The use of Information and Communications Technology in history teaching in secondary schools in England and Wales 1970-2003

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I certify that the work contained in the thesis submitted by me for the degree of Doctor of Philosophy is my original work, except where acknowledged reference is made to other authors. It has not previously been submitted by me for a degree at this or any other university.

Signed: 

Abstract

The thesis considers the ways in which developments in Information and Communications Technology (ICT) have impacted on history teachers' practice in secondary school history in England and Wales since the introduction of computers into schools in the early 1970s.

This is done by examining the historical record relating to the use of ICT in secondary history, and by empirical investigations conducted between 1995 and 2003. The empirical element of the thesis explores the perspectives of history teachers and history trainee teachers on the use of ICT in secondary history, using questionnaire and interview survey approaches.

The first chapter establishes the purposes, rationale and focus of the thesis. Key terms and concepts are defined and relevant literature reviewed. The research approach is justified and key questions outlined.

The second chapter places the study in the context of the impact of ICT on education more generally by exploring historical perspectives on the use of ICT in secondary education in England and Wales. The chapter demonstrates that there are 'different stories' about the role which ICT has played in secondary schools and differing views about the potential of ICT for enhancing educational outcomes.

Chapter 3 focuses on the use of ICT in secondary history and examines differing strands of the historical record in this area, pointing out areas where there are contradictions and uncertainties about the role of ICT in secondary history.

Chapters 4 and 5 detail the empirical enquiries of the author in exploring secondary history teacher and trainee perspectives on the use of ICT.

The final chapter draws together the outcomes of the investigations. Conclusions are presented under four headings: implications of the research approach adopted,

contribution to knowledge in the field, implications for policymaking in the field of ICT and education, future role of ICT in secondary history.

Contents

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List of tables and figures

Chapter 4

a) Tables

b) Figures

Chapter 5

a) Tables

b) Figures

Abbreviations

AHC	Association for History and Computing
BBC	British Broadcasting Corporation
BECTa	British Education and Communications Technology Agency
BERA	British Educational Research Association
BESA	British Educational Suppliers Association
CAL	Computer Assisted Learning
CHC	Computers in the History Classroom
DES	Department of Education and Science
DfE	Department for Education
DfEE	Department for Education and Employment
DfES	Department for Education and Skills
EERA	European Educational Research Association
HABET	Historical Association Advisory Body on Educational Technology
HMI	Her Majesty's Inspectorate
HTEN	History Teacher Education Network
ICT	Information and Communications Technology
IT	Information Technology
INSET	In-service training
ITT	Initial Teacher Training
LEA	Local Education Authority
MEP	Microelectronics Programme
NCC	National Curriculum Council
NCET	National Council for Educational Technology
NFER	National Foundation for Educational Research

OECD	Organisation for Economic Cooperation and Development
Ofsted	Office for Standards in Education
PGCE	Post Graduate Certificate in Education
QCA	Qualifications and Curriculum Authority
SCAA	Schools Curriculum and Assessment Authority
SCHTE	Standing Conference of History Teacher Educators
SOED	Scottish Office Education Department
TTA	Teacher Training Agency

Chapter 1

Introduction

'The basic question may be stated as this: is there anything inherent in a discipline that might better influence if or how technology may be employed in teaching?'

(Waggoner, 1994: 175)

Purpose of thesis

The thesis examines the role that information and communications technology (ICT) has played in the teaching of history in secondary schools in England and Wales since the introduction of computers to secondary schools in the last quarter of the twentieth century. The enquiry embraces a consideration of the nature, extent and value of ICT use in history teaching in secondary schools in England and Wales during this period. In the light of the investigations, it considers the part which ICT might play in enhancing teaching and learning in secondary school history in the future.

The purpose of the enquiry is to bring an objective and scholarly approach to an area of education policy and practice which is characterised by assertion and counter-assertion and widely differing findings, and to an area which is subject to rapid change in terms of technological development.

The enquiry explores some of the paradoxes, contradictions and diverse findings in the field of history and ICT in secondary schools. There have been very different reports on the extent to which secondary history teachers make use of ICT in their teaching, different findings on their attitudes to the use of ICT, and the factors that are perceived to be deterrents or barriers to the use of ICT (see, for example, DfE, 1993, Easdown, 1994, Harris and Preston, 1994, DfE, 1995, Ofsted, 1995a, Haydn, 1996a, Summers and Easdown, 1996).

Although computers are widely perceived to be 'a good thing', there is some evidence to suggest that many history teachers in secondary schools do not make extensive use of them (NCET, 1994, Ofsted, 1995, 2002, Harrison *et al.*, 2002). There is therefore a useful purpose to be served in considering the 'rhetoric-reality gap' between the claims made for the use of ICT and what is current practice in history teaching in secondary schools.

The thesis examines teachers' and trainee teachers' perceptions of the comparative utility of particular ICT applications in history. If substantial financial investments are being made in putting computers into schools, it would be useful to ascertain precisely what advantages they offer for teaching and learning in particular school subjects. It would also be helpful to gain insight into history teachers' views on what investments in ICT they see as being most helpful for future development of the use of ICT in subject teaching. The section of the thesis on trainees' views on ICT in history teaching also explores their perceptions of which interventions and experiences they find to be particularly helpful for developing their ability to use ICT effectively in subject teaching, and which they feel are less helpful.

The thesis explores the interplay of the historical record on the use of ICT in secondary history with the empirical enquiries of the author. This is done partly to examine consistencies and disparities in findings, and partly to suggest new or amended questions for consideration, which might provide insights into the ways in which ICT has the potential to enhance teaching and learning in secondary history.

The context of the enquiry: ICT and Education

In order to place the enquiry in context, to explain why this subject is worth researching, and to justify the approach taken, it is important to note the growing

importance and attention that has been attached to the recent impact of new technologies in education (see, for example, Blair, 1995b, DfEE, 1997b, DfES, 2002b, 2003).

McFarlane (2001: 237) described the vision of ICT outlined in some of these policy statements as 'an agent of change which applies in a revolutionary way', but examination of the discourse on the impact of ICT in education shows that there are a wide range of views on its potential to improve education outcomes.

The continuum ranges from, at one end, those who might be termed 'believers' or 'techno-utopians' (Cohen, 1998), who saw the deployment of ICT in education as unproblematically positive and essential (for example, Cochrane, 1995, Clarke, 2003), through those whose approbation of the use of computers in education was more qualified, conditional and sceptical (for example, Kay, 1995, Laurillard, 1998). There were even those who suggested that the use of ICT in education may have negative outcomes, and that investment in ICT in education should be reduced and the funds used to provide alternative resources, such as an increase in spending on books (Postman, 1993, Porter, 1996).

Not all countries have the same attitude to the use of ICT in education. Whereas some have adopted an enthusiastic espousal of putting large numbers of computers into schools, and seen the technologisation of education as a crucial 'weapon' in terms of international competitiveness in education, others have been more relaxed or restrained in this area, and have not viewed computer to pupil ratios, or quality and quantity of internet connectivity in schools as major factors in educational progress or effectiveness.

The United States has tended to mirror the enthusiasm of politicians in England and Wales for the use of new technology in education, with Bill Clinton's declaration

(1996) that 'the goal of education in the 21st century is to have a laptop computer on every student's desk'. Japan has not seen the provision of computers in schools as a high priority, lagging far behind England and Wales and the United States. A *Research Machines* survey (1997) of computer provision in G7 schools found that schools in Japan had less than a third of the computers of their British equivalents. In a paper entitled 'Information Technology or History Textbooks: the survival of the fittest?', Behre (1998: 58) stated that 'most countries in Europe compared to Sweden go easy or very easy in computerising their schools. The question is whether they are so conservative that they have not grasped the idea or whether they are smart, having understood that the school has more important things to do.'

This is an area worth researching because new technology has become an important part of government thinking about investment and training in education, with government investment in computers in education in England and Wales estimated at between £1.6 and £1.7 billion between 1999 and 2002 (Wills, 1999, Abbott, 2001). This funding has been invested in increasing the number of computers in schools, connecting schools to the Internet, providing computer training for teachers, free laptop computers for all new head teachers, and subsidised computers for practising teachers (*Guardian*, 6 June 2000). The scale of this investment in ICT indicates that the provision and effective deployment of computers in schools has been elevated to an important strand of education policy.

Nearly all countries face important decisions over investment in education. Given that billions of pounds are spent worldwide on educational resources of one sort or another, a rigorous analysis of the benefits of using ICT in a particular school subject, and of the precise ways in which *different ICT applications* offer advantages will be valuable in itself and may have implications for the use of ICT in other subjects.

Subject discipline approaches to the use of ICT in schools

In spite of the substantial literature on various aspects of ICT and education, as yet there has been only limited attention directed to the subject discipline dimensions of the use of computers in education, *i.e.* the ways in which its impact on teaching and learning processes might vary between one subject and another. Moreover, there has been a tendency for research on teaching and learning to move away from subject discipline approaches (Wineburg, 1997).

There is some evidence to suggest that the ways in which new technology is used in schools in the United Kingdom varies significantly from one school subject to another, both in terms of the extent of its impact on classroom processes, and in terms of *which* particular ICT applications are of use or potential use in particular subjects (see, for example, Sharp, C., 1995).

As early as 1992, Niemiec and Walburg noted the existence of over 250 studies on the effects of computers on pupils' learning (Niemiec and Walburg, 1992), and there has been an increase in the number of journals and general attention focusing on new technology in education since 1992. Cuban (1986) adopted a historical approach to teachers' use of new technology, but his study said little about subject discipline aspects of the use of educational technology. In spite of the massive literature on ICT and education, subject discipline studies of the effects of new technology on teaching and learning in schools are comparatively rare, particularly in the field of history in schools. Many studies have explored teacher and trainee teacher attitudes to ICT (Trushell, *et al.*, 1995, Selinger, 1996, Fisher, 2000, Mumtaz, 2000) but in a way that does not differentiate between subjects. Other studies have focused on the issue of gender in the use of computers in education (Cockburn 1985, Culley, 1988, Taylor, 2001) but again, have not differentiated by subject discipline or school subject. Where

books have attempted to address subject specific issues, the commercial need to encompass all subjects within the same volume has necessitated fairly cursory coverage of history (Leask and Litchfield, 1999, Ager, 2000). Books about history and ICT which have limited themselves to coverage of just one subject have tended to fall into the category of 'teacher help' guides, which provide practical activities or guides to history web portals, rather than research based approaches to the use of ICT in history in schools (Gardner, 1998, Gibson, 1999).

In her overview of the development of ICT in Initial Teacher Training (ITT) in the UK, Davis argued that 'the use of IT within subject studies requires extensive curriculum development' (Davis, 1992: 15). Even in the USA, (where, unlike the UK, there is an academic journal dedicated to ICT and history education, *History Computer Review*), a survey of social studies books and journals conducted by Yeager and Morris concluded that the use of computers in the teaching of history was a neglected area:

> It is clear to us from our research on computers in the social studies that little specific information on history teachers' use and potential use of computers exists. Clearly, the teaching of historical thinking with the aid of computer technology is a viable, largely unexplored part of the context for students' learning.... The extent to which schools are undertaking the fundamental refashioning of their approach to teaching history – including the application of computer technology – is worthy of more intensive study.
>
> (Yeager and Morris, 1995: 278-82)

The dearth of research in this area is also remarked on by Coulsting, author of a CD-rom on sixteenth-century history for first year undergraduates:

> Surely having the ability to bring together pictures, graphics, text and sound and even video has fantastic potential for teaching.... Why then, isn't it working? First, what I've found out is that there has been no definitive research into the delivery of courseware and students' learning styles, that students ignore CBL (computer based learning) and to be blunt, there is little evidence of it working.
>
> (Coulsting, 2000: 9)

The comparative neglect of subject discipline perspectives on the use of ICT in schools is surprising to someone whose background and interest in the use of computers in education derives primarily from experience of working in schools and with teachers and trainee teachers. To teachers, it is almost self-evident that the usefulness of computers, and the ways in which they will be used will vary extensively according to the nature of the school subject, to ideas about the nature of the subject discipline, and to views about the purposes of inflicting the subject on young people.

Data logging, for example, is invaluable for the science teacher, but is of no interest to history teachers. Integrated Learning Packages (or 'drill and skill' software, as it is sometimes called) such as Research Machines' *Success Maker* software have proved to be helpful in moving pupils forward in maths, (see BECTa, 1998) but do not seem to work for geography and history. Sharp's research (Sharp, C., 1995: 12) on the use of television and video recorder in British schools showed that some subjects made much more use of educational television broadcasts than others, with only 15% of maths departments reporting departmental use, compared to 89% of geography departments. Conversely, Simkin (1989) found that whereas 84% of maths teachers were using computers, less than 10% of history departments were making use of ICT.

Nor is there necessarily any correlation between the sophistication of the technology and its utility for enhancing teaching and learning in particular subjects. A good example of this is voice recognition software – a technological miracle, but not yet an educational one. When, in several lectures on new technology (between 1999 and 2002), I asked trainee teachers if they had seen it used in the classroom with real, live children, only one of over 600 students had ever seen it used.

Political enthusiasm for ICT in education has focused primarily on 'cutting edge' applications, such as the communications technology and multimedia facets of ICT (see Chapter 2). The word processor is 'blunt-edge' technology, compared to recent multimedia and communications technology developments, but as Walsh (1998) pointed out, from the point of view of the history teacher, it is an invaluable asset in helping pupils to organise information about the past in such a way as to make it more manageable.

Much of the research surrounding ICT in education has tended to ignore or underplay the ways in which different ICT applications might be of varying utility depending on the nature of the subject involved. One example of this was Fisher's survey of experienced teachers, asking them to rank a range of ICT competences which would be useful to trainee teachers. As with many other surveys in the area of ICT and learning, the responses did not differentiate between what might be useful to a trainee teacher of history and a trainee teacher of maths (Fisher, 1996).

