both Dawes (2001) and Uys (2007) found that staff benefited from working with more experienced colleagues (Table 4.8.2). Lavonen et al (2006) advocate this too as a means of planning together and exploring ideas. Edmonds (2007) explains that this does not need to be face to face discussion, it could happen in the virtual world, thus strengthening staff skills in and through the principles of e-learning, in line with the Technology-Enhanced Learning Strategy 2008-2011(Draft 2008). Whichever method is adopted, Uys (2007) explains that it must be at regular intervals in order to keep up to date.

4. Modelling of Practice – This has been a reoccurring theme from the analysis of the data. Loughran and Berry (2005) advocate the need to understand the thinking behind the use of ICT, that is the pedagogy, as well as the practice of using ICT for learning and teaching. They believe that this can only be achieved through modelling. This provides an understanding that ICT is one of a range of methodologies and should be implemented in an appropriate way (Table 4.8.1). This could be enhanced through a more directed approach towards using and exploring ICT during School Experiences. This would link closely to the Standards for QTS (2007) (Appendix I) and would also help to ensure that Learning Objectives relate closely between school and university work.

5. Technical Support, Reliable Equipment and Easy Access – This is an area that requires review, as advocated by Judge and O'Bannon (2008), Dexter et al (20020 and Somekah (1992). It has already been highlighted in the Technology-Enhanced Learning Strategy 2008-2011 (Draft 2008). However, it must be stressed again that this needs to be altered to be '*sympathetic*' to the needs of ITE courses, as the TDA (Draft 2007) point out. Lavonen et al (2006) advocate

that it needs to be staffed by people who understand education and its complexities, rather than simply technical experts. They should also be available to join sessions in order to increase staff confidence and improve student learning, this therefore makes it meaningful as it is in context (tables 4.7.7 and 4.7.8).

6. Recognition that ICT is not Standing Still and Planning for its Development – It has continually been highlighted that technology is changing rapidly and staff are concerned that they will be unable to keep up to date (Table 4.8.1). The TDA (Draft 2007) (Appendix K) makes the suggestion that ITE institutions should consider using the BECTA Self-Review Framework as a model for planning for change with ICT. This framework (Appendix M) helps to map out CPD, resources, policy development and practice as advocated by Lavonen et al (2006). Judge and O'Bannon (2008) and Dexter et al (2002) emphasise that ICT development requires whole department impetus. This is concerning from the existing policy documentation as it does not cater for ICT in education, only ICT in HE.

Chapter 5 – Conclusion

5.1 Context

In concluding this study it is important to remember the reasons behind it.

- To investigate further the responses provided by the Primary PGCE cohort of 2006-2007 when evaluating the ICT content of their course (Appendix P). This concluded that greater modelling of ICT in teaching and learning required across the curriculum in order that they had more strategies to use during their school experiences. They felt that there was good practice in some elements of the course, however, this was not consistent and as they were seeing much usage of ICT in schools, they would have benefited from greater opportunities during their University learning experience.

- To ensure courses meet the requirements of the new Standards for QTS (Appendix I) in 2007, which encourage the use of ICT across the professional teaching and learning range and include e-learning, there is a need to find out what exists on the Primary education courses and what improvements are needed. Added to this is the local agenda of the University adopting a new teaching and learning strategy in the form of CRE08 (Appendix D) which advocates the inclusion of ICT in a meaningful and relevant way to the course; thus raising the profile of ICT at this level of study, in line with the increased use of ICT in an ever-changing technology-rich society, where increasingly student teachers, and equally the pupils they teach, are more digitally literate.

Boyd et al (2006) point out that ITE courses should therefore have an understanding of this as this gives them credibility with the students they teach because it demonstrates an understanding of their 'real-world'. Vibert and Place (2006) added that it is therefore obvious to students when this good practice is not embedded into their teaching and learning experiences and consequently may have negative effects on their development. It is therefore important that ITE courses get the ICT right for their needs.

5.2 Answering Research Questions 1 and 2

- *How is ICT already used in teaching and learning across the Primary BEd and PGCE courses?*
- *Where and what is the existing good practice that can be shared with all members of the School of Education?*

The study found that there is wide variety of good practice within the Primary education courses, which is dependent on staff personal skills however, as the PGCE students had highlighted this is inconsistent. A major area of weakness was that, through auditing the subject areas (Appendix N), the recommended national curriculum content, for ICT within subjects, was not explicit. This can simply be addressed by auditing the curriculum in each subject area and using example materials (Appendix O) altering learning activities to accommodate the ICT element. It would also be beneficial if handbooks make explicit the learning intentions (Appendix N) with ICT including the links to the professional standards for QTS.

Staff attitudes are generally positive towards using ICT for teaching and learning (Appendix S) and they would welcome greater understanding, recognising that ICT will be part of the students' teaching experience. However, successful integration of ICT into teaching and learning activities was hampered by a number of factors including, access, resources, technical problems and personal skill levels. Indeed there was found to be much encouragement about using ICT, but in comparison, little actual content coverage, which is likely to be due to the staff member's personal ICT skill levels.

5.3 Answering Research Questions 3 and 4 – FINDING 2 RECOMMENDATIONS

- *How can teaching and learning with ICT by improved across the Primary BEd and PGCE courses?*
- *What is needed to ensure that improvement can happen? E.g. training, resources etc*

The study concludes therefore that there are two main points of action required in order to improve the teaching and learning with ICT on the Primary education courses.

1. Continuing Professional Development – This needs to be in the form of skill specific training as well as opportunities to spend time collaborating with colleagues. This process is vital in order for staff to keep up with the demands of the constantly changing ICT developments in education, which is a concern they have (Appendix S). It is now possible from the data collected to identify specifically those staff who are ready to engage with the Technology-Enhanced Learning Strategy 2008-2011 (Draft 2008 – Appendix F), and those who require greater personal skills based training and support with embedding ICT into the curriculum before becoming involved in new initiatives. This enables a personalised approach to CPD, making staff learning meaningful and contextualised for all.

2. Structure for Ongoing Development – It is now acknowledged that ICT is an ever-changing area and so contingencies for this must be put in place. The TDA (Draft 2007 – Appendix K) recommends adopting the BECTA Self Review Framework for ICT (Appendix M) in order to ensure that this change can be managed effectively. It allows for the planning of resources and staff development as well as technical support. This is particularly important as the University's Technology-Enhanced Learning Strategy 2008-2011 (Draft 2008 – Appendix F) does not currently cater for all the varied needs for ICT in education; it hones in on e-learning techniques alone. The TDA (Draft 2007) supports this study and acknowledges that ITE should include e-learning, but that it is not the only reason for ICT which needs to be supported. Having a structure for development in place would provide meaningful direction to the integration of teaching and learning with ICT in all its forms, thus developing staff and students needs in an ever-changing world.

5.4 Final Remarks

Drawing on the work of Pan (2000), it can be concluded that the University should support all students to be competent in using ICT for teaching and learning in all its various forms. They will need to be equipped with a level of understanding that enables them to make an impact during their school experiences. This is equally true of all staff members, thus creating an environment conducive to modelling the practice and pedagogy of ICT in teaching and learning. The University should show leadership in their community for the development of ICT in teaching and learning through developing programmes and structures which meet the needs of today's

digital society. It should be recognised that the School of Education should be technology-rich, but not dominated by technology as there are a great many other methodologies to utilise in learning and teaching, other than ICT.

5.5 Future Studies

As this study is limited to the Primary BEd and PGCE courses, a review of all ITE courses, using similar methods would be beneficial in order to create an understanding of the needs of the whole School of Education. Then in order to create a study that would have generalisable results similar studies could be conducted in other Schools of Education in England. This would help the development of common practice ensuring quality and rigour across all ITE programmes.

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Hunt L (2006) "A community development model for change"	In Hunt L, Bromage A and Tomkinson B eds – *The Realities of Change in HE: Interventions to promote Learning and Teaching*	London: Routledge

Maguire M (1993)	*The job of educating teachers - Thesis*	Kings College London: Centre for Education Studies
Maier P, Barnett L, Warren A, Brunner D (1998) 2nd ed	*Using Technology in Teaching and Learning*	London: Kogan Page
Maynard T (1996) "Limits of mentoring: the contribution of the HE tutor to Primary Student Teachers School-Based Learning"	In Furlong J and Smith R eds – *Role of Higher Education in Initial Teacher Training*	London: Kogan Page
McCulloch M "Teacher competencies and their assessment" (1994)	In McCulloch M and Fidler B - *Improving ITT? New roles for teachers, schools and HE*	Harlow: Longman
McFarlane A eds (1997)	*IT and Authentic Learning*	London: Routledge
McMillan K & Weyers J (2007)	*How to write Dissertations and Project Reports*	Harlow: Pearson
Moodie G (2006) "No money, no change"	In Hunt L, Bromage A and Tomkinson B eds – *The Realities of Change in HE: Interventions to promote Learning and Teaching*	London: Routledge
Muirhead G, Hicks P and Bishop J (2005) "Schools of the future"	In Wheeler S ed – *Transforming Primary ICT*	London: Routledge
Murray FB (1999) "The challenges Teacher Education presents for HE"	In Roth RA eds – *The Role of the University in the Preparation of Teachers*	London: Falmer
Pachler N (2001) "Connecting Schools and pupils: to what end?"	In Leask M ed – *Issues in teaching using ICT*	London: Routledge
Popham JA and Rocque R (2004) "Faculty as students: Teacher education faculty meaningfully engage in a pre-service technology course"	In Wentworth N, Earle R and Connell ML eds – *Integrating IT into the Teacher Education Curriculum*	New York: Howarth Press
Price G and Maier P (2007)	*Effective Study Skills*	Harlow: Pearson
Somekah B (2007)	*Pedagogy and Learning with ICT*	London: Routledge
Thair A, Garnett P and King S (2006) "Quality Assurances and Changes in HE"	In Hunt L, Bromage A and Tomkinson B eds – *The Realities of Change in HE: Interventions to promote Learning and Teaching*	London: Routledge
The Association of Teacher Educators - USA (Draft February 2007)	*Standards for Teacher Educators*	The Association of Teacher Educators - USA
Waite S (2005) "Personalising ICT in the Primary Curriculum"	In Wheeler S ed – *Transforming Primary ICT*	London: Routledge

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Appendix A

Staff Questionnaire - Parts A and B

Spring 2008

Dear Participants

This questionnaire forms the basis of my MA study which is a case study to investigate the role modeling of ICT by teacher educators in teaching and learning during Primary PGCE and BEd courses at the University It is hopes that the findings will serve as recommendations for the new BEd degree and to inform requirements for support with ICT in the future.

You have been selected to participate as you teach on the PGCE and/or BEd primary programmes; however your participation is **voluntary**.

There are two aspects to the questionnaire. The first centres a round the use of ICT specifically in Teaching and Learning; whilst the second is a self – evaluation of your personal ICT skills. Neither is intended to make, judgements but rather to inform future practice. In total, it should take **15-20 minutes to complete.**

The main advantage of participating is clearly to help me complete my MA! However, I hope also that the self evaluation aspect of the questionnaire, in particular, will enable you to see the level of ICT skills you already have. I hope that the first part will help to find out just what good practice already exists in the use ICT across the curriculum, which can then be shared; but also to ascertain the barriers to the effective use of ICT so that these can be eradicated (well certainly minimised!) in the future.

At this point it is important to note that results will be completely **confidential** and your participation is **anonymous**. Questionnaires will be kept for one year and then destroyed.

As participants you will have access to the final outcomes when they are complete. Should you wish to see them, please just ask, they should be available from September 2008.

You should also be aware that my MA is funded by the University of Bedfordshire; however, this research project is my personal undertaking for academic purposes.

Finally, I must thank you for your help in completing this questionnaire. It is very greatly appreciated! Should you enquire any clarification whilst completing the questionnaire, please do not hesitate to contact me.

Please return completed questionnaires to my tray ASAP or if you are completing this digitally to my email box ASAP!

With all good wishes and much gratitude

Kate

Kate Hudson – Extension 4067

From: kate Hudson
To:
Date: 13/02/2008 17:35
Subject: ICT Questionnaire

Hi All

I am today sending out my questionnaire about ICT on the Primary BEd and PGCE courses.
There are hard copies in your tray for those of you who like to work on paper.
Alternatively, there are electronic copies attached to this email for you to complete, if you prefer to work in that way.
However, please do not complete both the paper copy and the electronic copy...as this would be too much for my brain to cope with!
The attachment labelled 1 explains the purpose of my study, however, should you have any queries, please do not hesitate to ask.
Thank you in advance for your time, it is greatly appreciated.
Kindest regards

Kate Hudson
Senior Lecturer Primary Education
B.Ed. Head of Year 1/ Admissions Tutor

University of Bedfordshire
Polhill Avenue
Bedford
MK41 9EA

Telephone 01234 793067
Email kate.hudson@beds.ac.uk

Questionnaire - Part A

Background Information

1. Female/Male
2. Age. Please ring.

30 or Under	31-35	36-40	41-45	46-50	51-55	56 or Over

3. Qualifications and year obtained. (e.g. Cert Ed 1974, MA 1982)

4. Year appointed to this University (under all it's various names)
5. Full Time/ Part Time
6. Number of years spent in Initial Teacher Education in total (include other institutions)

7. Current status (SL, PL etc). Any responsibilities, e.g. course leader?

8. Primary Schools teaching experience. Please give the total number of years experience in each sector.

	Nursery	Reception	Key Stage 1	Key Stage 2
No. of Years Experience				

9. What was your main reason for entering Teacher Education?

10. Which aspects of your work in Teacher Education do you enjoy the most?

12. Situational factors and ICT use in Teaching and Learning (please circle)

		Yes	No
a	Do you feel you have adequate ICT equipment to support the work you do with your students?	Yes	No
b	Do you have technical support?	Yes	No
c	Do you have support during your planning for ICT use?	Yes	No
d	Do you have time allocated to plan, prepare and practice using ICT?	Yes	No
e	Does ICT support your delivery of the curriculum?	Yes	No
f	Do you have time to use ICT with students, or is it restricted by other curriculum demands?	Yes	No
g	Do you have an 'ICT buddy' (peer/mentor/partner) who will discuss ICT with you supportively?	Yes	No
h	Is ICT use fluent and unproblematic for you?	Yes	No
i	What do you think are barriers to further use of ICT with your students?		
j	What would facilitate your use of ICT with students?		

14. How do you help students to appreciate how ICT can be used in teaching and learning? (Please circle)

		I encourage my students to do this	I cover this with my students	I do not cover this; it is covered elsewhere in the course	I feel this is best covered on school experience
a	How ICT supports learning	Encourage	Cover	Elsewhere	School
b	How to integrate ICT into the curriculum	Encourage	Cover	Elsewhere	School
c	How to differentiate tasks using ICT	Encourage	Cover	Elsewhere	School
d	Management of ICT resources in the classroom	Encourage	Cover	Elsewhere	School
e	Other – please comment				

15. If you have ticked that you do encourage students to do any of these (listed above); what techniques do you use to encourage your students to use ICT in this way?

Self-evaluation tool for personal ICT skills

Name (optional): _____

The purpose of this is not to judge your competencies, but to gather information about the skills you possess and to find if this affects the use of ICT in the Department. This may also provide an insight into useful training opportunities for the future. This tool is use on the Strategic Leadership of ICT courses run by the National College of School Leadership over the last few years, now uses widely in schools with all staff. Use a coloured highlighter pen to mark those statements which best apply to your skills. You can mark statements in more than one box in each line.

Key area	Pre-emergent	Emergent	Established	Advanced
Word processing	• create and save in appropriate locations • use edit, copy, cut and paste • change paper size, margins, font styles and sizes • format paragraphs • use spellchecker	• use existing templates, create templates • insert headers and footers • insert page numbers • use bullet and numbering styles • use tab, create tables, format tables • change borders and shading in tables	• use columns in a document • use print preview • print part of a document • print multiple copies • create labels	• mail merge • use auto text • create footnotes, indexes, cross references
Spreadsheets	• create and save in appropriate locations • use edit, copy, cut and paste • change paper size, margins, font styles and sizes • format paragraphs • use spellchecker	• use fill command • use simple formulae to perform simple calculations (eg sum multiply) • sort data	• use auto filter • use more complex formulae • inset links to other sheets • Format columns	• import data from other applications • use look-up tables • design macros • create pivot tables

Key area	Pre-emergent	Emergent	Established	Advanced
Internet	• access internet for personal and professional use • use a search engine	• use Favourites to store websites	• use internet for community use e.g. discussion forums etc	• download software and resources and use for other work
File management	• save and retrieve documents or other files	• create new folders • intentionally delete folders/files	• rename folders/files • move/copy files • structure and manage files in folders	• change access rights to files and folders
Personal access	• share computer access with administration staff	• have personal access to computer at school • have personal computer at home	• use shared files • use a network	• can remotely access university system from home

Appendix B

Ethical Approval Form

Appendix B

RESEARCH PROPOSAL: ETHICAL APPROVAL FORM

(Printed version is for reference only, please complete electronically and print for signatures)

Student Kate Hudson

Location of research School of Education, University

Outline of proposed research project

Working title

A case study to investigate the role modeling of ICT by teacher educators in teaching and learning during Primary PGCE and BEd courses.

Brief description of context

See Attached – Introduction

Purpose of study (including key research questions)
See Attached – Introduction

Key literature
See Attached – Reference List and Bibliography

Proposed methodology (attach draft questionnaires, interview schedules etc)
See Attached – Research Methodology
Appendix A and C

Identification of research population (including sampling procedures)
See Attached – Research Methodology

Identification of potential risks to participants (including anonymity)
See Attached – Research Methodology

Statement of how risks will be minimised /avoided
See Attached – Research Methodology

Ethical Research Issues Checklist

The BERA guidelines have been consulted to inform ethical practice ☐

Has the research proposal identified any of the following research procedures? (Circle/Underline):

1. Gathering information about human beings (and organisations) through;
   - Interviewing
   - Surveying
   - Questionnaires
   - Observation of human behaviour
   - Taking human tissue/fluids
   - Interfering in normal physiological and/or psychological processes

2. Using archived data in which individuals are identifiable
3. Researching into illegal activities

If any of the above are circled/underlined, does the proposal satisfactorily identify the ways in which the following will be dealt with the following (tick boxes for "Yes"):

- ☐ Voluntary participation without inducement;
- ☐ Procedures for providing participants with full awareness of the objectives of the research, the procedures to be followed, and the anticipated outcomes particularly in respect of publication of findings;
- ☐ Proposal has met the criteria for respect for confidentiality and publication contained in Research Ethics Committee policy
- ☐ Research proposal form completed appropriately
- ☐ Informed consent completed appropriately

Do the procedures identified in the proposal necessitate full formal risk assessment?YES/NO

Has the risk assessment been carried out? YES/NO/NONE REQUIRED

Does this assessment fall within university limits? YES/NO/NONE REQUIRED

Approved by the organisation hosting the research :	
Head teacher/Manager Paul Daner **Date** 31.1.08	**Mentor/supervisor** **Date**
The student has read and understood the guidelines provided by the School of Education on ethical issues related to empirical research. They are aware of the need for anonymity for the children and organisation (school), confidentiality of data, and the need for a professional approach during the investigation. Their research proposal has been approved.	
Student K Edmondson Date 29/1/8	Research supervisor Date 7/2/8
School Research Ethics Panel Date	Faculty/University Research Ethics Panel

Appendix C

Pilot Study Questionnaire

Appendix AC

Dear Participants in this Pilot Study,

Firstly, thank you for taking your time to complete this questionnaire and thank you in advance for feedback; it is very gratefully received I can assure you.

In addition to completing the questionnaire, please provide feedback on the following:

- **How long did it take you to complete?**
- **How clear were the instructions?**
- **How clear were the instructions?**
- **Are there any omissions that you can think of?**
- **How was the layout?**
- **Any comments?**

Thank you very much once again for your time and trouble.

Q2 - Age categories overlap eg 35-40, 40-45
could be 35-40 41-45

Q12 f - not sure what you mean (I'm a bit stupid)

Have uniformed response = either tick or circle

15 mins
Plus that = 2 ½ hours

Spring 2008

Dear Participants

This questionnaire forms the basis of my MA study which is a case study to investigate the role modeling of ICT by teacher educators in teaching and learning during Primary PGCE and BEd courses at the University It is hopes that the findings will serve as recommendations for the new BEd degree and to inform requirements for support with ICT in the future.

You have been selected to participate as you teach on the PGCE and/or BEd primary programmes; however your participation is **voluntary**.

There are two aspects to the questionnaire. The first centres a round the use of ICT specifically in Teaching and Learning; whilst the second is a self – evaluation of your personal ICT skills. Neither is intended to make, judgements but rather to inform future practice. In total, it should take approximately XXX to complete.

The main advantage of participating is clearly to help me complete my MA! However, I hope also that the self evaluation aspect of the questionnaire, in particular, will enable you to see the level of ICT skills you already have. I hope that the first part will help to find out just what good practice already exists in the use ICT across the curriculum, which can then be shared; but also to ascertain the barriers to the effective use of ICT so that these can be eradicated (well certainly minimised!) in the future.

At this point it is important to note that results will be completely **confidential** and your participation is **anonymous**. Questionnaires will be kept for one year and then destroyed.

As participants you will have access to the final outcomes when they are complete. Should you wish to see them, please just ask, they should be available from September 2008.

You should also be aware that my MA is funded by the University of Bedfordshire; however, this research project is my personal undertaking for academic purposes.

Finally, I must thank you for your help in completing this questionnaire. It is very greatly appreciated! Should you enquire any clarification whilst completing the questionnaire, please do not hesitate to contact me.

Please return completed questionnaires to my tray ASAP or if you are completing this digitally to my email box ASAP!

With all good wishes and much gratitude

Kate Hudson – Extension 4067

Questionnaire - Part A

Background Information

1. Female/Male

2. Age. Please ring.

Under 30	30-35	35-40	40-45	45-50	50-55	Over 55

3. Qualifications and year obtained. (e.g. Cert Ed 1974, MA 1982)

BEd - 1991
MA - 2005

4. Year appointed to this University (under all it's various names) 2002

5. Full Time/ Part Time

6. Number of years spent in Initial Teacher Education in total (include other institutions) 5

7. Current status (SL, PL etc). Any responsibilities, e.g. course leader?

SL - Leader of Games
Module leader for Yr 1 & Yr 2 module.
Cleaner of cupboard @ AIM!

8. Primary Schools teaching experience. Please give the total number of years experience in each sector. 0 / 1 week

	Nursery	Reception	Key Stage 1	Key Stage 2
No. of Years Experience				

9. What was your main reason for entering Teacher Education?

Professional development.
Co-ordinated SCITT for PE in school. Always worked with students - Good progression.

10. Which aspects of your work in Teacher Education do you enjoy the most?

Practical delivery.
Personal tutor

Perspectives of ICT

11. What are your general views of ICT? (Please circle)

		Strongly Agree	Agree	Disagree	Strongly Disagree
a	ICT is a necessary tool	1	(2)	3	4
b	The more I use ICT the more I am enthused/motivated by it	1	(2)	3	4
c	I do not enjoy using ICT	1	2	3	(4)
d	I can do my work quite competently without having to use ICT	1	2	3	(4)
e	I am confident that I'll be able to keep up with future developments in ICT	1	(2)	3	4
f	I question whether the time and effort required to master the use of ICT is worth it in term of the returns	1	2	(3)	4
g	It is essential that a lecturer shows a positive attitude towards ICT	1	(2)	3	4
h	I think that money spent on ICT would be better spent on more traditional resources	1	2	3	(4)
i	The more I use ICT the more I can see how it can extend and enhance learning	1	(2)	3	4
j	I would like to learn more about ICT	1	(2)	3	4
k	ICT skills ought to be taught by specialist ICT lecturers	1	(2)	3	4
	Other – please comment → Would save time & stress to be less experienced - would expect non-specialists to deliver a specialist aspects of the degree				

12. Situational factors and ICT use in Teaching and Learning (please tick)

		Yes	No
a	Do you feel you have adequate ICT equipment to support the work you do with your students?		✓
b	Do you have technical support?	Some	
c	Do you have support during your planning for ICT use?	Some	
d	Do you have time allocated to plan, prepare and practice using ICT?		✓
e	Does ICT support your delivery of the curriculum?	✓	
f	Do you have time to use ICT with students unrestricted by curriculum demands?	~~Not sure~~	✓ ~~can't see~~
g	Do you have an 'ICT buddy' (peer/mentor/partner) who will discuss ICT with you supportively?		✓ only colleagues in this room!
h	Is ICT use fluent and unproblematic for you?		✓
i	What do you think are barriers to further use of ICT with your students? Access in practical teaching areas - ASH, Bedford LRC etc. Lack of suitable resources / equipment		
j	What would facilitate your use of ICT with students? Better ~~of~~ the ~~the~~ share		

13. What are your views about the role of ICT in Teacher Education? (Please circle)

		Strongly Agree	Agree	Disagree	Strongly Disagree
a	ICT provides an insight into new of different learning and teaching environments	1	(2)	3	4
b	ICT enriches/enhances courses or programmes of work	1	(2)	3	4
c	ICT introduces students to a range of techniques they are likely to meet in their future work	1	(2)	3	4
d	ICT improves the quality of the content of students' coursework or assignments	1	(2)	3	4
e	ICT improves the quality of the content of the curriculum materials students produce for their pupils	1	(2)	3	4
f	ICT reduces time required to cover content	1	2	(3)	4
g	ICT is going to be essential for continuing professional development	1	(2)	3	4
h	ICT should be avoided because it is unreliable	1	2	3	(4)
i	ICT promotes in students attitudes of responsibility and autonomy in their learning	1	(2)	3	4
j	Other – please comment Should be fit for purpose - especially in practical aspects of Phys Ed.				

14. How do you help students to appreciate how ICT can be used in teaching and learning? (Please tick)

		I encourage my students to do this	I cover this with my students	I do not cover this; it is covered elsewhere in the course	I feel this is best covered on school experience
a	How ICT supports learning		✓		
b	How to integrate ICT into the curriculum		✓		
c	How to differentiate tasks using ICT	✓	✓		
d	Management of ICT resources in the classroom	✓	✓		
e	Other – please comment				

15. If you have ticked that you do encourage students to do any of these (listed above); what techniques do you use to encourage your students to use ICT in this way?

Practical examples shown during lectures & seminars

Teach using aspects of ICT = Modelling

Set assignments with an expectation of ICT incorporated.

16. What teaching/content delivery methods and learning activities do you use involving ICT?

Power point.
Whiteboard.
Cameras - Video - still.
Keyboard Cards / Word lists / Resources

Internet.
BREO

16. What opportunities would you like any future ICT training provide for you? (e.g. skills development in a specific area, time to see what others are doing, working in small groups)

Working in small groups
Sharing good practice.
Ensuring good access to ICT equipment / resources.

Thank you very much for your time

– It is greatly appreciated!

Self-evaluation tool for personal ICT skills

Name: _____ Peter

The purpose of this is not to judge your competencies, but to gather information about the skills you possess and to find if this affects the use of ICT in the Department. This may also provide an insight into useful training opportunities for the future. This tool is use on the Strategic Leadership of ICT courses run by the National College of School Leadership over the last few years, now uses widely in schools with all staff. Use a coloured highlighter pen to mark those statements which best apply to your skills. You can mark statements in more than one box in each line.

Key area	Pre-emergent	Emergent	Established	Advanced
Word processing	• create and save in appropriate locations • use edit, copy, cut and paste • change paper size, margins, font styles and sizes • format paragraphs • use spellchecker	• use existing templates, create templates • insert headers and footers • insert page numbers • use bullet and numbering styles • use tab, create tables, format tables • change borders and shading in tables	• use columns in a document • use print preview • print part of a document • print multiple copies • create labels	• mail merge • use auto text • create footnotes, indexes, cross references
Spreadsheets	• create and save in appropriate locations • use edit, copy, cut and paste • change paper size, margins, font styles and sizes • format paragraphs • use spellchecker	• use fill command • use simple formulae to perform simple calculations (eg sum multiply) • sort data	• use auto filter • use more complex formulae • inset links to other sheets • Format columns	• import data from other applications • use look-up tables • design macros • create pivot tables

National College for School Leadership

Becta British Educational Communications and Technology Agency

Key area	Pre-emergent	Emergent	Established	Advanced
Databases	• keep most records in paper format	• use database prepared by others • add my own records • make simple searches • make simple queries	• set up simple data bases • make complex queries • use reporting	• create sophisticated databases using a range of data types • set up reporting systems • use output in reports
Presentation	• enter text into PowerPoint template	• manipulate and order slides	• animate text and slide show settings	• create PowerPoint presentations including multimedia files • link presentations to websites and other applications
Scheduling	• keep paper diary and address book	• keep addresses or appointments electronically	• use Outlook (or similar) to keep diary and contacts • use tasks	• scheduler linked to university system, for university and personal calendar
Email	• have personal email address • create, read and reply to messages	• use address books • add attachments	• access email daily • create distribution lists • direct mail to different inboxes	• use digital signatures to send secure information • join email lists and newsgroups or online forums

Key area	Pre-emergent	Emergent	Established	Advanced
Internet	• access internet for personal and professional use • use a search engine	• use Favourites to store websites	• use internet for community use e.g. discussion forums etc	• download software and resources and use for other work
File management	• save and retrieve documents or other files	• create new folders • intentionally delete folders/files	• rename folders/files • move/copy files • structure and manage files in folders	• change access rights to files and folders
Personal access	• share computer access with administration staff	• have personal access to computer at school • have personal computer at home	• use shared files • use a network	• can remotely access university system from home

Appendix D

University's CRE08 Agenda

University of

Stimulating Learning – the Background to CRe8

November 2007

Produced in Conjunction with

Bridges Experience

This Briefing Paper provides an overview of the University's Curriculum Review for 2008 (CRe8). More detailed Briefing Papers provide further information on each of the individual strands and their implementation. These are available on the CRe8 web site at http://ltss.beds.ac.uk/cre8.

1 Introduction

Many of the strands and themes outlined in the overarching document will be familiar to staff: employability, PDP, the core aspects of assessment and the elements of realistic learning. CRe8 brings these together but it also signifies a change in emphasis. This is to see the range of learning opportunities that students engage in not as isolated activities and interventions but as part of a seamless process designed to foster student engagement and development. Thus it signifies a shift away from a focus on individual elements (modules or units) towards a focus on the overarching student programme with the intention that the final learning experience is more than just the sum of the various parts.

In addition, implementing CRe8 focuses on:

- establishing the primacy of the course over the unit,
- seeing learning as a process, and
- making explicit the connections between units and levels.

1.1 Background

In August 2006 the University of Luton combined with the Bedford campus of [illegible] University to form the new University of Bedfordshire. Both institutions were rightfully proud of their records in supporting student learning but the challenge presented by the new University's development plan was to place it at the forefront of developments in teaching and learning with a national and international record of excellence in supporting a diverse student population.

Discussions with colleagues across the new University (assisted by the work of the University's Centre for Excellence in Teaching and Learning) identified the key issues that provided the focus for the work of the team of staff responsible for developing the new framework. Since the new combined institutional framework, alongside a new set of regulations, was due for implementation in September 2008 it became known as the Curriculum Review for 2008 – or CRe8[1].

[1] CRe8 both represents one of the issues that the University is dealing with – an increased use by students of text-speak and also one of the core ideas – to create the time and space for students and staff to be creative with and within the new curriculum.

1.2 Learning in the 21st Century

In the past, learning was defined as a change in behaviour. It was approached as an outcome - the end-product of some process that can be easily recognised. This approach highlights a crucial aspect of learning - change. However, it does not pay attention to students' individual differences, needs or preferences and does not respond to society's current trends and requirements. Learners are diverse in their reasons for, and approach to, learning and in their needs and abilities. What is required is a commitment to the principles of inclusive, flexible and 'personalised' education.

A more recent perspective sees learning as a process - what happens when the learning takes place is crucial. In this way, learning can be thought of as 'a process by which behaviour changes as a result of experience'[2]. Learning is not simply a question of learning facts, procedures and techniques but it involves the achievement of new ways of thinking and reasoning. Importantly, students' conceptual change is viewed as resulting not only from their classroom activities but also from their interactions with the surrounding social environment. In this framework, learning is seen as an inter-personal affair between the teacher and the student, the student and his/her peers.

In today's society where rapid technological development has increased the potential applications of technology in education and e-learning has in some cases replaced the traditional method of knowledge transmission, the role of the teacher changes. 'The teacher can give students ladders that lead to higher understanding, yet the students themselves must climb these ladders'[3]. Teachers can focus on the provision of personalised learning as a continuous process of knowledge acquisition, transformation and integration which results in deep learning rather than the mere acquisition of new skills[4]. Universities must support and promote personalised learning and adapt to meet a range of needs and interests "to ensure that every student reaches the highest standard possible, whatever their background." (DfES, 2007).

One of the significant questions that arises is the extent to which students are conscious of the learning procedures. Are they aware that they are engaged in learning - and what significance does it have if they are? Such questions have appeared in various forms over the years and tap into students' ability to develop autonomous, reflective thought. The challenge is to create learning environments which enable learners to build more meaningful personal interpretations and representations of the world; teachers must support students as they assess their performance using feedback and self-assessment tools and intervene in time and at an appropriate level in order to improve the meta-cognitive skills of the learners[5].

Educating graduates in the 21st century will require change – change from the University, change from staff and change from students. This will not be accomplished overnight. CRe8 sets a direction of travel for the university towards a goal of personalised, reflective and collaborative learning which equips students for an uncertain and ever-changing world.

[2] Maples and Webster 1980; in Merriam, S. and Caffarella (1991, 1998) *Learning in Adulthood. A comprehensive guide*, San Francisco: Jossey-Bass.
[3] Slavin, R.E. (1997). *Educational Psychology: theory and practice* (5th ed.). Needham Heigts, MA: Allyn & Bacon.
[4] Leadbeater, C. (2005). The Shape of Things to Come: Personalised Learning Through Collaboration, Nottingham: DfES.
[5] Johnson-Glenberg, M. (2005). Web-based training of metacognitive strategies for text comprehension: Focus on poor comprehenders. *Reading and Writing*, **18**, 755-786.

1.3 Core issues

In planning for CRe8, the following issues were highlighted:

- A need to respond to the mission and values of the new University. An access institution, committed to widening participation for all who have the potential to benefit and to enable its staff and students to ASPIRE[6].
- The University's vibrant and diverse student body. This is both a strength, in that it provides rich and varied experiences on which to draw, and a challenge in that each student has individual needs and priorities.
- The need to provide a learning environment which challenges and develops the more able students as well as those that traditionally have been the focus for interventions and activities.
- The importance of allowing for subject differences – allowing individual areas to develop within the framework a curriculum that meets the needs of their students.
- Developments in technology which will play an increasingly important part in how students engage with learning and with their wider development. The use of technology will be an important part of the learning experience but it should not be the driver – the pedagogy that underlies the learning process should frame the learning experience.

1.4 Aims

Overall the CRe8 has the following inter-related aims:

- to provide a curriculum which excites, motivates and engages students;
- to develop students as independent self-regulatory learners; and
- to prepare students for life beyond the University.

[6] Aspire represents the University's values and stands for **A**ccess, **S**cholarship, **P**artnership, **I**nnovation, **R**espect, and **E**mployability.

2 The Strands

There are five overarching strands to CRe8:

- Personalised learning
- Curriculum
- Realistic Learning
- Employability
- Assessment

It is not the intention that each strand stands alone but that it relates to and supports the others. The following sections outline these strands, more detailed discussion and exemplar material is available on the CRe8 web site.

2.1 Personalised learning

Personalised learning is an extension of Personal Development Planning. It asks us to consider how, in a mass higher education system, we can respond the learning needs of individual students – and where our responsibilities end and those of the students begin.

Students must 'personalise' learning for themselves but to enable them to do this we have to create an environment which helps students to understand themselves and their needs, and which supports the development of the skills and attitudes which will enable them to succeed. Recent developments in technology (the advent of the Portal, e-portfolios, web 2.0 technologies etc.) can help here and we need to tap into these to help support the personalisation agenda. It also requires us to have a much richer picture of individual students.

2.2 Curriculum

The curriculum represents both what we design to support students' learning – and what they actually experience. Making connections between these and emphasising learning as a process involving analysis of Self, Opportunity, Aspirations and Results provides the emphasis for our work in this strand and supports the wider CRe8 agenda.

Being clear about our goals and explaining how students can achieve these is at the heart of this process. It will require us to be explicit about our intentions and to work with students on improving their understanding.

The use of technology also features in this strand. Students are increasingly expecting to engage with part of their learning on-line and through technology, and we need to ensure that we can match their expectations and use the technology to support deep learning.

2.3 Realistic Learning

'Learning is not a spectator sport'[7]. We want students to be actively engaged in the learning process not just passive recipients. At heart, learning is both a social and a personal process. Students may learn from tutors, fellow students and other sources but what they learn becomes personal for them.

The notion of *Realistic Learning* comes from research conducted with students in the University and is designed to encompass the core characteristics of the learning experience at the University of Bedfordshire. Learning should be:

Meaningful - students see personal, social, professional, intellectual and practical relevance in the curriculum.

Active - students are actively engaged in the learning process and not just passive recipients of it.

Challenging - activities which challenge existing constructs, knowledge and assumptions and are interesting, but which also create opportunities for students to be creative and have fun.

Reflective - occasions for reflection are structured within a process of development that allows students to internalise their experiences and make connections across boundaries e.g. between units and with the demands of the outside world.

Collaborative - learning is part of a social process where students learn cooperatively with peers, tutors and other 'learning enablers' creating a learning community.

[7] There are several references to this quote so its origin is somewhat obscure. For example 'Learning is not a spectator sport. Students do not learn much just sitting in classes listening to teachers, memorizing prepackaged assignments, and spitting out answers. They must talk about what they are learning, write reflectively about it, relate it to past experiences, and apply it to their daily lives. They must make what they learn part of themselves.' see Chickering, A. W. & Gamson, Z. F. Seven Principles for Good Practice in Undergraduate Education. *AAHE Bulletin*, March 1987, p. 3 – 7.

Briefing Paper: Stimulating Learning – the Background to CRe8

2.4 Employability

Employability is defined as 'a set of achievements – skills, understandings and personal attributes – that makes graduates more likely to gain employment and be successful in their chosen occupations, which benefits themselves, the workforce, the community and the economy' (ESECT[8]). For the University of Bedfordshire this has the following dimensions:

Subject knowledge and understanding –a firm foundation in their subject and a curriculum which enhances their creative, evaluative, analytical and critical skills.

Vocational relevance and applicability – the curriculum helps bridge the transition into employment and develops the inter-personal and practical problem-solving skills required.

A career orientation - ambitious but realistic career aspirations and the career management skills to attain these aspirations.

Personal skills, attributes and independence – the life-long learning skills required to benefit from education and to sustain their continued development.

Subject contextualisation –a national understanding and international awareness of the environmental, social and political dimensions of their chosen subject.

A sound value-base – students are exposed to the values and ethical expectations of their subject and are expected to display these characteristics.

We need to ensure that these aspects of employability are fully embedded in our curricula and that students can recognise and articulate them.

[8] See www.heacademy.ac.uk/resources/publications/learningandemployability and references there in for a more detailed discussion.

2.5 Assessment

Assessment expresses our expectations and standards. It governs what students learn, how fast they learn and, to some extent, how they learn. We need to ensure what they learn is helpful and prepares them for future challenges. Thus a focus on assessment and maximising its potential to develop self-regulated learners is one of the core strands of CRe8.

Assessment is a time-consuming activity – for students and staff. We need to ensure that we are using this scarce resource to maximise student learning. Assessment also has a significant impact on how students view themselves. We need to acknowledge this in how we respond to students and ensure assessment is a positive learning experience.

6 Learning as a process

Learning is a process not a series of events. We need to ensure that students have the learning skills to learn from the range of circumstances in which they find themselves, at university, in work and in their personal lives. An effective learning environment helps and supports students in making sense of their experiences. Furthermore it helps to make connections between past, present and future events. What have I learned from this activity?

We can assist students in developing these skills and in being reflective learners, by consciously making the linkage explicit at lower levels and encouraging the students to see those links for themselves as they develop.

A structured personalised learning process, such as the SOAR process, which asks students to think about any activity in terms of Self, Opportunity, Aspirations and Results can help structure and support learning.

Self	What skills, knowledge and experience do I bring to this activity?
Opportunity	What does this activity give me the opportunity to develop, experience?
Aspirations	What do I, personally, want to get out of this activity?
Results	What did I learn? What will I carry forward? What would I do differently if I was to do it again?

You can find out more about the SOAR process and its application by visiting the SOAR section of the Cre8 web site.

7 The Use of Technology

"We have to know who our students are. We must ask them what they want, what excites them and what they like, what motivates them. We must be aware of their experiences, the social trends that shape them, and– in this context– the web sites that appeal to them. If these ways of thinking are captured as we shape technology rich learning environments, we will be able to reach out to the student and make learning relevant to their everyday lives."[6]

Technology enables CRe8 and the pedagogy it embodies, it is not the driver. It does, however, provide a means of delivering personalised learning in the context of a mass higher education system.

Technology can help with a number of the elements of CRe8. For example:

- Responding to differing learning styles
- Enabling access and the personalisation of the curriculum
- In providing a mechanism for recording attainment, views and opinions.
- Supporting employability and the development of appropriate skills.

Whilst we need to recognise that some of our students will be 'digital natives', for others the use of technology will be new or appear threatening. In the 'digital age' we are failing our students if they don't leave university as effective e-citizens.

[6] Information Technology In the Service of Student Learning 2001 PKAL Roundtable on the Future *www.pkal.org/documents/it_roundtable_report.pdf*

University of Bedfordshire

Stimulating Learning - Creating CRe8

Personalised learning

Personalised learning has the following dimensions:

Students understanding themselves - who they are and who they want to be.

Students learning how to become more effective learners through exploring their learning styles and developing their self-esteem and self-efficacy.

Accommodating students' personal learning styles and preferences by multiple teaching and assessment methods.

Valuing and acknowledging the diversity of students' experiences and drawing on them in learning and teaching approaches and activities.

Helping students to make sense of their learning in terms of the behaviours, actions and end-goals that are expected of them.

Enabling students to personalise their learning and development - identifying their strengths (actual and potential) and understanding how these can develop and transfer to their chosen futures.

Teaching

Effective curriculum design and delivery involves:

Staff understanding students: where they are in their development and where they need to get to.

An open and transparent curriculum with clearly aligned goals, expectations, learning outcomes and assessments.

Supporting key transition points such as the start of each academic year and ensuring that early experiences set the tone for future activities.

A 'scaffolded' curriculum which provides students with more early support followed by structured opportunities requiring more independent responsibility and which focuses on higher-order thinking skills such as analysis, synthesis and evaluation.

A focus on learning as a process and making explicit links between levels, units and activities.

The appropriate use of technology to support learning and enhance independent learning skills.

Realistic learning

The learning experience should be:

Meaningful - students see personal, social, professional, intellectual and practical relevance in the curriculum.

Active - students are actively engaged in the learning process and not just passive recipients of it.

Challenging - activities which challenge existing constructs, knowledge and assumptions and are interesting, but which also create opportunities for students to have fun

Reflective - occasions for reflection are structured within a process of development that allows students to internalise their experiences and make connections across boundaries e.g. between units and with the demands of the outside world.

Collaborative - learning is part of a social process where students learn cooperatively with peers, tutors and other 'learning enablers' creating a learning community.

Employability

An curriculum which supports Employability involves:

Subject knowledge and understanding –a firm foundation in the subject and a curriculum which enhances creative, evaluative, analytical and critical skills.

Vocational relevance and applicability – the curriculum bridges the transition into employment and develops the inter-personal and practical problem-solving skills required.

A career orientation - ambitious but realistic career aspirations and the career management skills to attain these aspirations.

Personal skills, attributes and independence – the life-long learning skills required to benefit from education and to sustain continued development.

Contextualisation –a national understanding and international awareness of the environmental, social and political dimensions of the subject.

A sound value-base – students are exposed to the values and ethical expectations of their subject and are expected to display these characteristics.

Assessment

Effective assessment involves:

Assessment strategies which focus on developing students' wider attributes and skills as well as testing knowledge and understanding.

Students developing self-regulatory behaviours through self-assessing and peer-assessing against criteria set by others and being supported and encouraged to use feedback to develop their skills and improve performance.

Students having detailed assessment briefs which clearly articulate the task, the expectations and the relationship to past and future activities within or beyond the University.

Students having focussed, meaningful and timely feedback designed to build confidence, self-esteem, encourage positive motivational beliefs and support learning.

Tutors using the outcomes of assessment to help shape future learning.

Appendix E

University's Education Strategy 2005-2008

UNIVERSITY

Education Strategy (2005 – 08): Education for Life

The University's approach to developing its Education Strategy has been evolutionary. The process started at the 2004 Teaching and Learning Conference and has involved input from staff within the University and partner institutions who were asked to identify their aspirations and how they might be achieved.

Academic Board has approved the aims and direction of the strategy as set out in Section 1 of this paper. Section 2 provides an analysis of the current context which informs the strategy and a more detailed discussion of current thinking around the main issues. Section 3 provides a provisional action plan for implementation. Academic and professional support departments and individual members of staff are invited to respond in detail to the strategy and how it can be implemented.

1 Our Vision

1.1 Our Themes

1. The Education Strategy (2005 – 08) takes as its starting points our mission and Development Plan (2004). Our ambition is to establish an international reputation for an innovative and applied curriculum which meets the needs of a diverse student body. The key themes which have been identified are:

- Access to higher education for all who can benefit: attracting students with potential that we can develop and learning needs to which we respond.
- Our multi-cultural and multi-national student community: recognising and learning from their different perspectives, and preparing students for global citizenship and the global workplace.
- An employability-focussed curriculum: preparing students for the transition into employment and enabling them to maximise life opportunities.
- Becoming a 'distributed' university: for our students learning may occur in a variety of environments; the university and its various sites, partner institutions, at home, at play and at work.
- The importance of the learning environment: providing students with a challenging, cohesive and responsive infrastructure which involves the whole of the University – its estate, community, and policies and practices.
- Using our staff to maximise student learning: ensuring staff resources are used effectively and efficiently, and supporting the development of all those teaching our students.

1.2 Our Aims

2. The Strategy is wide ranging and has been developed to inform other institutional strategies. The aims of the Strategy are to create:

- An engaging and exciting curriculum which supports the transition from further into higher education, raises expectations, broadens horizons and provides students with the skills, knowledge and wider attributes required for employment and lifelong learning.
- A learning process which recognises the needs and priorities of the individual student, provides opportunities to develop and practise employability skills in a supportive environment, promotes deep learning, and emphasises students taking responsibility, in partnership with the university, for their development and achieving their aims.

- A blended learning environment where staff with the experience, skills and knowledge required to deliver a vocationally relevant higher education curriculum provide significant added-value to the learning process and are supported in this by the virtual environment, the workplace and life experiences.
- Student support which is integrated into the learning process so that students learning needs are diagnosed, delivered, monitored and reviewed regularly throughout their studies.
- An estate which enables staff to explore innovative and effective approaches to supporting students learning, which creates a challenging, vibrant and exciting working and learning environment, which fosters social learning and places students and supporting their development at the centre of the campus.
- A virtual environment which enables students, wherever and whenever they are studying, to access support, guidance and details of their progress.

1.3 Our Priorities

3. To deliver the Strategy it is proposed that we:

i. Agree a set of principles that underpin our approach to teaching and learning (10[1]).

ii. Define what an employability-focussed curriculum means to us (12) with all students having the opportunity of subject-related work experience (30).

iii. Become more student-centred by using personal development planning as the prime means for structuring student learning and developing knowledge, skills and attributes (16, 38) supported by an evolving record of their learning which captures academic and wider abilities and attributes (21 –22).

iv. Place the students 'programme' at the core of considerations of student development (20) with learning support integrated into the core curriculum augmented by additional face-to-face and virtual support (54 – 59).

v. Further develop the first year undergraduate curriculum as distinctive and foundational with later years being characterised by greater student independence and less structured support (24, 28).

vi. Review our structures and core practices to ensure that they fully support student learning e.g. the Academic Year (24), February starts (25), the mechanism for Honours classification (41), Assessment (41).

vii. Develop a physical environment which is driven by the curriculum and the needs of our students, which provides an exciting and enriching learning experience and which emulates the working environment our graduates will experience (42 – 46, 53).

viii. Provide all students with a supportive virtual learning environment which augments and extends the classroom environment (47, 48 – 53).

ix. Use staff resources in a flexible and responsive manner ensuring that they have the appropriate competences and experience (60 – 68).

x. Adopt an evidence-based approach to underpin the implementation of the strategy (23) and as the basis of establishing our national and international reputation.

4. Academic Board approved these themes, aims and priorities at its meeting in June 2005.

[1] Numbers indicate the relevant paragraphs in section 2 of the strategy.

2 Analysis and Actions

1. This section sets out some of the premises which have informed the development of the strategy and our current thinking about how we might implement the vision in section 1. The intention is to engage individuals and academic and professional support departments in further discussion about how we might implement the strategy[2].

2.1 Context

2. The Education Strategy (2005 – 08) takes as its starting points our mission and Development Plan (2004). The Mission states our determination to establish 'an excellent reputation for high quality and vocational distinctiveness', and our 'commitment to providing innovative opportunities to participate in higher education for all those able to benefit'. The Development Plan identifies nine strands which this strategy will support.

i. The development of HE in FE.
ii. Growth in selected subject areas.
iii. Improved conversion of applicants.
iv. Improved retention.
v. Enhanced international recruitment.
vi. Growth of NHS business.
vii. Strategic alliances and possible mergers.
viii. Information systems and re-organisation.
ix. Culture change and Human Resources.

3. Key features of the plan of relevance to this strategy are:

- Increasing number of students taught off-campus[3].
- Increasing international students[4].
- Increasing postgraduate numbers[5].
- Improved student retention[6]

4. Our home students will come largely from the diverse local community which we serve whilst international students will come from a more extensive range of countries than at present with different educational experiences and expectations.

5. The strategy takes into account the national agenda which is likely to be governed by the continuing response to the 2004 White Paper and trends towards greater flexibility and vocationalism within the pre-university curriculum:

- Increased emphasis on performance measures as evidenced by retention and completion rates, student attainment, employability, value-added indicators, etc. – with associated league tables.
- Student fees and student choice in an increasingly competitive environment.
- Increased 'professionalisation' of academic staff being driven by the HE Academy;

[2] In this section of the document 'will' is used to indicate issues which received broad support in developing the strategy whilst those designated 'should' are for more detailed consideration.
[3] By 2007 42% of students will be taught away from the Park Square and Putteridge Bury campuses. This includes Nursing and Midwifery, Foundation degrees in FE Colleges, Majan College, SCITTs, and the increasing number of other bodies with which the University has arrangements (e.g. Kensington Consultation Centre, British School of Osteopathy, National Child-Birth Trust and the Institute for Optimum Nutrition).
[4] By 2007, 40% of those studying at Park Square or Putteridge Bury will be International students.
[5] By 2007, 22% of students at Park Square or Putteridge Bury will be studying at postgraduate level.
[6] A continuing cohort progression of 84% by 2007-08.

- The Burgess review, Bologna process and an emphasis on recording students' wider attributes.
- A developing 16-18 curriculum which provides a broader and more flexible education than traditional A-levels.

6. The changes we have made to simplify the structure of our programmes coupled with investments in technology and our academic infrastructure open up new opportunities for the way in which we structure our curriculum and support our students' development.

7. Our students' will come from increasingly diverse backgrounds and prior educational and life experiences; their needs will be diverse and changing. We need to be aware of, and respond to, individual needs, circumstances and commitments within a context which is maximising the use being made of our resources (physical, structural and human) and which recognises current understanding of student learning. To do this we will continue to develop a flexible and supportive curriculum which provides students with a relevant, challenging and engaging learning experience – whenever and wherever they are studying.

8. This strategy combines areas covered previously in the Learning, Teaching and Assessment strategy (LTAS, 2002) with aspects of student support, to provide a more holistic approach to education in the context of our commitment to access and widening participation. It has also been designed to help define revisions to other strategies (notably those around human resources, ICT and Estates) engendering closer alignment.

2.2 Education at the University of Luton

9. This section of the Strategy sets out the nature of the curriculum we are seeking to develop.

2.2.1 Principles

10. The following principles underpin our Strategy.

- We will maintain our commitment to providing an effective and supportive learning environment for all our students – whatever their background and wherever they are studying.
- We will continuously strive to raise the aspirations and the attainment of all our students.
- We believe that effective learning is supported through discussion and debate. This involves students actively engaging with academics, other students, professionals, learning resources staff, careers advisers, academic advisers and other staff.
- The focus for considering the educational development of our students is at the programme (rather than module) level.
- Our curriculum will prepare students for the transition beyond HE study.
- Our research will inform our teaching and the development of our curriculum.
- The scholarly and professional activity of staff will be integrated with the curriculum.
- Learning, teaching and assessment requires the effective harnessing and nurturing of the knowledge, skills and abilities of all our staff: academic, administrative and professional support.
- All our staff will be involved in the scholarly and professional activity and this will enhance and inform their work.

2.2.2 Curriculum Aims

11. The vocational distinctiveness and access nature of our mission is supported through a curriculum which aims to prepare students for employment in a multicultural world. It places a strong emphasis on employability and personal development planning whether at foundation, honours or Masters' level.

12. Employability is defined broadly as 'a set of achievements, understandings and personal attributes that make individuals more likely to gain employment and be successful in their chosen occupations'[7]. The following six dimensions characterise our approach to delivering employability (each recognising the needs of the particular subject and the level of the award):

- *Subject knowledge and understanding* – students should have a firm foundation of knowledge of their subject and experience a curriculum which is intellectually challenging and academically rigorous, and which develops their creative, evaluative, analytical and critical skills.
- *Vocational relevance and applicability* – the curriculum should model the practice of professionals and quasi-professionals in each subject area to help bridge the transition into employment and develop the inter-personal and practical problem-solving skills required.
- *A career orientation* - students should develop ambitious but realistic career aspirations and the career management skills to attain these aspirations.
- *Personal skills, attributes and independence* – students should display the life-long learning skills required to benefit from higher education and to sustain their continued development beyond the University.
- *Subject contextualisation* – students should have a national understanding and international awareness of the environmental, social and political dimensions of their chosen subject.
- *A sound value-base* – students should be exposed to the values and ethical expectations of those working in their subject area and be expected to display these characteristics.

13. We already have sound foundations in all of these areas but the latter two warrant elaboration. In an increasingly global environment, vocational education should include an element of comparative study across cultures or national boundaries so that our students have an understanding of how cultural and national differences affect employment opportunities and experiences. This is aided by the international and multi-cultural profile of our students and the increasingly diverse experience of our staff. The further development of international links at the institutional and departmental level will help bring this comparative element further into our curriculum. This element is a core component of our strategy for cultural integration and our aim to build an international reputation for the University.

14. Values and ethics have featured within our level descriptors but have been more prominently emphasised in some subjects than others. Companies and public sector organisations (including universities[8]) are being encouraged to embrace ethical principles and professional values, and to consider the sustainability of their activities. To support our students in the workforce of the future we need to ensure that they have an effective understanding in this area as appropriate to their subject. All programmes, at all levels, as they come forward for approval or review, will be required to identify the ethical and value-base which underpins their awards and their strategy for developing, embedding and assessing these.

15. Finally, we will aim to make learning challenging but engaging and 'fun'. Positive learning experiences can help support engagement with the learning process, deepen learning and increase motivation. We will do this through providing a varied curriculum and an exciting environment that involves students in the learning process and which emphasises the social aspects of learning.

[7] Knight P. and Yorke M. (2003) Assessment, Learning and Employability, SRHE and Open University Press
[8] See http://www.cihe-uk.com/ethics.php

2.2.3 The Role of Personal Development Planning

16. Personal development planning (PDP) is a means of delivering employability and supporting students' learning. It provides both a focus around which the curriculum can be structured and a mechanism by which a student-centred approach can be delivered. PDP:

- emphasizes critical reflection as a core attribute;
- promotes the ability of students to evaluate, analyse and add value to others' ideas and to develop and articulate their own;
- recognises and supports the needs of individual students;
- enables the development of academic and employability skills and attributes;
- links the taught curriculum with wider experiences;
- makes students more aware of how they learn;
- increases students' awareness of their skills and abilities; and
- supports students taking greater responsibility for their own learning as they progress through their studies.

17. We will monitor, evaluate and continuously improve the effectiveness of our curriculum. Through dissemination of our experiences and those of our students at subject and national levels we will further enhance our national and international reputation.

18. For our work in the areas of employability and PDP, and our sustained commitment to providing a high quality education, we have been awarded a Centre for Excellence in Teaching and Learning (CETL). The CETL has its own action plan, aligned with this strategy, focussing initially on the undergraduate curriculum. It will support departmental and institutional activities which enable the PDP and employability aspects of this strategy to be delivered and will provide a focus for guidance, support and evaluation.

2.2.4 Programme Profiles

19. Our curriculum model is built around marrying the objectives of the programme to the personal objectives and plans of the student. This model of clear objective setting with regular critical review and refocussing represents a powerful learning strategy and provides the basis for developing the skills required for lifelong learning.

20. To support this we will develop Programme Profiles[9] specifying the subject specific knowledge, subject-specific skills and wider skills and abilities derived from the characteristics of our curriculum as set out in section 3.2. Programme Profiles will incorporate detailed assessment criteria, including threshold standards, at each stage of the curriculum. Programme Profiles will enable students to clearly understand the requirements of each stage of their programme, to set realistic but challenging goals and to provide a means of monitoring their progress towards these goals. The threshold criteria will also provide the basis for progression and for award.

2.2.5 e-Portfolios and Transcripts

21. We will further develop this distinctive curriculum model and its support, and develop the use of e-portfolios as a means for students to record and review their progress.

22. We will provide detailed transcripts of students' attainment of the attributes covered in the Programme Profiles and final transcripts will meet the requirements of the Diploma Supplement of the Bologna declaration[10].

[9] Programme profiles would be more comprehensive versions of the current Programme Specifications defined by the PROGINF.
[10] See http://www.aic.lv/rec/Eng/leg_en/DSrec_EN.htm

2.2.6 Students

23. Our aim is to create a learning environment responsive to the diverse needs of our student body. We will engage students in providing feedback through formal and informal mechanisms and monitor academic performance and engagement with university systems by the major identifiable sub groups to ensure that we are providing an effective learning experience for all our students.

2.3 Curriculum Structure

2.3.1 The Transitional Undergraduate First Year

24. At undergraduate level, the first year allows for the development of the necessary academic skills to cope with the transition into higher education and has 'low stakes' assessment in that grades do not contribute towards final honours classification. Recent changes now mean that the diet of modules in most first year curricula is prescribed. Rather than fragment the first-year curriculum and the student learning experience, we will move towards a more integrated first year by removing elements of semesterisation.

25. This would mean an end to most February start programmes. Except in certain areas, the need to accommodate February starters constrains the curriculum for the majority of students and places an additional administrative and academic burden on the university which is difficult to sustain.

26. In a restructured first year, students might commence their 30 weeks level 1 study in September and, allowing for two weeks at Easter, final assessments would be complete before the last week in May[11]. The first year exam period will take place in the week before Christmas[12] and in the middle of May. Any referral examinations will be sat at the beginning of July[13].

27. Within the revised year, programme teams would be able to structure and support student development towards the desired outcomes as expressed in the Programme Profile. In areas with large student numbers we would evaluate the use of 'setting' to enable the establishment of groups of students of similar ability whose specific needs can be more easily addressed. In addition, the revised year 1 curriculum will need to respond to developments in the pre-university curriculum ensuring a smooth transition for students.

28. Students in the first year require additional timetabled time and additional staff support to that they receive at levels 2 and 3. This does not, necessarily, mean further academic staff time but will involve regularised and recognised input from the support areas of the University (learning resources, student support and careers) as well as further opportunity for student-student mentoring and support. Thus, students' formal supported learning time (their timetabled time) should be greater at level 1 than at other levels.

2.3.2 The Quasi-Professional Years

29. Years two and three of a career-orientated undergraduate degree require the further development of knowledge and understanding and an increasing ability to put this knowledge and understanding into practice.

30. As a vehicle for learning, there is no substitute for real work experience. In addition, students with subject-related work experience are more likely to find suitable graduate employment. All students should have the opportunity for experience in employment related to

[11] We could adopt this model across all years but, in principle, there is no reason why the first year might not be timetabled differently. This would free-up resource where there is bunching but we would need to consider whether we could cope with the different rhythms (eg in relation to exam scheduling).
[12] Where programme teams wish to have examinations at this stage, alternatively it will be another teaching week.
[13] Alternatively we could remove any right of referral in examinations at year 1.

their subject area as a part of their programme and for which they can receive academic credit[14]. Some courses have elements of work experience built in; this should be extended to cover all undergraduate programmes by:

- providing a supported and accredited sandwich year for all honours students; and
- providing for a subject-related work experience module (of at least 30 credits) in all programmes[15].

31. As well as work experience, students need the opportunity to experience a curriculum which enables them to model professional practice in a safe and supportive environment. We will create such an environment in each subject area and promote inter-disciplinary working through projects and other activities.

32. Programme approval, review and monitoring will consider the relevance and currency of the vocational elements of the curriculum through the range of measures in place. These will include:

- The recent professional experience of staff.
- The use of appropriate visiting professionals to support curriculum delivery.
- Input from employers and professional practitioners to augment the curriculum either directly or via on-line discussion.
- Use of real and recent case studies and projects.
- Realistic simulations and role-play.
- The use of an EBL approach to curriculum delivery.
- Opportunities for workplacements.
- Visits to professional practice.

33. Fundamental to the success of our strategy will be our success in getting graduates into graduate employment[16]. We will develop the current Destinations of Leavers from Higher Education (DLHE) survey to provide the basis for this monitoring, linked to the annual programme monitoring process.

2.3.3 Foundation degrees

34. Foundation degrees require students to have work-based learning as an integrated component of their curriculum. We will ensure that our Foundation degrees involve real work experience involving at least one semester's study in an appropriate work environment and that the learning from this experience is maximised.

35. We now have growing experience of operating Foundation degrees in a number of areas. During the period of this strategy we will enable the sharing of experiences across programme teams in key areas (employer links, work experience, skills development, PDP etc) to promote and disseminate good practice. We will establish a Foundation Degree Programme Managers Group to sustain this activity.

36. Where Foundation degrees are taught locally, we need to support the higher education experience of students and help with the potential transition into honours-level study with the University. To do this we will expect that, normally, at least 60 credits of the students' final year will involve modules taught on University premises or with input from University staff.

[14] Provision for students to receive credit for general work based learning and volunteering is already available within the Scheme or will be supported through the CETL.
[15] Unless there are clear professional body requirements that make this difficult to meet.
[16] This is likely to be a key national measure of value-added and one which should be important to the university in the context of its vocational mission.

2.3.4 Taught Masters' provision

37. Our approach to employability and student development set out in section 3 applies equally to Masters' level provision. We need to ensure that all students, whatever their background, are aware of the demands of M-level study, and that they are helped and supported in achieving these.

38. To do this we will extend the use of PDP processes to Masters' level. However, as befits Masters' level study, the emphasis will be on students' taking responsibility for their own development. Our approach will mimic commercial and public sector approaches to staff review processes. We will revise our existing induction processes so that all students are aware of the demands of their programme and undertake self-diagnosis against core skills requirements. Students will then be expected to undertake actions to improve their performance. This process will be monitored and assessed by tutors as part of a module (minimum of 5 credits) as a core part of their programme.

2.4 Assessment

39. Assessment (summative, formative, diagnostic, ipsative[17]) goes to the heart of the learning process. It is the means by which we establish standards, emphasise the knowledge, skills and attributes we value, and the way in which we regulate the pace of student learning and give feedback to help and support further development. Assessment is resource intensive for staff and students, and we need to ensure that it leads to student development and the maintenance of standards. Over-assessment, under-assessment and poor assessment can lead to surface learning, disengagement and poor student development. Furthermore, lack of engagement with assessments is one of the first indicators of students at risk of failure or non-progression.

40. Much is now known about good practice in assessment drawn from research and developmental activities locally and nationally. The recent restructuring of the undergraduate scheme together with other activities such as investment in Computer-based assessment (CBA), PDP and more integrated student support, mean that it is now appropriate for us to review how we assess our students at all levels in the context of employability and supporting and sustaining student development.

41. In the area of assessment we will:

- review sectoral practice as a basis from which to revise and refresh institutional approaches;
- review the mechanism used for honours classification to ensure that it helps promote engagement throughout a student's studies;
- evaluate the use of portfolio-based approaches for first year students linked to PDP processes;
- extend diagnostic assessment so that it encompasses greater continuous self-assessment;
- consider formative and summative assessment processes[18] to ensure that students are challenged to maximise their abilities and that designated learning outcomes are met;
- pilot and evaluate the use of e-feedback mechanisms;
- develop generic study skills guides and explore the use of multi-media resources[19] as a revision aid on selected modules and, if effective, further extend this practice.
- review transcripting and profiling practices to ensure that the student, and selected staff, has a 'rich picture' of her or his abilities.

[17] Ipsative assessment is the measurement of 'distance travelled' by the student.
[18] Ipsative assessment is being considered by the CETL.
[19] Including increased use of digitization as provided by recent changes to copyright agreements, commentary, audio recordings and interactive programmes including formative assessment.

2.5 The Learning Environment

2.5.1 The Campus

42. The learning environment plays an important role in how students perceive their University, themselves and their studies. Providing a creative, well-equipped and stimulating learning environment aids creativity and supports student identification with the institution and their department. Furthermore, the way in which we teach students is constrained by the physical environment in which that teaching takes place. Physical space is limited within the Park Square and Putteridge Bury campuses and we need to maximise its use.