Where heed has been given to the differing characteristics of subject disciplines, it has tended to be in the area of higher education. Hammond and Bennett's study of how disciplines differ in their use of ICT to support small group activities in higher education argued that 'while many uses of ICT are common across the disciplines studied... there are also some striking differences.... It is vital that such differences

are considered when advising the take-up of innovative teaching and learning methods' (Hammond and Bennett, 2002: 55). Similarly, Waggoner 's research on the differences between academic disciplines in the use of ICT revealed that a faculty member's discipline is a major factor in shaping course planning and teaching, but this was again in a higher education context (Waggoner, 1994: 175). Veen (1993) also claimed that willingness of teachers in schools to adopt new technology was influenced by their beliefs about the nature of their subject discipline, but there was limited development of the nature of these differences.

In talking of the 'underconceptualisation' of subject matter knowledge in recent research and debate about teaching and learning, Wineburg referred back to the debates about the nature of learning that had been part of the history of the psychology of education in the twentieth century:

> In the earlier part of this century, two schools of educational psychology, one stressing the generic nature of knowledge, the other focusing on what was unique about different domains, competed for adherents. Chicago's Charles Judd, who stressed the distinctive 'psychologies' of the different subjects in the curriculum... could not muster the same appeal of the all embracing, stimulus-response behaviorism of Columbia's E.L.Thorndike. The battle raged for many years, but as the historian of education Ellen Condliffe Lagemann put it, Thorndike won.
>
> (Wineburg 1997: 256)

Wineburg went on to argue that this victory led to a 'penchant for the universal, seeking to establish general laws of learning, nomothetic theories, and culture-free constructs of mind' (*op. cit.* 256), and to a tendency to see progression in learning as an aggregative or quantative process. He cited the example of the Bell and McCollum

tests where 'to get better' at history was measured in terms of breadth and depth of subject content knowledge of American presidents.

Barnard and Saunders (1994) described a more recent UK manifestation of this struggle over the nature of learning:

> Central to the issue lies the epistemological divide between a traditional emphasis on knowledge as an external landscape, and a post-Piagetian emphasis on knowledge as an individually constructed internal picture. The situation is sometimes regarded as if there were two diametrically opposed positions, cultural restorationists who see teaching as a corpus of facts and learning as a passive process of receiving this. Opposed to them are the relativists, liberal progressives for whom teaching means presenting learning activities and learning as an active process of building a mental network of relations.
>
> (*Guardian,* 28 December 1994)

One area where this struggle was fought out was the recent history of the history curriculum in the UK, with politicians on the whole arguing for the primacy of subject content knowledge, and viewing 'getting better at history' as acquiring a broader and deeper knowledge of the substantive people, events and concepts of the past, and academics in the field of history education tending to place more value on developing children's understanding of second order concepts, and understanding of the nature of the discipline of history (see, for example, Phillips 1998, Haydn, 2000a).

How useful ICT might be in the process of 'getting better at history' would clearly depend on which model of progression was being used.

The genesis and focus of this enquiry

My 'position' in this enquiry, and my interest in the use of new technology in the teaching and learning of history in schools, stems from working as a history teacher in secondary schools before the common deployment of screen based technology in the teaching of history, and during the period when computers started to be installed in schools. I subsequently worked in history teacher education with Post Graduate Certificate in Education (PGCE) trainees in the early 1990s. This entailed visiting large numbers of history departments and also assuming responsibility for developing history trainees' ability to use ICT in their teaching.

At this time, major claims were being made about the potential of ICT for enhancing educational outcomes, and about the extent to which computers were being used in schools (see Chapters 2 and 3). A Department for Education report on the use of ICT in schools in England and Wales (DfE, 1993) suggested that computers were making a significant contribution to teaching and learning in most school subjects, including history. Amongst other things, it reported that 32% of teachers were making regular use of computers in their teaching (defined as twice a week or more), including 22% of history teachers. The report indicated that 82% of history departments were making 'substantial' or 'some' use of computers in their teaching, and that 67% were making use of central computing facilities within the school.

The survey reported that the prevalence of computer use varied from one school subject to another, and that their use in history was less than in several of the other 'main' school subjects. The survey did not report, comment or speculate on why there were differences between school subjects in the use of computers, or differentiate in what ways different subjects made use of computers.

There was a degree of dissonance between these findings and my own experiences of work in a secondary school, and visits to schools to work with trainee history teachers. Only rarely had I seen any use of computers in the classroom, or listened to teachers talking about computer use in classrooms. Even though the survey indicated that only a minority of teachers were using computers regularly, the figures still seemed quite high compared to my own experiences of working in schools.

This disparity between the DfE findings and my own experiences and conjectures on computer use led me to explore the question of computer use in history teaching. This was done partly by looking at the recent history of the use of computers in schools, and partly by asking questions of trainee history teachers whilst on school visits, and of secondary teachers who were taking part in in-service training (INSET) in history and ICT. The fact that the use of computers varied from subject to subject, and that there had only been very limited attention paid to subject discipline dimensions of the use of computers in schools led me to adopt a subject based approach to the enquiry, focusing on the ways in which conceptions of the nature and purpose of school history impacted on the use of computers.

Although the initial stimulus for this enquiry arose from exchanges with learners ('A' level history students and PGCE trainees – see page 23 of this chapter and pages 150-52), the main focus of the enquiry has been on teachers' perspectives on the use of ICT in secondary history. There were several reasons for adopting this approach.

McCulloch and Watts (2003: 131) have argued that in engaging with theoretical and methodological developments in history, education and the social sciences

> historians of education should draw deeply on their own experience, their own craft, to determine how and when to do so. They should take as their starting point for such an engagement their concern to come to

terms with the major conundrums with which they have wrestled, on and off, for years.

In terms of the 'major conundrums' in the field of history and ICT in secondary schools, the primary research question which arose from the interactions with the 'A' level students and PGCE trainees was why history teachers did not make more use of ICT when major claims were made for its potential to improve teaching and learning. This paradox remained the key focus of enquiry from the initial stages of investigation, right through the eight years of empirical research, although over the course of the research, subsidiary questions emerged: what use *did* history teachers and trainees make of ICT, in what ways did developments in new technology influence teachers' attitudes to and use of ICT, and what did *history teachers and trainees* feel would be helpful in reducing the 'rhetoric-reality gap?

The decision to focus on teacher perspectives on ICT also derived from the acknowledgement that what teachers feel and believe has an important effect on the degree to which change in education will be effective (see, for example, Hargreaves, 1992, Zhao and Frank, 2003). Given the position of the author during the period of the enquiry, working with history trainees as a PGCE tutor, and with history teachers through visits to trainees and tutoring INSET courses on history and ICT, there were also advantages in terms of access to history teachers' and trainees' views on ICT.

The enquiry was further delineated by the decision to link historical perspectives on the use of ICT with current practice. Although the thesis has at its heart a historical approach to the use of ICT in secondary history, the main purpose is not to test earlier research findings in the field by, for instance, life history or oral history approaches. Rather it has been to explore changes over time and consider the ways in which developments in ICT have impacted on teachers' use of and attitudes to ICT. The

combination of historical perspectives and empirical enquiry was adopted as part of a cumulative approach (see concluding chapter, pages 275-8), which offered the most appropriate opportunities for developing insight into the potential of ICT for enhancing teaching and learning in history, so that 'our journeys in the present and future may benefit from the possession and understanding of an accurate map of the past' (Aldrich, 2003: 136).

This is not to deny the validity or relevance of other approaches to issues relating to the use of ICT in history teaching, such as learner perspectives, and gender, class and school effects on the use of ICT in secondary history, but rather to define the main focus of *this* study as teacher and trainee teacher perspectives on the use of ICT since the introduction of computers to schools in the early 1970s.

In terms of the temporal span of the enquiry, it is difficult to be precise about the exact year in which computers became a 'standard' resource available to history teachers, given that national surveys on the number of computers in schools did not start until 1985 (DES, 1986), but the commissioning of a major national evaluation project in 1974, 'Understanding computer assisted learning', which focused on several school based projects (see Macdonald, 1975) suggests that computers must have been a reasonably common phenomenon in schools in the early 1970s.

Definition of key terms and concepts

i) ICT

The Teacher Training Agency (TTA, 1998: 1) defined ICT as including 'computers, the internet, CD-roms and other software, television, radio, video, cameras and other equipment'. In its broadest sense, ICT encompasses any technology which can be used to communicate information. This definition would embrace the telephone, the

fax machine and the television, as well as the computer and its associated applications such as the World Wide Web and e-mail.

This thesis will focus on the use of computers and communications technology through computers rather than the broader definition given by the TTA. In spite of the existence of several different interpretations of the term 'ICT', and the fact that the television and video-recorder have had a substantial influence in classrooms in the United Kingdom (Sharp, C., 1995), discourse, debate and controversy on the role of new technology in education has tended to focus predominantly on the computer and the forms of communications technology associated with the computer (primarily, the internet and e-mail). This is the area where substantial claims and massive financial investments have been made. It is also an area of paradox and contention, and where there is 'the rhetoric-reality gap' to explain.

The rapid development of the internet in the early 1990s, with the exponential growth of the World Wide Web, and the facility to transfer information quickly over long distances via e-mail or electronic attachment was seen as a radical step forward for the potential of new technology to influence education, hence the change (in the UK but not in all countries) from the acronym 'IT' (Information Technology), to 'ICT' (Information and Communications Technology). In the UK, there was a general change to using the term 'ICT' as against 'IT' in the mid 1990s, but there are some exceptions to this (for example, Cohen, 2000). The use of 'IT' as against 'ICT' is not seen as indicating any substantial difference in meaning unless this is clearly indicated in the accompanying text.

ii) Trainees

This term is used for pre-service teachers undertaking courses which will accredit them to become qualified teachers. In some contexts the term 'student teachers' or 'interns' is used, but for consistency, the term trainees will be used except where quoted in the literature in other terms.

iii) Mentors

This term is used to denote teachers in schools who have responsibility for supervising and guiding the trainees in their school subject. This is not automatically the head of department, and there are many schools where responsibility for supporting the trainees on their school placement is distributed amongst several members of the department, but in England and Wales there is generally a named person who has responsibility for the welfare and training of trainees in their school subject. In Chapter 4, which focuses on the perspectives of history teachers on the use of ICT in history, the term is applied to experienced history teachers (in this case with a minimum of three years teaching experience) who are officially denoted as having formal responsibility for history trainees in their school subject.

iv) Interactivity

A contested term in the context of the use of ICT in education; interactivity is often cited as a facet or intrinsic virtue of ICT that enhances the effectiveness of the learning process (see Chapter 3). There are very differing interpretations as to exactly what forms it takes, and how it enhances learning.

v) Department for Education

The name of the government department responsible for education has changed four times during the period which is studied in the thesis. The biennial reports of the government department were initially commissioned when the department concerned was called the Department of Education and Science; the name changed through the Department for Education, the Department for Education and Employment and at the time of writing is the Department for Education and Skills. In the references, these differences are acknowledged, but in the main text of the thesis, the term 'Department for Education' has been used, generally abbreviated to 'DfE'.

What has been written about history and ICT in the secondary school? A review of the literature

Given the very limited time scale spanned by literature on the use of ICT in secondary history teaching (a period of roughly a quarter of a century in the case of some sources, and much less in others), delineation between primary and secondary sources is problematic. The literature has therefore been divided into 'official' and 'non-official' sources. 'Official' is taken to mean documents, papers and reports emanating from government departments, and agencies which have been put in place by government to act on their behalf. This category includes the Department for Education (DfE), the Teacher Training Agency (TTA), Her Majesty's Inspectorate, (HMI), the Office for Standards in Education (Ofsted), and (more tenuously perhaps), the quango set up to oversee, promote and monitor the development of new technologies in education, the British Educational Communications and Technology Agency (BECTa), which superseded its previous incarnation, the National Council for Educational Technology (NCET).

'Non-official' sources comprise academic and professional journals concerned with history and new technology, books, book chapters and academic theses which consider the use of ICT in secondary history, and the World Wide Web, which has become an interesting and significant source of information in this field, particularly over the last few years. Although this thesis confines its attention to developments in England and Wales, where relevant, consideration is given to sources from other parts of the United Kingdom and elsewhere, particularly in the United States. The thesis also draws on the reported comments of politicians, policy makers, historians and 'experts' in the field of ICT and education in the media, both in televised broadcasts and in the national press, given that these are part of the historical record in the area under consideration.

The next section of the thesis provides a brief review of the sources which are germane to this enquiry: their nature, extent, 'position', problems and limitations. The developed analysis and explanation of the story which they tell, and how that relates to the empirical enquiries detailed in Chapters 4 and 5, is given in Chapter 3 of the thesis. The range of sources considered is important, as different strands of the historical record on the use of ICT in secondary history reveal very differing ideas about the rationale for the use of computers and communications technology in education, different 'stories' about their use in the teaching of history over the past two decades, and different ideas about progression in ICT and history, and what it meant 'to be good' at ICT and history (see Chapter 3).

a) Official sources

i) National Curriculum documentation

From the Interim Report of the National Curriculum History Working Group (DES, 1989a) to the most recent revision of the National Curriculum for history (DfEE/QCA, 1999), there have been a range of curriculum documents relating to the use of ICT in the teaching of history. These include non-statutory guidance for the subject (NCC, 1991), and draft proposals for the revision of the arrangements for the teaching of history in schools (SCAA, 1994). These documents show shifts in the emphasis, nature and rationale for the use of computers in history teaching. They demonstrate the 'mindset' of policymakers and the committees which deliberated over these curriculum specifications, but these are often stated in very general and minimalist terms. They give some information and insight into the increasing importance attached to ICT, but they also serve to substantiate the assertion of Duncan Graham (Chief Executive of the National Curriculum Council at the inception of the National Curriculum), that little time and thought had been given to thinking through exactly what computers and communications technology might offer to teachers of particular school subjects in secondary schools (Graham, 1993).

ii) Policy statements and research surveys undertaken by the Department for Education

The succession of policy statements flowing from the DfE at frequent intervals between the late 1980s and the present day give an indication of the importance attached to this facet of education policy. They also provide insight into the shifting rationale behind the drive to technologise schools, particularly when set against the public statements of politicians.