43. The needs of an employability-based curriculum in an institution dedicated to innovative, exciting and effective teaching, require us to ensure that the Estate is appropriately configured to create an environment which supports students' learning. This requires us to improve both the standard and nature of the teaching space, and to provide learning environments which, for example, mimic employment scenarios and facilitate the movement from large to small group teaching.

44. With increasing emphasis on students being identified with linear programmes and less module choice, it is now possible to make firmer predictions about space needs and to plan the development of the Estate to meet teaching expectations. This process should start with a departmental-level review of how we wish to teach our students and will consider the needs of the different student groups (full-time, part-time, undergraduate, postgraduate etc.).

45. The social dimension of the learning process is also one which we will address. Peer-supported and social learning provide a means of enhancing the learning process and addressing issues of alienation through providing a place, within the main University campus, for students to meet together to work on group projects and support each other. Currently such space is limited to laboratories and related working areas. The development of space for social interaction supports both our teaching and learning aspirations and our strategy for student retention.

46. We should reconfigure the layout of the Park Square campus to place students at the centre. The Learning Resource Centre, Careers Service, Corporate Student Advisory and Learning Support areas should be brought together into one central area to provide a focus for student support, guidance and social learning.

2.5.2 Beyond the campus

47. Increasing numbers of our students have little or no contact with the Park Square campus as part of their studies. The challenge here is to create an HE community for these students and the staff who teach them. Enhancing the virtual environment and ensuring access to all, providing staff development at the departmental and institutional level combined with e-zines should be used help to cement the relationship with students and those teaching them.

2.5.3 The Virtual Environment

48. The virtual environment (Blackboard. SITS e-vision, the Student web site, student support, learning resources, CMS on-line) will support students learning as part of a blended learning approach. It will enhance classroom-based activities, delivering the background knowledge, supporting diagnostic and self-assessment processes and providing access to support and information. It provides an important facet of the higher education experience for students studying away from the Park Square campus whether directly with us or through our collaborative partners – thus, for many students, the virtual environment will be the University. We will ensure that it reflects our values and creates a dynamic, stimulating and professional environment which supports students' learning.

49. Blackboard is a core part of our learning infrastructure accessible to students whenever and wherever they may be studying. It provides additional support to the learning process, a means of communicating with students and support for referral activities – blended learning where the

virtual environment supports and enhances the learning undertaken in the classroom, workplace and home.

50. Blackboard use has been expanding but is not yet fully implemented across all programmes in the University. One of the key elements in our strategy is to ensure that we maximise the benefits that a VLE can provide linked to the needs of each subject and the support of students' learning. As part of a blended-learning approach, all university-based students should have access to a minimum level of support via Blackboard[20] and we will work with partner institutions on integrating the University's provision with their own VLE to maximise the benefits for students.

51. Whilst there are advantages in the blended learning approach, there is a danger (also noted elsewhere in the sector) that it can act as a disincentive for students to attend lectures and tutorials. Thus action needs to be taken to maximise attendance including ensuring that there is a significant added-value in attendance, student development to ensure that the value of attendance is stressed and that they are prepared to maximise their learning from engagement with staff and fellow students, and effective attendance monitoring.

52. Blackboard also provides a means of delivering the curriculum going beyond a repository for course and curriculum information and for student management. In some specialist areas, such as the MBA by supported learning, there is already a large component of e-learning but this is always supported by local tutors meeting students and 'flying faculty' together with on-line activities such as Viper and discussion boards thus enabling the dialogue essential to the our view of the learning process to take place. We will continue to adopt a cautious approach to the use of e-learning. The potential for the use of Blackboard in this way (i.e. as the main part of the means of delivering the curriculum) will vary from subject to subject and is a matter for consideration by programme teams and individual members of staff. Here the needs of the curriculum, and the target student body, will drive the use of the technology. However, we need to ensure that we keep abreast of developments and are aware of the potential which technology provides so that new markets and flexible delivery can be exploited.

53. Increased blended learning (and other developments such as increased use of CBA) require changes to the institutional estate and infrastructure. Students will increasingly gain access from home using their own PC's and may also wish to bring in laptops to 'plug and play'. Provision is currently being made for this within the Park Square campus which will open new opportunities. We will monitor and respond to these opportunities and the developing demand from students to access the virtual environment as our approach to blended learning develops. Ensuring we maintain equity of access will remain a priority. We will provide dedicated suites, training rooms and social space (such as an internet café) to ensure that all students can access and make effective use of the virtual environment.

2.6 Learning infrastructure

54. The learning infrastructure relates to the areas which support student learning whether directly or indirectly. This includes Learning Resources, Careers, Student Services, Learning Support, the Corporate Academic Advisory Service (CAAS) and also embraces administrative and other functions.

55. The effective delivery of learning resources in support of learning is a key component of the strategy. This is dependent on the maintenance of stable and effective links between Learning Resources and academic departments and maintaining a balance in purchasing which responds to shifts in academic publishing and developments in technology.

[20] This is currently specified in terms of module handbooks, Announcements and key events; Assessment details and timing; Reading lists (provided and updated by LR); Supporting learning materials (lecture notes, handouts, etc.); Management of email communication; and Monitoring student use of the VLE

56. We have made significant changes to support procedures, notably through the introduction of CAAS and Learning Support, and are planning developments in the personal tutoring system. The challenge for the forthcoming period is to ensure that these are embedded in practice with effective links and referral mechanisms between local and corporate structures, and that they meet the needs of the different student groups. PDP processes will be important here in supporting the needs of our students wherever they are studying and in linking to the various support structures as well as effective monitoring and student feedback mechanisms.

57. The Careers Service has an important role in sustaining the employability curriculum. Over the past ten years it has changed from being a peripheral and referral activity, to being an important part of the curriculum. This will be sustained and further developed to ensure that students, at all levels, have the necessary career management skills to support their life-long learning needs.

58. Communication skills are one of the key factors in educational attainment (particularly being able to write for academic assessment) and in gaining employment. The University has recently amended its processes to give greater attention to this area. Specialist language support staff working with academic staff – at all levels of the curriculum – will feature strongly in the next phase of development as we respond to the needs of both home and international students and the varying levels of communication skills required as students progress through their studies. Standards for communication skills will be written into the Programme Profiles.

59. In the digital age, IT skills and information literacy are core attributes. To support this we will use the European Computer Driving License as our benchmark standard and enable our students to achieve this and receive accreditation. We will also ensure that our students have the necessary search skills and understanding of copyright and plagiarism issues to function effectively in the knowledge economy through the incorporation of these skills in Programme Profiles.

2.7 Human resources, Scholarship and Research

60. Delivering a curriculum which enhances employability and is vocationally relevant requires a programme team which is abreast of current developments academically and professionally, and can demonstrate an ability to support students' learning.

61. The characteristics required embrace academic credentials (research and academic scholarship), professional credentials (professional body membership, recent relevant experience) and pedagogical understanding and competence. At the programme team level, as a benchmark, we should expect that:

- 50% have relevant professional qualifications.
- 50% have recent relevant professional experience (within the last five years).
- 50% are members of the HE Academy or have a professional qualification in education.
- 50% are members of Research Institutes (for Masters' level provision).

62. Each department will have a staff development plan to ensure that these targets can be met and we will revise our Staff Review and related processes to ensure that their attainment is supported.

63. We will be making greater use of visiting lecturers and visiting professionals to support the curriculum and will ensure that our contracts and processes facilitate the temporary engagement of such staff to enrich the curriculum and that we respond to their development needs.

64. Increasing professional support staff will engage with elements of delivery and we will ensure that they get appropriate training and support and that their revised role is recognised through their roles and the associated remuneration.

65. We should develop systems of monitoring and student feedback so that they enable staff to obtain detailed feedback on their teaching proficiency that can be the focus for their own development.

66. We will monitor and respond to the development of professional standards currently being undertaken by the HE Academy. Within each teaching team we should expect to find a significant proportion of the teaching staff are members of the Academy. We will seek to extend our current programme on HE teaching which is accredited by the Academy to include wider aspects of Academic Practice. All new members of staff should be expected to become members of the HEAcademy within two years of appointment through either the direct route or via our own accredited programme.

67. We need to respond to the development needs of the increasingly diverse range of staff supporting our students (full-time, part-time, VLs, professional support) whether within the main campus or in collaborating institutions. To support this we will develop on-line resources covering key aspects of the academic and support roles as they impact on student learning.

68. We will revise our own CPD processes, and work with partners in relation to theirs, to ensure that staff can demonstrate not only engagement with these processes but the ability to apply them in practice.

2.8 Implementation

69. To implement the strategy and deliver a high quality learning experience responsive to the needs of our diverse population requires concerted action by all staff: academic, professional support and administrative. The delivery of the strategy requires an understanding of the nature of our vocational curriculum and the pedagogical approach which underpins it, plus a clear identification of the competencies we require of staff and their roles in delivering the employability curriculum. Furthermore, it requires a culture which puts students' education at the heart of what we do and mirrors in our own practices the reflective and evaluative practices we seek to develop in our students. We need to:

- Promote a team approach – whilst effective curriculum design considers the student's whole programme, effective curriculum support considers the skills, knowledge and attributes of the team of staff who support its implementation.
- Foster innovation and disseminate practice.
- Adopt an evidence-based approach to policy development and implementation, drawing on perceived best practice with careful monitoring of the impact at all levels.
- Publish the outcomes widely to establish our reputation.
- Identify and support our own development needs – we should match our expectations of students in terms of personal development planning and managing their own learning and development with our own procedures, policies and practices.
- Provide coaching, development and support to teams – whilst recognising that there may be individual needs that also need to be addressed.
- Ensure that our various strategies, polices and procedures support the implementation of the educational strategy.

70. To help support the implementation of the strategy we need to recognise excellence in teaching through the reinvigoration of the current Teaching Fellowship scheme. Teaching fellows, working with PDP fellows (supported by the CETL) should support the local development and implementation of the strategy in conjunction with the Sub Deans (Quality Enhancement).

2.9 Monitoring

71. Overall monitoring the implementation of the Education Strategy is the responsibility of the Teaching Quality and Standards Committee and the respective Faculty TQSCs. Institutional processes for approval, review and monitoring will be adapted to enable relevant aspects of the strategy to be considered as part of core quality assurance and enhancement procedures.

3 Objectives

72. Derived from the overarching aims of the strategy, ten specific objectives have been identified with provisional actions plans as set out in the remainder of this document.

Objective 1	Employability is embedded in the curriculum design of all programmes; in a manner appropriate to the subject and academic level.
Objective 2	Personal Development Planning is an integral part of the learning process and supports the needs of a diverse student body
Objective 3	Teaching practice, space and the University environment is conducive to supporting the employability-based curriculum and creative academic study
Objective 4	Learning support is fully integrated into the learning experience providing timely and effective guidance and support.
Objective 5	Full and effective use is made of Learning Technology and IT systems to support student learning and the management of their learning experience.
Objective 6	Assessment processes support the learning process and the development of employability skills whilst maintaining academic standards.
Objective 7	The curriculum and its teaching and support, is responsive to the needs of its diverse student body
Objective 8	Staff teams have the necessary expertise to deliver the employability curriculum.
Objective 9	Staff have the skills set and development to enable them to teach and support student learning
Objective 10	The University has an international profile in curriculum design, teaching, and cultural integration

73. Professional Support and Academic Departments will be consulted about these actions, the timescales and any support required for implementation.

Mark Atlay
September 2005

Objective 1 **Employability is embedded in the curriculum design of all programmes in a manner appropriate to the subject and academic level.**

	Action	Outcome	Lead Responsibility	In association with	Timescale
1.1	Programme teams undertake a review of the current curriculum to ensure that employability issues are explicitly addressed and develop an associated action plan encompassing: ▪ Subject knowledge and understanding. ▪ Vocational relevance and applicability. ▪ Subject contextualisation. ▪ Value-base ▪ A career orientation ▪ Personal skills, attributes and independence	Programme profiles for each programme developed and monitored as part of the annual monitoring cycle	DVC(A) or Heads of Department	Field and course chairs CETL	2005/6
1.2	All undergraduate students have the opportunity to utilise work experience and work-related learning as an integral part of the curriculum. This is a compulsory component of Foundation degrees.	Work experience	DVC(A) or Heads of Department	Field and course chairs and CETL	2007/8
1.3	Programme approval and review processes revised to ensure employability issues are fully considered	Revised procedures	Dean of Quality Assurance	Sub Deans CETL	2005/6
1.4	Annual monitoring processes revised to ensure employability issues are fully considered	Action plans monitored as part of annual monitoring	Dean of Quality Assurance	Sub Deans CETL	For 2005/6 monitoring
1.5	Student transcripts capture the richness of the student experience	Review transcripts	Registrar	CETL	2005/6

Objective 2 **Personal Development Planning is an integral part of the learning process and supports the needs of a diverse student body.**

	Action	Outcome	Lead Responsibility	In association with	Timescale
2.1	Extension of PDP within the undergraduate curriculum in line with CETL development plan	CETL annual plan achieved	CETL Director	Field Chairs	Annually
2.2	Review of existing practice and development of an action plan for PDP at Foundation degree level	Action Plan	CETL Director	Field chairs and programme leaders	2005/6
2.3	Review of existing practice and development of an action plan for PDP at taught postgraduate level including a 5 credit module	Action Plan	CETL Director	Course chairs	2006/7
2.4	Review and implement e-portfolios and other mechanisms for supporting Progress Files	Review	CETL Director	PDP Fellows	2005/6 for implementation 06/07
2.5	Impact of PDP curriculum monitored	Report to TQSC	CETL Director	PDP Fellows	Annually

Objective 3 **Teaching practice, space and the University environment is conducive to supporting the employability-based curriculum and creative academic study**

	Action	Outcome	Lead Responsibility	In association with	Timescale
3.1	Develop field/departmental teaching and learning strategies to support the employability curriculum with action plans for estate configuration	Space usage strategy for each department	Heads of Department	Head of Estates	2005
3.2	Undertake a space planning review based on projected student numbers	Space planning strategy	Head of Estates	Head of Planning	2005/6
3.3	Create a vibrant and stimulating university estate environment which promotes creativity, establishes departmental identities and stimulates intellectual curiosity	Significant improvement to visible	Head of Estates		Continuous
3.4	Social space developed within Park Square campus	Social space created	Head of Estates		Continuous
3.5	IT infrastructure and Estate developed to meet developing needs	Part of revised Estates strategy	Head of Estates	Head of IT	Continuous
3.6	Student support functions brought within one area to provide a focus for student support and guidance	Relocation and branding	Head of Estates	Director of Learning Resources	By 2007

Objective 4 **Learning support is fully integrated into the learning experience providing timely and effective guidance and support.**

	Action	Outcome	Lead Responsibility	In association with	Timescale
4.1	Further extend processes for monitoring student needs (through diagnostic testing, work of STAR boards etc.) to ensure that all students at all levels are directed to and receive appropriate support through departmental or corporate mechanisms	Integrated support and referral mechanisms	DVC (Academic)	Head of Learning Resources, Head of TQE	Continuous
4.2	Develop on-line and other support mechanisms to ensure that students studying on and off-campus have access to appropriate learning support	Support integrated and utilised	Head of Learning Support		2005/6
4.3	Review provision for the development of English language skills to ensure that all students, throughout their programmes, have access to appropriate support and can demonstrate the required competences	English language strategy	DVC (Academic)	Head of Learning Support	2005/6
4.4	Induction arrangements for direct entrants revised and refined	Induction plans	Heads of Department		2006/7
4.5	Review support for information literacy and IT skills development at all academic levels.	Plan	Head of Learning Resources	Head of TQE	2006/7
4.6	Develop systems for student-student mentoring and support	Action plan	DVC (Academic)	Head of TQE	2007/8

Objective 5 **Full and effective use is made of Learning Technology and IT systems to support student learning and the management of their learning experience**

	Action	Outcome	Lead Responsibility	In association with	Timescale
5.1	Implement a single portal to enable all students to have access to the virtual university (e-vision, Blackboard, Learning resources, learning support etc.)	Portal in place	DVC (Academic)	Director of Learning Resources, Director of Information Services	2006
5.2	Ensure that all modules use Blackboard to minimum university specifications	80% 05/06 90% 06/07 95% 07/08	DVC (Academic)	Head of Learning Technology	As target
5.3	Support the development of the use of learning technology to support student learning (rather than information transmission)	Revised LT strategy	Head of Learning Technology	Heads of Department	2006
5.4	Develop an institutional strategy for the use of QuestionMark perception and/or to support formative and summative assessment	Revised CBA strategy	Head of Learning Technology	Heads of Department	2006
5.5	Undertake an evaluation of student access to and use of IT and their IT skills	Report	Dean of Students		2005
5.6	Ensure the use of Learning Technology is SENDA compliant	Review	Head of Learning Technology		Continuous

Objective 6 **Assessment processes support the learning process end the development of employability skills whilst maintaining academic standards.**

	Action	Outcome	Lead Responsibility	In association with	Timescale
6.1	Identify and disseminate effective assessment strategies for the employability based curriculum	Policies reviewed and assessment Guide produced	DVC (Academic)	CETL team	2005/6
6.2	Identify threshold criteria against Programme Profiles	Criteria established	DVC (Academic)	Field and programme chairs	2006/7
6.3	Review current assessment practice to ensure broad comparability of student and staff workload	Curriculum level review	DVC (Academic)	Heads and Field and course Chairs	2006/7
6.4	Pilot e-feedback mechanisms and review for possible implementation	Review	CETL		2005/6
6.5	Pilot the use of multi-media revision guides in selected modules	Impact review	Head TQE	Head of Learning Technology	2005/6
6.6	Develop automatic systems for monitoring the non-completion of assessments	Warning system	Registrar	SITS Team	2005/6
6.7	Develop detailed transcripts based on Programme Profiles and Progress Files which meets Bologna requirements	Revised transcript	Registrar	SITS Team	2007/8

Objective 7 The curriculum and it's teaching end support, is responsive to the needs of its diverse student body

	Action	Outcome	Lead Responsibility	In association with	Timescale
7.1	Review the structure of the level 1 curriculum as e foundation year to support transitions and aid progression	Year 1 review and action plan	DVC (Academic)	Field Cheirs	2005/6
7.2	Revise methods of gathering feedback from students and ensuring that that students are informed how their feedback contributes to evolving practice	Feedback strategy	Dean of Students		2005/6
7.3	Pilot streaming of students in large classes to help target resources and to ensure that all students are supported in developing to their full potential	Pilot project	DVC (Academic)	Selected Heads and course teams	2005/6
7.4	Develop student profiling systems to ensure the effective targeting of resources to groups of students	Student profiles produced	DVC (Academic)	Head of Planning and Head of TQE	Continuous
7.5	Further develop systems for the effective and prompt monitoring of student engagement	Revised processes	DVC (Academic)	Registrar	2005/6

Objective 8 Staff teams have the necessary expertise to deliver the employability curriculum.

	Action	Outcome	Lead Responsibility	In association with	Timescale
8.1	Ensure that programme teams have the necessary recent experience of sectoral employment practices to support the delivery of the employability curriculum	Departmental plans	DVC (Academic)	HR	Annually updated
8.2	Develop secondment, work shadowing and related schemes to provide staff with recent relevent sectoral experience to help validate the curriculum	Schemes developed and used	Director of HR		2005/6
8.3	Develop guidance on the relationship between the levels 3 and M curricula and scholarship/research	Policy statement and guidance	DVC (Academic)	PVC Research, Head of TQE	2006/7
8.4	Review of roles, contracts and remuneration to support more flexible use of permanent and temporary staff	Revised roles and contracts	Director of HR	DVC (Academic)	2005/6

Objective 9 Staff have the skills set and development to enable them to teach and support student learning

	Action	Outcome	Lead Responsibility	In association with	Timescale
9.1	Identify the academic skills set and ensure appropriate training and monitoring is provided	Competency framework	Director of HR	Head of Learning Technology and Head of TQE	2005/6
9.2	Improve IT training facilities to ensure that IT and employment-related training can take place	IT training facilities	Head of Estates		Continuous
9.3	Support membership of the HE Academy	Course teams to have 50% membership of the HE Academy	Head of TQE		Continuous
9.4	Review the Field chair and programme manager role to promote their roles in academic leadership?	Review	DVC (Academic)	Director of HR	2005/6

Objective 10 The University has an international profile in curriculum design, teaching, and cultural integration

	Action	Outcome	Lead Responsibility	In association with	Timescale
10.1	Research the impact of the curriculum model and the effectiveness of teaching practices	Internal research and evaluation culture	Head of Teaching Quality Enhancement	PTFs and PDP fellows	Continuous
10.2	Develop the international reputation through publishing in international journals and presentations at conferences	Ten papers per year published	Head of Teaching Quality Enhancement	All staff	Annually from 2006/7
10.3	Develop international links at the subject and institutional level with similar institutions	Links with five other institutions	DVC (Academic)	Deans	By 2007
10.4	All departments to have international links which impact on students' learning	Identifiable links	Heads of Department	Deans	By 2007

Appendix F

University's Technology-Enhanced Learning Strategy 2008-2011

Appendix F

UNIVERSITY

Technology-Enhanced Learning Strategy 2008 – 2011

Introduction

"There are increasing and varied pressures driving the rise in use of e-learning within UK Higher Education. There is no doubt that new technologies provide exciting opportunities for enhancement and innovation in learning" (Higher Education Academy, 2007).

The Technology-Enhanced[1] Learning (TEL) Strategy 2008 – 2011 takes as its starting points the University's Mission and Vision Plan *'New Futures 2007 -12'* and the Education Strategy (2008 – 13): *Transformational Education*. The three-year strategy[2] opens access to new markets, supports the personalised learning of students and contributes towards enabling the university community to function effectively and efficiently in the digital age.

While face-to-face learning will continue to remain the cornerstone of learning at the University of Bedfordshire, through the considered use of technology every student should have flexible access to learning activities and resources that meet their needs. The application of technology should deliver improved access to richer resources while contributing to more effective use of staff and student time. Technology permits learning to take place in more flexible ways, accommodating students who need to study at times and places outside the traditional model. Technology can also provide the means of personalising learning, giving students more and better opportunities to identify and engage with learning that maps onto their personal learning styles and supports their personal development. The considered application of technology has been shown to improve student attainment, retention, inclusion, employability and engagement[3]. It is a vital aspect too, for developing graduates who are 'information technology' literate and equipped to cope with a world of increasingly rapid technological change. In its current plans to review its Strategy for e-Learning, HEFCE has identified that "technology-based solutions will be integral to institutional learning, teaching and assessment strategies" with the implication that the use of technologies to support learning should not be viewed as something additional but normalised into the natural working of the institution. The University's TEL strategy supports such an approach.

Only e-learning

not just this in school – more

tech in schools currently wider

Aims

The key aims of the TEL Strategy are to ensure that technology is used appropriately, effectively and efficiently to:

- support student learning and development;
- support staff in the delivery of the curriculum;
- prepare students to function in a technologically-rich and changing world;
- enhance existing provision; and
- exploit new market opportunities.

agreed – both HE and for schools

Currently there is a difference – L-T there won't be

[1] Technology-Enhanced Learning encompasses e-Learning, Blended Learning, Distance Learning and use of Technology in the Classroom (e.g. interactive whiteboards, personal response keypads).

[2] Given the rapidly changing nature of technology and the University's current position, a shorter period for this strategy is proposed than the University's new futures or its Education strategy.

[3] See Exploring Tangible Benefits of e-learning: Does investment yield interest? JISC Infonet at www.jiscinfonet.ac.uk/case-studies/tangible

Actions

There are four strands to our work in the initial phase of our strategy which match the strands of our Education Strategy.

A Curriculum delivery and the learning infrastructure
B Learner development and support
C Extending and reviewing institutional structures
D Academic staff and processes

The intended outcomes for each strand are detailed below and the actions which will be taken to implement them are provided in the Action Plan at the end of this document.

A. Curriculum delivery and the learning infrastructure

A1 Extend delivery to broadly mode 2 across the University[4]
A2 Expand the set of courses and units delivered by mode 3
A3 Enhance support for online communities of practice
A4 Ensure technology is used effectively to support assessment processes
A5 Adopt an evidence-based approach to implementing technology-enhanced learning

B. Learner development and support

B1 Extend the use of e-portfolios supported by e-PDP processes across the University
B2 Provide improved integration of online support systems and tools
B3 Deliver guidance and support for students to improve their utilisation of online learning

C. Extending and reviewing institutional structures

C1 Ensure access to appropriate information technology is readily available
C2 Develop university systems to support mode 3 delivery
C3 Continuously develop the real and virtual estate to provide technology-rich learning environments
C4 Work with partners to develop localised action plans to support technology enhanced learning

D. Academic staff and processes

D1 Develop procedures to systematically review departmental use of technology-enhanced learning
D2 Support the TEL strategy through associated, focused, staff development.
D3 Develop online staff development materials to support effective practice.

Relating the strands and actions

Course provision

The University already has in place through BREO (Blackboard™) a range of technologies which support curriculum delivery and, when effectively deployed, enhance student learning. Whilst there has been significant progress in its use over the past three years, the majority of delivery is currently at mode 1. Systematic high quality teaching is dependent on the effective use of technology to develop students' skills, support different learning styles, enable flexibility of access, provide formative feedback, capture student learning, encourage reflective processes and enable the effective deployment of staff resources. The effective deployment of technology is fundamental to our approach to personalising learning and thus our ambition is to move the majority of our provision, over the lifetime of this strategy, to mode 2 (A1).

[4] See Appendix 'e-Learning Modes of Engagement'

Technology gives us the opportunity to access new niche markets and to extend current provision by exploiting online learning for distance learners. We will identify those areas where considered investment in an online approach is likely to bring the greatest return (A2) and ensure that university systems can sustain a distance learning approach throughout the student life-cycle from initial approach, through registration, learning activities, assessment, support, results and graduation exploiting the potential of the new portal (C2).

Supporting learning

Our students need to be prepared to function fully in a world which is changing rapidly, where technology acts as a mediator between humans and that world, and where graduates are expected to be technologically competent. Younger students are deemed to be increasingly comfortable with technology but may be less familiar with its use as part of an integrated approach to learning. More mature students may, in addition, require help with becoming accustomed to technology and comfortable with its use. We will ensure that our students are equipped to function with confidence in an ever-changing, technology-rich environment by providing appropriate development supported by improved guidance and online materials and activities linked to developments at the curriculum level (A3, A4, B2, C1).

agree
But not just e-learning its more than this for education

We will use technology to support the CRe8 initiative, with its emphasis on realistic learning and employability, and to assist in making the link between activities in the University and the wider world. We will pursue further integration, implementation and enhancement of the underpinning technology, enabling students to better personalise their learning. Interactions will be captured online in a range of styles and students will increasingly gather their own materials using integrated wiki and blog tools, pulling together content from a broad range of sources, integrating these via e-PDP processes with their electronic content repository and publishing evidence of development and learning for internal and external audiences through e-portfolios (B1, C2).

agree → but only mature hnrs outside school ie business/corporate world

Deleted: (B1, C2)

There are a number of online assessment tools provided by the University and their use should, wherever appropriate, take advantage of the feedback mechanisms integrated within them. Computer based assessment can support personalised learning by providing formative feedback focussed on individual needs at a time controlled by the student. It can help prepare students for assessment, and if necessary, for reassessment. Existing systems will be reviewed and opportunities will be identified for the effective and efficient use of technology to support summative, formative, diagnostic and ipsative assessment processes (A4).

IT Infrastructure

The successful growth and development of TEL throughout the University as signified by this strategy is highly dependent on underpinning IT systems and associated procedures. We need to ensure that systems are sufficiently robust and reliable to maintain staff and student confidence. We will improve our central services, systems and processes, using technology to integrate learning systems with identity management and user data to improve the targeting of learning activities and the monitoring of student development (C1, C3).

✓ good.

Learning and teaching styles which are not limited to traditional didactic modes and which support the move towards mode 2 delivery require technology-rich learning spaces. We will continue to develop our learning environment to reflect this. ISD has developed a specification for hardware in open-access locations together with a software set. A review will be undertaken to identify opportunities for the further development of resources that ensure that staff and students can readily access appropriate hardware and software and that support and advice can be readily obtained. (C1)

– open hub earlier?

Achieving our aims

In order to facilitate a structured approach to the development of courses and units, we will adopt a 3-tier model (see Appendix 1) to represent the modes of engagement with online learning across the curriculum. The modes are:

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Mode 1: BASELINE;

Mode 2: INTEGRATED;

Mode 3: ONLINE.

(It is important to recognise that Mode 2 as defined represents a general model and that different departments and courses will need to interpret the detail of their provision in ways which appropriately reflect their own context.)

To achieve the planned growth and development the Learning Technology Unit (LTU), in conjunction with designated academic staff, will audit the implementation of TEL within departments[5] against the model. To support this process, LTU will adapt examples of good practice from the HEA Benchmarking and Pathfinder Projects to develop specific audit tools and practices (based on the Pathfinder project at the University of Reading) which reflect University of Bedfordshire's aims and objectives. (D1)

Academic departments will work with the LTU to ensure the audit tools meet local needs and then undertake a review of departmental TEL effectiveness. This will include an audit of existing practices to determine the extent to which mode 2 delivery is being achieved, a review against similar departments in other institutions as part of a benchmarking exercise, a review of the current levels of staff and student expertise and the views of these groups, and an evaluation of the extent to which technology is being deployed to support CRe8. The review will provide course teams with information to enable them to plan the evolution of their courses through the development of a detailed plan with associated actions and timescales. (A1, D1)

The process of engaging with departments as part of the review process will be used to enable staff to enhance their understanding of e-learning pedagogies and the opportunities afforded by new technologies. Staff development will focus primarily on the needs of departments and course teams through targeted staff development in delivering the identified actions plans. (D2)

Wider staff development will focus on developing the understanding of new staff, on the introduction of new technologies, on identifying and disseminating good practice through developing a community of practice across the institution and its partner organisations. (D2, A3, A5)

Partner Institutions

All University of Bedfordshire students should be supported in their learning through the appropriate and effective use of technology and, where online activities are concerned, this should normally be via BREO since it gives access to learning materials and activities and the full range of integrated services to which our students are entitled, aligned with their student records on SITS, and library resources online. It is therefore expected that staff in partner institutions should take full advantage of the staff development opportunities offered by the Learning Technology Unit and that BREO will be used to support the learning of University of Bedfordshire students in partner institutions. However, it is recognised that this approach presents a challenge in that staff in partner institutions may be more familiar with alternative VLEs and that remote staff development is problematic. Link Tutors together with TLU will work with partner institutions on developing localised action plans supported by on-line staff development resources (C4, D3).

great for e learning but still need to consider tech for learning in specific area

process is begun - now needs to implement stage this is stage 2/3 for many staff

good but again not just e learning

[5] Departments includes divisions and other sub-groupings.

Action Plan

		Action	Target	Lead Responsibility
A	**Curriculum delivery and the learning infrastructure**			
A1	Extend delivery to broadly mode 2 across the University (See also D1)	• Departments to review status against agreed criteria and develop action plans • Monitor progress against departmental plans	Target: 20% of units recognisably mode 2 by Sept 2009 40% of units recognisably mode 2 by Sept 2010 60% of units recognisably mode 2 by Sept 2011	Heads of Department with the Head of e-Learning
A2	Expand the set of courses and units delivered by mode 3	• Identify development opportunities • Provide planning templates, guidance and support • Monitor progress	Development opportunities identified by September '2008 24 programmes of study available by mode 3 by 2010	Heads of Department with Head of e-Learning
A3	Enhance support for online communities of practice	• Identify appropriate technologies • Provide guidance for use as new systems are identified • Implement and support	Technology identified and guidance produced by December 2008 Systems embedded and widely used by December 2009	Head of e-Learning
A5	Ensure technology is used effectively to support assessment processes	• Review use of online assessment systems and processes • Develop action plan • Develop and integrate online feedback mechanisms	Review use of computer-aided assessment and feedback by September 2008 with associated action plan Develop and integrate feedback mechanisms by Sept 2010	Head of e-Learning
A5	Adopt an evidence-based approach to implementing technology-enhanced learning	• Research, evaluate and disseminate the impact of TEL on student learning • Identify evaluation tool(s)	Evaluation tools identified by December 2008 Action Research Group in place by December 2008 Publish outcomes bi-annually commencing February 2009	Head of e-Learning

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		Action	Target	Lead Responsibility
B	**Learner development and support**			
B1	Extend the use of e-portfolios supported by e-PDP processes across the University	• Review e-Portfolio tool and identify best option to underpin uptake of e-Portfolio in support of e-PDP • Identify core templates / models of e-portfolio usage	Appropriate e-portfolio tool identified by December 2008 75% of all students have structured e-portfolios linked to their curriculum by September 2010	Ass Director CETL with Head of e-Learning
B2	Provide improved integration of online support systems and tools	• Identify range of online support opportunities • Develop activity framework to pull together and move towards standardization of relevant support materials and activities • Review annually by student feedback	Range of activities identified by July 2008 Framework in place by December 2008	Head of e-Learning
B3	Deliver guidance and support for students to improve their utilisation of online learning	• Identify activities prioritised according to curriculum need • Develop online materials and support activities for range of BREO tools • Review annually by student feedback	Review of student development needs undertaken and priorities established by August 2008 Roll-out of materials / activities commenced September 2008 Update resources informed by student feedback	Head of e-Learning

		Action	*Target*	*Lead Responsibility*
C	**Extending and reviewing institutional structures**			
C1	Ensure access to appropriate information technology is readily available to users	• Review existing provision of IT support and infrastructure including soft and hardware • Develop plan for implementation and mechanism for continuously updating	Review undertaken by June 2009	Head of e-Learning with Director of ISD
C2	Develop university systems to support mode 3 delivery	• Review student life-cycle needs • Develop and implement a plan	Review undertaken by February 2009 Implementation for September 2009 mode 3 starters	Head of e-Learning with Registry, Finance and other functions
C3	Continuously develop the real and virtual estate to provide technology-rich learning environments	• Review sector provision and internal plans and produce a report	Report to inform Estates and Facilities Development produced September 08 and updated annually	Head of e-Learning
C4	Work with partners to develop localised action plans to support technology enhanced learning	• Engage with link tutors to identify TEL needs and develop a plan • Yearly action plan for each major partner	Reviews undertaken by December 2008 Plans for all key partners developed by September 2008	Head of e-Learning

		Action	*Target*	*Lead Responsibility*
D	**Academic staff and processes**			
D1	Develop procedures to systematically review departmental use of technology-enhanced learning and develop associated action plans	Identify audit tools and processes.	Tools and processes in place by August 2008 50% of departments have action plans developed during 2008/9 Remaining 50% have action plans developed during 2009/10	Head of e-Learning
D2	Support the TEL strategy through associated, focused, staff development.	Provide training for new staff on appointment Annual series of workshops Community of practice developed and sustained	Revised PgCAP and induction processes September 08 Evidenced through achievement of A1 and student feedback	Head of e-learning
D3	Develop online staff development materials to support effective practice.	Identify key areas for development and develop online materials and activities for full range of BREO tools Review annually by feedback	Priorities established by August 2008 Roll-out of materials commenced by September 2008	Head of e-Learning

Not developed this level - gaps below this with learning

Appendix 1: e-Learning Modes of Engagement

Mode 1 BASELINE

Baseline course administration and learner support

Use BREO to distribute course / unit information and carry out course / unit administration, typically including aims and objectives, assessment criteria / pro formas, timetabling information and announcements, reading lists, tutor contact details, FAQs, additional web resources, links to field level resources, course / unit handbook, lecture preparation materials and lecture notes.

Mode 2 INTEGRATED

Blended learning leading to significant enhancements to learning and teaching processes – comprehensive online provision integrated with face-to-face learning

Communication	Activities
Provide integrated communication channels (text and voice-based) to enable students, especially in disparate groupings and locations, to exchange information and ideas, ask questions and discuss issues relating to their learning. Provide specific opportunities and channels for students to manage and develop their own collaborative working and learning communities, including the opportunity to build social learning networks. Provide on-line unit evaluation opportunities, coupled with feedback on actions taken as a result of previous feedback.	Provide an environment that fosters collaborative student projects, involving shared responsibility for resources and outcomes, providing significant opportunities for students to personalise learning. Students use communication tools and shared spaces to collaborate on task processes and outcomes. Opportunities for reflection and e-PDP integrated and guidance given on methodologies (e.g. blogging) and best practice. Provide integrated structure for students to evidence learning and personal development planning (PDP) collected online and presented at appropriate point(s) by means of e-portfolio.
Content	**Assessment**
Provide flexible access to high-quality, reusable learning materials: may include structured gateways to web and other resources with accompanying self-paced independent learning activities, adaptive release, interactive tutorials with feedback, simulations, study and learning resources and activities fostering independent learning. Provide content in a broad range of media formats including podcasts and videocast to deliver rich learning opportunities. Learning *materials* primarily delivered online – face-to-face tutorials reserved primarily for interaction.	Provide structured and purposeful feedback to students on their learning via computer-aided assessment for either formative (self-assessment and monitoring of progress) or summative (examination and grading) purposes or both. Provide past assessment and / or exam questions and model answers. May involve electronic setting, submission and feedback and return of student assignments using digital artifacts. Likely to involve some assessment by e-portfolio.

Mode 3 ONLINE

Online course / units - students may undertake entire programme of study by online means

Online Learning	Management
Learning is structured incorporating all of the above (Modes 1 & 2) in ways that facilitate flexible and supported learning to enable learners to learn at times and places of their own choosing, within a clearly-defined, structured learning programme. Provide activities and tools to foster the development of a social learning experience for learners who may never meet other than online.	Student lifecycle online – all forms, documentation and processes available via on-line means. Pre-session preparation guidance and activities available online for pre-start engagers. Guidance for all tools, together with diagnostic activity tests to ensure familiarity and confidence with specific tools.

This framework will be developed and amended in line with changing technologies and experience of implementing. Adapted from work at Oxford Brookes University (See www.brookes.ac.uk/mediaworkshop/brookesvirtual/modesofengagement/index.html)

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Deleted: Appendix 1: e-Learning Modes of Engagement¶ Mode 1 BASELINE ¶ *Baseline course administration and learner support* ... [1]

Appendix 1: e-Learning Modes of Engagement

Mode 1 BASELINE

Baseline course administration and learner support

Use BREO to distribute course / unit information and carry out course / unit administration, typically including aims and objectives, assessment criteria / pro formas, timetabling information and announcements, reading lists, tutor contact details, FAQs, additional web resources, links to field level resources, course / unit handbook, lecture preparation materials and lecture notes.

Mode 2 INTEGRATED

Blended learning leading to significant enhancements to learning and teaching processes – comprehensive online provision integrated with face-to-face learning

Communication

Provide integrated communication channels (text and voice-based) to enable students, especially in disparate groupings and locations, to exchange information and ideas, ask questions and discuss issues relating to their learning.

Provide specific opportunities and channels for students to manage and develop their own collaborative working and learning communities, including the opportunity to build social learning networks.

Provide on-line unit evaluation opportunities, coupled with feedback on actions taken as a result of previous feedback.

Activities

Provide an environment that fosters collaborative student projects, involving shared responsibility for resources and outcomes, providing significant opportunities for students to personalise learning.

Students use communication tools and shared spaces to collaborate on task processes and outcomes. Opportunities for reflection and e-PDP integrated and guidance given on methodologies (e.g. blogging) and best practice.

Provide integrated structure for students to evidence learning and personal development planning (PDP) collected online and present at appropriate point(s) by means of e-portfolio.

Content

Provide flexible access to high-quality, reusable learning materials: may include structured gateways to web and other resources with accompanying self-paced independent learning activities, adaptive release, interactive tutorials with feedback, simulations, study and learning resources and activities fostering independent learning.

Provide content in a broad range of media formats including podcasts and videocast to deliver rich learning opportunities.

Learning *materials* primarily delivered online – face-to-face tutorials reserved primarily for interaction.

Assessment

Provide past assessment and / or exam questions and model answers.

Provide structured and purposeful feedback to students on their learning via computer-aided assessment for either formative (self-assessment and monitoring of progress) or summative (examination and grading) purposes or both.

May involve electronic setting, submission and return of student assignments using digital artifacts.

Likely to involve some assessment by e-portfolio.

Mode 3 ONLINE

Online course / units - students may undertake entire programme of study by online means

Online Learning

Learning is structured incorporating all of the above in ways that facilitate flexible and supported learning to enable learners to learn at times and places of their own choosing, within a clearly-defined, scaffolded learning programme.

Provide activities and tools to foster the development of a social learning experience for learners who may never meet other than online.

Management

Student lifecycle online – all forms, documentation and processes available via on-line means.

Pre-session preparation guidance and activities available online for pre-start engagers. Guidance for all tools, together with diagnostic activity tests to ensure familiarity and confidence with specific tools.

This framework will be developed and amended in line with changing technologies and experience of implementing. Adapted from work at Oxford Brookes University (See www.brookes.ac.uk/mediaworkshop/brookesvirtual/modesofengagement/index.html)

Appendix G

Primary PGCE and BEd Action Plans

	develop the inter-cultural issues and global understandings for student development.					
	Assess how to reduce the taught sessions for the core subject areas and therefore move towards an independent personalised learning model for the core subjects	CT, IW & PPGCE Core Curriculum Team	Feb 2008	Time for meetings	Personalised learning model ready to implement Sept 2008	Head of School with Course Leader & SMT
	Ensure ICT becomes embedded in the development of personalised learning programmes and across the course.	CT, KH & PPGCE course team	Feb 2008	Time for meetings	ICT aspects are embedded ref. personalised learning agenda	Head of School with Course Leader & SMT
	Assessment mechanism review and investigation of how to move	CT, PJ & NB (CT to see how other	March 2008	Time for meetings	Action research is integrated into the course	Head of School with Course Leader & SMT

	and initially pilot the concept		(pilot)			
	Provide staff development in the use of ICT e.g. interactive white boards and discussion groups).	CT, KH, NB & PJ	Jan 2008	Time for meetings	More staff using ICT within their programmes. Action – research	Course Leader
Research	Develop the Escalate research project and provide appropriate feedback on the Escalate project.	CT, JC, PF & PJ	Start Sept 2007 to end June 2008	Time for meetings	Deliver research. Successful inclusion in Escalate research	Head of School with Course Leader & SMT
	Identify specific education topic areas which should be researched by UOB to support the research base within the PGCE community. Review how these research programmes can be staffed and developed by the	CT & PJ with PPGCE course team	May 2008	Time for meetings	List of research areas to be developed. Engagement process by the students from Sept 2008.	Head of School with Course Leader & SMT

12 Retention of Male students: A significant number of male students have transferred since July 07 internally. The Men into Primary initiative is a national driver to redress the imbalance in the Primary Teaching Profession	To examine current practice and reverse the current 'trend' . Exit interviews need to be more thorough and data collected and analysed.	Course Leader with Strand Leaders, esp Y1	On-going and by April 2008		Reversal of trend	Course Leader and admissions tutors
13 ICT: How to support staff needs to develop a range of ICT skills within their teaching and their taught modules.	To respond to requests from staff regarding in-house CPD and external provision.	Module leaders and ICT Co-ord.	On-going	To be advised	More uptodate staff with respect to ICT Embedded in to course planning and content	ICT Co-Ord

Appendix H

University's IT Policies

University of

IT policy documents overview

ISD
Month Year

Introduction

This document provides a quick overview of the main University IT related policy documents. Staff should always read the current version of each policy in its entirety (from the staff website), but this overview will give staff a general idea of what the policies cover.

Software Licensing policy

This policy details the University's stance on the installation of software applications, be they freeware, shareware, commercial or any other type. In general, only correctly licensed or free software can be used on University equipment.

Staff can load evaluation and demonstration software but it must be removed upon completion of the evaluation period.

Network Use policy

The Network Use policy covers the purposes for which staff can and cannot use the University Network. It also ties in with the Joint Academic Network (JANET) Acceptable use policy, and includes the implications to staff or third parties of breaking the terms of usage.

Anti-Virus Policy

This document describes the various types of Malware (viruses, worms, trojans, backdoor, spyware, exploits), and then describes the IT security that is in place at the University to deal with them, including Firewalls and Anti-

Virus scanning (Perimeter, On-Access and On-Demand scanning). Staff are expected to be cautious when running unknown applications or selecting web links of dubious origin.

IT Provision for Home Workers policy

'Home Worker' refers to anyone who is employed by the University of Bedfordshire who works from home as part of their contract of employment.

This policy covers a number of different aspects relating to Home Workers and the use of University supplied IT. This includes Health & Safety, Equipment, Software Applications, the University Network and IT support.

IT provision for Working from Home policy

This policy covers staff who work from home with the agreement of their line manager, where it is *not* a contractual requirement of their employment.

The policy covers the possibility of IT equipment loans, non-guarantee of connection to the University Network, remote-only IT support and other related issues.

Desktop Computer policy

This document describes the current University policy to buy Intel-based PCs and Windows XP as standard, with PowerPC-based Apple Macintosh machines for specialist applications.

Physical IT Security policy

This policy document describes the steps that ISD take to physically secure IT equipment in the University, and also details sensible steps that all University staff should follow to help maintain security for IT equipment.

Individual Data Backup policy

This policy describes the responsibilities individual staff members have for ensuring the integrity of their work-related data. It also outlines the steps that staff can take to help themselves and the help that Information Services can provide.

In a nutshell, staff are responsible for ensuring the safe storage of their general data files. The U: drive on the Network is the recommended location for backing up data, with writable removable media another option (e.g. CD-RW/DVD-RW, Memory sticks, USB hard drives, etc.).

The Network drive is backed up by the Systems & Networks team, so your data will be safe and can be retrieved if necessary.

IT Asset policy

This policy describes the lifecycle of hardware and software and how it is managed within the University; from specification and procurement through to disposal at end-of-life.

The document also explains why most staff are assigned as an XP 'power user' instead of an 'administrator'.

Web Policy

The Web policy document explains the purpose of the University's web presence, and the responsibility that members of staff have towards the information presented on it.

All University Web sites must conform to a number of standards, including W3C (for accessibility), and 'Communications and Marketing'. The websites must also be developed using the University's chosen Content Management System, and any web-related issues must be discussed with the University Webmaster.

Conclusion

The above policies are all IT related. They should be read and understood by all members of staff who use the provided IT services at the University. If you have any queries regarding any of the policy documents, you should contact ISD via the helpdesk at:

http://helpdesk.beds.ac.uk

To learn how to register and use the IT helpdesk, please refer to the **Using the ISD Helpdesk** document, available from the ISD website.

Appendix I

DCFS Professional Standards for Qualified Teacher Status (2007)

TDA (2007) QTS standards and ITT requirements

http://www.tda.gov.uk/partners/itt/standards.aspx (accessed November 2007)

Professional Attributes

Q1 Have high expectations of children and young people including a commitment to ensuring that they can achieve their full educational potential and to establishing fair, respectful, trusting, supportive and constructive relationships with them.

Q2 Demonstrate the positive values, attitudes and behaviour they expect from children and young people.

Q3(a) Be aware of the professional duties of teachers and the statutory framework within which they work.

Q3(b) Be aware of the policies and practices of the workplace and share in collective responsibility for their implementation.

Q4 Communicate effectively with children, young people, colleagues, parents and carers.

Q5 Recognise and respect the contribution that colleagues, parents and carers can make to the development and well-being of children and young people and to raising their levels of attainment.

Q6 Have a commitment to collaboration and co-operative working.

Q7 (a) Reflect on and improve their practice, and take responsibility for identifying and meeting their developing professional needs.

Q7(b) Identify priorities for their early professional development in the context of induction.

Q8 Have a creative and constructively critical approach towards innovation, being prepared to adapt their practice where benefits and improvements are identified.

Q9 Act upon advice and feedback and be open to coaching and mentoring.

Professional Knowledge

Q10 Have a knowledge and understanding of a range of teaching, learning and behaviour management strategies and know how to use and adapt them, including how to personalise learning and provide opportunities for all learners to achieve their potential.

Q11 Know the assessment requirements and arrangements for the subjects/curriculum areas in the age ranges they are trained to teach, including those relating to public examinations and qualifications.

Q12 Know a range of approaches to assessment, including the importance of formative assessment.

Q13 Know how to use local and national statistical information to evaluate the effectiveness of their teaching, to monitor the progress of those they teach and to raise levels of attainment.

Q14 Have a secure knowledge and understanding of their subjects/curriculum areas and related pedagogy to enable them to teach effectively across the age and ability range for which they are trained.

Q15 Know and understand the relevant statutory and non-statutory curricula and frameworks, including those provided through the National Strategies, for their subjects/curriculum areas, and other relevant initiatives applicable to the age and ability range for which they are trained.

Q16 Have passed the professional skills tests in numeracy, literacy and information and communication technology (ICT).

Q17 Know how to use skills in literacy, numeracy and ICT to support their teaching and wider professional activities.

Q18 Understand how children and young people develop and that the progress and well-being of learners are affected by a range of developmental, social, religious, ethnic, cultural and linguistic influences.

Q19 Know how to make effective personalised provision for those they teach, including those for whom English is an additional language or who have special educational needs or disabilities, and how to take practical account of diversity and promote equality and inclusion in their teaching.

Q20 Know and understand the roles of colleagues with specific responsibilities, including those with responsibility for learners with special educational needs and disabilities and other individual learning needs.

Q21(a) Be aware of current legal requirements, national policies and guidance on the safeguarding and promotion of the well-being of children and young people.

Q21(b) Know how to identify and support children and young people whose progress, development or well-being is affected by changes or difficulties in their personal circumstances, and when to refer them to colleagues for specialist support.

Professional Skills

Q22 Plan for progression across the age and ability range for which they are trained, designing effective learning sequences within lessons and across series of lessons and demonstrating secure subject/curriculum knowledge.

Q23 Design opportunities for learners to develop their literacy, numeracy and ICT skills.

Q24 Plan homework or other out-of-class work to sustain learners' progress and to extend and consolidate their learning.

Q25 Teach lessons and sequences of lessons across the age and ability range for which they are trained in which they:

(a) use a range of teaching strategies and resources, including e-learning, taking practical account of diversity and promoting equality and inclusion.

Q25 Teach lessons and sequences of lessons across the age and ability range for which they are trained in which they:

(b) build on prior knowledge, develop concepts and processes, enable learners to apply new knowledge, understanding and skills and meet learning objectives.

Q25 Teach lessons and sequences of lessons across the age and ability range for which they are trained in which they:

(c) adapt their language to suit the learners they teach, introducing new ideas and concepts clearly, and using explanations, questions, discussions and plenaries effectively.

Q25 Teach lessons and sequences of lessons across the age and ability range for which they are trained in which they:

(d) manage the learning of individuals, groups and whole classes, modifying their teaching to suit the stage of the lesson.

Q26 (a) Make effective use of a range of assessment, monitoring and recording strategies.

Q26(b) Assess the learning needs of those they teach in order to set challenging learning objectives.

Q27 Provide timely, accurate and constructive feedback on learners' attainment, progress and areas for development.

Q28 Support and guide learners to reflect on their learning, identify the progress they have made and identify their emerging learning needs.

Q29 Evaluate the impact of their teaching on the progress of all learners, and modify their planning and classroom practice where necessary.

Q30 Establish a purposeful and safe learning environment conducive to learning and identify opportunities for learners to learn in out-of-school contexts.

Q31 Establish a clear framework for classroom discipline to manage learners' behaviour constructively and promote their self-control and independence.

Q32 Work as a team member and identify opportunities for working with colleagues, sharing the development of effective practice with them.

Q33 Ensure that colleagues working with them are appropriately involved in supporting learning and understand the roles they are expected to fulfil.

Appendix J

DFES 4/98 Annex B: Initial Teacher Training Curriculum for the Use of ICT in Subject Teaching

Circular number 4/98

Annex B: Initial Teacher Training Curriculum for the Use of Information and Communications Technology in Subject Teaching

INTRODUCTION

IMPORTANT

This curriculum is different from those for primary and secondary English, mathematics and science because it does not relate to a particular subject. It is concerned with the ways in which Information and Communications Technology (ICT) can be used effectively in the teaching of other subjects in the pupils' National Curriculum.

ICT is more than just another teaching tool. Its potential for improving the quality and standards of pupils' education is significant. Equally, its potential is considerable for supporting teachers, both in their everyday classroom role, for example by reducing the time occupied by the administration associated with it, and in their continuing training and development. It covers the wide range of ICT now available, *e.g. computers, the Internet, CDROM and other software, television and radio, video, cameras and other equipment.* **While it is recognised that many teachers will also be responsible for developing pupils' IT capability using ICT, that is not the focus of this document.**

The requirements will come into effect from September 1998. The final year of undergraduate courses will be exempt from this requirement for 1998/99 only.

For primary trainees, this curriculum applies to training in the core subjects (English, mathematics and science) and their specialist subject(s). For secondary trainees, this curriculum applies to training in their specialist subject(s).

The curriculum aims, in particular, to equip every newly qualified teacher with the knowledge, skills and understanding to make sound decisions about **when, when not, and how to use ICT effectively in teaching particular subjects.** Although this curriculum applies to all trainees, the knowledge, understanding and skills required will often differ between subjects or phases. Some examples are given in the document to illustrate particular points, but **it is the responsibility of the ITT provider to ensure that the ways trainees are taught to use ICT are firmly rooted within the relevant subject and phase,** rather than teaching how to use ICT generically or as an end in itself. In order to support providers in this, the TTA proposes to produce separate exemplification, by subject and phase, which can be used in conjunction with this document.

With the introduction of the National Grid for learning, it becomes even more important for newly qualified teachers (NQTs) to be confident and competent in using ICT effectively in their teaching. The ITT curriculum will also form the basis of the Lottery-funded training for serving teachers in the use of ICT.

Providers of ITT must ensure that only those trainees who have shown that they have the knowledge, understanding and skills to use ICT effectively in teaching subject(s) are judged to have successfully completed an ITT course leading to Qualified Teacher Status (QTS). Detailed requirements of what trainees must demonstrate they know, understand and can do before being awarded QTS are set out in the *Standards for the Award of Qualified Teacher Status* (Annex *A).*

The National Curriculum for the use of ICT in subject teaching should therefore be read alongside the relevant ITT National Curriculum, where applicable, and the *Standards for the Award of Qualified Teacher Status (Annex A).*

Every attempt has been made to "future-proof" the content of this document, but ICT is changing rapidly and it will be necessary to keep the curriculum under close review. In order to make the requirements of the ICT curriculum clear to a wide readership, the use of jargon and technical language has been avoided, but the correct terminology has been used where appropriate.

The curriculum is in two sections.

Section A EFFECTIVE TEACHING AND ASSESSMENT METHODS

> This section sets out the teaching and assessment methods which, as part of all courses, all trainees must be taught and be able to use. This curriculum focuses on teaching and assessment methods which have a particular relevance to the use of ICT in subject teaching. Trainees must be given opportunities to practise, in taught sessions and in the classroom, those methods and skills described in this section.

Section B TRAINEES' KNOWLEDGE AND UNDERSTANDING OF, AND COMPETENCE WITH, INFORMATION AND COMMUNICATIONS TECHNOLOGY

> This section sets out the knowledge and understanding of, and competence with, ICT which trainees need to support effective teaching. Providers of ITT must audit trainees' knowledge and understanding of the ICT specified in paragraphs 12-19.
>
> Where gaps in trainees' knowledge are identified, providers must make arrangements to ensure that trainees gain that knowledge during the course and that, **by the end of the course,** they are competent in using their knowledge of ICT in their teaching. ITT providers will decide how best to teach the content of Section B. While some of the content may require direct teaching, some could be taught alongside aspects of section A.

The ITT National Curriculum for ICT does not attempt to cover everything that needs to be taught to trainee teachers if they are to use ICT effectively in their teaching. It is expected that providers of ITT will include in their courses other aspects of ICT, which are not specified in this curriculum, in relation to particular subjects.

This document specifies a ***curriculum.*** It is not a course model. All ITT courses must include the content specified, but it is for providers to decide how and where the various aspects should be included. For example, although this curriculum is set out in separate sections, there is no expectation that providers will teach these discretely. Indeed, it is expected that many providers will integrate aspects of the sections when designing courses. Similarly, there is no intention to impose on providers of ITT the way in which the curriculum should be delivered and assessed, nor to specify the materials or activities which should be used to

support the training. Providers should use this curriculum as the basis for devising courses which are coherent, intellectually stimulating and professionally challenging.

Initial teacher training is the first stage in the professional preparation of teachers and this curriculum provides the foundation of knowledge, understanding and skills which will enable every NQT to use ICT effectively in their first teaching post. Providers may, if they wish, go beyond the minimum standard specified in this document. They should, however, guard against over-interpretation of the content if the curriculum is to remain manageable, *e.g. in Section B, the content listed in paragraph 12 should be interpreted at a level appropriate for a general ICT user and not at a level which would be required by a network or system manager.* **The content specified should therefore be interpreted at a level which supports effective teaching by a newly qualified teacher in their first post.**

The TTA Career Entry Profile will enable a summary of each NQT's strengths and priorities for development during the induction year to be conveyed from initial teacher training to his or her first teaching post. During their induction year, NQTs will have the opportunity to consolidate and build on what they have learned in initial training. It is expected that, throughout their careers, teachers will continue to improve their teaching skills, and keep up to date with ICT and its application to subject pedagogy, so that they can teach rigorously and in a way which communicates their enthusiasm for the subject to pupils, in order to stimulate pupils' intellectual curiosity and to maintain and raise standards of attainment.

Throughout the document, the examples printed in italics are non-statutory. The numbers and letters throughout the curriculum are for reference purposes only, and do not necessarily indicate a particular teaching sequence or hierarchy of knowledge, skills and understanding.

INITIAL TEACHER TRAINING NATIONAL CURRICULUM FOR THE USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY IN SUBJECT TEACHING

A. EFFECTIVE TEACHING AND ASSESSMENT METHODS

1. Trainees must be taught how to decide when the use of ICT is beneficial to achieve teaching objectives in the subject and phase, and when the use of ICT would be less effective or inappropriate. In making these decisions, **trainees must be taught how to** take account of the **functions of ICT** and the ways that these can be used by teachers in achieving subject teaching and learning objectives. This includes:

a. how the **speed and automatic functions** of ICT can enable teachers to demonstrate, explore or explain aspects of their teaching, and pupils' learning, more effectively;

b. how the **capacity and range** of ICT can enable teachers and pupils to gain access to historical, recent or immediate information;

c. how the **provisional nature** of information stored, processed and presented using ICT allows work to be changed easily;

d. how the **interactive way in which** information is stored, processed and presented can enable teachers and pupils to:

   i. explore prepared or constructed models and simulations, where relevant to the subject and phase;

   ii. communicate with other people, locally and over distances, easily

and effectively;

iii. search for and compare information from different sources;

iv. present information in ways which are accessible in different forms for different audiences.

Trainees should be taught what the implications of these functions are for achieving teaching objectives in the relevant subject(s), *e.g. in mathematics and science, the use of a calculator or a spreadsheet may remove the tedium of repetitive calculations and enable pupils to focus their attention on an emerging numerical pattern or the relationship between successive readings.* However, trainees must be made aware when pupils' skills in mental or written calculation are not being developed and therefore the activity may not suit the particular teaching objectives in hand.

2. Trainees must be taught how to use ICT most effectively in relation to subject-related objectives, including:

a. using ICT because it is the most effective way to achieve teaching and learning objectives, not simply to motivate pupils or as a reward or sanction for good or poor work or behaviour;

b. avoiding the use of ICT for simple or routine tasks which would be better accomplished by other means;

c. knowing that, where ICT is to be used, appropriate preparation of equipment, content and methodology is required;

d. avoiding giving the impression that the quality of presentation is of overriding importance and supersedes the importance of content;

e. structuring pupils' work to focus on relevant aspects and to maximise use of time and resource, *e.g. teaching pupils to refine searches rather than allowing pupils to search freely on the Internet or on CD-ROM;*

f. having high expectations of the outcomes of pupils' work with ICT, including:

- expecting pupils to use ICT to answer valid questions appropriate to the subject matter being taught;
- when appropriate, requiring pupils to save work, and evaluate and improve it;

g. making explicit the links between:

i. the ICT application and the subject matter it is being used to teach;

ii. ICT and its impact on everyday applications.

3. For those aspects of lessons where ICT is to be used, **trainees must be taught to identify in their planning:**

a. the way(s) in which ICT will be used to meet teaching and learning objectives in the subject;

b. key questions to ask and opportunities for teacher intervention in order to stimulate and direct pupils' learning;

c. the way(s) in which pupils' progress will be assessed and recorded;

d. criteria to ensure that judgements about pupils' attainment and progress in the subject are not masked because ICT has been used;

e. any impact of the use of ICT on the organisation and conduct of the subject lesson and how this is to be managed;

f. how the ICT used is appropriate to the particular subject-related objectives in hand and to pupils' capabilities, taking account of the fact that some pupils may already be very competent, *e.g. because of home access or through participation in extra-curricular ICT activities,* and some may need additional support.

4. Trainees must be taught the most effective organisation of classroom ICT resources to meet learning objectives in the subject, including how to:

a. use ICT with the whole class or a group for introducing or reviewing a topic and ensuring that all pupils cover the key conceptual features of the topic, *e.g. through the use of a single screen or display;*

b. organise individuals, pairs or groups of children working with ICT to ensure that each participant is engaged, that collaborative effort is balanced, and that teacher intervention and reporting back by pupils takes place where appropriate;

c. make ICT resources available to pupils for research or other purposes which may arise either spontaneously during lessons or as part of planned activity, ensuring that the resource is used profitably to achieve subject-related objectives;

d. position resources for ease of use, to minimise distraction, and with due regard to health and safety;

e. ensure that work done using ICT is linked to work away from the screen, allowing ICT to support teaching rather than dominate activities, *e.g. providing sufficient desk/floor space around the hardware to enable the ICT to be used with other materials; providing space to write as well as input from the keyboard; positioning ICT so that pupils are able to sit facing the teacher when required.*

5. Trainees must be taught to recognise the specific contribution that ICT can make to teaching pupils with special educational needs in mainstream classrooms based upon the need to:

a. provide access to the curriculum in a manner appropriate to pupils' needs;

b. provide subject-specific support.

6. Trainees must be taught how to choose and use the most suitable ICT to meet teaching objectives, by reviewing a range of generic and subject-specific software critically, including how to:

a. assess its potential for helping to meet teaching objectives;

b. judge its suitability for the age of pupils, their stage of development, and their prior experiences, taking account of language, social and cultural background;

c. evaluate the success of its use in relation to teaching objectives.

7. Trainees must be taught how to contribute to the development and consolidation of pupils' ICT capability within the context of the subject being taught through:

a. explicit discussion and, where necessary, teaching of the ICT skills and applications which are used in the subject;

b. using ICT terminology accurately and appropriately, and explaining to pupils any ICT terminology which arises from the application of ICT to the subject;

c. using ICT in ways which provide models of good practice for pupils, and insisting that pupils employ correct procedures when using applications.

8. In order to understand how to monitor, evaluate and assess their teaching and pupils' learning in the subject when using ICT, and to evaluate the contribution that ICT has made to the teaching of their subject, trainees must be taught:

a. how to **monitor pupils' progress** by:

i. being clear about teaching objectives and the use of ICT in achieving them;

ii. observing and intervening in pupils' ICT-based activities to monitor and support their progression towards the identified objectives;

iii. asking key questions which require pupils to reflect on the appropriateness of their use of ICT;

b. **how to recognise standards of attainment in the subject** when ICT resources are used, including:

i. recognising how access to computer functions might change teacher expectation of pupil achievements, *e.g. automatic spell-checking, image-making, graphical representation;*

ii. identifying criteria by which pupils can show what they have learnt as a result of using ICT-based resources from the Internet or CD-ROM, and insisting that pupils acknowledge the reference sources used in their work *e.g. requiring pupils to interpret and present the information gained from a CD-ROM for a specific purpose rather than simply printing off information;*

iii. how to determine the achievement of individuals when the "product" is the result of a collaborative effort, through observation, record keeping, teacher intervention and pupil-teacher dialogue;

iv. how to ensure that assessment of ICT-based work reflects pupils' learning and the quality of their work within the subject(s) rather than just the quality of presentation or the complexity of the technology used;

c. how to use **formative, diagnostic and summative methods of assessing pupils' progress in the subject where ICT has been used,** including how to set up ICT activities with targeted objectives for assessment and make provision in those activities for all pupils to demonstrate achievement, conceptual understanding and learning through the use of ICT.

9. In addition, trainees on courses providing for pupils aged 3-8 and 3-11 must be taught the importance of introducing pupils in nursery and reception classes to the use of ICT and to recognise the contribution that ICT can make to this age group, including how to:

a. encourage pupils to become familiar with ICT and positive users of it;

b. ensure that all pupils have opportunities to use ICT, and that their experience takes account of any home use or other previous experience of ICT;

c. identify and teach the skills necessary for handling input devices effectively, *e.g. switches, mouse, keyboard;*

d. use ICT to support the development of language and literacy, through the use of programs which develop reading and writing, *e.g. to reinforce letter/sound correspondence,* and encourage pupils to engage with stories, songs and rhymes presented on the screen, as well as through the use of high quality educational broadcasts;

e. use ICT to support the development of numeracy through the use of computer programs and robots which develop and reinforce the use of mathematical language, and the recognition and exploration of numbers, simple mental operations and patterns;

f. use ICT to support pupils' creative development through the use of computer programs which encourage them to explore and experiment with pattern, shape, pictures, sound and colour;

g. encourage pupils working collaboratively with ICT to share responsibilities for making decisions and reaching conclusions, *e.g. as they progress through a simple computer adventure game.*

10. Opportunities to practise

Trainees must be given opportunities to practise, in taught sessions and in the classroom, those methods and skills described above.