A second important source of information about the government's perspectives on the ways that ICT might be used in education can be found in the electronic sources which it sponsored, such as the National Grid for Learning (www.ngfl.gov.uk), the Virtual Teachers Centre (www.vtc.ngfl.gov.uk), and the Standards Site (www.standards.dfee.gov.uk), and Curriculum Online (www.curriculumonline.gov.uk). As will be noted in Chapter 2, these electronic information portals were seen as an important part of government strategy on education and ICT. Later chapters of the thesis consider the gap between government hopes for these sources and the extent to which history trainee teachers and practising teachers made use of them.

A further important contribution of departmental sources to the main research question of this thesis lies in the roughly biennial surveys of the use of computers in schools from 1985. Not only do these surveys provide an important source of information about the extent of computer use in schools, they were one of the sources which disaggregated such use by school subject. Both the longitudinal scope of the surveys, and their scale, make them an important source of reference. An indication of the scale of the research can be gleaned from the 1996 survey, which was carried out in a representative sample of 813 primary, 646 secondary and 413 special schools in England, with response rates of 54%, 33% and 56% respectively (DfEE, 1997a: 2). As the 1996 survey pointed out, the roughly biennial timing of the surveys made it possible to compare findings with the results of previous surveys, and to discern trends and developments in the extent to which, and the ways in which computers were being used in school subjects.

However, in spite of their scale and frequency, these surveys were not unproblematic. The pace of developments in ICT made it difficult to ask exactly the

same questions over time, a factor which affects all attempts to conduct longitudinal research in this area. Although some questions have remained constant (expenditure on ICT, computer to pupil ratio), others have been introduced more recently. One example of the latter was the increasing emphasis on the impact of the internet and the 'connectivity' issues arising out of the revolution in communications technology in the 1990s, with questions about access to the internet, the use of school web sites, and the number of teachers and pupils with personal e-mail addresses. These connectivity issues were to have a profound impact on the government's thinking about how ICT might be used in the field of education (see Chapters 2 and 6).

The attempt to chart the development of the use of ICT in schools for research purposes is a good example of the ways in which research questions change and evolve in the light of emerging findings and changing circumstances. The surveys and the responses to them also brought about a realisation that it was not enough simply to measure how many computers were in schools and how often they were being used. More consideration needed to be given to how much, and in what ways, ICT was influencing and improving the quality of teaching and learning in schools. The department therefore commissioned a series of evaluation studies to complement these biennial surveys (see next section).

The surveys also raised important questions about research methodology. There were major differences between the findings of these large scale surveys and a number of smaller 'independent' studies of the use of computers in schools. These are considered in Chapter 3.

iii) Projects, materials and evaluation studies carried out by the British Educational Communications and Technology Agency (BECTa)

The National Council for Educational Technology (NCET) was the government's main agency for developing the educational use of technology until it was superseded by the British Educational Communications and Technology Agency (BECTa) in 1998. Many of NCET's earlier reports and initiatives were generic rather than subject focused (NCET, 1994, NCET, 1996a), but a major government funded initiative, *History Using IT*, which was undertaken between 1996 and 1999, marked a move towards a more subject based approach to the use of new technology, which was mirrored by the initiatives of other agencies such as the Teacher Training Agency. As well as spelling out a model of 'pupil entitlement' to ICT in secondary history, and providing exemplification (NCET, 1996b), the project supported exemplar working materials for secondary schools in the area of word processing and data handling (NCET, 1997, 1998). These were widely used in schools, and this was perhaps the first initiative in the field of ICT and school history which could make such a claim. The impact of the initiative is explored in more detail in Chapter 3.

More recently, the DfES commissioned BECTa to produce a series of research and evaluation studies with the aim of evaluating the progress of the government's *ICT in schools* programme and examining the impact of ICT use on standards of pupil attainment. These studies focused on the impact of ICT on school standards in the core subjects of English, maths and science, but elements of the ImpaCT2 Report on pupil learning and attainment suggested that differentials in ICT use had no statistically significant impact on pupil attainment in history. In some subjects, such as science and craft and design technology, high ICT use appeared to have led to a boost in pupil attainment (Harrison *et al.*, 2002).

iv) Reports and policy documents of HMI and Ofsted

The perceptions of Her Majesty's Inspectorate (HMI) of the role and potential of computers in school history can be traced back to 1985, with a short section of *History in the primary and secondary years: an HMI view*, being devoted to the use of computers in the history classroom (DES, 1985). A later overview of the role of history in the school curriculum, *History from 5 to 16* (DES, 1988) provided further insights into HMI thinking on the place of computers in the history classroom.

HMI's position on the use of new technology in history teaching was further defined and clarified when HMI Carole Baker (1988) gave the keynote address at the first International Conference on *Computers in the History Classroom* at Leeds University in 1988 (see Chapter 3). At this point, HMI's data about the use of computers in secondary history classrooms were very limited, but Baker drew attention to the organisations that were being set up to pioneer and promote the use of computers in school history, including the Association for History and Computing (AHC), and the Historical Association's Advisory Body on Information Technology (HABET).

In the aftermath of the Education Reform Act of 1988, HMI was subsumed into the Office for Standards in Education (Ofsted), and Ofsted reports on school history are another useful source in assembling a narrative of the use of computers in school history. But until a major survey targeted particularly at the effect of government initiatives on the use of ICT as they influenced secondary history (Ofsted, 2002a), comments on the use of ICT in secondary history were typically limited to a brief paragraph in the general reports on the subject. These consistently pointed to very limited exploitation and use of ICT in school history (see, for instance, Ofsted, 1993, Ofsted, 1995, Ofsted, 2000, Ofsted, 2002b). These findings are explored in more

detail in Chapter 3. As with BECTa, much of Ofsted's output on issues relating to the use of ICT in schools was generic rather than subject specific.

v) Regulations for the training of teachers

A study of the changing regulations for the accreditation of new teachers reveals some of the changes in thinking about the use of ICT in school history, both in terms of the importance attached to proficiency in the use of new technology, and in terms of what in meant 'to be competent' in the use of new technology as a history teacher (DES, 1989b, DES, 1992, DfEE, 1998b, DfES/TTA, 2002). At some points these stipulations had a profound influence on the way that history teachers were prepared for using ICT in their teaching (see Chapters 3 and 5).

vi) Materials published by the Teacher Training Agency

In addition to its role, in cooperation with the Department for Education, in defining the competences required by trainee teachers in the area of ICT, the TTA has published several documents which aim to guide trainees in the development of proficiency in ICT (TTA, 1998, 1999a, b, 2002).

A study of these documents provides insight into changing emphases in the approach to developing the ICT competence of trainee teachers, and shows that there was a move towards paying more heed to the subject specific implications of using ICT in classrooms. When compared to the pronouncements of politicians on the rationale for the use of ICT in schools, such a study reveals clear differences in emphasis, with rationale, exemplification and specified competences focused principally on using ICT to enhance the quality of teaching and learning in school subjects. The creation of technologically enabled pupils was at most tangential to this

main aim. It is also possible to chart changes in the approach to the development of trainee competence in ICT, with earlier documents adopting an objectives led approach, with the specification of dozens of disaggregated 'micro-competences' in the use of computers, and later publications adopting a more holistic and less prescriptive approach.

Specification and advocacy did not necessarily translate into classroom practice. Chapter 5 considers the extent to which trainees took note of these exhortations and requirements.

b) Non-official sources

i) *Teaching History*

The main professional journal for history teachers in England and Wales, *Teaching History* provides one of the most helpful strands for examining the historical record of the use of computers in the teaching of history in secondary schools, not least because, unlike some other sources, it documents the period from the earliest pioneering experiments with the use of computers in school history, going back to as early at 1979 (Labbett, 1979), to the most recent developments. Whereas DfE and Ofsted monitoring of the use of ICT in the history classroom did not start until the 1980s and 1990s respectively, *Teaching History* documents the earliest forays into the use of computers in school history (see Chapter 3). The volume of reportage of developments in school history and ICT increased as the twentieth century progressed, with special editions dedicated to the use of computers in school history in 1989, 1998 and 2001, and a gradually increasing percentage of coverage devoted to history and new technology from the 1990s onwards. The inception of a regular feature on the use of computers, 'Computer update', from 1985, and a column allocated to the

Historical Association's advisory body on the use of educational technology (HABET) from 1990 provide a frequency of data which is not available from many other sources. Another advantage of *Teaching History* for the researcher is the insight it affords to the perspectives of practising teachers. Although some of the contributors to the journal were academics, (largely from the world of teacher education, and therefore with some connections to the world of practising teachers), the bulk of the readership, and many of the contributors, particularly in recent years, were classroom teachers. This strand of the discourse on history and ICT in schools is not always well represented, given that most teachers do not have the time or inclination to publish their views and experiences in academic or professional journals.

Although it might be an overstatement to claim that *Teaching History* has consistently and representatively provided access to the voice of the history teacher over the past 30 years, by comparison with academic journals and government proclamations on history and ICT, it gives different insights into the views of classroom history teachers. Analysis of what has been written about the use of computers in school history in the journal reveals a marked absence of any qualitative or quantitative survey of the use of computers in secondary schools. Articles typically report on case studies, particular projects or single-school experiences of using new technology in the history classroom, and often involve teachers providing an evaluation of their own innovations and experiments. In spite of these caveats, the journal remains an indispensable part of any attempt to construct a historical perspective on the use of new technology in secondary schools. As a repository of information which goes back over a quarter of a century, it is one of the few sources which, when analyzed across the full period, for changes in emphasis, focus and application, gives access to '*la longue dureé*' (in comparative terms).

ii) Academic journals with a specific focus on history and ICT

Another useful source was the published proceedings of the Computers in the History Classroom Conferences (1988-1997). This conference met roughly biennially and provided a forum for scholars worldwide who were interested in the use of computers in the history classroom. Earlier proceedings were principally descriptions of case studies and pioneering projects in history and ICT, but Almond and Tomlinson (1990) provide an early survey of history teacher perceptions of the computer in the classroom. Later volumes provide more critical analysis of the use of computers in school history, and Chapter 3 draws on several of the papers from the Luxembourg and Glasgow Conferences (Lehners *et al.,* 1996, Hillis and Martin, 1999). Many of the papers referred to from these conferences provide data on history teacher and trainee teacher response to the use of computers in their teaching, but it should be acknowledged that such conferences could reasonably be expected to attract enthusiasts and 'believers' rather than cynics and 'Luddites'.

Also of relevance to the enquiry were the journal and books emanating from the Association for History and Computing (AHC). Although the vast majority of papers in both the journal and the books focus on the use of computers for research purposes and for teaching at undergraduate or postgraduate level, both Volume 1 and 2 of *History and Computing* contain papers on the development of computer use in schools (Blow, 1987, Wild, 1987, Wild, 1989). These papers are referred to in Chapter 3 to give an indication of the position of computers in secondary history schools in England and Wales in the late 1980s.

An international perspective on the use of ICT in school history was provided by papers published in *History Computer Review.* Published twice annually from 1985,

this US based international journal focused on the use of computers in the teaching of history. As with *History and Computing*, the majority of the papers relate to teaching at undergraduate level, and the journal has a strong US bias in terms of contributions. Many of the papers relate to the teaching of US history, but the journal does provide a helpful overview of the ways in which the use of computers in the teaching of history has changed over the past 18 years.

There is heavy emphasis on the use of databases and simulations in the 1980s and early 1990s (Schick, 1985, Mattisen, 1989), moving to consideration of the use and potential of CD-roms in the mid 1990s (Rosenzweig, 1993, Hillis, 1996), and moving on again to reflect the impact of communications technology and the uses of the internet, with over 80% of papers focusing on this facet of ICT in the issues from 1998. The journal's millennium issue also contained predictions from academics in several countries on what role ICT would play in the history classroom of 2015 A.D. (Corbeil, 2000, Haydn, 2000b, Hillis, 2000, McLachlan, 2000, Schick, 2000a). The journal also contains several papers which explore the ways in which computers and communications technology provide 'interactive' learning in school history (Schick, 1995, 2000, Rickman, 1999, Slatta, 2001), a question that is explored in Chapter 3 of the thesis.

iii) Academic journals with a focus on history and education containing papers on the use of ICT in school history

These included papers from the *Journal of the International Society for History Didactics.* More recent volumes of this journal contain several papers on the use of ICT in secondary history, and provide a European perspective which is rarely featured in *History Computer Review*. In addition to describing European initiatives and

projects in the field of ICT and school history, several of the papers (Beaber, 1998, De Keyser *et al.,* 1998, 2000, Colpaert *et al.,* 2000) consider the pedagogical issues involved in the use of computers, and the question of 'interactivity', which are discussed in Chapter 3. Behre (1998) makes the important point that not all countries have been equally zealous in pursuit of the technologisation of schools, and that there are differing views about how useful computers and communications technology are for enhancing teaching and learning (see Chapter 2).

Also of relevance were several papers published in the *International Journal of Historical Learning, Teaching and Research.* Most issues of this recently founded journal have contained at least one paper on the use of ICT, reflecting the increasing prominence accorded to the issue. All the papers focus on the subject specific dimensions of the use of ICT and on pedagogical issues. Elements of a paper by the author (Haydn, 2002) form part of the analysis of ICT use in school history in Chapters 4 and 5. There are also papers which point to changing conceptions of what history in schools is for, which have implications for the part that ICT might play in a historical education, which are drawn on in Chapter 3 (Lee, 2001, Nichol and O' Connell, 2002, Virta, 2002).

The annual conference proceedings of the Standing Committee for History Teacher Educators (History Teacher Education Network from 2000) were also a helpful source as they contained several papers which provided insight into the perspective of history teacher educators on the use of ICT in secondary history.

The year 1992 saw the first meeting of the Standing Conference for History Teacher Educators in the United Kingdom, an association of those involved in the training of history teachers. In 2000 it changed its name to the History Teacher Education Network (HTEN). A book has been published annually with a selection of papers

from the conference, and several of the papers relate to developments in the use of computers in the history classroom.

The papers provide a different perspective on the use and development of ICT in school history, that of university lecturers in higher education, working with both trainee history teachers and practising history teachers. Many of the contributors are former history teachers, but the papers have a more clearly defined research focus than contributions to *Teaching History*.

Although some are based on case studies within particular schools, there are also more general surveys, using both qualitative and quantative data. The studies are on a much smaller scale than 'official' surveys of the use of ICT in school history conducted by DfES, BECTa, and the National Foundation for Educational Research (NFER).

Of particular relevance to this enquiry are the papers of Austin (1995a, 2000) and Easdown (1997a, 2000), which provide data on the attitudes of history teachers and trainee teachers to the use of ICT which can be contrasted with the data obtained from the empirical enquiries of the author (see Chapter 5). The HTEN books also contain an earlier survey by the author on the problems of developing PGCE trainees' use of ICT (Haydn, 1996b).

Reference is made in Chapter 3 and the concluding chapter to the Yeager and Morris (1995) survey of the use of computers in history education in selected social science journals. A survey of the journal *Canadian Social Studies* reveals one paper which focuses on the use of ICT in school history, arguing that because both history and computers are information based, there is a natural link or affinity between the two. Examples are given of the use of databases, word processing and desktop

publishing which mirror the types of use which were adopted in approaches in England and Wales during the same period (Farnworth, 1992).

iv) Papers published in ICT and Education journals

There are many academic journals specialising in the use of new technology in education. Much of what has been written is not differentiated in terms of subject disciplines, and much relates to the use of ICT in higher education. Literature from these sources is considered here only when it is germane to the central research question of the thesis – the use of ICT in secondary school history. Although many journal articles and research findings do not focus primarily on the subject specific dimensions of the use of ICT in education, there are papers which, at least in part, address subject specific aspects of the use of ICT, most notably where there is a comparison of the extent to which teachers in different subjects make use of ICT and have different attitudes to the use of ICT (see, for instance, Blow, 1991, Waggoner, 1994, Lienard, 1995, Summers and Easdown, 1996, Cuckle *et al.*, 2000, Williams *et al.*, 2000, Hammond and Bennett, 2001). There are also papers in 'general' ICT and Education Journals which have implications for the deployment of ICT in the teaching of history, such as Laurillard's (1998) study of the impact of multimedia technology on the learner's experience of narrative, given that narrative is a key component of history as a discipline, and Freeman and Tagg's paper (1985) on the use of databases in the classroom. On occasion, papers in 'general' journals do focus exclusively on the use of ICT in a particular school subject, such as Easdown's (1994) study of history mentors and trainee teachers, and the Nichol *et al.* (2003) study of the use of hypertext exercises as against card sort activities in history. Easdown's work is

particularly helpful in offering a source of comparison with some of the empirical enquiries carried out by the author in Chapters 4 and 5.

v) Books, book chapters and theses

Early books on ICT and school history were sponsored by the Historical Association and organisations such as the Microelectonics Education Programme (MEP). Examples included *Exploring History with Microcomputers* (Wilkes, 1985), and two collections supported by the MEP in conjunction with the Historical Association (Blow and Dickinson, 1986, Dickinson *et al.,* 1987). Most of the contributions described early experiments with computers in the secondary history classroom (see Chapter 3 for more developed analysis of these developments). The tone of the latter two volumes was described as 'proselytising' by one reviewer (Barker, 1987) but there was some survey evidence to suggest that growing numbers of history teachers were becoming interested in the use of computers. Blow and Dickinson (1986), and Lewis (1985) provide some qualitative data about pupil views of early computer software in history (see Chapter 3). To these early volumes could be added the published proceedings from the Computers in the History Classroom Conference (see above), while Schick's (1990) *Teaching History with a Computer* provided a guide to how the use of computers was developing in the United States (see Chapter 3).

A 1997 collection (Martin *et al.,* 1997) brought together a wide range of contributors (over 25) which offered a world wide perspective on the ways in which the computer was impacting on teaching and learning in school history, but although the collection offered breadth, and insights into which particular facets of ICT were influential at the time, a substantial majority of the contributions were case studies of particular programs and applications, often written by the protagonist of the initiative

or project. The book provided little or no insight into the extent to which these projects were impacting on classrooms outside the trialled environment, or into history teachers' attitudes to the growing importance attached to new technology.

A later collection, which focused mainly on the use of ICT in history classrooms in the United States (Trinkle and Merriman, 2001), gave an indication of the extent to which the internet now dominated discourse about the use of ICT in the teaching of history. Although several of the chapters relate to the study of history at undergraduate level, those pertinent to school history are considered in Chapter 3. Again, they provide little or no insight into some of the questions which are central to this thesis – the use of ICT by history teachers in England and Wales, and the attitudes of those teachers to the use of computers. They do provide insights into claims made for the potential of ICT in school history, and into the nature of 'interactivity' in the use of computers in the history classroom.

A more recent collection focuses on the use of ICT in secondary history in England and Wales (Haydn and Counsell, 2003), and includes a summary of Ofsted inspection findings on the use of ICT (Harrison, 2003), and chapters by history INSET providers and initial teacher education history tutors. These chapters are referred to in more detail in subsequent chapters.

In terms of chapters within books on history teacher education and history teaching, it is surprising to find that even into the 1990s, many texts widely used in the training of history teachers (see Husbands and Pendry, 2000) have no chapter on the use of ICT in history teaching. This suggests that the importance accorded to this facet of history teaching accelerated only slowly in the consciousness of history teacher educators, and that it was not until the internet came to 'maturity' or prominence in the mid 1990s that ICT assumed its current status within the pedagogy of history teaching.

More recent publications on the teaching of history in secondary schools do contain a chapter on the use of ICT (Haydn *et al.,* 1997, Munro, 1999, Haydn, 2000b, Britt *et al.,* 2000, Phillips, 2002), and as with recent contributions to *Teaching History,* the chapters reflect changes in the ways that ICT is seen as making a contribution to teaching and learning in secondary history. The chapter by Britt *et al.* also gives an indication of US perspectives on changes in the role of ICT in history, and on changing views of the purposes of school history which influence the part that ICT might play in history teaching.

Although it does not focus specifically on the use of ICT in school history, the PhD thesis of Martin Cohen (2000) points out the differing perspectives of the people involved in the use of ICT in education and presents a helpful framework for comparing the views of policymakers, teachers and pupils on the use of ICT. This is referred to in Chapter 2.

vi) Sources from the internet

Chapter 3 of the thesis draws on some materials from the internet which are not available in published form but which can be attributed by their web address. These include research findings of the Fischer Family Trust on the use of ICT in secondary history carried out in 2000 and 2001 (www.fischertrust.org/history.htm), papers from online journals (Rykken, 2001, Simkin, 2003), and extracts from online discussion forums on the use of ICT in secondary history (www.schoolhistory.co.uk/forum) which have provided a 'bottom-up' counterpoise to the 'official' sites sponsored by the DfE.

vii) Public statements of politicians and policy makers on the use of ICT in education

These form an important contribution to the thesis as they help to explain the disjunction between policy formation on the use of ICT in schools, and the perspectives of practising teachers on the ways in which new technology impacts on their practice (see Chapter 2). The sources are generally attributed to the media source in which the statements were reported. They are referenced as fully as possible, with the name of the television programme or radio broadcast and date of transmission in the case of television and radio broadcasts, and the name and issue date of the newspaper in which the politician or policy maker was quoted, with the title of the article where this is available.

Methodology

i) Research approach

Research questions can be examined according to many different methodological principles or research approaches/traditions, and using a wide range of methods. The decisions as to which approaches to take are influenced by appropriateness to purpose considerations, but also (particularly with unfunded research) by pragmatic factors, such as manageability, cost etc. It is also important to acknowledge the part played by the background of the researcher, or what Hexter (1972) termed 'the second record'.

The methodology used in this enquiry reflects a combination of the author's own background in higher education, drawing as it does on both the use of historical perspectives (Aldrich, 1997), and later in the thesis, empirical enquiry through the use of survey approaches, with elements of ethnography and action research.

In the early sections of the thesis, the approach adopted is that of the deployment of historical perspectives in order to gain insights into the use of ICT in secondary school history in England and Wales. This is done by examining different strands of the historical record in the area in question. Aldrich (1997) cites the example of Sharp's work (Sharp, P., 1995) on the work of governing bodies as an example of this approach, where a study of the past contributes to an understanding of the present, and helps to inform future policymaking. Reid (1986) and Goodson (1994) also argue that policies and actions in social policy are built at least in part on the legacies of the past and that the historical dimension therefore has a part to play, or is one of the ways of constructing understanding of current issues and problems in education.

Aldrich (1997: 5) makes the point that if history is to be used in such ways, 'it is incumbent upon the professional historian of education to ensure that such usage is as accurate as possible, both in its representation of the past, and in the connections established between past, present and future'. It is therefore not sufficient simply to present or chronicle the historical record, or even to ensure that all voices and strands of the record are heard. There is also a need to 'weigh' and test the evidence emerging from the various strands of the historical record (see Chapter 2). Cherryholmes (1993: 1) warns against 'naïve' readings of texts which are 'deficient in informed judgement', and Maclure (1994: 285) stresses the need to 'interrogate' policy texts and public discourse, rather than taking them at face value. This is partly a question of considering the unconscious or unarticulated assumptions of the texts, but also, of taking into account the 'position', (rather than 'bias') of the contributors to the historical record, and understanding that politicians and educationalists may have differing views about what education is for, which in turn impact on the role which ICT might play in education.

The later sections of the thesis (Chapters 4 and 5) adopt an empirical approach to the principal research question, through the use of survey methods (questionnaire and semi-structured interview) to derive insights into aspects of education policy and practice. These chapters report the enquiries which the author has undertaken in the field of ICT in secondary history over the past several years. This is principally in the form of questionnaires and interviews, but there is also analysis of some course documentation and trainee feedback which has been accumulated in the course of working with history PGCE trainees. In all instances, it was made clear that participation in the research, completion of the questionnaires, and involvement in interviews was optional, and participants were informed about the objectives and context of the research (British Psychological Society, 1997: 3.1).

There are also elements of ethnography and action research in some strands of the research. The author draws on work done, and sources deriving from work with history PGCE trainees, particularly in trying to ascertain what activities and interventions trainees felt to be of benefit in 'getting better at ICT' in history. Hammersley and Atkinson (1995: 1) describe an ethnographic approach as follows:

> In its most characteristic form it involves the ethnographer participating, overtly or covertly, in people's daily lives for an extended period of time, watching what happens, listening to what is said, asking questions, in fact, collecting whatever data are available to throw light on the issues that are the focus of the research.

Much of the data obtained in the three stages of data collection derived from teachers and trainees known to the author, with whom the author had some form of working relationship, in the case of some mentors, a working relationship that extended over several years. The initial data obtained from 'A' level students and

PGCE trainees in the first phase of data collection (see pages 150-2) was collected whilst working with the students and trainees, rather than as an 'outside' researcher. In such cases, Elliott (1988) warns of the importance of acknowledging the possible influence of 'insiderness', and in particular, the danger of respondents wishing to provide what the researcher is looking for. In addition to exercising caution when considering such data, triangulating the responses of teachers and trainees provided one way of checking for such distortion in the ethnographic strands of the enquiry (see Chapters 4 and 5).

The action research element in the enquiry derives from elements of the data where the author has reflected on his own practice in the field of history and ICT in secondary schools, particularly in trying to improve the ways in which trainee teachers are prepared to use new technology in their teaching. As well as analysing relevant data, this entails conscious reflection on the actions and practices which have taken place over the period of the enquiry.

Elliott (1991, 1998: 14), an influential figure in the field, explained action research in terms of the study of educational situations with a view to improving the quality of action within them, and enunciated several key features which characterised 'good' action research. These included a focus on changing practice, the gathering of evidence about the extent to which (educational) practice is consistent or inconsistent with the aim of the practice, teacher reflexivity, and activities which 'provide a basis for wise and intelligent decision making'.

ii) Rationale for the research approach

The decision to combine 'historical perspectives' with survey approaches was taken for several reasons. Looking at the historical record was one of the most effective

ways of asking *some* of the 'questions worth asking' about the use of ICT in secondary history, not least the question, 'what were computers *supposed* to deliver?' Comparing the discourse of politicians, academics and teachers provides one form of triangulation of data. A study of what has been written and said about the use of ICT in education, and in secondary school history in particular, provides insight into the differing philosophies and perspectives on the use of computers over time which would be difficult to gain through the use of surveys. Not only would interview and questionnaire access to key players be problematic, a survey approach would deliver no more than a snapshot of the current situation, in a field that is subject to rapid change. The pace of change in the use of ICT in education is such as to render longitudinal studies problematic.

Study of the historical record on the use of computers in school history reveals a wide divergence of results and views, particularly in areas such as how much history teachers have used computers in their teaching. The combination of a survey approach with historical perspectives provides a further means of triangulating data on the use of ICT in school history; a way of testing some of the claims made against the empirical enquiries of the researcher. There are also some 'black holes' in our knowledge of issues concerning ICT and school history. One example of this is the absence of any research evidence about the prevalence of questions about ICT in interviews for newly qualified history teachers. There are also interesting issues around the relationship of 'big research' (large scale enquiries undertaken by bodies such as the DfES, NFER), and smaller scale surveys conducted by individual researchers (Adey, 2003, Wiliam, 2003). There has been a tendency to see 'big research' as being more reliable in terms of presenting an accurate picture of the state

of things, because of their larger sample size. This assumption is questioned in Chapters 3 and 6.

Overall, the combination of research approaches offers the potential for broader insights into the use of ICT in secondary history, with different approaches proving more effective in eliciting answers to different sub-questions in the enquiry, and also, providing a means of comparing data from the historical record with that from the author's own empirical enquiries, in the words of Johnson (1994: 8) 'honing in on research evidence from several points of view'.

iii) Data collection

The literature survey is detailed in pages 29-47. Empirical data for Chapters 4 and 5 were collected between 1995 and 2003, and are based on a combination of questionnaire and interview surveys of PGCE history trainees, newly qualified history teachers in their first year of teaching, and history mentors who were experienced practitioners with a minimum of three years teaching experience. There is also analysis of data stemming from trainee course evaluations and audits within the same period where this is relevant. The decision to obtain data from these different constituencies was in line with Elliott's expression of the basic principle that it is important to understand a situation from a multiplicity of perspectives (Elliott, 2001). SPSS and Filemaker Pro software programs were used to assist data analysis.