B. TRAINEES' KNOWLEDGE AND UNDERSTANDING OF, AND COMPETENCE WITH, INFORMATION AND COMMUNICATIONS TECHNOLOGY

Knowledge, understanding and skills in using ICT in subject teaching

Trainees enter initial teacher training with a variety of experiences in ICT. For many, their own knowledge and understanding of ICT may not be sufficient to ensure that they understand how to use ICT in ways which support good teaching, as set out in the QTS standards, including, for example, good pace, challenge, questioning and high expectations of pupils. It may also not be sufficient to ensure that they feel confident about, and are competent in using, ICT to secure progress in pupils' learning within the phase and in the subject(s) they are training to teach. It is likely that most trainees will be familiar with more traditional forms of ICT, *e.g. television, video, tape-recorders,* and will have experienced their use in education. The content of Section B, therefore, gives greater emphasis to computer-related ICT because it is new, and because trainees' knowledge, understanding and skills in this area may vary considerably from what is required.

Audit

Providers should audit trainees' knowledge, understanding and skills in ICT against the relevant ICT content set out in paragraphs 12 to 19 below. Where gaps in trainees' ICT knowledge, understanding and skills are identified, providers must make arrangements, for example through supported self-study, to ensure that trainees gain the relevant knowledge and understanding during the course and that, **by the end of the course,** trainees are competent in using the ICT specified within the relevant phase and subject(s).

11. In relation to the ICT content set out in paragraphs 12 to 19, trainees must be given opportunities to:

a. evaluate a range of information and communication technologies, and the content associated with them, *e.g. television and radio, video, computers, the Internet, cameras and other equipment,* justifying the selection and use of ICT in relation to aspects of their planning, teaching, assessment and class management, including for personal professional use, *e.g. in downloading on-line materials for teaching or writing reports;*

b. understand and use correctly the specialist terms associated with the ICT used in the subject which are necessary to enable them to be precise in their explanations to pupils, to discuss ICT in relation to the subject at a professional level, and to read inspection and classroom-focused research evidence with understanding.

Several of the following sections have been divided into two columns. The left-hand column specifies the knowledge and understanding of ICT which all trainees are required to demonstrate by the end of their course. **The relevance of different aspects of the specified content will depend on the subjects and ages of the pupils being taught, and providers should pay particular attention to those aspects which are most relevant in each case.** The right-hand column has been included to indicate the level of knowledge and understanding required and to give it relevance to teaching in different subjects. The TTA will provide, separately, more detailed subject-specific exemplification which can be used in conjunction with this document.

12. Trainees must demonstrate that they are competent in those areas of ICT which support pedagogy in every subject, including that they:

a. can employ common ICT tools for their own and pupils' benefit, *e.g. word processing, e-mail, presentation software, data handling* **and can use a range of ICT resources, at the level of general users** (rather than as network or system managers), including:	
i. the common user interfaces, using menus, selecting and swapping between applications, cutting, pasting and copying files, and cutting copying and pasting data within and between applications;	
ii. successfully connecting and setting up ICT equipment, including input devices, *e.g. a mouse, touch screen, overlay keyboard, microphone* and output devices *e.g. printers, screens and loudspeakers;*	*e.g. connecting a printer to a computer with the correct driver; connecting an overlay keyboard and ensuring that it works;*
iii. loading and running software;	*e.g. CD-ROM*
iv. file management;	*e.g. copying, deleting, naming and renaming files*

v. seeking and using operating information, including from on-line help facilities and user guides;	
vi. coping with everyday problems and undertaking simple, routine maintenance, with due consideration to health and safety;	*e.g. including checking the power is on; checking for loose connections; managing and replacing consumables; good practice in avoiding viruses; e.g. drawing information from a CD-ROM (encyclopaedia or newspaper collection);*
vii. understanding the importance of passwords and the general security of equipment and access to it. *and ensuring that it works;*	
b. know and understand the characteristics of information, including:	
i. that information must be evaluated in terms of its accuracy, validity, reliability, plausibility, bias;	
ii. that information takes up memory and that there are implications when saving and compressing files;	*e.g. a colour image contains more information than its black and white equivalent and can be saved in different ways to increase the amount of available memory;*
iii. that information has to be stored somewhere;	*e.g. in memory, on disc, on a local server, on the Internet;*
iv. that ICT systems can present static information or changing information;	*static information e.g. a picture on the screen or a page of text; changing information, e.g. simulations, control programmes;*
v. that information can be directly and dynamically linked between applications;	*e.g. changes to numbers in a spreadsheet can link directly to changes in a word processed report; a video clip can be linked to a button on a multimedia application; a picture or text may be linked to on-line information on a network or the Internet;*
vi. that applications and information can be shared with other people at remote locations.	*e.g. for a collaborative project between pupils or teachers in the same or different locations;*

13. Trainees must demonstrate in relation to the subject and age(s) of pupils to be taught that they:

a. know how to use ICT to find things out, *including, as appropriate for the subjects and the age of pupils to be taught:*	
i. identifying sources of information and discriminating between them;	*e.g. disk, CD-ROM, Internet; upto-date information from a weather station; low status sources on the Internet with no editorial scrutiny; CD-ROM information which has been through some editorial scrutiny but may be out of date;*
ii. planning and putting together a search strategy, including framing useful questions, widening and narrowing down searches;	*e.g. translating enquiries expressed in ordinary language into forms required by the system;*
iii. how to search for information,	*e.g. in searching a database or*

including using key words and strings and logical operators such as AND, OR and NOT, indexes and directories;	*employing an Internet search engine;*
iv. collecting and structuring data and storing it for later retrieval, interpretation and correction;	
v. interpreting what is retrieved;	
vi. considering validity, reliability and reasonableness of outcomes;	*e.g. knowing the probable outcome of a calculation rather than just relying on the calculator;*
b. know how to use ICT to try things out, make things happen and understand how they happen *as appropriate for the subject(s) and the age of pupils to be taught:*	
i. exploring alternatives;	*e.g. changing the variables in a spread sheet or a simulation;*
ii. modelling relationships;	*e.g. exploring how changes in variables such as weather and market forces might influence the crop rotation cycle planned by a farmer;*
iii. considering cause and effect;	*e.g. in text editing and presentation; determining the effect of increases in the cost of raw materials when costing production on a spreadsheet; designing a weekly diet to meet nutritional requirements; programming a simple model using LOGO;*
iv. predicting patterns and rules recognising patterns, and hypothesising;	*e.g. hypothesising about a rule that underpins a pattern;, predicting and simulating; evaluating outcomes e.g. graphical outcomes, exploration of colour shape and form, exploration of sound;*
v. knowing how to give instructions;	*e.g. knowing the importance of the grammar and syntax of instructions in ICT;*
vi. sequencing actions;	*e.g. moving floor turtles or robots; following a sequence of actions to produce a result;*
vii. defining conditions e.g. "if this happens, do that...";	*e.g. programming feedback into a control device or putting conditions into a spreadsheet formula;*
viii. understanding how feedback works and the difference between things that do and do not rely on feedback;	*e.g. an automatic window opener on a greenhouse; an appliance that will not work until the lid is closed, such as a dishwasher;*
c. know how to use ICT to communicate and exchange ideas *as appropriate to the subject(s) and the age of pupils to be taught:*	
i. presenting ideas, including: identification of audience and purpose; deciding the best means with which to communicate;	*e.g. text, numbers, images, sounds or a combination; selecting the appropriate technology to produce the material; adapting the material to ensure that it achieves what it set out to do;*
ii. exchanging ideas, including identifying the most appropriate medium, and information.	*e.g. fax, e-mail or a conferencing system, taking into account the number of people involved, urgency and cost-effectiveness.*

14. Trainees must demonstrate that they know those features of ICT which can be used, separately or together, to support teaching and learning in subjects, including:

a. speed and automatic functions - the function of ICT which enables routine tasks to be completed and repeated quickly, allowing the user to concentrate on thinking and on tasks such as analysing and looking for patterns within data, asking questions and looking for answers, and explaining and presenting results, *as appropriate to the subject(s) and age of pupils being taught,* including how ICT can be used to:	
i. measure events at long or short time intervals in order to compress or expand events which would normally take very short or long periods of time, and illustrate them to pupils at speeds appropriate to their pace of learning;	*e.g. measuring and recording the reducing height of a bouncing ball using freeze-frame video; or measuring and recording the changes in temperature and pressure throughout a weather front; performing rapidly repeating calculations in a spreadsheet to illustrate patterns of numbers; illustrating changes in the distribution of working populations;* events with the control of actions;
ii. measure and record events which might otherwise be impossible to gather within a classroom environment;	*e.g. collecting data on the movement of people around a school over the period of a week; recording weather data from the passage of a weather front;*
iii. explore sequences of actions and link the sensing of events with the control of actions:	*e.g. building and controlling a working lift or programming the movement of a buggy;*
b. capacity and range - the function of ICT, as appropriate to the subject(s) and age of pupils to be taught, to access and to handle large amounts of information; change timescales, or remove barriers of distance; give teachers and pupils access to and control over situations which would normally be outside their everyday experience, including	
i. the range of forms in which ICT can present information;	*e.g. voice, text, images, sounds or video;*
ii. the range of possible appropriate ICT sources, including local sources such as CD-ROM, and remote databases such as the Internet and the National Grid for Learning;	
iii. how to judge the accuracy of the information and the credibility of its source;	*e.g. discussing the fact that anyone can set up a website and there is no quality control over its content;*
iv. how ICT can be used to gain access to expertise outside the classroom, the school and the local community through communications with experts;	
c. **provisionality** - the function of ICT which allows changes to be made easily and enables alternatives to be explored	

readily, and *as appropriate to the subject (s) and age of pupils to be taught:*	
i. how to make best use of the ability to make rapid changes, including how to create text, designs and models which may be explored and improved in the light of evaluation;	*e.g. word-processing, computer aided design and manufacture, spreadsheet models, animations, sound or video presentations;*
ii. how to judge when and when not to encourage exploration and change using ICT;	*e.g. whether the clarity and accuracy of pupils' writing might be improved through drafting and redrafting;*
iii. how saving work at different stages enables a record to be kept of the development of ideas;	
d. interactivity - the function of ICT which enables rapid and dynamic feedback and response, *as appropriate to the subject(s) and age of pupils to be taught,* including how to determine the most appropriate media to use.	*e.g. the changing values in a spreadsheet or the feedback provided from a simulation or measurements of factors in an experiment; the responses to queries of an Internet search engine.*

15. Trainees must demonstrate that they are aware of the potential of ICT to enable them to prepare and present their teaching more effectively, taking account of:

a. the intended audience, including matching and adapting work to subject matter and objectives, pupils' prior attainment, reading ability or special educational needs; recognising the efficiency with which such adaptations can be made using ICT;
b. the most appropriate forms of presentation to meet teaching objectives, *e.g. illustrating or explaining using: text; sound; still or moving pictures; live video links; illustrations, graphics or animations; numbers, graphs or charts, separately or in combination.*

16. Trainees must demonstrate that they:

a. know and understand the ICT requirements of the pupils' National Curriculum in relation to the phase(s) and subject(s) to be taught;
b. are familiar with the standards as set out in the pupils' National Curriculum for IT, relevant to the phase for which they are training to teach, and know the level of IT capability they should expect of pupils when applying ICT in the subject(s).

—must be covered through other curriculum areas

17. Trainees must demonstrate that they know how each of the following is relevant to the specialist subject and phase for which they are training:

a. generic procedures and tools, including	
i. understanding the key features and functions used within the subject;	*e.g. word-processors, graphics and desk-top publishing packages, spreadsheets, databases, multimedia and web page authoring tools;*
ii. using ICT to prepare material for pupil use;	*e.g. the use of a word-processing package to create templates to help pupils to write in a modern foreign language; setting up a spreadsheet to help pupils explore relationships and patterns; preparing a video or music sequence;*

Module on their specialist subject?

b. reference resources, including:	
i. how to search reference resources;	*e.g. reference CD-ROMs and World Wide Web sites on the Internet*
ii. how to incorporate the use of reference resources into teaching;	
c. the ICT specific to the subject;	*e.g. graphics packages and scanners in art; computer-aided design (CAD) software and computer-controlled equipment in Design and Technology; sequencing software and midi keyboards in music; dynamic geometry software in mathematics;*
d. the major teaching programs or "courseware" to ensure that material is matched to the pupils' competences;	
i. where content and activities are presented in sequence to teach specific topics;	*e.g. multimedia distance learning activities; a series of educational television programmes;*
ii. where teaching activities are combined with assessment tasks and tests.	*e.g. integrated learning systems (ILS); distance learning packages.*

18. Trainees must demonstrate that they are aware of:

a. the current health and safety legislation relating to the use of computers, and can identify potential hazards and minimise risks;
b. legal considerations including those related to:
i. keeping personal information on computers, as set out in the Data Protection Act;
ii. copyright legislation relating to text, images and sounds and that relating to copying software;
iii. material which is illegal in this country;
c. ethical issues including:
i. access to illegal and/or unsuitable material through the Internet;
ii. acknowledging sources;
iii. data confidentiality;
iv. the ways in which users of information sources can be (and are) monitored;
v. material which may be socially or morally unacceptable.

19. Trainees must demonstrate that they know how to use ICT to improve their own professional efficiency and to reduce administrative and bureaucratic burdens, including:

a. using ICT to aid administration, record-keeping, reporting and transfer of information;
b. knowing about current classroom-focused research and inspection evidence about the application of ICT to teaching their specialist subject(s), and where it can be found;
c. knowing how to use ICT to join in professional discussions and to locate and access teaching plans, material and other sources of help and support, including through the National Grid for Learning;
d. knowing how ICT can support them in their continuing professional development.




Appendix K

TDA (Draft 2007) Characteristics of ICT in ITT

Characteristics of ICT in ITT

tda
developing people, improving young lives

Third draft – 29 March 2007

Tim Tarrant

CHARACTERISTICS OF THE ICT LEVEL WE SHOULD BE ATTEMPTING TO ACHIEVE FOR ALL ITT PROVIDERS

1. All trainees have personal access to a laptop or use memory sticks or their equivalent to transfer and use data between the school(s) their home and their training centre.
2. Trainees and trainers are offered opportunities to use digital capture and analysis, PDAs and videoconferencing.
3. The training provider is pro-active in ensuring that the trainee has access to, and training in, the use of an IWB.
4. The training provider uses a VLE that is sympathetic to needs of ITT.
5. The training provider is pro-active in ensuring that a trainee has access to whatever VLE is available – e.g. school, LA, RBC – when the trainee is on a school placement.
6. E-based support is an integral part of the provider's training programme and all documentation and materials are available on-line.
7. The training provider is pro-active in ensuring that trainees have opportunities to make up for any poor or mediocre experience they have had in using ICT during their school placement(s). For example, to visit schools that make innovative use of ICT.
8. Trainers and trainees are encouraged and assisted in developing a professional level e-portfolio.
9. Trainees have opportunities to research into innovative use of ICT.
10. There is an integrated approach to the professional development of teacher trainers, particularly ICT trainers, which is reviewed on an annual basis.
11. There are regular, effective and productive links with other training providers on ICT issues.

RATIONALE FOR THE CHARACTERISITICS

1. To have a measure of agreement between the TDA and providers on where we should be going in the use of ICT.
2. To give a base-mark which will indicate improvements in provision and use and which will inform the criteria for funding rounds.
3. To establish links between ICT provision and use in ITT and other sectors to identify areas of improvement in ITT against policy initiatives such as Harnessing Technology, the Self Review Framework, etc.
4. To create a list of characteristics which can be tested against new policy areas with ICT implications such as Building School for the Future and which can be amended to take account of the new policy areas and also changes in new technology. For that reason the characteristics will need to be kept under review.

EXPLANATION AND RATIONALE FOR THE INDIVIDUAL CHARACTERISTICS

1. PERSONAL ACCESS

   a. Research indicates that, above all else, personal access is the most effective way of increasing ICT skills.
   b. Consistent with the Government's personalisation policy.

   Note: There is a case for saying laptops for all students and that is the case at The College of St Mark and St John (Marjon) and for several teacher trainers in Scotland. However, we are not advocating that because (i) an increasing percentage of trainees are now purchasing their own laptop, (ii) there is evidence, still anecdotal rather than researched, that trainees with a laptop are sometimes reluctant to take them into the classroom – weight, etc, and (iii) when a trainee is confident about the ICT facilities in a school they might well prefer to prepare their work on their PC or laptop and use a memory stick.

2. DIGITAL CAPTURE, PDAs, VIDEOCONFERENCING

   a. Digital capture and analysis has proved to be a powerful tool in analysing a trainees' performance and in showing trainees effective practice.
   b. It is important that trainees receive a broad experience in the use of ICT before they take up their first teaching post – the opportunities thereafter may well be limited.
   c. Schools expect trainees to be knowledgeable in the use of ICT in a variety of areas.

3. INTERACTIVE WHITEBAORDS

   a. IWBs have not been included with the PDAs, etc, because, for IWBs, "opportunities to use" is not sufficient. The level of investment by Government and schools in their use and the amount of time it takes for a teacher to become confident in using the interactivity of an IWB suggests that student teachers should actually receive training in the use of an IWB.

4. VLE – SYMPATHETIC TO ITT

   a. Evidence suggests that the VLEs used across a University are not entirely suitable for ITT unless they have been modified for that purpose. Some VLEs can be adapted within the original suite of programmes to provide a more relevant offer to ITT.

5. VLE – TRAINING PROVIDER PRO-ACTIVE

   a. Use of VLEs in schools is part of Government policy (E-Learning strategy) and there is now a Becta approved list of VLE providers.
   b. Over 90% of trainees currently use a VLE – the relatively few who do not need to have experience of using one so that they understand the concept when they are on teaching practice and when they take their first appointment.

6. E-BASED SUPPORT

   a. E-based support is becoming an essential part of teacher training – allowing tutors to maintain contact with student teachers on teaching practice.
   b. Providing all materials on-line does not preclude hard copy but should be the preferred choice now that trainees' personal access to ICT is over 90% and personal access to laptops is over 50%.

7. SCHOOLS INNOVATIVE USE OF ICT

   a. Some training providers already ensure that their trainees see practice in the most effective schools in the use of ICT e.g. Southampton University and PE. It helps to offset the fact that not all trainees will have the opportunity of the best schools for their teaching practice.

8. E-PORTFOLIOS

   a. A number of ITT providers are looking at e-portfolios for their students. The logic is that if a student teacher is prepanng a folder of evidence to establish that they meet the QTS standards it makes sense if that evidence is in a format that will help them in the rest of their career.
   b. The E-learning strategy states that learners should be encouraged to develop and e-portfolio.

9. RESEARCH

   a. ITT providers often make access to additional ICT kit - video capture and analysis, PDAs, etc – dependent on the student teacher analysing and reporting on the impact on their practice.
   b. It would be difficult for teachers to move through the standards without developing their ICT skills and the use of ICT in their teaching and the management of their work.

10. INTEGRATED APPROACH TO PD

    a. The need for this is self-evident.

11. CONTACT WITH OTHER TRAINING PROVIDERS

    a. Teacher trainers in ICT and those supporting ICT should be active members of ITTE and NAACE so that their professional expertise is updated and tested. ITTE supplies the ICT in ITT focus and NAACE the broader issues of ICT.

Appendix L

UK Professional Standards Framework for teaching and supporting learning in Higher Education

Universities UK

Cyngor Cyllido Addysg Uwch Cymru
hefcw
Higher Education Funding Council for Wales

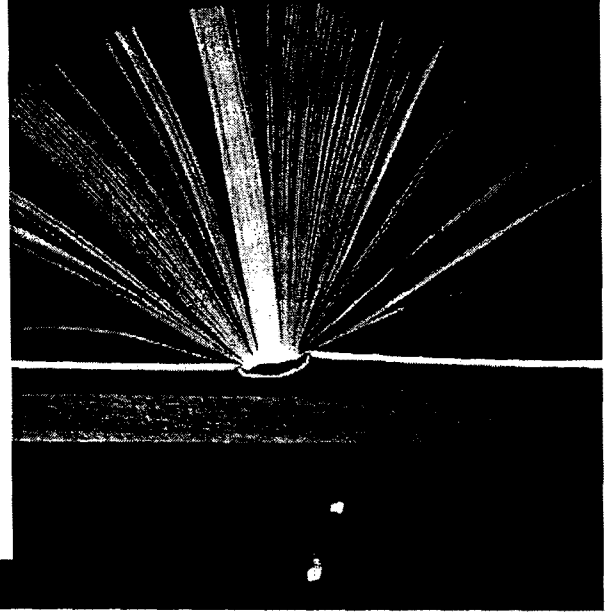
Scottish Funding Council

HIGHER EDUCATION hefce FUNDING COUNCIL FOR ENGLAND

Department for Employment and Learning
www.delni.gov.uk

The Higher Education Academy

The UK Professional Standards Framework for teaching and supporting learning in higher education



DEVELOPING THE HE SECTOR-OWNED STANDARDS

This paper describes the new National Professional Standards Framework for Teaching and Supporting Learning in Higher Education.

The idea of a framework for professional standards for teaching and supporting learning in higher education was proposed in the White Paper *The Future of Higher Education* (2003). In response to this the UUK, SCOP and the UK HE funding bodies invited the Higher Education Academy to consult with the sector to develop such a framework.

Following extensive consultation with the sector a National Professional Standards Framework has been developed for institutions to apply to their professional development programmes and activities and thus demonstrate that professional standards for teaching and supporting learning are being met.

At the heart of this framework is acknowledgement of the distinctive nature of teaching in higher education, respect for the autonomy of higher education institutions, and recognition of the sector's understanding of quality enhancement for improving student learning. The framework recognises that the scholarly nature of subject inquiry and knowledge creation, and a scholarly approach to pedagogy, combine to represent a unique feature of support for student learning in higher education institutions.

The standards framework aims to act as:

- an enabling mechanism to support the professional development of staff engaged in supporting learning
- a means by which professional approaches to supporting student learning can be fostered through creativity, innovation and continuous development
- a means of demonstrating to students and other stakeholders the professionalism that staff bring to the support of the student learning experience
- a means to support consistency and quality of the student learning experience.

THE STANDARDS FRAMEWORK

The framework is a descriptor based approach whereby HE institutions determine their own criteria in the application of the standards framework. In order to demonstrate application of the standards, six areas of activity, core knowledge and professional values (all derived from the Higher Education Academy's existing Accreditation Scheme) are applied to learning outcomes and assessment activities within the institution's professional development programmes.

THE STANDARDS

Standard descriptor	Examples of staff groups
1. Demonstrates an understanding of the student learning experience through engagement with at least 2 of the 6 areas of activity, appropriate core knowledge and professional values; the ability to engage in practices related to those areas of activity; the ability to incorporate research, scholarship and/or professional practice into those activities	Postgraduate teaching assistants, staff new to higher education teaching with no prior qualification or experience, staff whose professional role includes a small range of teaching and learning support activity
2. Demonstrates an understanding of the student learning experience through engagement with all areas of activity, core knowledge and professional values; the ability to engage in practices related to all areas of activity; the ability to incorporate research, scholarship and/or professional practice into those activities	Staff who have a substantive role in learning and teaching to enhance the student experience
3. Supports and promotes student learning in all areas of activity, core knowledge and professional values through mentoring and leading individuals and/or teams; incorporates research, scholarship and/or professional practice into those activities	Experienced staff who have an established track record in promoting and mentoring colleagues in learning and teaching to enhance the student learning experience

AREAS OF ACTIVITY, CORE KNOWLEDGE AND PROFESSIONAL VALUES WITHIN THE FRAMEWORK

Areas of activity

1. Design and planning of learning activities and/or programmes of study
2. Teaching and/or supporting student learning
3. Assessment and giving feedback to learners
4. Developing effective environments and student support and guidance
5. Integration of scholarship, research and professional activities with teaching and supporting learning
6. Evaluation of practice and continuing professional development

Core knowledge

Knowledge and understanding of:

1. The subject material
2. Appropriate methods for teaching and learning in the subject area and at the level of the academic programme
3. How students learn, both generally and in the subject
4. The use of appropriate learning technologies
5. Methods for evaluating the effectiveness of teaching
6. The implications of quality assurance and enhancement for professional practice

Professional values

1. Respect for individual learners
2. Commitment to incorporating the process and outcomes of relevant research, scholarship and/or professional practice
3. Commitment to development of learning communities
4. Commitment to encouraging participation in higher education, acknowledging diversity and promoting equality of opportunity
5. Commitment to continuing professional development and evaluation of practice

RELATIONSHIP TO THE HIGHER EDUCATION ACADEMY NATIONAL ACCREDITATION SCHEME

Guidance and support is offered through the work of the Higher Education Academy for HE institutions to be accredited for their application and use of the new standards framework.

Please see **www.heacademy.ac.uk** for further details.

Appendix M

BECTA Self Review Framework – ICT Mark

http://schools.becta.org.uk/ Google - ICT Mark

Becta Schools | Whatls ... ...

To print this page: Go to your file menu, select print then click here to return to the previous page.

Benefits of ICT Mark accreditation

Schools accredited with the ICT Mark standard are demonstrating that they are committed to using technology to improve their overall effectiveness and efficiency.

School experiences

Find out how other schools have benefited from ICT Mark accreditation in these four video clips:

Why apply for the ICT Mark?
The benefits of the ICT Mark to staff
The ICT Mark and celebration
The impact of getting the ICT Mark

What the ICT Mark can do for your school

Applying for ICT Mark assessment and achieving accreditation can offer your school a number of benefits:

- Provides an opportunity to celebrate success
- Verifies your own self-review judgements
- Recognises whole school improvement
- Provides an opportunity to be seen as centre of excellence
- Tells suppliers that you are an informed customer
- Provides you with credibility for hosting visits and providing services
- Provides an opportunity for learners to celebrate their use of ICT
- Gives parents confidence that technology is being used effectively
- Informs parents that you offer better communication to families and homes
- Informs other schools and organisations that you are a potential partner for extending opportunities for learning through technology
- Raises public recognition of good practice in the use of ICT
- Strengthens your bids for involvement in new initiatives
- Recognises your commitment to self-review and evaluation
- Recognises your commitment and hard work
- Includes promotional material and guidance on how to use the ICT Mark to promote your school.

Links:

- Why apply for the ICT Mark? [http://schools.becta.org.uk/index.php?section=srf&catcode=ss_to_srf_suc_icm_ben_04&rid=14212]
- The benefits of the ICT Mark to staff [http://schools.becta.org.uk/index.php?section=srf&catcode=ss_to_srf_suc_icm_ben_04&rid=14207]
- The ICT Mark and celebration [http://schools.becta.org.uk/index.php?section=srf&catcode=ss_to_srf_suc_icm_ben_04&rid=14208]

To print this page: Go to your file menu, select print then click here to return to the previous page.

Self-review framework

Becta's self-review framework offers you a route for **assessing** and **improving** your school's use of ICT. The framework is **free to use** via an online tool and is linked to the **national standards** for ICT. We can help:

- show you what "good" use of ICT looks like
- benchmark your progress against other schools
- identify your strengths
- produce action plans for improvement.

Sign up

Signing up is easy and it's **free**:
Self-review framework for England, Scotland and Wales
Self-review framework for Northern Ireland
Self-review framework for Early Years

Where to start

Watch an introductory video
How will the framework benefit my school?

The framework is divided into **eight categories** which will support and challenge your school. You can work through these at your own pace.

1. Leadership and management

- Develop and communicate a shared vision for ICT.
- Plan a sustainable ICT strategy.

2. Curriculum

- Plan and lead a broad and balanced ICT curriculum.
- Review and update the curriculum in the light of developments in technology and practice.
- Ensure pupils' ICT experiences are progressive, coherent, balanced and consistent.

3. Learning and teaching

- Plan the use of ICT to enhance learning and teaching.
- Meet pupils' expectations for the use of ICT.
- Encourage teachers to work collaboratively in identifying and evaluating the impact of ICT on learning and teaching.

4. Assessment

- Assess the capability of ICT to support pupils' learning.

- Use assessment evidence and data in planning learning and teaching across the whole curriculum.
- Assess the learning in specific subjects when ICT has been used.

5. Professional development

- Identify and address the ICT training needs of your school and individual staff.
- Provide quality support and training activities for all staff in the use of ICT sharing effective practice.
- Review, monitor and evaluate professional development as an integral part of the development of your school.

6. Extending opportunities for learning

- Understand the needs of your pupils and community in their extended use of ICT.
- Ensure provision is enhanced through informed planning resulting in quality of use of ICT within and beyond the school.
- Review, monitor and evaluate opportunities to extend learning within and beyond your school.

7. Resources

- Ensure learning and teaching environments use ICT effectively and in line with strategic needs.
- Purchase, deploy and review appropriate ICT resources that reflect your school improvement strategy.
- Manage technical support effectively for the benefit of pupils and staff.

8. Impact on pupil outcomes

- Demonstrate how pupils can make good progress in ICT capability.
- Be aware of how the use of ICT can have a wider positive impact on pupils' progress.
- Review pupil attitudes and behaviour and how the use of ICT can impact positively on pupil achievement.

Reward your success

Once your school has reached a certain level on the framework, you have the option to apply for the ICT Mark, a national quality accreditation which celebrates achievement in the use of ICT in working towards whole-school improvement.

You may also want to enter for Becta's ICT Excellence Awards, which are closely aligned to the self-review framework and offer further recognition.

Links:

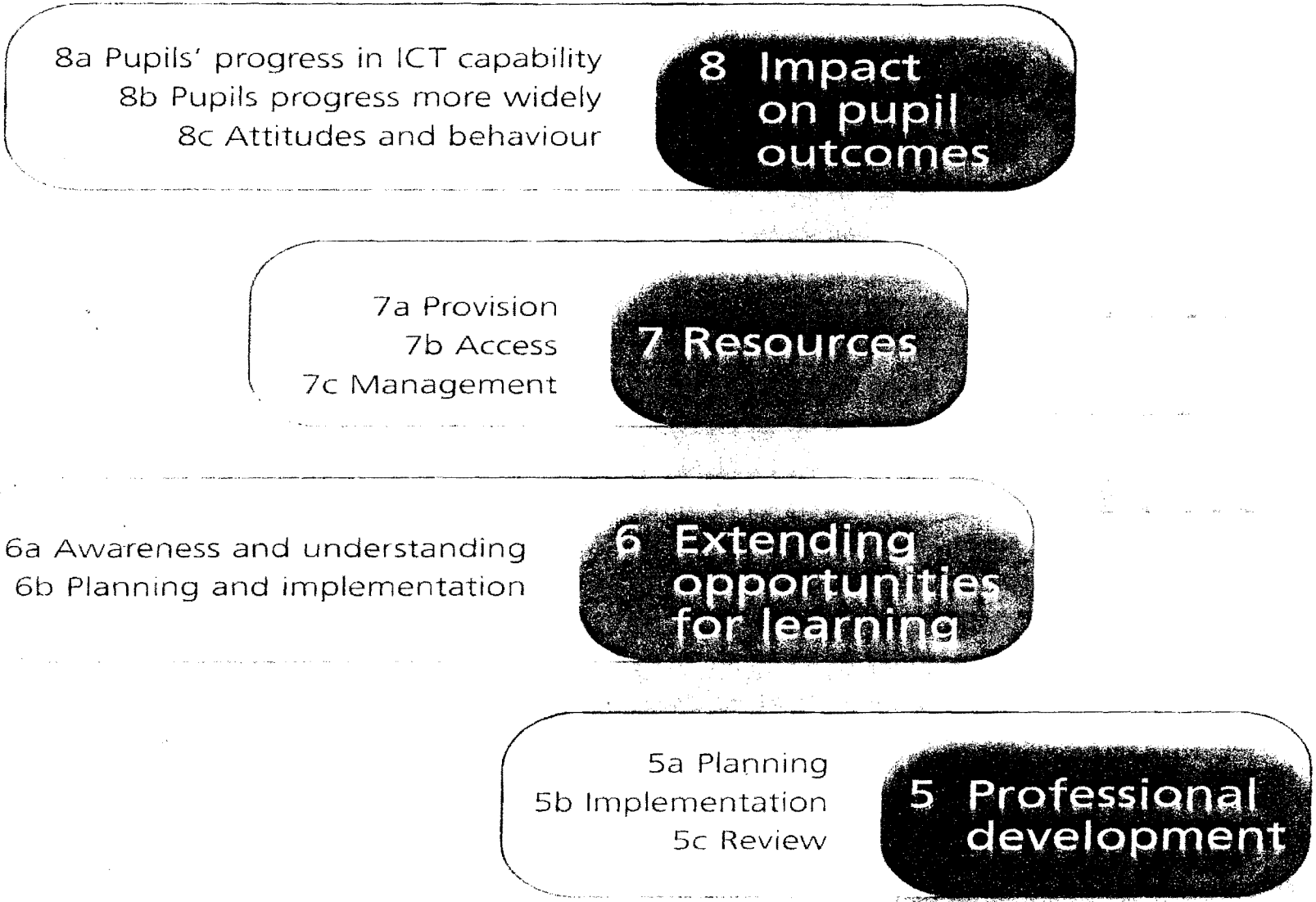
- Self-review framework for England, Scotland and Wales [http://matrix.becta.org.uk/selfreview]
- Self-review framework for Northern Ireland [http://matrix.becta.org.uk/niselfreview]
- Self-review framework for Early Years [http://matrix.becta.org.uk/rebrand/home/index.cfm#MatrixCategory_29]
- Watch an introductory video [http://schools.becta.org.uk/index.php?section=srf&catcode=ss_to_srf_int_02&rid=12970]
- How will the framework benefit my school? [http://schools.becta.org.uk/index.php?section=srf&catcode=ss_to_srf_ben_02]

improving learning
through technology

school
technology
effectively?

contains
you need
about
ICT can
efficiency and
initiatives

your learners
don't miss out!