The use of telephone interviews with former trainees and mentors made it easier to extend the scale of the survey of those groups. Although seen as innovatory by Dicker and Gilbert (1988), recent surveys have generally been sanguine about the use of such interviews in educational research (Sykes and Hoinville, 1985, Fidler, 1994, Miller, 1995). Frey and Oishi (1985) suggest that telephone interviews reduce the threat to

validity produced by interviewer effects such as body language, but this might also reduce the interviewer's ability to gauge aspects of the 'naturalness' of respondents' comments (such as eye contact). Such disadvantages were compensated for by the opportunity which phone interviews afforded to extend the scale of the surveys.

iv) Reflections on the methodology

Elliott (1991) makes the point that applied research in education, particularly in the area of action research, involves reformulating research questions in the light of emerging findings. Rather than simply finding 'answers' to educational problems, the process of research helps to refine the questions we ask of educational processes. This is particularly the case in an area such as new technology, which is subject to rapid changes and developments. Thus, the range of 'sub-questions' which have been asked about the use of ICT in secondary school history has changed in some respects as the enquiry has proceeded, partly as a result of emerging findings, partly because educational technology has 'moved on'. Examples of this are the 'death' of the Concept Keyboard at secondary level in the 1990s: they have simply disappeared from use in secondary schools. Also, many history software programs which were exclusive to the now obsolete Archimedes computer are no longer in use. This means that, as with the biennial DfE surveys, it is difficult to construct a 'classical' longitudinal study in this area. The changing focus of the enquiry, and changes to the questions asked of history teachers and trainees does mean that the investigation has retained the flexibility to adapt to changes in the technology and policy landscapes which have impacted on the use of ICT in school history.

The use of a range of instruments to elicit information about the role of ICT in secondary history, the study of the historical record from a range of perspectives, and

the combination of questionnaire and interview survey, offer at least a weak form of triangulation. Recent years have seen an increasing acceptance of the usefulness of combining research methodologies within the same investigation (Harrison et *al.*, 2002, Davies, 2003), and of the use of both Likert scales and rating scales (Simmons, 2001). The weaknesses of questionnaire and interview surveys are well documented, (see, for example, Oppenheim, 1966, Denscombe, 1998, Munn and Drewer, 1999), but a combination of these two modes of survey can help to compensate for some of the weaknesses inherent in both survey methods when used in isolation.

Reliability and validity are acknowledged to be difficult areas in qualitative research (Goodwin and Goodwin, 1996, Cohen and Mannion, 2000). Cohen and Mannion argue that issues of validity can be addressed through 'the honesty, depth, richness and scope of the data achieved... the findings must accurately describe the phenomena [the gap-problem] researched' (Cohen and Mannion, 2000: 105-9). Hammersley (1995) advises that careful attention must be paid to the authenticity of data, its plausibility and credibility, and clarity on the nature of claims made from the research.

In terms of reliability, Cohen and Mannion (2000: 107-9) advise that researchers should revise and compare initial results by accumulating further data in as similar contexts as possible. Although there were three distinct phases of data collection in this study, precise replication in the field of ICT and schools is problematic for the reasons stated above. Some triangulation of data can be obtained by comparing the data from different constituencies, in this case from experienced and trainee history teachers. Triangulation can also be achieved by comparing the historical record on the use of ICT in secondary history with the empirical enquiries carried out by the author. A further form of triangulation can be achieved within the historical record, by

comparing testimony from different sources. One example of this is the very different interpretation of the ImpaCT2 findings (see Chapter 2). Another is Clarke's assertion (1999a) that ICT was 'not even considered something that should form part of initial teacher training' until the Labour Party had come to office in 1997. The accuracy of this statement is called into question by a number of sources which demonstrate that this was not the case (see for example, Davis, 1992).

Goodwin and Goodwin (1996) also argue that reliability can be enhanced by careful and thorough descriptions of the role of the researcher, the sampling strategy and selection of informants, the definition of key concepts or constructs guiding the study, and transparency in reporting the data collection and analysis approaches used. This also means acknowledging the possible dangers of what Cohen and Mannion (2000) term 'convenience' sampling, where the selection of respondents is to at least some degree influenced by ease of access to respondents. There is also the importance of acknowledging possible 'social' effects where there is, for example, a tutor-student or other working relationship (Johnson, 1994). The design of research instruments can also play a part in reliability. One way of achieving this is to measure both intensity of feeling and the number of instances supporting a particular point (Platt, 1981). This approach was adopted when attempting to gain insights into the comparative importance of factors deterring history teachers and trainee teachers from using ICT (see Chapters 4 and 5). A further safeguard in terms of both the validity and reliability of the study is the exercise of caution over claims made for the study. This might explain the use of the word 'suggest' as against 'demonstrate' at some points in the enquiry.

The research methodology adopted is an example of 'big research' and small scale practitioner research brought together. As Wiliam (2003: 16) has argued:

> We need both kinds of research. Practitioner research without big research is blind – not all avenues are equally worth exploring, while big research without practitioner research is empty – educational research that does not improve practice is literally a waste of time.

It is the interplay of 'big research' with small scale practitioner research which this thesis seeks to explore, in order to gain insights into the use of ICT in secondary history.

Lawrence Stenhouse (1975) described the function of educational research as to provide teachers with ideas and data which they can test out against their own experience. One test of validity, (and of the extent to which the undertaking of the enquiry has been worthwhile), is whether or not the outcomes and conclusions of the research provide teachers (and policymakers) with such ideas and data.

An overview of the structure of the thesis

This opening chapter of the thesis provides a clear statement of the main focus of the investigation (pages 13-14), together with a rationale to justify why the area in question is worth researching (pages 14-22). There is a critical review of what has already been written about the use of ICT in the secondary history classroom in England and Wales (pages 29-47), and an explanation of the methodologies which are deployed in the thesis to address the central research question (pages 47-56).

Chapters 2 and 3 of the thesis use the idea of historical perspectives (Aldrich 1997) as a way of developing insights into how and why things are as they are today, and gaining insight into how they might be in the future, in relation to the use of ICT in secondary history.

Chapter 2 explores the recent history of the role of ICT in education in the UK, and charts the increasing importance attached to the use of computers in schools, before examining various strands of the recent historical discourse on education and ICT.

Chapter 3 considers the emergence and development of the use of computers in the history classroom in schools in the UK. It details changes in views on the purposes and nature of school history which have implications for what it means 'to be good at history', for the types of learning which might secure progression in the subject, and for how this relates to the use of new technology in history in schools. There is also a survey of the emerging literature on the use of ICT in school history, the attitudes of history teachers and trainee teachers to the use of ICT, and their views on the factors which have limited the effective deployment of new technology in school history. The chapter also considers the implications for history teachers of the move from 'IT' to 'ICT' in the early 1990s, with the development of communications technology, and the construction of history 'portals' or 'gateway' sites on the internet. Subsequent chapters consider these historical perspectives against the empirical enquiries in this area undertaken by the author.

Chapters 4 and 5 report the empirical enquiries of the author, which focus respectively on the perspectives of history teachers and history trainees. The data consist of a mixture of questionnaires, interviews and course evaluation details which were obtained between 1995 and 2003. The data from these small scale enquiries are considered in relation to the contents of Chapters 2 and 3, in an attempt to question and critique the current knowledge base on the use and potential of ICT to enhance teaching and learning in school history. Chapter 6 draws together historical perspectives on ICT and school history in the UK with the empirical investigations detailed in Chapters 4 and 5 in a way that questions and challenges some of the

assumptions and claims of earlier literature in this field. It argues that a study of what has been written about history and ICT in schools, together with consideration of the empirical enquiries which the author has conducted in this area offers insights which provide opportunities for reducing the 'rhetoric-reality gap' which has thus far characterised the use of ICT in school history.

The conclusions in Chapter 6 are presented under four headings. These are: the importance of a cumulative approach; contribution to knowledge in the field of ICT in secondary school history; implications for policymaking in ICT in schools; the future role of ICT in secondary school history.

Chapter 2

Putting the enquiry in context: historical perspectives on the use of ICT in secondary education in England and Wales

Introduction

Compared to the book, the electronic screen has had a very brief history as an educational aid, but its development and use in educational contexts has generated considerable comment in the few decades of its existence. There is now a very substantial body of literature on the effects and potential influence of computers on the educational process. It is therefore possible for historians of education to consider some of the claims which have been made for the merits of screen-based learning as against more traditional modes of education.

This section of the thesis considers the historical record relating to the use of computers in education in England and Wales. It charts the increasing importance attached to the use of computers in schools, before examining various strands of the recent historical discourse on education and ICT. The chapter also notes the emergence of a 'rhetoric-reality gap' (Trend, Davis *et al.*, 1999) in the use of ICT in education, that is to say, the substantial difference between the claims made for the use of computers in education, and its use in practice. In the final section, some conclusions are drawn as to the validity of the various strands of discourse on the use of ICT in education.

The role of ICT in secondary education in England and Wales: a historical perspective

It is difficult to dispute the impact that ICT has had on society in general in the UK. A recent study commissioned for the Department for Education and Skills to survey the

attitudes and experiences of young people aged 5-18 and their parents with regard to their school and home use of ICT found that 99% of young people used computers either at school or at home, with 78% of households owning a personal computer, and 75% using the internet at school or at home (DfES, 2002a). As early as 1985, before the massive expansion of the World Wide Web, Dede (1985) compared the impact of the computer on society, education, culture and literacy to that of the printing press.

By 2000, there were over one million computers in schools in the UK (Savage, 1999), and there were claims that the impact of ICT on society was so profound as to have changed the meaning of what it meant 'to know' something, 'to learn' something, and even to have transformed the nature of literacy (Simon, 1971, Gipps, 1996, New London Group, 1996, Loveless, 1998, Abbott, 2001). Within and beyond the UK, concern was expressed about 'the digital divide' – the belief that those who were denied access to ICT would *necessarily* be disadvantaged in society (DfEE, 1997b, OECD 2000).

But this is not to say that the computer has necessarily had as big an impact on schools as it has had in other institutions. It is possible to do a wide range of exciting and interesting things with computers compared with, for example, blackboards, but this is not to say that that they *necessarily* offer as many potential educational benefits, or are as efficient a learning mechanism as other modes of education, such as, for instance, Socratic dialogue between teacher and learner, or the reading of books. Wilkes (1985: 14) pointed out that 'computers have so far penetrated different areas of activity very unequally, with education among those least affected. (Compare the relative effects of computerisation on the life and work of a school and a bank since 1970).'

Batho (1985) noted five major advances in educational technology since the 1870s, from the cinematograph – slides, filmstrips and moving pictures, through to the

development of radio broadcasting in the first half of the twentieth century, and then more recently, television broadcasting, the photocopier, and 'most dramatically of all', (Batho, 1985: 8) the development of the personal computer.

Molnar (1997) made the point that the history of the modern computer age is a brief one, estimating it at about 50 years. The educational use of computers has an even briefer span. Molnar identified the PLATO project at the University of Illinois as the first large scale use of computers in education, with projects at Dartmouth and Stanford Universities in 1963 emerging as the first steps towards using computers in education for instruction as against research. According to Molnar, it was not until Papert's work in the early 1970s that the idea of computer based education percolated down to school level.

The development of educational television broadcasts for schools also has only a recent history, but has had a significant impact on the educational process over a period of time. Educational television broadcasts became an established feature of the school curriculum in the United Kingdom in the 1970s. The advent of the video-recorder, permitting flexibility in the timing of the use of education broadcasts, further popularised their use, so that by the early 1990s, use of educational television in classrooms was the norm rather than the exception in British schools (Sharp, C. 1995). One of the paradoxes of the debate over the role of ICT in education is that although there is evidence to suggest that the television has had much more impact on teaching and learning in UK school than the computer, its use has not elicited the same degree of interest and enthusiasm from politicians and policymakers. This paradox is explored further in Chapters 4-6.

The development of the microprocessor in 1975 made possible the deployment of computers in schools by reducing the cost (and size) of computer units, but in terms of

the educational use of computers, Britain lagged some way behind developments in the United States. (For a summary of the development of computer use in education in the United States, see Molnar *op. cit.*). However, Batho (1985: 8) wrote of 'a revolution in school equipment unparalleled in the twentieth century', with the appearance on the market in 1979 of inexpensive, portable microcomputers. The availability and provision of such technology to schools did not however necessarily translate into regular classroom use, and in terms of being incorporated into teachers' classroom practice the use of computers lagged far behind that of television and video, a phenomenon not limited to the United Kingdom. As late as 1993, an Australian survey found that 37% of student teachers on their second teaching placement had not used a computer on any occasion in the course of their training because 'the thought had not occurred' (Downes, 1993: 24).

In spite of considerable political and financial commitment, (and Batho's assertion that computers represented 'the most dramatic' of educational technology innovations), biennial government surveys, and independent research findings, indicated that the classroom use of computers in British schools remained unresponsively sluggish. In spite of pressure to incorporate the use of computers into their classroom practice, teachers were not making regular use of the increasingly large numbers of computers in their schools (see for instance Haydn, 1996a).

The introduction of computers into schools in the UK was deemed of sufficient importance to merit a roughly biennial survey by the department responsible for education from 1985 onwards. A comparison of the 1985 and 2000 surveys gives some indication of the extent to which computers have proliferated in schools in England and Wales in that time. In 1985, there were on average two computers per primary school, with a computer to pupil ratio of one to 107 and expenditure per pupil of £2. By 2000,

this had changed to 19 computers per school, one to 18 computer to pupil ratio and expenditure of £37 per pupil. In secondary schools, 1985 saw 13 computers per school, a computer to pupil ratio of one to 60, and expenditure per pupil of £3, which changed to 113 computers per school, one computer to eight pupils, and expenditure of £56 per pupil. By 2000, 98% of secondary schools were linked to the internet, and 56% of teachers and 26% of pupils had a personal e-mail address (DES, 1986, DfEE, 2000). During this period, both Conservative and Labour administrations were also making substantial financial investments in other facets of the educational use of computers, such as provision for staff training in information technology.

In addition to charting the increase in computer provision in schools, the surveys monitored the use of ICT in schools, and in some instances, head teachers' and departmental heads' perceptions of the impact of computers on teaching and learning, teacher confidence in the use of computers, and teachers' experience of in-service training in ICT. Some, but not all of these areas were disaggregated by school subject (see Chapter 3).

The surveys make interesting reading for those researching the use of ICT in UK schools, not least because the findings contrast starkly with other research on the use of computers in schools (see Chapter 3 for further development of this point). Moreover, in terms of the use of new technology in British classrooms, the biennial surveys of the extent to which the growing number of computers in schools were being used revealed that at some points, the use of computers was *in decline*. Although up to 1990, the surveys presented a picture of a gradual increase in the use of computers, thereafter, there were some negative trends, both in terms of the extent to which computers were being used in the classroom, and in teachers' and head teachers' views of their contribution to teaching and learning. The 1998 DfEE survey showed that fewer than

20% of head teachers believed that ICT was making a significant contribution to teaching and learning in their school, a considerable reduction from 1996 figures, which had risen to almost 40%. The 1998 survey revealed that in spite of improvements to specification of computers in schools, and improvements to the computer to pupil ratio, the contribution of ICT to teaching and learning had actually declined. From the 'peak' of 1990, where 38% of secondary heads had reported that ICT was making a 'substantial' contribution to teaching, by 2000, this figure was down to 20%; in primary schools, the figure declined from 31%, to 13%. The contribution of ICT to the quality of whole class and group learning was also in decline, down to 17% in secondary schools and ten per cent in primary schools (DfEE, 1998a). It is interesting to note that this question was not posed in the 2000 survey (DfEE, 2000).

The 1970s and early 1980s had seen the introduction of computers into schools, and widespread experimentation with ways of incorporating their use into day to day classroom use by some, but by no means all teachers. Denley *et al.* (1989) and Wild (1987) made the point that at this stage teachers who were exploring the use of computers in their teaching were in a minority, and were regarded in some quarters as eccentrics. In order to encourage the exploration of the use of computers in schools, government funded initiatives such as the Microelectronics Programme, the Microelectronics Support Unit and the National Council for Educational Technology were set up (Davis, 1992), and at Local Education Authority (LEA) level, advisors were appointed to support the development of the use of computers in schools. It was not until the late 1980s that the government's strategy for increasing computer use in schools moved from one of persuasion to compulsion (Griffin and Davis, 1990). Statements relating to the use of computers were written into the National Curriculum, albeit in fairly dilute form (DES, 1991b, DfE, 1995b) and the Trotter Report (1989), an

expert group set up to identify best practice in ICT in Initial Teacher Training (ITT) advocated the adoption of an ICT capability for teacher trainees within the criteria for teacher education. Training in ICT had hitherto been largely optional in ITT courses (Davis, 1992).

By the late 1990s, far from the use of computers being an optional interest for teachers in UK schools, there was considerable pressure on teachers to use ICT in their teaching. Peter Cochrane (1995), Education Officer for British Telecom proclaimed that 'in future there will be two kinds of teacher; the IT literate and the retired'. The Dearing Report (1993: 28) strengthened the position of ICT on the school curriculum, calling for ICT skills to be placed 'at the heart of the curriculum'. The criteria for competence in new technology stipulated by ITT requirements were progressively strengthened, and after 1998, included over a hundred separate statements, stretching over 15 pages (DfEE, 1998b), and any departments in secondary schools which did not demonstrate that they used computers in their schemes of work were likely to face criticism in their Office for Standards in Education (Ofsted) inspections (Haydn 1996a). One British survey found that one of the main reasons which teachers gave for using computers in their teaching was because they felt that they ought to (Cox *et al.*, 1999).

In the wake of the Stevenson Report (1997) and the McKinsey Report (1997) which reviewed the position of ICT in UK schools, and reported poor internet access and concerns about teachers' readiness to incorporate ICT into their teaching, the government announced the development of a 'National Grid for Learning' (NGfL), a massive education hub on the Internet which, it was hoped, would become a major resource for disseminating resources, information and training in education. Analysis of the DfEE's policy document *Connecting the learning society* shows that the development of the internet had if anything intensified the political interest in ICT in

education, with the belief that it would make possible a massive increase in the amount and speed of educational information which could be disseminated across an electronic education network (DfEE, 1997b). The moves to stiffen the ICT competency requirements for trainee teachers were also complemented by a £230 million programme of ICT training for serving teachers (DfEE, 1997b).

Thus, by the late 1990s, there had been substantial commitment to, and investment in ICT in schools in England and Wales, with these countries possessing a computer to pupil ratio that was 'amongst the most favourable anywhere in the world and matched only in Canada, the USA and a few European countries' (Abbott, 2001: 34) and a department for education which claimed that there was 'no place for scepticism' about the role of new technology in education (quoted in Cohen, 1999).

But in spite of the increasing numbers of computers in schools, and the growing pressure on teachers to use them, the uptake of teachers using computers in their teaching remained unresponsively slow. With the exception of the Department for Education's surveys which had at some points indicated an encouraging trend in the use of computers in schools, and one other large scale survey which reported widespread use of ICT (Harris and Preston, 1994), several other reports, surveys and commentators indicated that the use of computers in schools was proving to be problematic. In 1988, Her Majesty's Inspectorate (HMI) found that only six per cent of newly qualified teachers used computers even once in their first year of teaching (HMI, 1988). In 1994 the National Council for Educational Technology (NCET) reported that 'although teachers see computers as curriculum tools and many express confidence about their future use, very few actually use them' (NCET, 1994: 25). In 1999, Cox *et al.* noted the 'disappointingly slow uptake of ICT in schools by the majority of teachers' (Cox *et al.*, 1999: 2), a finding echoed by Selwyn (1999a).

In an overview of pedagogical issues in the UK, Mortimore (1999) cautioned that 'our enthusiasm for information technology has led us to spend much money to provide fascinating experiences for learners. We have not yet, however, found ways to use the technology to think or learn in radically different ways.' It was in this year that Trend *et al.* (1999) coined the phrase 'rhetoric-reality gap' to denote the difference between what was being claimed for the use of computers in education and what was current practice.

In 2000, Professor Stephen Heppell, Director of the Ultralab Centre at Anglia Polytechnic University, warned of the dangers of generalizing from a few isolated pioneering ventures which had been successful:

> Don't be fooled by the pool of great and imaginative projects around the world – there is a far bigger pool of inactivity or dismal activity (yes, there really are still rooms of children typing up "best copy" from their already handwritten work). For teachers in that "dismal" pool, the problem is simply that they do not know where to look for ideas, solutions and honest evaluations.
>
> (Heppell, 2000: 12)

Even as recently as 2002, reports on the use of ICT in schools were predominantly negative in tone, Kenny (2002) arguing that Ofsted findings implied that 60% of teachers still made no use of computers in their teaching. Ofsted was also critical of the dividend from the £230 million teacher INSET programme in ICT (Ofsted, 2002). Nor did findings indicate an improvement in the *quality* of learning resulting from the use of ICT. The Impact2 Report (Harrison *et al.*, 2002: 13) stated that 'classroom observations indicate that relatively few teachers are integrating ICT into subject teaching in a way

that motivates pupils and enriches learning or stimulates higher level thinking and reasoning.'

Nor was this pattern of development limited to the UK; research by Pelgrum and Plomp (1991) and Handler and Marshall (1992) suggested that the under use of computers in schools was not just a UK phenomenon.

If computers were so wonderful for educational purposes, why weren't schools and teachers using them? Is it heretical to suggest that this might reflect on the misplaced faith in the use of computers as a tool for teaching and learning, or is it primarily a function of lack of teacher competence in ICT? Or is it that the pace of technological change has outpaced teachers' ability to incorporate it into their day-to-day teaching? Is there some truth in Warhaftig's assertion that 'the computer can be a fabulous tool.... But the dirty little secret is that no one really knows what to do with this stuff' (quoted in Banks and Renwick 1997)?

Part of the process of finding the answers to these questions is to consider the recent history of the discourse about the use of ICT in schools.

New technology and education in the United Kingdom: recent discourse

Given the substantial financial investment in information technology, and its high profile in policy debates on education, politicians, academics and information technology professionals have contributed to a public debate on the role of new technology in education over the past 30 years, in a way that presents historians of education with an opportunity to examine the emerging strands of this discourse. Analysis of what has been written and said about new technology and education reveals that far from there being a consensus on the potential of ICT to enhance educational outcomes, there is a continuum of views, ranging from the unreservedly positive and

enthusiastic, to those who have claimed that the technologisation of education systems may actually have a negative effect on the processes of teaching and learning. Cohen (2000) pointed out that there was (perhaps unsurprisingly) a wide difference in 'position' between politicians/policymakers, teachers and pupils in their views on the role that ICT played in education, in terms of whether they were idealistic or sceptical, and in areas such as economic competitiveness, the provision of individualised learning, pupil motivation, social relations, and the use of new educational methods.

The next section of the thesis looks at what has been written about the use of computers in education by politicians and policy makers on the one hand, and academics on the other. Consideration of differing strands of the discourse about the use of ICT in education reveals differences not only in terms of the value and potential of ICT in education, but also in terms of what computers in education are for, what education is for, and how learning takes place. This helps to explain why the use of computers in education is a complex and contested area of knowledge.

Politicians and ICT

On a tour of television studios in 1981, Secretary of State for Education Sir Keith Joseph asked his hosts, 'Tell me, do you think television is here to stay?' (Quoted in Hoggart, 1994). It is difficult to find any subsequent statement from a politician of any party in the United Kingdom expressing scepticism about the part that new technology would play in society in general, and in education in particular.

In 1981, as a Minister of State at the Department of Trade and Industry, Kenneth Baker had advocated the promotion of computers in schools. There was a strong economic and vocational rationale behind this:

> I want to try and ensure that the kids of today are trained with the skills that gave their fathers and grandfathers jobs.... And that is the reason that we've pushed ahead with computers into schools. I want youngsters, boys and girls leaving school at sixteen, to actually be able to operate a computer.
>
> (Quoted in O'Shea and Self, 1983: 27)

Baker (1993: 59-63) expressed the ambition to equip every school in England and Wales with a computer, and saw the development of a technologically enabled teaching force as fairly straightforward, explaining to a conference of education officers in 1988 that from henceforth, such skills would be built into initial training courses (Baker, 1988).

This emphasis on the vocational justification for computers in schools was to be a consistent strand in politicians' statements about the virtues and importance of ICT, running from Baker to Wills (2001), who argued in the traditional ministerial opening speech at the British Educational Technology and Training (BETT) Conference that 'every child should leave school fully capable of using new technology as 90% of jobs involve some sort of interaction with ICT'. In the DfES policy document *Transforming the way we learn: a vision for the future of ICT in schools* (2002b: 4), which spelled out targets for the National Grid for Learning, there was reference to the potential of ICT to boost the prospects of British industry, and to make Britain 'a world leader in the export of learning services', but no mention was made of improving teaching and learning in school subjects. It was not until a 2003 document, *Fulfilling the potential: transforming teaching and learning through ICT in schools,* that a much more explicit emphasis was put on teaching and learning issues, with the statement that 'ICT can make a significant contribution to teaching and learning across all subjects and ages, inside and outside the curriculum' (DfES, 2003: 2-3).

A study of the statements of politicians from all parties in the United Kingdom shows that they have been unequivocally positive about the part that new technology would play in enhancing educational outcomes. Even New Right think-tanks, generally critical of 'progressive' influences in education, did not include new technology in their catalogue of pernicious trends in education.

Parties were careful not to be outbid in their commitment to investment in new technology for education, which was at times elevated to a matter of national survival and success. Conservative Minister David Hunt (1995) stated that 'the nation which embraces technology most willingly and most effectively will be the winners in tomorrow's world'. Education Minister Eric Forth (1995) claimed that 'Britain leads the world in IT in schools', and another Conservative Minister, John Redwood (1995) argued that 'our children are in no doubt. They are dancing to the tune of cyberspace.... Even French grammar can captivate if it is presented in colour, on screen.'

Analysis of the public profile of the Labour Party on the role of ICT in education shows that they were determined not to be outbid in presenting their credentials in this area of education policy, with high-profile conferences such as *Windows on the future* (London, 18 October 1994), and the report *Opening doors to a learning society* (Labour Party, 1994) both highlighting Labour's plans for developing the use of computers in schools, and the 1997 White Paper expressing the determination to 'create a society where, within ten years, information and communications technology (ICT) has permeated every aspect of education' (Labour Party, 1997: 41).

As Labour Party leader, and later as Prime Minister, Tony Blair was particularly evangelical and insistent about the educational potential of new technology, with a succession of high profile statements about the essential part which new technology must play in raising educational standards, including the claim that 'the future lies in the

marriage of education and technology. The knowledge race has begun. The pace of technological change means the task is urgent. Knowledge is power. Information is opportunity' (Blair, 1995a: 14). In the foreword to *Connecting the learning society*, he pledged his commitment to connecting all schools in the United Kingdom to the Internet by 2002, with a rationale not dissimilar to that given by Kenneth Baker over a decade earlier; 'children cannot be effective in tomorrow's world if they are trained in yesterday's skills'; 'helping our businesses to compete' (DfEE, 1997b: Foreword).

Labour politician Charles Clarke (1999b) elevated new technology above even literacy and numeracy in asserting that 'familiarity with ICT is the most vital life skill for the generation now going through school', and Secretary of State for Education, Estelle Morris insisted that ICT would be 'our new DNA, or our new internal combustion engine.... My biggest fear is that we get it wrong and miss the chance. The thing that worries me most is that we cause the digital divide to grow' (quoted in Russell and Stafford, 2002: 2). The Government's White Paper, *Schools: building on success* (DfEE, 2001a) claimed that the use of ICT would become routine in virtually every classroom, and at the BETT Conference in January 2001, the government's Minister for ICT, Michael Wills, announced 'the completion of the first stage of the ICT revolution in schools' (Wills, 2001).