8a Pupils' progress in ICT capability
8b Pupils progress more widely
8c Attitudes and behaviour
8 Impact on pupil outcomes
7a Provision
7b Access
7c Management
7 Resources
6a Awareness and understanding
6b Planning and implementation
6 Extending opportunities for learning
5a Planning
5b Implementation
5c Review
5 Professional development

Report for ICT Register

1 Leadership and management

1a Vision for ICT
1b Strategy to achieve the ICT vision
1c Organisational effectiveness and efficiency
1d Monitoring and evaluation

2 Curriculum

2a The planned ICT curriculum
2b Pupils' ICT experience
2c Curriculum leadership and review

3 Learning and teaching

3a Teachers' planning, use and evaluation
3b Learning with ICT
3c Leadership of learning and teaching

4 Assessment

4a Assessment of, and with, ICT

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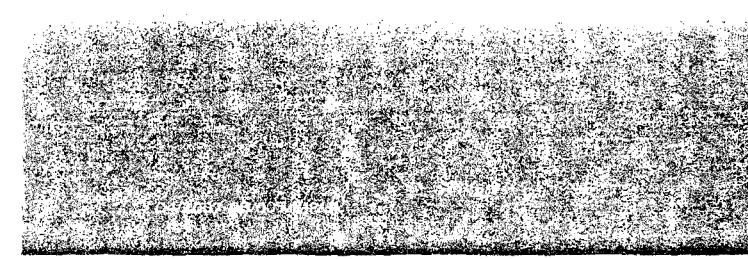
Millburn Hill Road,
Science Park,
Coventry CV4 7JJ
Tel: 024 7641 6994
Fax: 024 7641 1418
email: becta@becta.org.uk
URL: http://www.becta.org.uk



Appendix N

Analysis of ICT in Subject and Year

	HE and School context	Subject/Year Group																					
		Core English					Core Maths					Core Science					Core Year 4					
	Characteristic	1	2	3	4	P	1	2	3	4	P	1	2	3	4	P	1	2	3	4	P	
1	Learning objectives include ICT			X			X		X			X	X	X						X		
2	Useful websites supplied	X	X	X			X	X				X	X	X						X		
3	VLE/BREO highlighted for information						X	X				X										
4	Useful reading includes ICT		X																			
5	Video used													X								
6	CD ROMS highlighted													X						X		
7	Tasks involve ICT							X	X					X						X		
8	ICT assessed								X					X						X		
9	Academic consideration of ICT in subject																			X		
10	Workshops on ICTskills in subject											X								?		
11	QTS ICT standards								X				X	X						X		
12	Submissions to BREO								X					X						X		

	HE and School context	Subject/Year Group																									
		Art					D&T					Geography					History					Perfroming Arts				
	Characteristic	1	2	3	4	P	1	2	3	4	P	1	2	3	4	P	1	2	3	4	P	1	2	3	4	P
1	Learning objectives include ICT	X	X	X																						
2	Useful websites supplied	X	X	X	X		X	X				X	X				X	X	X			X	X			
3	VLE/BREO highlighted for information		X					X				X	X				X		X							
4	Useful reading includes ICT												X													
5	Video used		X																							
6	CD ROMS highlighted																									
7	Tasks involve ICT			X								X					X		X			X	X			
8	ICT assessed			X																						
9	Academic consideration of ICT in subject			X																						
10	Workshops on ICTskills in subject			X				X					X				X	X								
11	QTS ICT standards						X	X			X	X	X				X	X	X							
12	Submissions to BREO																X		X							

	Characteristic	ICT					PE					Primary Languages					Year 2 Foundation				
		1	2	3	4	P	1	2	3	4	P	1	2	3	4	P	1	2	3	4	P
1	Learning objectives include ICT	X		X	X	X			X						X						
2	Useful websites supplied	X		X	X		X	X	X	X				X	X	X					
3	VLE/BREO highlighted for information	X		X	X																
4	Useful reading includes ICT	X		X	X											X					
5	Video used			X	X											X					
6	CD ROMS highlighted									X											
7	Tasks involve ICT	X		X	X				X												
8	ICT assessed	X		X	X													X			
9	Academic consideration of ICT in subject			X	X	X															
10	Workshops on ICTskills in subject	X		X	X	X			X	X					X	X					
11	QTS ICT standards								X	X					X	X					
12	Submissions to BREO	X		X						X						X					

	HE and School context	Subject/Year Group																	
		English						Maths						Science					
	Characteristic	1	2	3	4	P		1	2	3	4	P		1	2	3	4	P	
1	Learning objectives include ICT					X				X						X			
2	Useful websites supplied		X	X		X				X		X				X		X	
3	VLE/BREO highlighted for information																	X	
4	Useful reading includes ICT			X															
5	Video used																		
6	CD ROMS highlighted																		
7	Tasks involve ICT		X	X								X			X	X		X	
8	ICT assessed			X					X						X	X			
9	Academic consideration of ICT in subject																		
10	Workshops on ICTskills in subject			X		X			X			X				X		X	
11	QTS ICT standards		X			X												X	
12	Submissions to BREO		X												X	X			

	HE and School context	Subject/Year Group																					
		Early Years					Professional Studies					School Experience					Multi Agency					
	Characteristic	1	2	3	4	P	1	2	3	4	P	1	2	3	4	P	1	2	3	4	P	
1	Learning objectives include ICT		X	X			X															
2	Useful websites supplied		X				X	X	X	X	X									X		
3	VLE/BREO highlighted for information			X			X	X		X	X											
4	Useful reading includes ICT			X																		
5	Video used			X																		
6	CD ROMS highlighted																					
7	Tasks involve ICT			X			X		X	X	X	X	X	X	X	X				X		
8	ICT assessed			X					X			X	X	X	X	X						
9	Academic consideration of ICT in subject			X																		
10	Workshops on ICTskills in subject			X																		
11	QTS ICT standards						X	X	X		X	X										
12	Submissions to BREO						X			X												

Appendix O

Analysis of ICT coverage against the National Curriculum

National Curriculum	
Listening to /Watching recordings	YR 2
Listening to /watching live presentations/talks	R YR 2
CD ROMS/Web pages/hotlinks/menus ICT Based information texts	YR core
Comparing 2 copies own work for revisions/ improvements	
Retrieving information on screen - search/find	
Searching using key words	
Summarising information rather than printing page	
Moving image to support literary texts	YR 2 PGCE
Understand organisational features of text - hyperlinks, tables, bullet points, icons	
Planning and proffing on screen - thesaurus, spell check, grammar check	
Compose writing on screen	
Fax and email communication	
Communicate results using mathematical symbols	
Digital and analogue devices to measure weight and time	
Programme a toy involving 1/2 and 1/4 turns	YR4 Core , PGCE (LOSS)
Select and use appropriate maths ICT equipment	YR3 Core
Construct and use formula to transform one list of data to another	
Drawing software to plan alternative room layouts	
Use software to create repeating patterns, such as tessellations	YR3
Represent and interpret discrete data using graphs and diagrams and ICT	
Use a variety of ICT resources to explore	YR1 Core , YR4 Core , Y2
Use multimedia sources to make comparisons	
Compile a database using data collected	
Use software to combine words and pictures about materials and objects	PGCE
Use sensors to detect and compare sounds made under different conditions	
Use a range of sources of information and data, including ICT-based sources	Recording + interpreting data YR1 core
Make systematic observations and measurements using data logging	PGCE

Communicate data using graphs and diagrams and ICT	
Use a speadsheet or database to analyse data e.g food in school lunches	
Use video/CD ROM to see things that cannot be observed/ non local environments e.g. solar system	YR3 core
Use a branching database to create a key	
Use simulation software to show changes in population of micro organisms in different conditions	
Sensors to record temperature change	
Use Internet/CD ROM to research e.g water supplies	PGCE
Use software to extend investigation into circuits	YR4 core, PGCE
Use WP/DTP to plan and display and communicate ideas	YR1;2
Use paint package to produce a pattern for a finishing a product	YR 2
Use ICT for CAD	
Use ICT in a control program	
Use Internet/CD ROM to research e.g significant people and events	YR1, 2
Order events on timeline on screen	
Use a census database to search for information and identify patterns	YR1
Communicate understanding using ICT	
Use digitised maps to colour code features in local study	
Use a programmable toy to develop instructions to follow a route	
Use secondary sources of information e.g CD ROMS, Internet e.g. investigate a contrasting locailty, compare weather conditions	
Use digital camera to record places, people events observed	
Use a database to sort, question and present information e.g. about different countries	
Use ICT in geographical investigation e.g. analysing fieldwork data	YR2
Exchange email about settlement with other schools	
Use paint package to explore shape, colour and pattern	
Use digital media as a material and process	YR1, 2 (KA not explicit
Use digital camera and video to record observations	YR3
Use digital images as a starting point for creative work	YR1, 2
Develop digital art for school website	YR3 (KA)
Use software to explore sounds	
Use recording equipment to recall, identify and make improvements to sounds	
Use ICT to produce music, capture, change and combine sounds	YR2 (KA)

Use videos of movements to develop actions, compare ideas and quality	Yr4
Use a concept keyboard to order specific actions in sequences	
Use video and CD ROM to improve performance	Yr4
Use Internet to look at different reports about the same issue	Yr2 (part) through RE
Work with authentic ICT based materials to learn about other countries and cultures	Yr3.

EVERYWHERE TO ENSURE COVERAGE

Key Stage 1	
Finding things out	
1) Pupils should be taught how to:	
a) gather information from a variety of sources	ART - ALL, GEOG ALL, MATHS - AM, YR1 ICT, RE YR
b) enter and store information in a variety of forms	YR1 ICT
c) retrieve information that has been stored	YR1 ICT
Developing ideas and making things happen	
2) Pupils should be taught:	
a) to use text, tables, images and sound to develop their ideas	AA YR3, YR2+YR3 ENG, PGCE ENG, YR1 HIST, YR1 ICT, PGCE ICT, YR2 R.A
b) how to select from and add to information they have retrieved for particular purposes	
c) how to plan and give instructions to make things happen	YR3 Core maths, PGCE ICT, YR2 maths
d) to try things out and explore what happens in real and imaginary situations	Y2 Geog, YR1 ICT, PGCE ICT
Exchanging and sharing information	
3) Pupils should be taught:	
a) how to share their ideas by presenting information in a variety of forms	YR1 ICT, PGCE ICT
b) to present their completed work effectively	
Reviewing, modifying and evaluating work as it progresses	
4) Pupils should be taught to:	
a) review what they have done to help them develop their ideas	
b) describe the effects of their actions	
c) talk about what they might change in future work.	PGCE ICT
Breadth of study	
5) During the key stage, pupils should be taught the **Knowledge, skills and understanding** through:	
a) working with a range of information to investigate the different ways it can be presented	
b) exploring a variety of ICT tools	YR1 ArA, YR2 D&T, PGCE ICT, YR3 maths, YR3+PGCE PLang.
c) talking about the uses of ICT inside and outside school.	

Key Stage 2	
Finding things out	
1) Pupils should be taught:	
a) to talk about what information they need and how they can find and use it	YR1 ICT, RE YR2
b) how to prepare information for development using ICT, including selecting suitable sources, finding information, classifying it and checking it for accuracy	YR3 Core Science, YR1 ICT, PGCE ICT, RE YR2.
c) to interpret information, to check it is relevant and reasonable and to think about what might happen if there were any errors or omissions.	
Developing ideas and making things happen	
2) Pupils should be taught:	
a) how to develop and refine ideas by bringing together, organising and reorganising text, tables, images and sound as appropriate	ART YR3, YR1 D&T, YR2+YR3 Engl, PGCE Eng, YR1 HIST, YR1 ICT, YR3 ICT, PGCE ICT, YR4 PE
b) how to create, test, improve and refine sequences of instructions to make things happen and to monitor events and respond to them	YR3 Core Maths, YR1 ICT, PGCE ICT, YR3 Maths
c) to use simulations and explore models in order to answer 'What if ... ?' questions, to investigate and evaluate the effect of changing values and to identify patterns and relationships	YR1 Core Science YR2 PE T, YR1 HIST, YR1 ICT, PGCE ICT
Exchanging and sharing information	
3) Pupils should be taught:	
a) how to share and exchange information in a variety of forms, including email	PGCE ICT
b) to be sensitive to the needs of the audience and think carefully about the content and quality when communicating information	
Reviewing, modifying and evaluating work as it progresses	
4) Pupils should be taught to:	
a) review what they and others have done to help them develop their ideas	
b) describe and talk about the effectiveness of their work with ICT, comparing it with other methods and considering the effect it has on others	
c) talk about how they could improve future work.	
Breadth of study	
5) During the key stage, pupils should be taught the **Knowledge, skills and understanding** through:	
a) working with a range of information to consider its characteristics and purposes	
b) working with others to explore a variety of information sources and ICT tools	YR3 Core Science, YR1 Core YR1 ICT, YR4 ICT, PGCE ICT YR3 + PGCE P Lang, Science Biology Core + PGCE
c) investigating and comparing the uses of ICT inside and outside school.	

Appendix P

Results from Primary PGCE questionnaire 2007

Appendix P - Data Questionnaire and Results

PRIMARY PGCE TRAINEE ICT EVALUATION 2006 - 2007

purpose of this questionnaire is to gather information that will help design a well-focused and essful ICT experience during PGCE training in the future.

Gender: ☐ Male ☐ Female

Age in years:

Under 25
26-35
36-45
Over 45

ow would you rate your ability to use a computer?
ices are: good, fair, poor, no answer)

you have a computer at home, how often did you use it for preparing for teaching when on ol Experience?
oice are: several times a week, several times a month, a few times, never, omputer)

WEEK -
MONTH -
FEW -
NEVER -
NO R -

How often did you use ICT tools (*not the Internet*) for the following purposes:

	Very often (everyday)	Often (twice or more a week)	Seldom (a few times a month)	Never
Teaching-learning for specific subjects	☐	☐	☐	☐
Teaching computer skills	☐	☐	☐	☐
Finding/accessing information and educational materials	☐	☐	☐	☐
Making presentations/lectures	☐	☐	☐	☐
Preparing lessons	☐	☐	☐	☐
Communicating with students	☐	☐	☐	☐
Communicating with other teachers	☐	☐	☐	☐
Communicating with parents	☐	☐	☐	☐
Monitoring and evaluating students' progress or keeping track of student's performance	☐	☐	☐	☐
Preparing reports Specific Task on this?	☐	☐	☐	☐
Further personal development	☐	☐	☐	☐
Others, please specify TV/CD/VID/DVD.				

How has the University part of the course developed this?
What could the University course offer to enhance this?

practice sessions needed
Resources/locations
Review software
Xcurricular ICT (eg science)
Monitoring ideas
How to plan
Bleo
Networks / shared files/folders
IWB lecture (similar for others features)
Use ICT in class
Presentation
Teaching ICT skills — management
Other ICT — digital recorders, ... tools

Choose sessions
Timing in course
Differentiation

Spreadsheets
Personalised learning
Databases

ase tick under the appropriate column if the following ICT facilities were available in your le in the schools you worked in on placements B and C.

	Available	
	Yes	No
Overhead projector		
TV		
VHS		
DVD		
Video camera		
Photo camera		
Radio/cassette player		
Photocopier		
Digital projector		
Interactive Whiteboards		
Desktop		
Laptop		
Handheld/PDA		
Printer		
Programmable 'toys'		
Scanner		
Other, please specify		

How has the University part of the course developed this?
What could the University course offer to enhance this?

- video camera in English
- IWB
- programmable toys
- cameras
- software variety

} more + x curricular

List the core software that you saw in use in your schools

What other information can you give us which would help us to plan PGCE ICT Training?

IWB [illegible] early

Resources [illegible]

Control [illegible] ||

More session in school block || Put together at start !

Broad range coverage

Cross curricular [illegible] || Sessions too long

More session [illegible] Shorter regular !

Webpage of resources / forum ||

Hardware reliability || - Supervised session for confidence [illegible]

Opp for session needed

Relate personal skill to curriculum [illegible]

Thank you very much for you time.

SE offers experience

More info on curriculum - not word

MFL compensation ||

Use Audit & ask students to formulate curriculum ||

More Hands on ||

Collaborative work ||

Personalised learning

What to do if ICT fails? } [illegible]

How to teach ICT management

- Troubleshooting !

Smaller groups

Status of lecturers ||

Precourse ICT

Associated issues

Negative comments – course not built skills/competence = 57
Reliance on previous knowledge/School Experience = 40

Interactive Whiteboard Lecture useful but earlier 24
More advanced features of word – not basics 3
Seminar on whiteboard and Textease 6
Powerpoint 16
Web page 1
Graphics 1
Simulations 3
New literacy and numeracy lecture 1
Spreadsheets 1
Good staff 6
Science core lectures for resources 1
Personalised learning 3
More whiteboard seminars/software/info sheets 58
How to teach ICT/class management/what to do if fails/troubleshooting 17
Follow up audit and plug knowledge gaps/ differentiation/ choose sessions/supervised sessions for confidence 21
Relate personal skills to curriculum skills 6
Databases help 3
Publisher help 1
More cross curriculum – especially foundation 18
Spreadsheet help 2
More hands on 21
More on simulation 1
More on technology to collaborate 2
More on report writing tools 1
Reschedule cancelled sessions 4
MFL issues 6
Resources locations/held on web page/forum 9
Review software/uses/variety 5
Recording/monitoring ideas 10
How to plan 3
BREO 2
Networks/shared folders 1
Other ICT– digital recorders/tools etc 2
Video in English, Websites/Resources in Science – fab Maths covered
Course timing/move nearer to block/more sessions/order of lectures/put together at start/shorter sessions/more regular sessions 13
Internet usage/safety 1
Smaller groups 1
Precourse ICT tasks 1
Hardware reliability 2
Collaborative groups and ICT 2
School Experience to offer opportunity 1
Programmable toys
Cameras

Appendix A –
Data Figures

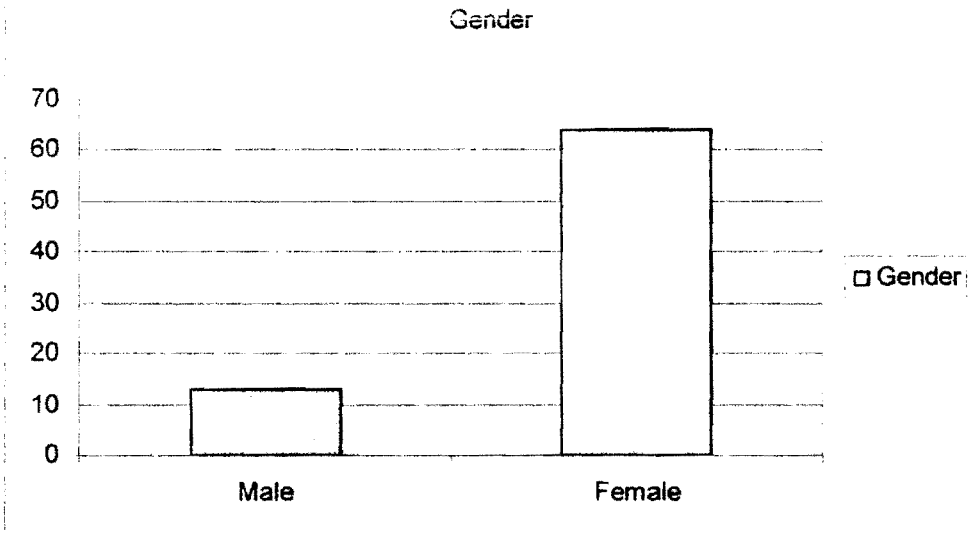


Figure 1: Graph to show gender split in group

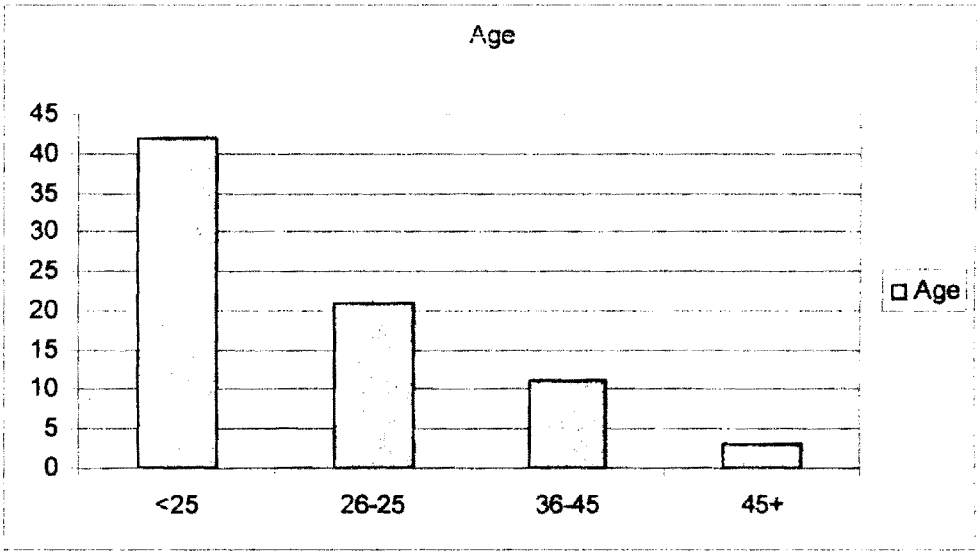


Figure 2: Graph to show age ranges in group

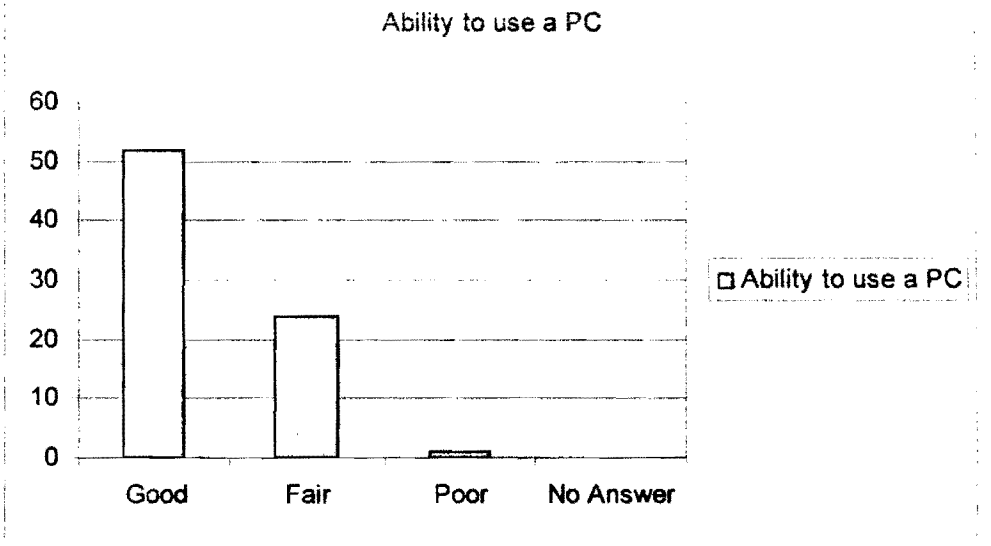


Figure 3: Graph to show self assessed ability of group to work with a computer

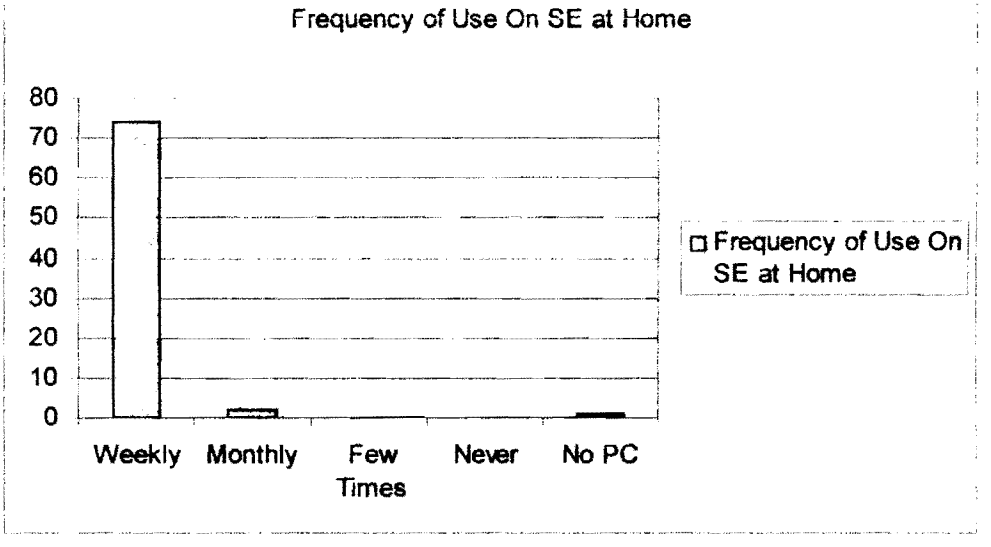


Figure 4: Graph to show frequency of use of a computer by the group during school experience at home

Appendix 5 - Data Tables

%	Excellent	VG	Good	Fair	None
WP	45.45	33.77	16.88	2.60	1.30
Spreadsheets	10.39	14.29	29.87	36.36	9.09
Presentation	25.97	29.87	27.27	15.58	1.30
Email	54.55	36.36	9.09	0.00	0.00
Internet	45.45	40.26	12.99	1.30	0.00
Graphics	9.09	16.88	28.57	29.87	15.58
Web Pages	0.00	0.00	18.18	32.47	49.35
Database	1.30	1.30	19.48	29.87	42.86
Simulations	1.30	1.30	19.48	29.87	41.56
Collaboration	1.30	7.79	27.27	24.68	31.17
Whiteboards	22.08	31.17	25.97	18.18	2.60

Table 1: The self assessed percentage of skills in the group

%	Everyday	2x pw	Few x pm	Never
Specific Subjects	55.84	27.27	9.09	2.60
Teaching ICT	10.39	50.65	36.36	2.60
Finding Information	49.35	35.06	12.99	2.60
Presentations	32.47	35.06	12.99	2.60
Preparation	80.52	16.88	0.00	2.60
Communicate Students	24.68	12.99	20.78	41.56
Communicate Teachers	9.09	25.97	28.57	36.36
Communicate Parents	2.60	2.60	18.18	71.43
Monitor Progress	11.69	38.96	31.17	11.69
Reports	7.79	14.29	67.53	6.49
Personal Development	19.48	42.86	22.08	7.79

Table 2: The percentage of use of computers during school experience

%	Everyday	2x pw	Few x pm	Never
Specific Subjects	29.87	58.44	11.69	0.00
Teaching Online Assessment	11.69	10.39	35.06	42.86
Presentations	29.87	36.36	24.68	9.09
Preparation	48.05	41.56	6.49	0.00
Communicate Students	9.09	12.99	15.58	61.04
Communicate Teachers	9.09	11.69	37.66	42.86
Communicate Parents	1.30	0.00	10.39	81.82
Preparing Papers	37.66	50.65	9.09	1.30
Collecting Materials	20.78	49.35	18.18	9.09

Table 3: The percentage of use of the Internet during school experience

	%
OHP	92.21
TV	98.70
VHS	94.81
DVD	87.01
Vid Camera	67.53
Still Camera	100.00
Radio Cassette	97.40
Photocopier	100.00
Digital Projector	87.01
Whiteboard	97.40
Desktop	87.01
Laptop	77.92
PDA	7.79
Printer	97.40
Toys	71.43
Scanner	51.95

Table 4: Technology available for use in schools during school experience

%	Always	A lot	Sometimes	Rarely	Never
ICT	77.92	18.18	3.90	0.00	0.00
Maths	15.58	38.96	38.96	3.90	2.60
Science	14.29	24.68	44.16	11.69	3.90
History/Geography/RE	12.99	23.38	48.05	11.69	3.90
Modern Languages	6.49	10.39	12.99	5.19	38.96
Literacy	16.88	23.38	38.96	15.58	5.19
Art/D&T	7.79	6.49	36.36	28.57	20.78
PE	2.60	0.00	6.49	22.08	68.83
Music	6.49	2.60	20.78	23.38	40.26

Table 5: Usage of technology on school experience in different subject areas

1	Whiteboards
2	Word Processing
3	Powerpoint
4	Internet Searching and Downloading
5	Spreadsheet - Simulations - Technology to collaborate

Table 6: Top 5 teaching tools

1	Whiteboard - SMART, Active Primary, Easiteach etc
2	Microsoft Office
3	Espresso
4	Video/Photo software
5	Textease
6	Art packages
=	2 Simple
8	Abacus
9	Variety of subject specific software

Table 7: Most common software found on school experience

PRIMARY PGCE TRAINEE ICT EVALUATION 2006 - 2007

The purpose of this questionnaire is to gather information that will help design a well-focused and successful ICT experience during PGCE training in the future.

1. Gender: ☐ Male ☐ Female

2. Age in years:

☐ Under 25
☐ 26-35
☐ 36-45
☐ Over 45

3. How would you rate your ability to use a computer?
(Choices are: good, fair, poor, no answer)

4. If you have a computer at home, how often did you use it for preparing for teaching when on School Experience?
(Choice are: several times a week, several times a month, a few times, never, no computer)

6. How often did you use ICT tools (*not the Internet*) for the following purposes:

	Very often (everyday)	Often (twice or more a week)	Seldom (a few times a month)	Never
Teaching-learning for specific subjects	☐	☐	☐	☐
Teaching computer skills	☐	☐	☐	☐
Finding/accessing information and educational materials	☐	☐	☐	☐
Making presentations/lectures	☐	☐	☐	☐
Preparing lessons	☐	☐	☐	☐
Communicating with students	☐	☐	☐	☐
Communicating with other teachers	☐	☐	☐	☐
Communicating with parents	☐	☐	☐	☐
Monitoring and evaluating students' progress or keeping track of student's performance	☐	☐	☐	☐
Preparing reports	☐	☐	☐	☐
Further personal development	☐	☐	☐	☐
Others, please specify				

How has the University part of the course developed this?
What could the University course offer to enhance this?

lease tick under the appropriate column if the following ICT facilities were available in your
ble in the schools you worked in on placements B and C.

	Available	
	Yes	No
Overhead projector	☐	☐
TV	☐	☐
VHS	☐	☐
DVD	☐	☐
Video camera	☐	☐
Photo camera	☐	☐
Radio/cassette player	☐	☐
Photocopier	☐	☐
Digital projector	☐	☐
Interactive Whiteboards	☐	☐
Desktop	☐	☐
Laptop	☐	☐
Handheld/PDA	☐	☐
Printer	☐	☐
Programmable 'toys'	☐	☐
Scanner	☐	☐
Other, please specify		

How has the University part of the course developed this?
What could the University course offer to enhance this?

13. List the core software that you saw in use in your schools

.....
.....
.....
.....
.....
.....
.....

14. What other information can you give us which would help us to plan PGCE ICT Training?

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

Thank you very much for you time.

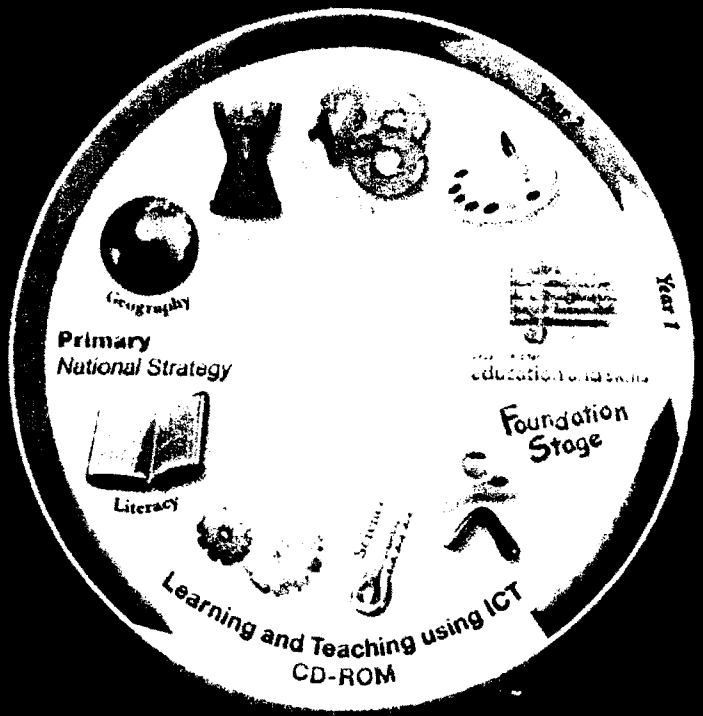
Appendix Q

Example Resources for Teaching and Learning with ICT across the curriculum

National Strategy

Learning and Teaching using ICT:

Complete materials from Foundation Stage to Year 6



department for
education and skills
creating opportunity, releasing potential, achieving excellence

Primary teachers with children in Years 1 to 6 and practitioners in the Foundation Stage

Status: Recommended

Date of issue: 09-2004

Ref: DfES 0315-2004 G

SureStart

example resources available to support ICT across the curriculum

These discs have been separated into subjects instead of year groups & distributed to stage

department for
education and skills
creating opportunity, releasing potential, achieving excellence

SureStart

National Strategy

Learning and Teaching using ICT:

Example materials from Foundation Stage to Year 6

THIS BOX IS FOR DELIVERY PURPOSES ONLY

Please distribute to teachers in the different year groups.