In spite of a substantial increase in the number of research studies which suggested that computers were not an unproblematic panacea for educational improvement, the enthusiasm of politicians of all parties appeared to be undimmed. This unqualified belief in the power of new technology to enhance teaching and learning was one of the few areas of consensus in educational policy in the 1990s, (in terms of the discourse of politicians and policy makers), in spite of the absence of a corresponding academic

discourse or a substantial body of research evidence to corroborate this inchoate enthusiasm. As Heppell (1995) cynically remarked,

> Ever since Harold Wilson spoke of the white heat of technology, politicians and decision makers have assumed that silicon offers a hot-wired short-cut to voters' hearts, especially when jobs, schools and national pride entered the equation. A succession of ministers, from Benn to Baker, embraced technology with photogenic relish; when did you last see an Education Minister in the media without a computer in the background?

Where precise advantages of computers in relation to the processes of teaching and learning were specified by politicians, the facility to increase access to information was seen as one of the key educational attributes of new technology. In advocating the extension of internet access in schools, Blair made the point that new technology could increase the volume of information available to learners: 'It's going to bring libraries and archives right into the classroom.... The children can access virtually anything they want' (Blair, 1998).

A concomitant of this belief was a concern about the danger of the creation of an information underclass, which might not have equal access to new technology (DfEE, 1997b).

Another strand of political discourse on new technology was the faith placed on the 'interactive' capability of multimedia technology to make learning more effective. Here is Blair again:

> The other important thing about CD-roms of course is that they are interactive. Learning is no longer a matter of passively receiving information; you can become actively involved in the process yourself, answering quizzes,

> manipulating images, summoning up pictures or music and pasting together your own notebook of words, images and sounds on screen.
>
> (Blair 1995b)

The possibility of cutting educational 'unit costs' through the use of new technology in education has not been a central strand of public political discourse, but is seen by some academics as one of the hidden agendas behind the political imperative to technologise education. Cohen (1998) talked of 'Techno-Utopianism – one of New Labour's many intellectual vices.... The belief that interactive technology can replace old-fashioned and expensive teachers... the love of gadgets and gee-whizzery.'

Margaret Hodge's claim that 'if pupils are working from lessons on the internet, a trained classroom assistant may be as useful as a teacher.... The teachers' monopoly in the classroom will be brought to an end.... We should be thinking of employing fewer teachers not more' (quoted in *The Guardian*, 21 May 1998), and the comment by Estelle Morris (2002) that '1% on the school pay bill costs £150 million, which could be used for workforce reform and equates to, for example, many thousands of support staff or nearly 150,000 laptops', are both statements which give some credence to this belief, and contribute to a degree of suspicion and scepticism in elements of educationalists' discourse on the use of new technology in education.

In spite of the paucity of evidence to document proven gains in learning outcomes from the use of ICT in schools, or 'value for money' for the investment involved, the DfEE argued that 'there is no place for scepticism about the role of new technology in education', adding that teachers were 'a hurdle to be overcome' (quoted in Cohen, 1999).

A study of the public statements of politicians in the UK, and the policy documents which political parties, governments and government agencies have issued over the past

20 years makes it clear that politicians had a very positive view of the potential of computers to improve educational outcomes, and that their faith in new technology was often expressed in fairly generalised and inchoate terms (as against, for example, articulating the precise advantages which particular computer applications bestow on different curriculum subjects).

A study of the policy statements issued by the Department for Education between the late 1980s and the most recently issued documents reveals interesting shifts in the rationale for the use of computers in schools. Davis (1992) pointed out that as early as 1987, the government circular *New technology for better schools* (DES, 1987) presented the main aim of the government's policy as being to use new technology to enhance the quality of teaching and learning across the curriculum, with the familiarisation of pupils with new technology being no more than an important by-product. This emphasis was not to regain its prevalence explicitly in policy documents or in the public statements of politicians until much later, when many of the other strands of discourse on the use of ICT in education had moved towards a consideration of pedagogical issues, and the particular ways in which computers could enhance learning in school subjects. The situation is complicated by the fact that policy making is a complex process, and at various points in the narrative different factions within the policymaking process were more or less dominant. A study of the record in this area suggests that the role of HMI within the department was more influential in the 1980s than in later years, and the balance of power between the department and the Cabinet Office was also subject to fluctuation over the period under consideration. One tentative hypothesis which might be advanced is that in terms of policymaking in education, the views of 'education professionals' within the civil service, such as HMI, became less influential *vis à vis* more general policy advisors, such as the Cabinet Office, from the late 1980s onwards,

and that this had an impact on policy with regard to the use of ICT in schools. Certainly, a study of the policy statements over the period in question reveals that there were differing views about why schools should have lots of computers in them, and that these views changed over time.

Comparing discourses: politicians' and educationalists' claims for new technology and learning

Perhaps unsurprisingly, the views of those who might be said to have a vested interest in the technologisation of education tended to echo the enthusiasm of politicians. As early as 1994 the National Council for Educational Technology (NCET, 1994) claimed to have identified 27 ways in which ICT improved teaching and learning in schools. In 1999 Bill Gates claimed that connecting classrooms to the internet would lead to 'the greatest advance in quality and equality of education in this century' (Gates, 1999: 387). In 1998 The Chief Executive of the Technology Colleges' Trust painted a glowing picture of the emerging educational future:

> Imagine the school of the future. You see children doing a great deal of their work on computers, generating presentations in multi-media formats, accessing the information they need over fast communication links, collaborating with others in workplaces, schools, museums, libraries and homes on an enormous range of tasks.
>
> (Teachers') role would change. Some conduct whole class lessons, videoconferencing with electronic whiteboards with a class of thousands worldwide in front of them. Others work as learning facilitators assisting students in meeting their personal learning targets. Para-professionals at a

> support desk a hundred miles away help other students with technical issues such as software familiarity.
>
> (Upton, 1998)

In similar vein, Owen Lynch, Chief Executive of BECTa stated 'an absolute belief' that ICT would make 'a critical difference to the quality of teaching and learning, and to the efficiency and effectiveness of teachers and schools', whilst acknowledging that 'there is very little evidence to support that to a degree that is irrefutable' (Lynch, 2000). This raises the question of whether there is in a sense an educational equivalent of the 'military-industrial complex', with a network of powerful and influential bodies in the fields of politics and the ICT industry imposing policies which have not been fully tested or debated. Goodson and Mangan (1991: 269) argued that the political imposition of ICT for economic competitiveness, as against educational motives was precisely what happened in the late 1980s in Ontario:

> In the process of introducing a new form of technology into classrooms, a certain version of the purposes of schooling was reinforced both through high level discourse and through the very real backing of government dollars. The vision of schooling which underlay the introduction of computers in schools was debated by only a small coterie of insiders who quickly took it upon themselves to speak for "everyone". The wider public debate which many people might have thought necessary simply did not happen.

This scepticism over the rationale for the drive to put computers in schools and concern that it was a policy imposed on teachers by industrial and managerialist pressures, to comply with an 'economic efficiency' model of education, was also echoed by Apple (1987) and Cuban (1993).

Thus, in spite of the enthusiasm of politicians, and the DfEE's insistence that 'there is no room for scepticism' about the promotion of ICT in education, not all strands of the discourse on new technology and education were positive and unquestioning. A study of recent research on the impact of ICT in education, and of the views of academics and teachers reveals, in most quarters, a much more measured and guarded attitude to the use of ICT in schools, and much less consensus as to the value of computers in education.

In an editorial in the *British Journal of Educational Technology*, Nichol and Watson (2003: 2) suggested that from the mid 1980s,

> academic researchers' evaluations have suggested that claims for the impact of ICT on learning were not borne out and there is relatively little to show for the major investment of time, resources and human endeavour in educational ICT.... Rarely in the history of education has so much been spent by so many for so long, with so little to show for the blood, sweat and tears expended.

This is not to say that there have not been some academics who have expressed positive views on the use of ICT in schools. Enthusiasm for computers in education was not confined to politicians and those who were either selling technology to schools or who were charged with the mission of promoting the use of ICT in schools. Some academics were also to make massive claims for the transformational potential of ICT in education. Bork (1979) predicted that by 2000 the major way of learning, at all levels in all subjects would be through interactive use of computers. In the same year, Evans (1979) pronounced that computers would transform the teaching and learning process and render books redundant. It was even claimed that ICT would bring about different and powerful *ways* of learning, which would cultivate and develop learners'

intellectual autonomy, creativity, self confidence and problem solving abilities (Papert, 1980).

Research which suggested that levels of book provision in British schools had been reduced, and stood at an eighth of the amount spent on books in Norway's schools (Howson, 1999) and that in some subjects (including history), less than half of the pupils had access to an unshared text book (Johnson, 1999), sharpened the debate about the respective merits of book versus screen based learning. Moreover, many teachers expressed scepticism over the pressure to incorporate new technology into their pedagogy, and the assumption that increased use of ICT would necessarily lead to improvements in learning outcomes (see Chapter 3).

With the exception of two surveys which argued that high levels of ICT provision had helped to raise standards in some school subjects (BECTa 2000, Harrison *et al.*, 2002), research findings on the impact of ICT on standards of teaching and learning were tentative and tended to suggest that it was 'too early to say'. Two major studies in the United Kingdom which attempted to ascertain the 'value added' contribution of new technology to educational outcomes were equivocal in their findings. The (first) ImpaCT Report noted that problems of access to hardware and limitations in teacher confidence in the use of new technology meant that it was difficult to gauge the potential of new technology for enhancing teaching and learning (Watson, 1993). A more recent survey of the efficacy of Integrated Learning Systems for accelerating learning in maths and English concluded that learning gains had been made by pupils using the software, but cautioned that the cost of the investment in software and computers might have led to equivalent learning gains if invested in other forms of support – extra text books, smaller teaching groups etc (BECTa, 1998). These findings raised the question of weighing investment in ICT against other resource inputs. In an

educational system where resources are finite, the commitment of resources to a particular form of learning support needs to be measured against the potential benefits of alternative deployment of resources.

The government's enthusiasm to justify the investment of new technology in education led it to commission a large scale research survey which had as one of its main aims to find out whether the use of ICT helped to raise standards of attainment in schools. The responses to the ImpaCT2 Report (Harrison *et al.*, 2002) showed how problematic and contested the interpretation of research in this area could be. Secretary of State for Education Charles Clarke (2003: 2) was bullish about the findings, commenting on the outcomes of the survey that 'we know from our extensive and continuing research that pupils who use ICT in the classroom get better results than those who don't. This is true across all abilities, communities and subjects.' John Clare, Education Editor of *The Daily Telegraph* interpreted the findings of the same survey very differently:

> Equipping schools with a million computers and connecting them all to the internet has had very little if any impact on standards according to a study commissioned by the Department for Education. Despite... unprecedented levels of investment, it could find no consistent relationship between computer use and pupil achievement in any subject at any age.... One of the report's most striking findings was how little use secondary schools made of the 150 or so computers with which each is now equipped. The proportions of schools saying they never or hardly ever used computers in lessons for 14 year olds were 61% in English, 67% in maths and 82% in science.
>
> (*Daily Telegraph*, 10 January 2003)

Nichol, Watson and Waites (2003: 1) writing in the *British Journal of Educational Technology* were also less sanguine in their analysis of the ImpaCT2 Report, noting that it made 'grim reading', and showed 'a depressing pattern of low level ICT use in both teaching and learning in schools'.

These very contrasting interpretations of the same piece of research evidence show the importance of reading the historical record on the use of ICT in education very carefully, of keeping in mind the position of those making claims for the use of ICT in relation to the overall discourse on ICT, and of not taking all information in this area at face value.

For all these reasons, it is possible to claim that there *is* a case for scepticism over the move towards screen based learning in UK schools, and that historians of education have a responsibility to examine the strands of discourse in this area, in order to assess the validity of claims made. An analysis of the claims of politicians and policy documents from government agencies, and those of educationalists, researchers and practitioners reveals differences in approach to the potential of ICT for enhancing teaching and learning. This is not just a question of a gap in the scale of claims made for learning gains; the two discourses tend to focus on different aspects of new technology, and at times indicate differing views as to what learning is, and how it is achieved. Smart (2001) argued that political espousal of new technology may have been at least in part a matter of political image rather than a clear sighted and research based awareness of its educational potential, attributing New Labour's enthusiasm for ICT as 'a lifestyle statement... youthful, entrepreneurial, inclusive and full of potential'.

A survey of academic and professional discourse on the part which new technology might play in improving educational outcomes, even among those who are, in general, advocates of screen based learning, reveals a much more cautious and equivocal tone,

and less confidence and certainty over the part which ICT will play in education. The advantages in terms of dissemination of information are weighed against the disadvantages of reading from a screen as against a page. The possible pluses in terms of student motivation are weighed against the danger of colour and animation replacing rigour and depth, and of 'interactivity' not getting beyond the level of meretricious quizzes and comprehension exercises. Kay (1995: 149) coined the phrase 'Junk Learning' to sum up some of the dangers inherent in screen based learning:

> Computer screens are not good for reading extended prose; the tendency is to show pictures, diagrams and short "bumper-sticker" sentences, because that it what displays do well....
>
> A related idea is that education is a bitter pill that can be made palatable only by sugar coating – a view that misses the deep joy brought by learning itself.... An educational system that tries to make everything easy and pleasurable will prevent much important learning from happening.

Two of the key characteristics of screen based learning that set it apart from the book, are the systems of hypertext – the facility to click on a word or picture and go directly to another site, source, archive, or educational resource, as against the linear structure of the book, and multimedia – the use of colour, sounds and animations as against simple text. It is instructive to compare the views of Blair and Redwood about these forms of 'interactivity' (see pages 73-4 and 71 of this chapter) with the views of those who were professionally involved with ICT and education. Whereas in political discourse, these features have generally been lauded as an aid to the learning process, some education researchers and practitioners pointed out that the almost constant opportunity to go to a wide variety of learning sources in multimedia learning environments could have negative as well as positive consequences. Observing over 200 pupils using CD-roms,

Sparrowhawk (1995) noted the tendency of younger pupils to eschew the difficult and the sustained enquiry, in favour of browsing and downloading of pictures. This is interactivity at the level of a television remote control button. In the words of Josie Taylor (1996) an academic working for the Open University,

> If they (learners) think it is all to do with trial and error, jumping from one thing to another, pressing this button, that button, that's not learning, that's not getting the knowledge into their minds in an integrated way, in a way they can make use of, that's just mucking about.