Minimum system requirements for this CD-ROM

Hardware:

- ... personal computer running Windows 95 rev. 2, 98, NT, 2000 or XP
- ... version of Windows including Windows Media Player v6.0 or later
- ... compatible sound card and speakers
- ... with a minimum resolution of 800 x 600 pixels (256 colours ... 24-bit recommended)

Software required by resource material including:

- ... 2000 or Word, PowerPoint and Excel 2000 viewers
- ... 5.0 or Netscape Navigator v4.7 or later and web connection (IE preferred) – JavaScript
- ... for browser

Running the presentation:

... CD drive. If you have Autorun enabled, the presentation will start automatically. If ... choose Run. In the Run dialogue box, type d:\autorun.exe (where d is the letter ...

HMSO, The Licensing Division, St Clements House,
2-16 Colegate, Norwich NR3 1BQ
Fax: 01603 723000
e-mail: hmsolicensing@cabinet-office.x.gsi.gov.uk

department for
education and skills
creating opportunity, releasing potential, achieving excellence

Raising Standards
Standards and Effectiveness Unit

INVESTOR IN PEOPLE

Coordinator's Audit of ICT in Music in Key Stages 1 & 2

ICT can be used to develop practical skills and musical understanding, by helping pupils to:

- *use and investigate sounds and structures*
- *refine and enhance performance and composition*
- *extend their knowledge of different styles of music*

BECTa (http://curriculum.becta.org.uk)

Music Key Stage 1

PoS	Knowledge, Skills and understanding	ICT Opportunity	Curriculum Requirement	What?	When?
2b)	Creating & developing musical ideas – composing skills	Opportunity	Pupils should be taught how to create musical patterns and explore, choose and organise sounds and musical ideas		
3b)	Responding & reviewing – appraising skills	Opportunity	Pupils should be taught how to make improvements to their own work		

Music Key Stage 2

PoS	Knowledge, Skills and understanding	ICT Opportunity	Curriculum Requirement	What?	When?
4c)	Listening, and applying knowledge and understanding	Opportunity	Pupils should be taught how music is produced in different ways *[e.g. through the use of different resources, including ICT]* and described through relevant established and invented notations		
5a)	Breadth of study	**Statutory** This requirement builds on ICT/1b	During the key stage, pupils should be taught the knowledge, skills and understanding through using ICT to capture, change and combine sounds		

Resources like these encourage subject planning & inclusion of ICT in the curriculum.

(All subjects available)

OSA

ICT in Music in Key Stages 1 & 2

ICT can be used to develop practical skills and musical understanding, by helping pupils to:

- *use and investigate sounds and structures*
- *refine and enhance performance and composition*
- *extend their knowledge of different styles of music*

BECTa (http://curriculum.becta.org.uk)

Music Key Stage 1

Knowledge, Skills and understanding	PoS	ICT Opportunity	Curriculum Requirement	Suggested Activities
Creating & developing musical ideas – composing skills	2b	Opportunity	Pupils should be taught how to create musical patterns and explore, choose and organise sounds and musical ideas *ICT Opportunity:-* Pupils could use software designed to enable exploration of sounds.	Pupils could use electronic keyboards to play or listen to the sounds created by the keyboard. Use CD ROMs or music programs Pupils could use tape recorders to sample sounds around them and organise them in relation to musical elements Use the windows sound recorder to record sounds or music and then look at how that sound can be changed by altering the pitch and the speed
Responding & reviewing – appraising skills	3b	Opportunity	Pupils should be taught how to make improvements to their own work ICT Opportunity:- Pupils could use tape recorders, computer programs or keyboards to recall sounds and make improvements	Pupils could use a software program such as Compose World Junior or 2 Simple Music Toolkit to create a musical phrase and after playing the phrase back, make amendments to improve it ensuring it has suitable sounds for the beginning, middle and the end
Listening and applying knowledge and understanding	4d	Opportunity	Pupils should be taught how music is used for particular purposes	Using a music composition program such as 2Simple Music Toolkit or Compose World Junior, create a piece of music to accompany a story written in Literacy or related to their topic or to accompany a dance in PE

This example demonstrates activities which meet ICT in the curriculum objectives [illegible]

Music Key Stage 2

Knowledge, Skills and understanding	PoS	ICT Opportunity	Curriculum Requirement	Suggested Activities
Controlling sounds through singing and playing – performing skills	1c	Opportunity	Pupils should be taught how to practise, rehearse and present performances with an awareness of the audience	Pupils could present their performance in the form of a video using Digital Movie cameras. This way they are able to evaluate the performance of themselves and others and see whether their performance meets the need of their intended audience
Creating and developing musical ideas – composing skills	2b	Opportunity	Pupils should be taught how to explore, choose, combine and organise musical ideas within musical structures	Using a music composition program such as 2Simple Music Toolkit or Compose World Junior create a piece of music for a specific purpose which has a clear structure, Pupils should be encouraged to select musical phrases that will complement the one before unless creating a specific effect. Ensuring there is a clear beginning and end
Listening, and applying knowledge and understanding	4c	Opportunity	Pupils should be taught how music is produced in different ways *[e.g. through the use of different resources, including ICT]* and described through relevant established and invented notations	Pupils could use electronic keyboards to recall sounds and make improvements on an increasingly sophisticated level Pupils could use sound files from the internet to incorporate into music composition
Listening, and applying knowledge and understanding	4d	Opportunity	Pupils should be taught how time and place can influence the way music is created, performed and heard	Use a variety of images as a stimulus to creating music using a keyboard or composition software. Pupils could use Digital Movie Cameras to take footage of some areas of the school and create some music to accompany this to reflect feelings of their film using music composition software or using other sounds and combining them in Audacity
Breadth of study	5d	**Statutory** This requirement builds on ICT/1b	During the key stage, pupils should be taught the knowledge, skills and understanding through using ICT to capture, change and combine sounds	Pupils could use electronic keyboards to play or listen to the sounds created by the keyboard. Use CD ROMs or music programs like Compose World Junior, 2 Simple Music Toolkit or Compose World 2 or Audacity

Appendix R

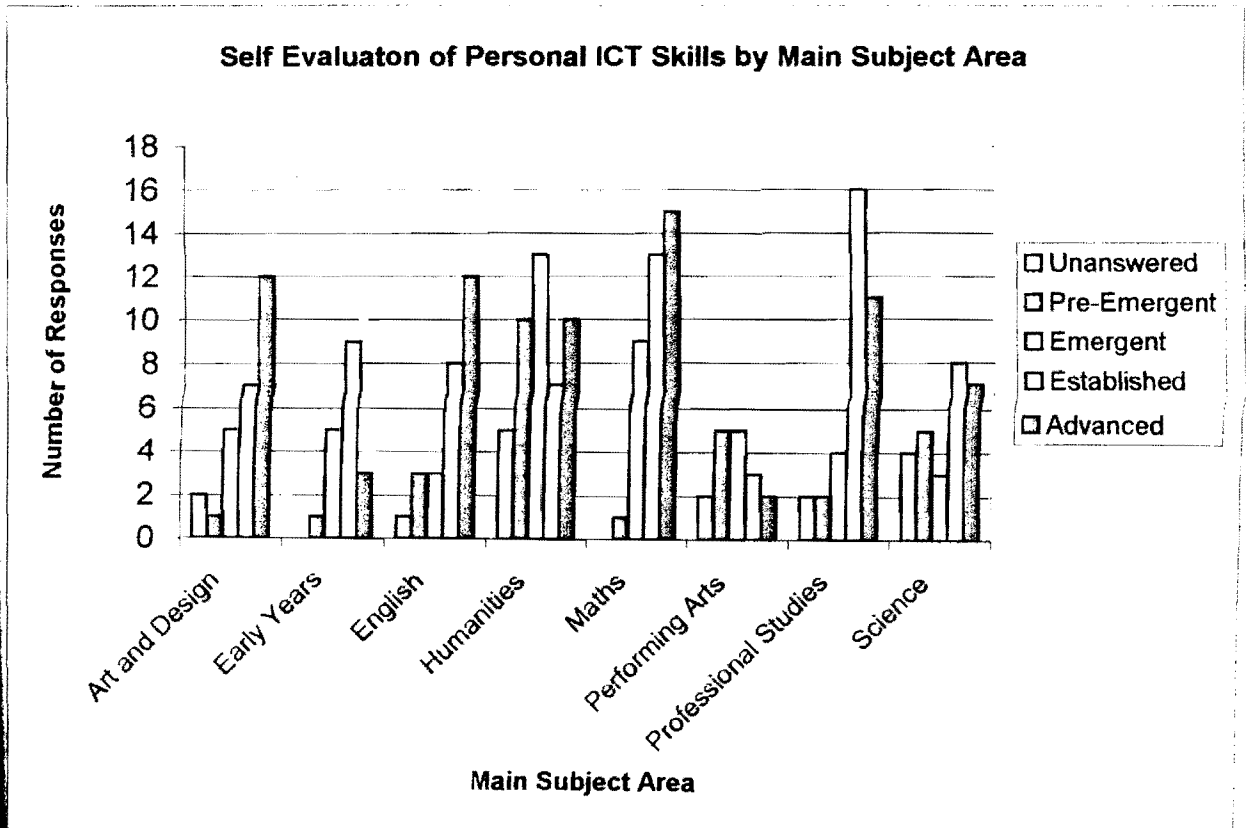
Analysis of Staff Skills

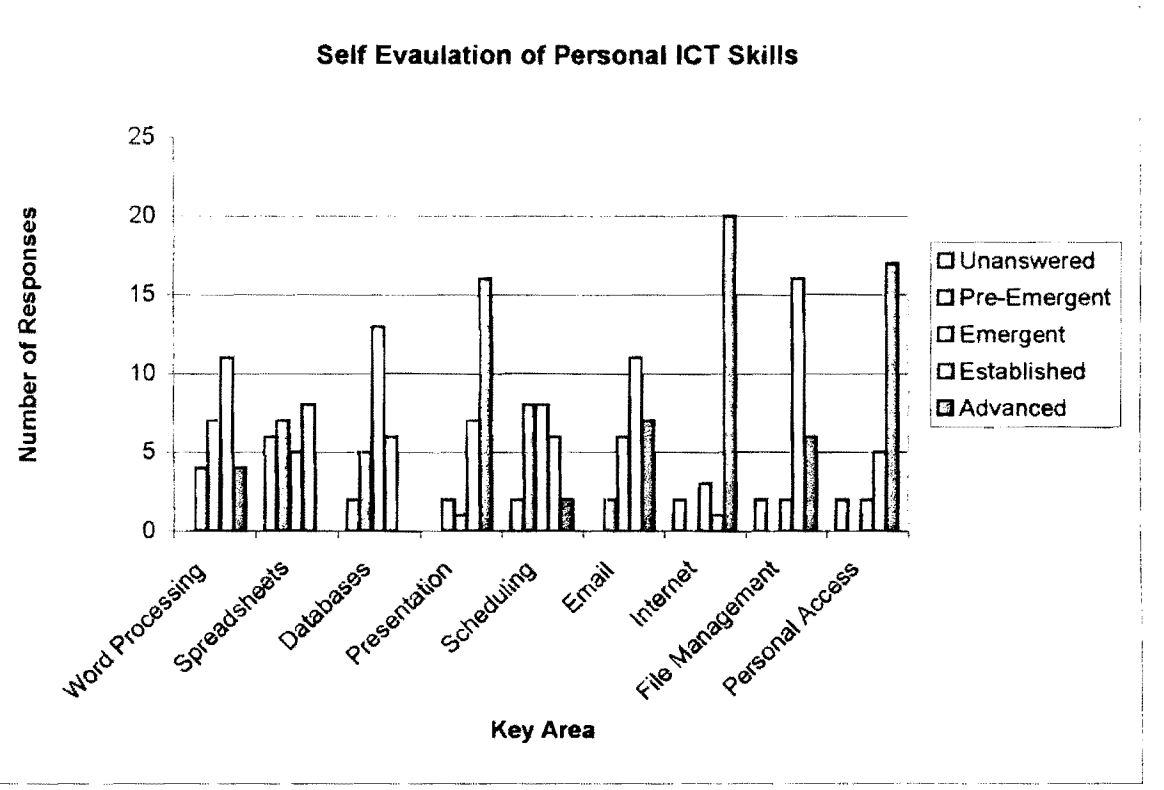
Analysis of Staff Questi

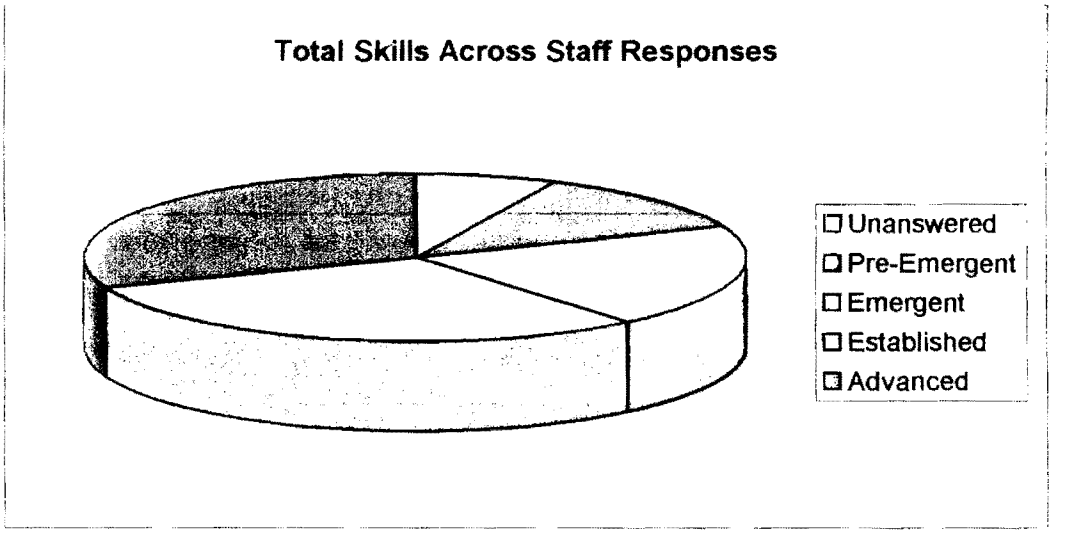
Key Area	Unanswered	Pre-Emergent	Emergent	Established	Advanced
Word Processing	0	4	7	11	4
Spreadsheets	6	7	5	8	0
Databases	2	5	13	6	0
Presentation	0	2	1	7	16
Scheduling	2	8	8	6	2
Email	0	2	6	11	7
Internet	2	0	3	1	20
File Management	2	0	2	16	6
Personal Access	2	0	2	5	17
Total	**16**	**28**	**47**	**71**	**72**

Key Area	Unanswered	Pre-Emergent	Emergent	Established	Advanced
Total	**16**	**28**	**47**	**71**	**72**

Key Area	Unanswered	Pre-Emergent	Emergent	Established	Advanced
Art and Design	2	1	5	7	12
Early Years	0	1	5	9	3
English	1	3	3	8	12
Humanities	5	10	13	7	10
Maths	0	1	9	13	15
Performing Arts	2	5	5	3	2
Professional Studies	2	2	4	16	11
Science	4	5	3	8	7
Total	**16**	**28**	**47**	**71**	**72**




Self Evaulation of Personal ICT Skills
Number of Responses
25
20
15
10
5
0
Word Processing
Spreadsheets
Databases
Presentation
Scheduling
Email
Internet
File Management
Personal Access
Key Area
Unanswered
Pre-Emergent
Emergent
Established
Advanced


Total Skills Across Staff Responses
Unanswered
Pre-Emergent
Emergent
Established
Advanced

Data Staff

Frequency of Appearances in Established/Advanced Personal ICT Skills from Self Evaluation

2-3 times	4-5 times	6-8 times
9	8	9
H	J	C
C	D 4	M
S	D W	M
E	P D	M
M R	I	D S
M W	P G	U
B L	P F	L
L	k	N
D		B S

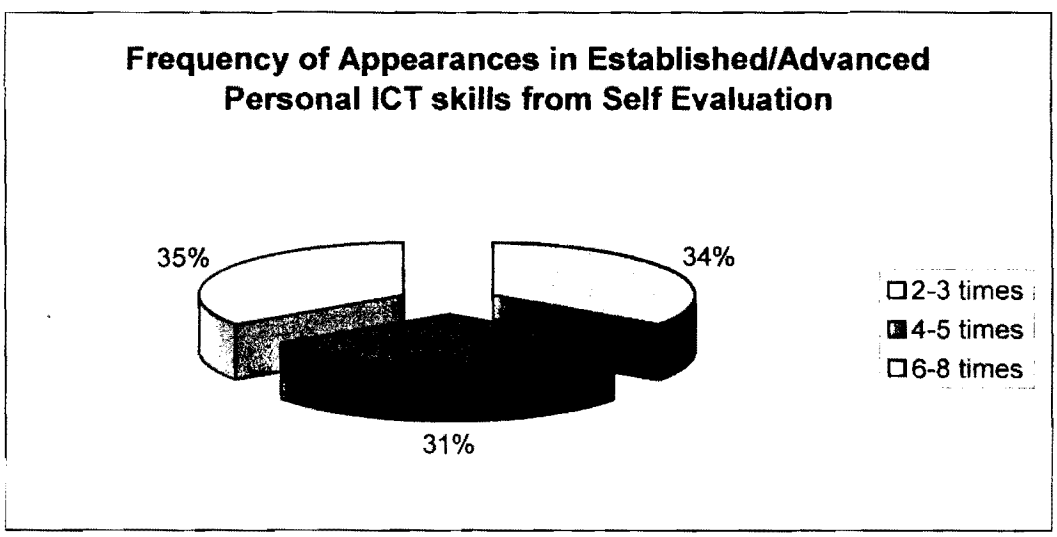
New initiatives/training
eg. whiteboards
Elearning etc
6-8x - 1st
4-5x - 2nd
2-3x - 3rd

basic application familiarity

subject/personal 'relevant' usage

Review curriculum & idea sharing

		Pre-emergent	Emergent
	Training Level 1	Training Level 2	Buddying
Word Processing	0	4	7
Spreadsheets	6	7	5
Databases	2	5	13
Presentation	0	2	1
Scheduling	2	8	8
Email	0	2	6
Internet	2	0	3
File Management	2	0	2
Personal Access	2	0	2



Data Staff

Characteristic of E-Learning Levels	Technology Enhanced Learning Strategy 2008-2011
Content and Support on VLE	Core English, D&T, Geography, History, PE, RE, School Experience, Foundation-Year 2
	Art, Early Years, Professional Studies
Wraparound (VLE+ Eportfolio)	Core Maths, Core Science, Core Year 4, English, Primary Language, Science
	ICT
Integrated	
Distance	

The leaders of these subjects appear in the 2/3 times Established/Advanced personal skills on S/E
∴ demonstrates lacking in personal skills leads to less ambitious ICT usage.

e-Learning Levels at University – INDICATIVE

	Mode 1 CONTENT & SUPPORT	Mode 2 WRAPAROUND	Mode 3 INTEGRATED	Mode 4 DISTANCE
Definition	*e-Learning largely an "add-on" to existing traditional practice; partial integration of University-wide systems; primary use is as a file repository. First stage for tutors gaining confidence with e-Learning.*	*Significant development of pedagogical practice as e-learning substitutes for, or augments, some traditional practices; blended approach adopted; significant engagement with learning activities online.* ***As Mode 1 PLUS ...***	*Integration of e-learning transforms pedagogical practice; e-learning is the predominant method of delivery, comprehensive integration of core systems but some f2f contact is expected* ***As Mode 2 PLUS....***	*Students may undertake entire programme of study by online means. F2f contact is an optional element.* ***As Mode 3 PLUS....***
Activities	Some use of functionality to facilitate peer-to-peer learning and support Direction of students to complimentary learning support, e.g LRWeb, PAD	Use of functionality e.g. groups and discussion boards, voice tools, wikis, blogs etc. Use of quizzes and tests for diagnostic and targeted fast feedback Fast lecturer feedback by e.g. BREO Messaging tool Support for development of e-Portfolios	Activities moved online for sound pedagogical reasons. Typically involves: lecture-seminar converted to structured content delivery to foster engagement; tests for diagnostic and targeted fast feedback on learning progress; wikis and blogs for co-operative learning and reflection; multi-media, podcasts and vodcasts integrated into structured learning activities.	Activities devised for online use are based on sound pedagogical underpinning and the needs of users. Involves carefully structured learning with managed on-line communication and support. Typically involves: use of voice tools, (may including desktop video-conferencing if appropriate) on-line peer-support learning sets
Content	Lecture notes as Word, PowerPoint etc Links to selected web pages	Content is primarily 'classroom' delivered but augmented by on-line resources. Typically Use of Turnitin for plagiarism detection Content modified for specific online delivery and integrated into activities – e.g. Powerpoint slides turned into pdf handouts Content transcends text – some use of image and media Access to digitised media where appropriate – such as selected videos	Content structured to take best advantage of online mode – i.e. use of folders and Learning Units to provide integration of content and activities, especially with adaptive release of content by successful task completion. A standardised structure providing relevant text based content and interspersed with multimedia elements. Students encouraged to contribute to content by social book marking (Scholar), wiki, and media creation (podcasts) thus fostering growth of students as co-learners with tutors. Utilisation of multimedia, for example Flash, to demonstrate complex concepts and reinforce fundamental learning objectives.	Content fully structured using all appropriate BREO affordances: folders, Learning Units, date release and adaptive release. Students see clearly how course is structured to run and given clear milestones with guidance re hitting targets while accommodating personal time management. Opportunities to include student-selected external technologies for content creation and sharing, such as Flickr, FaceBook, MySpace, Possible use of external book-linked course materials (cf Pearson, etc)
Management	Relevant Handbook(s) as Word doc(s), assignment information. Staff Profile page Use of Announcements and e-mail, calendar highlights key unit milestones	Navigational structure modified to suit needs of unit Communication by SMS texting. Time-delayed release of content.	Handbook(s) in Word *and* web-friendly form via Course Genie. Use of online surveys. Pro-active use of FAQs and feedback on changes as a result. Monitoring of students utilising an electronic attendance system (ensuring students log in online regularly).	Students register online – all forms and documentation available. Pre-session preparation guidance and activities available in site for pre-start engagers. Guidance for all tools and pre-start activity tests to ensure baseline familiarity and competence.

Appendix S

Data collated from Staff Questionnaires

Male		Female	
11	42%	15	58%

Return of Q		Electronic	
26	84%	5	19%

Age

<30	31-35	36-40	41-45	46-50	51-55	56+	Unanswered
0	1	1	3	3	12	5	1

Masters	22
Doctorate	1
Other Post Grad	3

Full time	Part time
20	6

Roles

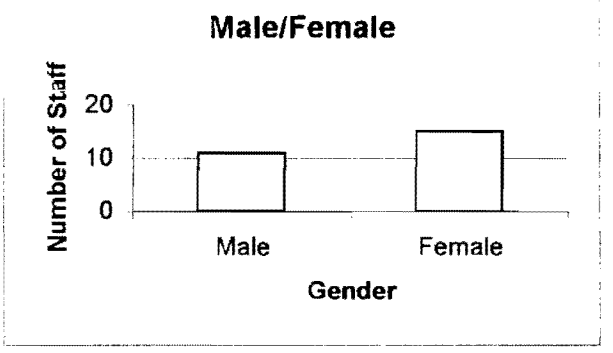
SL	Stand L	Module L	PL	VL	Year leader	Course L	Head of Sch	Field Ch	MA tutor	Manager	Admissions	GTP
16	3	8	6	1	5	4	1	2	1	2	1	1

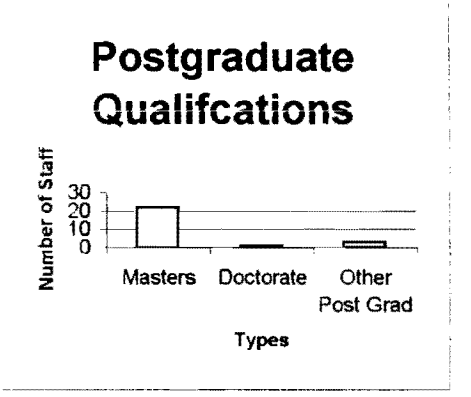
Reasons for ITE

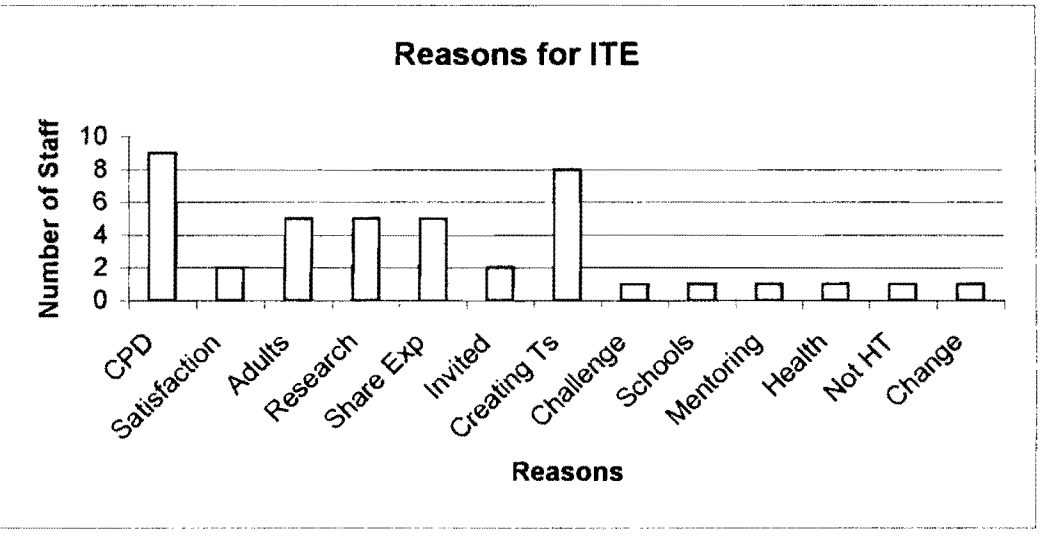
CPD	Satisfaction	Adults	Research	Share Exp	Invited	Creating Ts	Challenge	Schools	Mentoring	Health	Not HT	Change
9	2	5	5	5	2	8	1	1	1	1	1	1

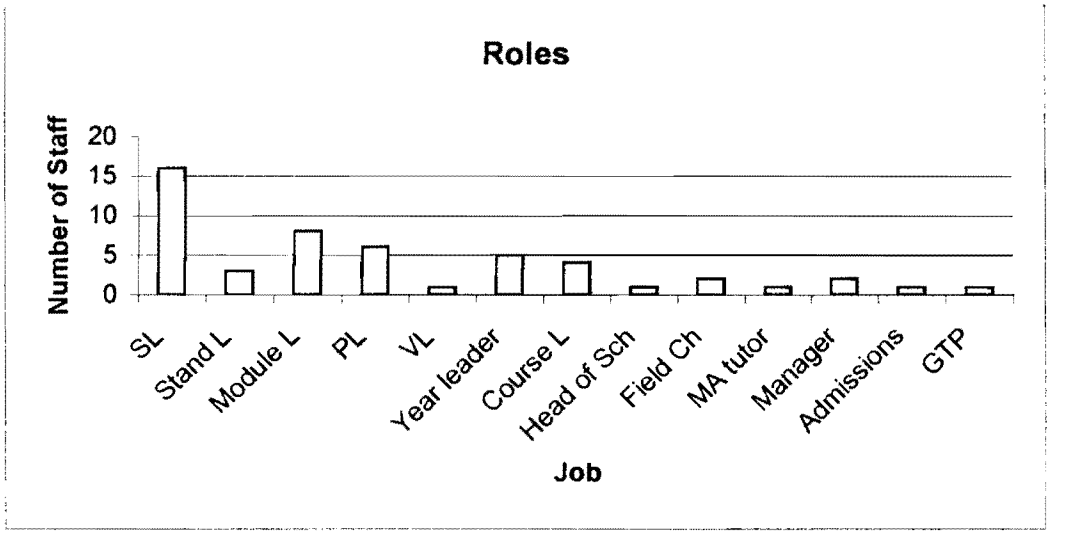
Best Bits

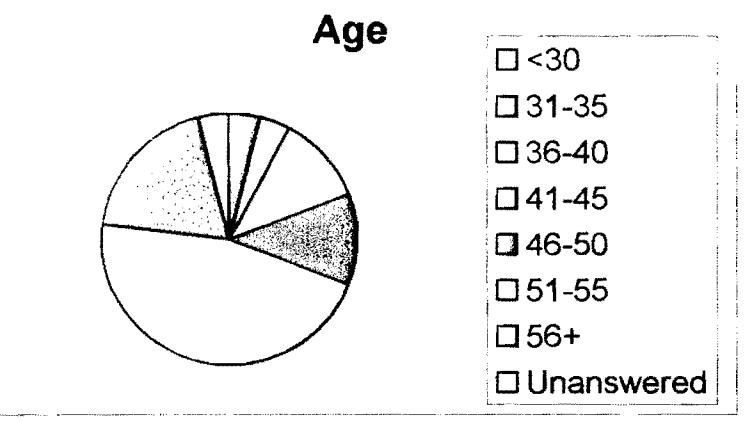
Teaching	Research	Unanswered	Link tutoring	Disserations	Tutor support	Collaboration	Improving	Adults
21	4	1	9	2	2	2	3	1

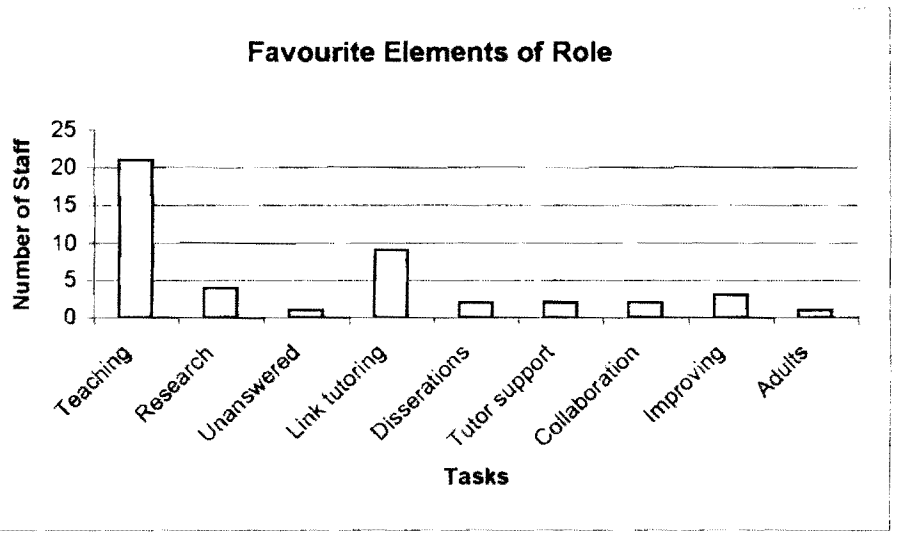

Male/Female
Number of Staff
20
10
0
Male
Female
Gender

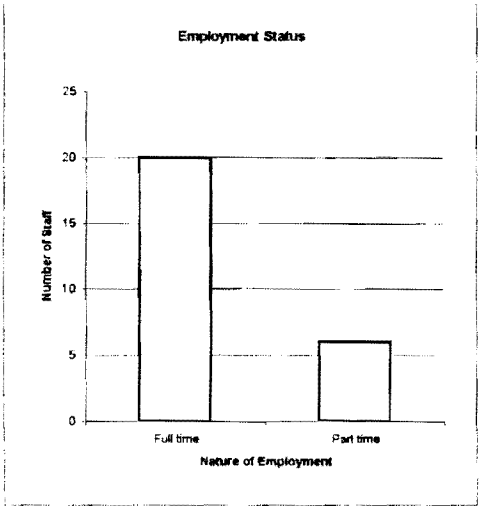

Postgraduate Qualifcations
Number of Staff
30
20
10
0
Masters
Doctorate
Other Post Grad
Types


Reasons for ITE
Number of Staff
10
8
6
4
2
0
CPD
Satisfaction
Adults
Research
Share Exp
Invited
Creating Ts
Challenge
Schools
Mentoring
Health
Not HT
Change
Reasons

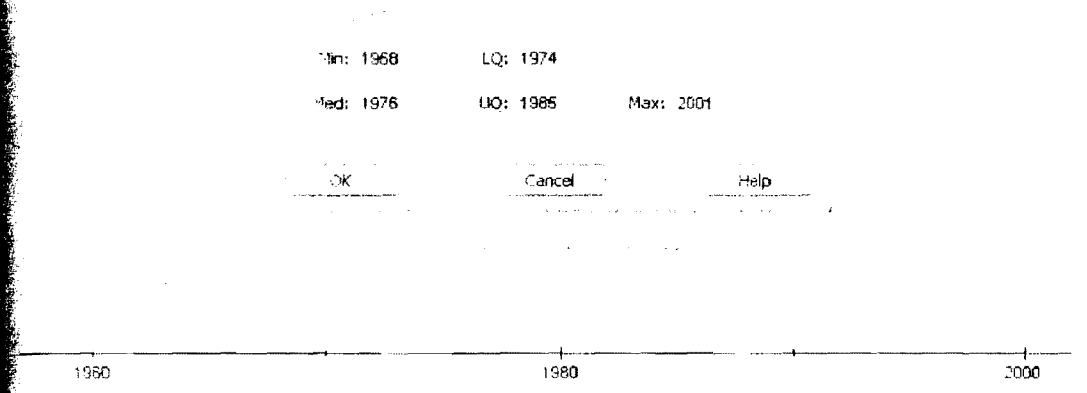

Roles
Number of Staff
20
15
10
5
0
SL
Stand L
Module L
PL
VL
Year leader
Course L
Head of Sch
Field Ch
MA tutor
Manager
Admissions
GTP
Job


Age
<30
31-35
36-40
41-45
46-50
51-55
56+
Unanswered


Favourite Elements of Role
Number of Staff
25
20
15
10
5
0
Teaching
Research
Unanswered
Link tutoring
Disserations
Tutor support
Collaboration
Improving
Adults
Tasks

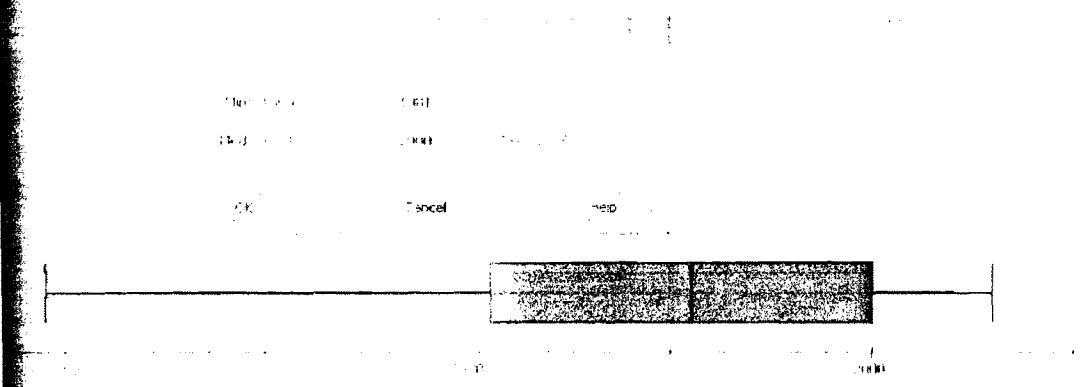

Employment Status
Number of Staff
25
20
15
10
5
0
Full time
Part time
Nature of Employment

Box & Whisker Ranges



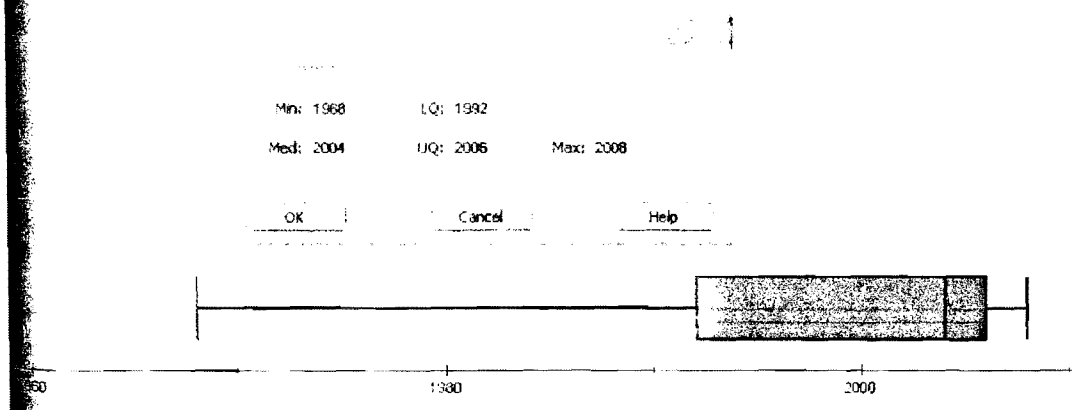
Mode = 1976
Range = 43
Mean = 1979

st degree qualifications



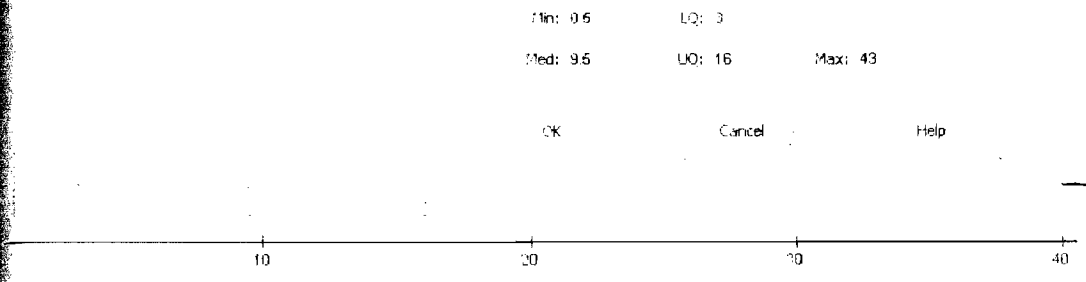
Mode = 1976
Range = 47
Mean 1989

ostgraduate qualifications



Mode = 2005
Range = 40
Mean = 1999

ar apponted to university



mean: 10.87
mode = 3 and 20
Range 42.5

Number of Years in ITE

Questionnaire - Part A

Background Information

1. Female/Male

2. Age. Please ring.

30 or Under	31-35	36-40	41-45	46-50	51-55	56 or over
	1	1	3	3	12	5

Number of electronic responses = 5 20%

Number of handwritten = 21 80%

26

Range: 43

Median = 1976
Mode: 1976
Mean: 1979

3. Qualifications and year obtained. (e.g. Cert Ed 1974, MA 1982)

DEGREE			
Cert Ed	~~HH~~ III	7	1972, 1976, 1978, 1974, 1973
BA QSA	II	2	1977, 1978
MA	~~HH~~ ~~HH~~ ~~HH~~ III	18	Begun, 1995, 1988, 1997, 2000, 200[illegible] 1994, 1991, 2004, 1998, 199[illegible] 1970, 1990, 1992, 2006
BSc	~~HH~~ I	6	1972, 1989, 1987, 1982 2001, 1974
PGCE	~~HH~~ ~~HH~~	10	1977, 1970, 2000, 1995, 198[illegible] 1959, 1985, 1978, 1981
BEd	~~HH~~ II	7	1977, 1990, 1997, 1976, 1979 1980, 1975
BA	~~HH~~ II	7	1976, 1969, 1985, 1958, 19[illegible] 1974
MSc			2003
EdD	I	1	Begun, 2000
MBA			2003
Dip Computing			1995
M Phil	II	2	1980, 2005
[illegible]			1997
[illegible]			[illegible]

Left margin: 1972 1972 1973 1974, 1974 1976, 1976, 1976 1977 [illegible], 1980, 1980 NVQ 1989

GRAD 1959
1972, 1974
1977, 1977
1978
1987
1958, 1988
1992, 1992
1995
1997, 1997
1998
2000, 2000
2003, 2003
2005

Median = 1991
Mode = 2000
Mean = 1989

4. Year appointed to this University (under all it's various names)

[illegible]		2
[illegible]		
1989		
[illegible]		
?		
1992	II	2
2008		
2005	IIII	5
2007	IIII	4
2000	II	2
2002		
2006		
2004		
1968		
1988	I	2

1968
1987
1988
1988
1989
LQ 1992, 1992
1994

2000, 2000
2002
2004 2005, 2005, 2005, 2005, 2005, 2005
2006 2007, 2007, 2007, 2007
UQ 2008

Median = 2004
Mode = 2005
Range = 40
Mean = 1999

5. Full Time/ Part Time

FULL	PART
[illegible]	[illegible]
19	6

6. Number of years spent in Initial Teacher Education in total (include other institutions)

0·5 | | | 3 3 3 3 5 6 7 8 | 11, 11

14, 14, 14, 15, 16, 20, 20, 20, 20, 2

LQ

+3

UQ

Mean 10·8

Median 9·5

Mode 3 and 20

Range 42·5

7. Current status (SL, PL etc). Any responsibilities, e.g. course leader?

SL 𝍸 𝍸 |||| | 16

Band leader ||| 3

Module leader 𝍸 ||| 8

PL 𝍸 | 6

VL

Year leader 𝍸 5

course leader |||| 4

Head of School

PRO Dean

Field chair || 2

MA Tutor

Diversity Chr (range) || 2

Admissions | 1

GTP Primary 1

8. Primary Schools teaching experience. Please give the total number of years experience in each sector.

Range 3 - 41

	Nursery	Reception	Key Stage 1	Key Stage 2	KS 3/4
No. of Years Experience	3	4, 3, 4, 4	4, 6, 5, 4, 2, 3, 3, 4, 5, 10, 15	3, ½, 3, 5, 3, 4, 10, 3, 1, 5, 1, 4, 11, 11, 10	10, 41, 11, 4, 6, 7, 3, 5

1, 1, 2, 3, 3, 4 (LQ, UQ)

NURSERY / YEARS

1	2	3	4	range 3
11	2	3,3	4	

median 2.5 mean

R + KS1 (LQ 2)

1, 1, 1, 1, 3, 3, 4, 4, 4, 5, 5, 5, 10, 15, 15

Median 4 Mean 5

KS 1/2

0.5, 1, 1, 2, 3, 3, 3, 3, 4, 4, 4, 4, 5, 5, 5, 5, 6, 6, 10, 10, 10, 10

Median = 5
Mode = 3
Mean = 3
Range = 24.5

9. What was your main reason for entering Teacher Education?

[illegible] 8

[illegible] 2

[illegible] 5

Research 5

Share experience 4
Share subject knowledge
Invited 2

Creating teachers 8

Challenge 1

Relations with schools 1

Mentoring 1

Personal Health 1

Not HT 1

Change 1

10. Which aspects of your work in Teacher Education do you enjoy the most?

Teaching	~~HH~~ ~~HH~~ ~~HH~~ ~~HH~~ I	~~20~~ 21
Research } Writing }	III	3
Unanswered	I	
Link mentoring	~~HH~~IIII	9
Supervising dissertations	II	2
Tutorials/supporting	II	2
Collaboration with colleagues	II	2
Improving provision	III	3
Adults in range of contexts	I	

Transfers show %
xL

Perspectives of ICT

11. What are your general views of ICT? (Please circle)

		Strongly Agree	Agree	Disagree	Strongly Disagree
a	ICT is a necessary tool	1 (19)	2 (7)	3	4
b	The more I use ICT the more I am enthused/motivated by it	1 (9)	2 (14)	3 (3)	4
c	I do not enjoy using ICT	1	2	3 (12)	4
d	I can do my work quite competently without having to use ICT	1	2 (2)	3 (11)	4
e	I am confident that I'll be able to keep up with future developments in ICT	1 (4)	2 (7)	3 (12)	4 (3)
f	I question whether the time and effort required to master the use of ICT is worth it in term of the returns	1	2 (4)	3 (13)	4 (9)
g	It is essential that a lecturer shows a positive attitude towards ICT	1 (14)	2 (10)	3 (2)	4
h	I think that money spent on ICT would be better spent on more traditional resources	1	2	3 (18)	4 (3)
i	The more I use ICT the more I can see how it can extend and enhance learning	1 (12)	2 (12)	3	4
j	I would like to learn more about ICT	1 (15)	2 (10)	3	4
k	ICT skills ought to be taught by specialist ICT lecturers	1	2 (9)	3 (14)	4 (3)
	Other – please comment				

- No time to keep up to date with the new ICT
- Skills by expert, application & curriculum – IIII
- ICT very good as a [illegible] – need to understand ICT
- Personal expertise affects use – III
- Technical issues affect use – II
- ICT not be all & end all
- offers a different approach
- Staff development needed to keep up – III
- [illegible]
- [illegible]

12. Situational factors and ICT use in Teaching and Learning (please circle)

a	Do you feel you have adequate ICT equipment to support the work you do with your students?	Yes 12	No 14
b	Do you have technical support?	Yes 15	No 10
c	Do you have support during your planning for ICT use?	Yes 9	No 16
d	Do you have time allocated to plan, prepare and practice using ICT?	Yes 1	No 25
e	Does ICT support your delivery of the curriculum?	Yes 26	No
f	Do you have time to use ICT with students i.e. is your use unrestricted by curriculum demands?	Yes 14	No 10
g	Do you have an 'ICT buddy' (peer/mentor/partner) who will discuss ICT with you supportively?	Yes 5	No 19
h	Is ICT use fluent and unproblematic for you?	Yes 7	No 18
i	What do you think are barriers to further use of ICT with your students? - knowledge of software capabilities – III 3 - access to up to date equipment – 7 - training I - time for CPD – 11 - 1 2 1 - sharing expertise with colleagues – II 2 - lack of resources – 6 - lack of support – 8 time for students to learn – III 3 lack of examples from school time to set up – 5 size of student group		
j	What would facilitate your use of ICT with students? - better software - training – whiteboard – III 3 - better computers - technical support – 7 - team of technicians with curriculum relevant skills - team teaching - buddy – III 3 - student ICT session II 2 - Second life - Online marking		

- improved timetabling – time to learn – IIII 4
- standard equipment in each room – 6
- training – 11
- availability of laptops – II 2
- availability of resources – III 3
- schemes of work to include ICT – III 3
- suitable resources – 6
- team to share [illegible] – II 2
- [illegible] benefit to students – II 2

13. What are your views about the role of ICT in Teacher Education? (Please circle)

		Strongly Agree	Agree	Disagree	Strongly Disagree
a	ICT provides an insight into new of different learning and teaching environments	1 15	2 10	3	4
b	ICT enriches/enhances courses or programmes of work	1 13	2 11	3 1	4
c	ICT introduces students to a range of techniques they are likely to meet in their future work	1 18	2 10	3	4
d	ICT improves the quality of the content of students' coursework or assignments	1 12	2 9	3 7	4
e	ICT improves the quality of the content of the curriculum materials students produce for their pupils	1 10	2 13	3 3	4
f	ICT reduces time required to cover content	1 5	2 6	3 13	4 1
g	ICT is going to be essential for continuing professional development	1 16	2 9	3	4
h	ICT should be avoided because it is unreliable	1	2	3 10	4 15
i	ICT promotes in students attitudes of responsibility and autonomy in their learning	1 5	2 12	3 7	4 1
j	Other – please comment ICT = tool not a means of improving content, that requires analysis, eval, synthesis etc ICT = tool, part of range of methodologies Need to teach students to be discerning about reliability of websites X2 ICT = tool - needs to be used properly/appropriately x 2 [illegible] NEED to save time				

Equipment needs maintenance programme

Benefit for visual learners

To maintain [illegible] content reduces time to explore ICT

ICT [illegible] need to keep updated through CPD - lifelong

14. How do you help students to appreciate how ICT can be used in teaching and learning? (Please circle)

		I encourage my students to do this	I cover this with my students	I do not cover this; it is covered elsewhere in the course	I feel this is best covered on school experience
a	How ICT supports learning	Encourage 16	Cover 6	Do not Cover 4	School
b	How to integrate ICT into the curriculum	Encourage 18	Cover 2	Do not Cover 5	School
c	How to differentiate tasks using ICT	Encourage 13	Cover 2	Do not Cover 10	School
d	Management of ICT resources in the classroom	Encourage 9	Cover 4	Do not Cover 8	School 4
e	Other – please comment Practical use + evaluation of resources ~~Video clips~~ Need to use ICT in delivery more – laptops, conferencing, IWBs ~~Software needs~~ More independent work assumes student competency Tasks / Assignments Provide details of resources + recommend software Need practical context in school.				

15. If you have ticked that you do encourage students to do any of these (listed above); what techniques do you use to encourage your students to use ICT in this way?

Add to BECTa II; use of [illegible]; Model good practice – IIII 4 IWB; Provide examples; Demonstration – II

[illegible]

Practical tasks requiring reflection – III 3

[illegible] – III 3

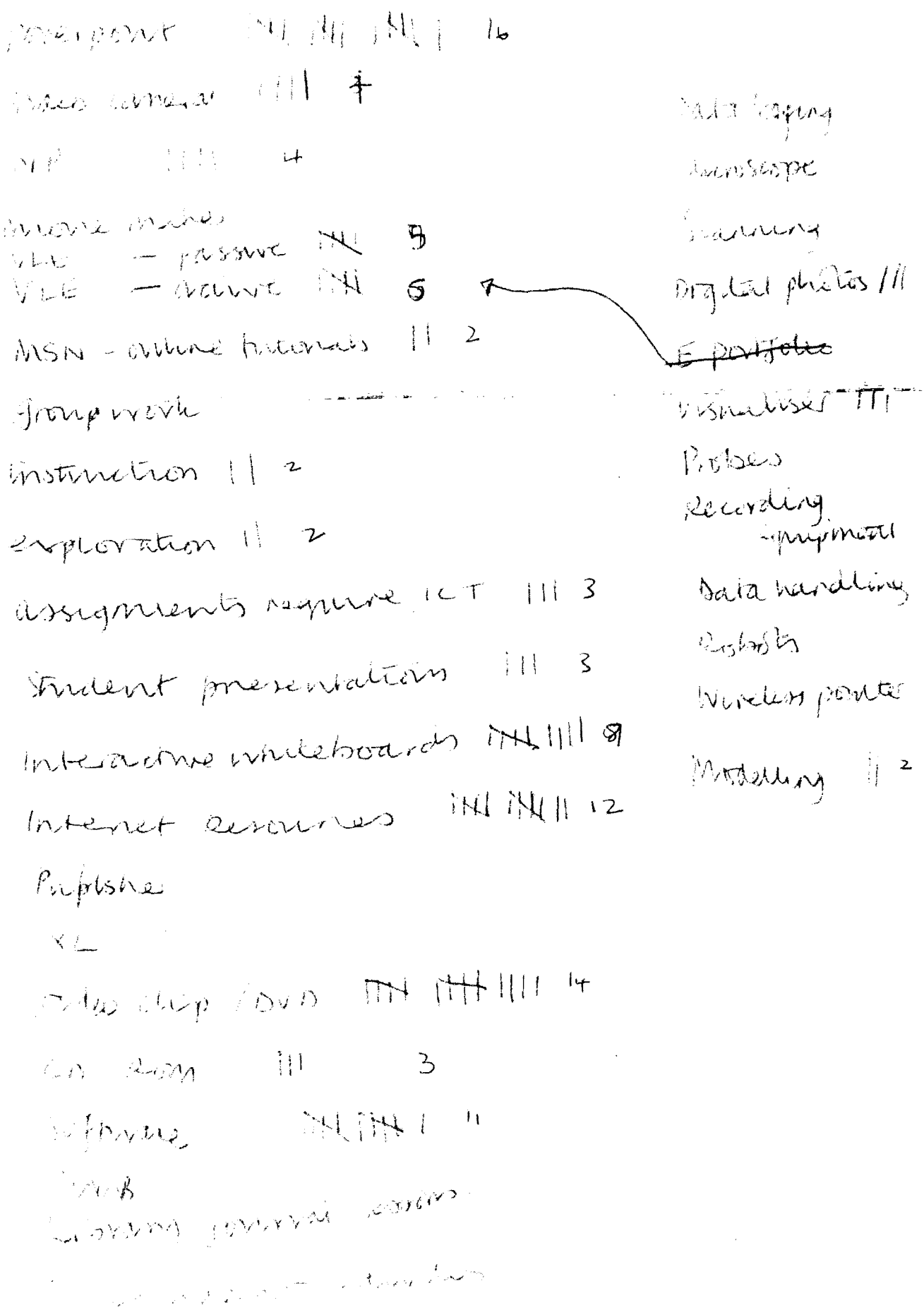
Software [illegible] [illegible] machines

[illegible] – 1

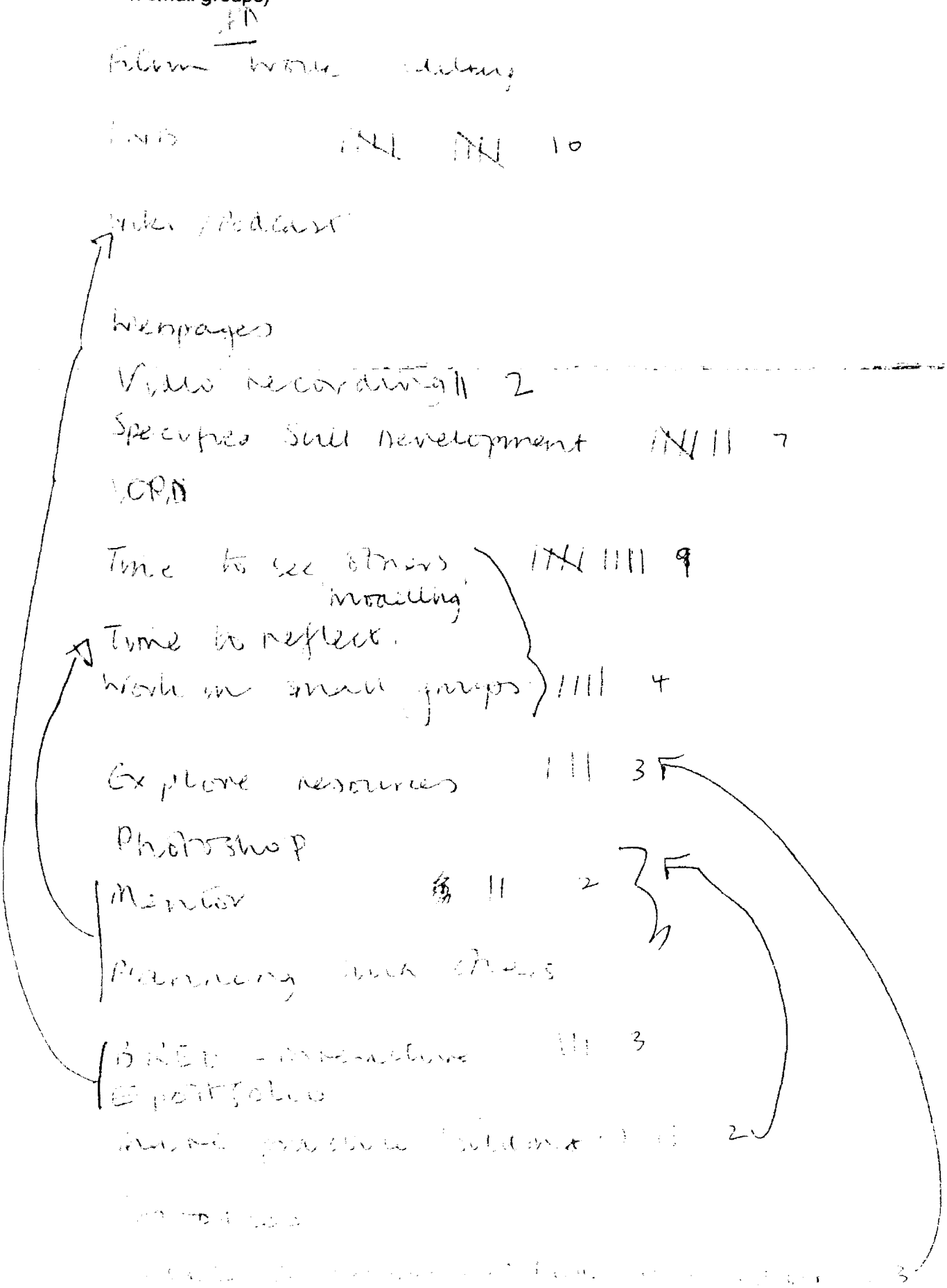
Demonstration – 1; [illegible] – II 3

Share good practice; Direct to [illegible]; [illegible]

16. What teaching/content delivery methods and learning activities do you use involving ICT?



16. What opportunities would you like any future ICT training provide for you? (e.g. skills development in a specific area, time to see what others are doing, working in small groups)



staff data
XL is ND

et al (1999)

		Strongly Agree	Agree	Disagree	Strongly Disagree	Unanswered	Strongly Agree	Agree	Disagree	Strongly Disagree	Unanswered
a	ICT is a necessary tool	19	7	0	0	0	73%	27%	0%	0%	0%
b	The more I use ICT the more I am enthused/motivated by it	9	14	3	0	0	35%	54%	12%	0%	0%
c	I do not enjoy using ICT	1	0	12	12	1	4%	0%	46%	46%	4%
d	I can do my work quite competently without having to use ICT	1	2	11	12	0	4%	8%	42%	46%	0%
e	I am confident that I'll be able to keep up with future developments in ICT	4	7	12	3	0	15%	27%	46%	12%	0%
f	I question whether the time and effort required to master the use of ICT is worth it in term of the returns	0	4	13	9	0	0%	15%	50%	35%	0%
g	It is essential that a lecturer shows a positive attitude towards ICT	13	11	2	0	0	50%	42%	8%	0%	0%
h	I think that money spent on ICT would be better spent on more traditional resources	0	1	18	3	4	0%	4%	69%	12%	15%
i	The more I use ICT the more I can see how it can extend and enhance learning	12	12	0	0	2	46%	46%	0%	0%	8%
j	I would like to learn more about ICT	15	11	0	0	0	58%	42%	0%	0%	0%
k	ICT skills ought to be taught by specialist ICT lecturers	1	7	14	3	3	4%	27%	54%	12%	12%

Perspectives of ICT

11. What are your general views of ICT? (Please circle)

11	Other – please comment
	No time to keep up to date 4
	Skills by expert application cross curricular 4
	ICT is as good as user – need to understand T&L 4
	Personal expertise affect use 3
	Offers a different approach
	Technical issues affect use 3
	Use student expertise
	Part of society

		Yes	No	Unanswered	Yes	No	Unanswered
a	Do you feel you have adequate ICT equipment to support the work you do with your students?	12	14	0	46%	54%	0%
b	Do you have technical support?	15	10	1	58%	38%	4%
c	Do you have support during your planning for ICT use?	9	16	1	35%	62%	4%
d	Do you have time allocated to plan, prepare and practice using ICT?	1	25	0	4%	96%	0%
e	Does ICT support your delivery of the curriculum?	26	0	0	100%	0%	0%
f	Do you have time to use ICT with students i.e. is your use unrestricted by curriculum demands?	14	11	1	54%	42%	4%
g	Do you have an 'ICT buddy' (peer/mentor/partner) who will discuss ICT with you supportively?	5	19	2	19%	73%	8%
h	Is ICT use fluent and unproblematic for you?	7	18	1	27%	69%	4%

12. Situational factors and ICT use in Teaching and Learning (please circle)

12 i	What do you think are barriers to further use of ICT with your students? Knowledge of software 3 Access to equipment 7 CPD 12 1 2 1 Sharing with colleagues 2 Lack of resources 6 Lack of support 8 Time for students 3 Lack of examples from school Time to set up Size of groups Resources
12 j	What would facilitate your use of ICT with students? Better software Whiteboard CPD – 3 Reliable resources 7 Technical support 8 Time to share/buddy 11 Standardised rooms 7 CPD – 11 Availability of resources including laptops 5 SOW include ICT 3 Seeing benefit to students – 2 Students ICT session 2 Second life Online marking

		Strongly Agree	Agree	Disagree	Strongly Disagree	Unanswered	Strongly Agree	Agree	Disagree	Strongly Disagree	Unanswered
a	ICT provides an insight into new of different learning and teaching environments	15	11	0	0	0	58%	42%	0%	0%	0%
b	ICT enriches/enhances courses or programmes of work	13	11	1	0	1	50%	42%	4%	0%	4%
c	ICT introduces students to a range of techniques they are likely to meet in their future work	16	10	0	0	0	62%	38%	0%	0%	0%
d	ICT improves the quality of the content of students' coursework or assignments	12	9	7	[illegible]	[illegible]	46%	35%	27%	0%	0%
e	ICT improves the quality of the content of the curriculum materials students produce for their pupils	10	13	3	[illegible]	[illegible]	38%	50%	12%	0%	0%
f	ICT reduces time required to cover content	5	6	13	1	[illegible]	19%	23%	50%	4%	0%
g	ICT is going to be essential for continuing professional development	16	9	0	0	1	62%	35%	0%	0%	4%
h	ICT should be avoided because it is unreliable	0	0	10	16	0	0%	0%	38%	62%	0%
i	ICT promotes in students attitudes of responsibility and autonomy in their learning	5	12	7	1	1	19%	46%	27%	4%	4%

		I encourage my students to do this	I cover this with my students	I do not cover this; it is covered elsewhere in the course	I feel this is best covered on school experience	Unanswered	I encourage my students to do this	I cover this with my students	I do not cover this; it is covered elsewhere in the course	I feel this is best covered on school experience	Unanswered
a	How ICT supports learning	16	6	4	0	0	62%	23%	15%	0%	0%
b	How to integrate ICT into the curriculum	18	2	5	1	0	69%	8%	19%	4%	0%
c	How to differentiate tasks using ICT	13	2	10	0	1	50%	8%	38%	0%	4%
d	Management of ICT resources in the classroom	9	4	8	4	1	35%	15%	31%	15%	4%

13. What are your views about the role of ICT in Teacher Education? (Please circle)

13 j	Other – please comment
	ICT is a tool – part of a range of methodologies, still requires analysis, evaluation synthesis etc
	Students need to be discerning about reliability of websites 2
	Needs to be used appropriately 2
	Use BREO, save time
	Maintenance programme
	Benefit to visual learners
	Time for students to explore – not just content
	Need to keep up to date
	Mirrors life

14. How do you help students to appreciate how ICT can be used in teaching and learning? (Please circle)

14 e	Other – please comment
	Practical use and evaluation
	Used in delivery
	Can student competency be assumed?
	Tasks/assignments
	Details of software/resources
	Need practical school context

15. If you have ticked that you do encourage students to do any of these (listed above); what techniques do you use to encourage your students to use ICT in this way?

Differentiation

Wireless pointer

Add to BREO 2

Use of speaker

Film

Tasks – 3

Video 3

Software needs loading on all machines

Sessions contain ICT 10

Internet 2

Student presentations 1

Expectations 1

ICT in assessment 3

Model good practice 7

Provide examples 2

Share good practice 7

Direct to articles 2

Self assess and seek support

School tasks 4

16. What teaching/content delivery methods and learning activities do you use involving ICT?

Powerpoint 16

Video camera 4

WP 4

Movie maker

VLE passive 5

VLE active 6

MSN tutorial 1

Group work

Instruction 2

Exploration 2

Assignments 3

Student presentations 3

IWB 9

Internet 12

Publisher

XL

Video clips 14

CD Rom 3

Software 11

Library journal sessions

Independent activities

Analysis of school use 2

Data logging

Microschope

Scanning

Digital photos 3

Visualiser 3

Probes

Recording equipment

Data handling

Robots

Wireless pointer

Modelling 2

16. What opportunities would you like any future ICT training provide for you? (e.g. skills development in a specific area, time to see what others are doing, working in small groups)

Film work editing

IWB 10

Wiki/podcast – BREO – eportfolio 5

Web pages

Video recording 2

Specific skills 7

Time to see others 19

Explore resources 6

Photoshop

Databases

Last point here solid

Self-evaluation tool for personal ICT skills

Name: _____

The purpose of this is not to judge your competencies, but to gather information about the skills you possess and to find if this affects the use of ICT in the Department. This may also provide an insight into useful training opportunities for the future. This tool is use on the Strategic Leadership of ICT courses run by the National College of School Leadership over the last few years, now uses widely in schools with all staff. Use a coloured highlighter pen to mark those statements which best apply to your skills. You can mark statements in more than one box in each line.

TRAINING (1)	TRAINING (2)			
Word processing				
6	4	7	11	3 (25)
Spreadsheets				
6	7	5	8	0 (25)

N.B No obvious pattern between personal ability in each area - good a some, not at others.

? Subject area + personal ability

NC National College for School Leadership

Becta British Educational Communications and Technology Agency

TRAINING (1) = basic usage

TRAINING (2) = Subject relevant usage

TRAINING(1)	TRAINING(2)	BUDDYING		
Databases 2	5	13	5	0 (21)
Presentation 0	2	1	7	15 (23)
Scheduling 2	8	8	6	2 (23)
Email 0	2	6	11	7 (25)

TRAINING (1)	TRAINING (2)	BUDDYING		
Internet				
2	0	3	1	(25)
File management				
2	0	2	16	6 (25)
Personal access				
2	0	2	5	(25)
16	28	47	78	72

=225