Many of those expressing caution over the potential usefulness of computers in education, (like Taylor and Sparrowhawk), operated in organisations with responsibility for, and experience of, computer based learning. David Sewart, Director of Student Services for the Open University, argued that 'few technologies teach more effectively than the book. It's portable, you can access multiple pages at once and annotate them too. Screens just aren't as easy to read from. We find with Web courses, people are printing more and more' (Sewart, 2000).

Madian's research (1995) suggested that multimedia formats could discourage students from thinking deeply about the meaning behind the information on screen, Laurillard (1998) noted that hypertext often left learners without a clear sense of narrative, thus undermining coherent 'joined-up' learning, and Porter went as far as to suggest that far from the danger of creating an information underclass denied full access to new technology, 'the privileged may well be the unplugged', in that they would be left with the high quality resource of books and journals, as against superficial, meretricious and 'infotainment' computer based resources (Porter, 1996). In contrast to the positive and 'certaintist' tone of political discourse on new technology and education, academic and professional discourse is characterised by ambivalence, open-

mindedness, the need to find out more about the effects of screen based resources on learning, and an awareness of the importance of instructional design, as well as technological advance. This is epitomised by Owston's summary of the debate on the comparative effectiveness of new and traditional educational media:

> This debate stems from the observation that after more than 50 years of research on instructional media, no consistent significant effects from any medium on learning have been demonstrated. Initially, hopes were high that television would have certain characteristics that would lead to improved student learning, but none have been found. Some argue that no effect can possibly be demonstrated, because any improvement in learning that may accrue will come from the instructional design, not the medium that delivers the instruction.
>
> (Owston, 1997: 29)

One explanation of the difference between political and academic discourses on the role which new technology might play in education is that they are founded on different conceptions of what learning is, and how it is acquired. In recent years, some UK politicians have been dismissive of the theoretical basis of teacher education, and the position of the four disciplines of education in regulations relating to initial teacher training has been very much reduced (see, for example Aldrich, 1990). In spite of these attacks on 'the theory of education', the constructivist position on theories of learning remains firmly entrenched in teacher education in the United Kingdom.

For those accepting a transmission model of learning, where learning is no more and no less than the transfer of information from the instructor or learning resource to the learner, and education itself as primarily a question of cultural transfer, the power of the screen and communications technology massively to increase access to information

appeared to offer formidable advantages. For those adhering to constructivist schools of learning, where the learner has to, as it were, 'go ten rounds' with the information, in order to clarify, integrate, restructure and synthesise, in order to translate information to understanding, the advantages of screens and communications technologies are less clear-cut. As Counsell (1998: 48) argued, access to more information might be the last thing that some learners needed, struggling as they were to make sense of the volume of information they were already confronted with. This was not to say that access to information, or the move to screen based learning was *per se*, a bad thing, but that thought needed to be given to how the information was to be presented, organised, problematised, and mediated, if learning was to be assured. Dede summarised the constructivist case as follows:

> We have found that learner investigation and collaboration and construction of knowledge are vital, and these things don't follow teaching by telling and learning by listening. It isn't that assimilation of knowledge isn't a good place to start, because it is hard to investigate something unless you know a bit about it. But assimilation is a terrible place to stop. The excitement about access to information is that it is the first step to expertise, to investigations, to knowledge construction. Only if access to data is seen as a first step – rather than as an end in itself, will it be useful.
>
> (Dede, 1995: 11)

This was not in itself, an argument either for or against screen based learning, but it raised the question of how effectively screen based learning lent itself to knowledge construction. This in turn raised the question of the quality of 'interactivity' which screen-based learning provided. Would it be simply at the level of games, quizzes and

the retention and regurgitation of information, and the pinball journey through information described by Sparrowhawk and Taylor?

Weighing discourses: the blind leading the sighted?

Acton (2000) has argued that in addition to acknowledging the multi-faceted nature of discourses on the past, historians have a responsibility to make judgements on the comparative validity of claims made by differing constituencies, rather than simply ensuring that all are given a voice.

The most enthusiastic proponents of screen-based learning operate at some distance from both classrooms *and* new technology. It was recently revealed that several government ministers had computers on their desks for purely cosmetic purposes, that the computers were not routinely used, and in some cases, not even connected (*Guardian*, 20 December 1997). Tony Blair, one of the most consistent advocates of the deployment of new technology in education, is a self-confessed computer-illiterate (*Guardian*, 16 and 17 April 1998). It is possible that the dependence of modern politicians on information from databases, focus groups and opinion polls has led them to assume that access to information can play an equally powerful role in the educational process, without, as Davis *et al* (1992: 12) suggested, considering its 'authenticity to the classroom, and authenticity to a particular discipline or field of study'.

Selwyn warned of the dangers of presenting educational computing in the context of 'a strictly techno-utopianist and futurist viewpoint, where virtually all of society's problems, be they economic, political, social or ethical, are subject to a technical fix'.

> The National Grid for Learning appears to be riding high on a wave of political consensus and goodwill. Few, if any, have dared to challenge the wisdom and salience of such a project – with any dissenting voices drowned out by a pre-millenial anxiety that UK education must keep up with the ubiquitous yet illusive 'information age'. Aside from a lack of constructive opposition, more worrying is the increasing trend for those in government and industry to present the Grid as a 'technical' fix' for UK schooling.
>
> (Selwyn, 1999b: 80)

In *Connecting the learning society*, one of the main recent policy documents justifying major investment in screen based learning, the section entitled 'Taking full account of the evidence' is only two paragraphs in length, and cites the use of e-mail in higher education in the United Kingdom as the main argument that substantial investment in new technology across the education sector as a whole is essential (DfEE, 1997b: 5-6).

Close analysis of the statements of politicians on the role of ICT in schools reveals, in addition to an emphasis on ICT for a technologically literate workforce and an internationally competitive economy, a strong element of competitiveness. As Abbott (2001: 109) observed 'the prime motivator, at least for politicians, all too often seems to be that of seeking to be the best country or the top country or the most connected country'. Statements are often characterized by inchoate and generalized enthusiasm for ICT, with little evidence of or attention to the precise ways in which ICT will enhance teaching and learning. The uncertainty over exactly *how* computers would be of use in schools, and exactly *what* teachers and pupils would do with them was reflected in the guidance given to the National

Curriculum Council over formulating a National Curriculum for Information Technology:

> It is clear that nobody knew what technology was and it was left to the working group to invent it.... Members of the group began their deliberations without even knowing the title of the course they were considering.... The only guidance given to the (National Curriculum) Council was that it was an entirely new subject and was capable of radically changing the way things were taught in schools.
>
> (Graham, 1993: 63)

As Benyon (1991) has argued, there is a need for 'an educationalist perspective' to be heeded in policy making in this area, and as I will argue, within this, consideration of the subject discipline dimensions of ICT, to explore how the nature of the discipline (in this case, history), and ideas about its form and function in schools, influence the part which computers and communication technology can play in teaching and learning.

Whereas the discourse of politicians and administrators has been unequivocal in its advocacy of new technology, even in the absence of a substantial body of research evidence to testify to its utility, those working closer to the educational process itself (and to the development of educational technology) have been more cautious in terms of claims made, and more insistent on the need to examine more closely exactly what new technology has to offer various subject disciplines. They have also been more aware that information is not the same thing as knowledge or understanding, and that there is therefore a need to continue to explore the respective ways in which book and screen based resources can be used to contribute to effective learning.

Study of DfE policy statements on the use of ICT in education suggests that policy makers were attracted by the potential of communications technology for transmitting information across the educational system. High hopes were pinned on 'The National Grid for Learning' (DfEE, 1997b), which was to be an electronic equivalent of the *Encyclopaedia* of the Enlightenment philosophers of the eighteenth century. It was claimed that this would revolutionise the degree of 'transference' possible in terms of educational ideas, best practice and the dissemination of 'strategies' from the centre. As Noss and Pachler (1999: 197-8) pointed out, the vision of learning outlined in *Connecting the learning society* (DfEE, 1997b) was clear:

> Teachers will be linked to the centres of power; the DfEE will be able to communicate directly with schools and issue its latest instructions: schools will be able to send performance data directly to each other and to the DfEE; and an aspect with increasingly high profile in the media recently, teachers will be able to download worksheets directly into their classroom.

Political faith was invested in the educational potential of the 'communications' strand of ICT for enhancing teaching and learning outcomes. If learning is seen principally in terms of 'transference', new technology, with the facility to transmit massive amounts of information very quickly, would appear to have much to offer. As John Naughton (*Observer,* 22 March 1998) pointed out, 'It's not every day that you encounter a member of the government who appears to understand the Net. Most politicians (Clinton, Blair, Blunkett, to name just three) see it as a kind of pipe for pumping things into schools and schoolchildren.'

Conclusions

The deployment of new technology in schools has become a more influential part of educational discourse over the past three decades, and the use of computers in schools has become a key issue of education policy, as evidenced by both the substantial investment in ICT in schools over the past two decades, and the massive research literature on the use of ICT in education which has emerged. Another indication of the increasing importance attached to the use of ICT in education is the increasingly stringent requirement for pre-service teachers to acquire competence in the use of computers. Whereas computers in schools were of interest to a small group of eccentric teachers in the 1980s (Wild, 1987), by the late 1990s it had become increasingly difficult for any teacher or trainee teacher to ignore the use of computers in their teaching. It is important to note that although these trends could be discerned in many education systems in the developed world, not all countries have been as keen to invest in ICT in schools as the UK, and the use of computers has not been elevated to such a central position in education policy (see Chapter 1).

With the exception of Charles Clarke's comments on the ImpaCT2 Report (see page 80), and the general tenor of politicians' statements about the use of ICT in education, it is generally acknowledged that there is a 'rhetoric-reality gap' between the claims made for ICT in education and what is current practice in the UK. Even Clarke, in a more measured statement, acknowledges that 'the potential for real transformation still remains largely untapped' (DfES 2003: Foreword).

Most research findings on the impact of ICT in secondary schools in England and Wales (including the ImpaCT2 Report) are circumspect about claims made, and see the incorporation of computers into school practice as far from unproblematic. Computers have not had the transformational effect that they have had in other areas of society.

A study of what has been written about ICT and education reveals that there are a wide range of views about the potential of ICT to enhance teaching and learning in schools. Not only is there a discernible difference between the stated views of politicians in England and Wales and many academics, there are also differing views amongst the latter, varying between optimistic, sceptical and negative views of the role of computers in schools. Not only are there differences about how useful ICT will be in schools; study of the discourse on ICT and education reveals different conceptions about what computers *are for* in schools, with politicians leaning towards vocational/workforce and economic efficiency justifications, and academics tending to look at whether and in what ways ICT helps pupils to learn. There are also differences about how learning takes place, with politicians tending to view learning as a comparatively unproblematic process of transmission, and educationists moving increasingly to a constructivist paradigm of learning.

Much of the literature on ICT and education has directed only limited attention to subject discipline dimensions of the use of computers in schools. The subject discipline dimension is missing not only from politicians and policymakers' statements about ICT and education, but also from the majority of research studies, where no reference is made to differences between subjects, (see, for instance, Fisher, 1996, Selinger, 1996, Wild, 1996, Williams, 1996, Murphy and Greenwood, 1998, Selwyn, 1999b, Fisher, 2000, Mumtaz, 2000, Rudd, 2000, Taylor, 2001).

There are, however some studies which do consider some aspects of the subject specific implications of the use of ICT, and which suggest that the usefulness of computers and communications technology may vary between school subjects and subject disciplines (Johnson, 1991, Waggoner, 1994, Lienard, 1995, Robertson *et al.*,

1995, Sharp, C., 1995, Easdown, 1997, Cuckle *et al.*, 2000, Easdown, 2000, Williams *et al.*, 2000, Hammond and Bennett, 2002, Nichol *et al.*, 2003).

Having placed this investigation in context, one of the main strands of the enquiry will now be to consider the subject discipline dimensions of ICT, and to explore how the nature of the discipline, (in this case, history), and ideas about its form and function in schools, influence the part which computers and communication technology can play in teaching and learning. The next chapters therefore focus on the recent history of the use of ICT in school history in England and Wales, firstly (in Chapter 3) by the deployment of historical perspectives in considering what has been written about history and ICT over the past three decades, and then (in Chapters 4 and 5), by detailing the empirical enquiries which the author has made over the past eight years.

Chapter 3

Historical perspectives on the use of ICT in the history classroom in secondary schools in England and Wales, 1970-2003

Introduction

The purpose of this chapter is to deploy the use of historical perspectives to ascertain the impact of ICT on teaching and learning in secondary history in England and Wales, from the introduction of computers into schools in the early 1970s, to 2003.

During this period, there were substantial changes in many of the areas which might be expected to have had an influence on the use of ICT in school history. As noted in Chapter 2, from a position where it was an aspiration to have a computer in every school, there are now over a million computers in schools in England and Wales. Within the past three decades, computers have gone from being 'a novelty', to a tool used by 99% of young people. There has also been a revolution in the sophistication and power of ICT; the current standard specifications for computers used in schools bear little relationship to the BBC B Masters which predominated in classrooms in the 1980s. The significance of the 'C' in ICT – in particular the development of the internet, also transformed ideas about the potential of ICT in education, and impacted on the ways that teachers and policymakers thought to make use of ICT in education.

The period saw a change in the priority attached to the use of ICT in education, which went from a position where teachers who were interested in the use of computers were regarded as eccentrics (Wild, 1987), and where teacher use of ICT was definitely 'optional', to a time where the message in policy documents and curriculum specifications was of pupil 'entitlement' to ICT experiences in classrooms, and where it

was no longer acceptable for teachers to say that they did not use computers in their teaching. Cochrane's assertion (1995) that 'in future there will be two sorts of teacher, the IT literate and the retired', seemed to be borne out by the increasingly stringent ICT stipulations in the competences required for Qualified Teacher Status (QTS).

The period also saw changes in ideas about the purposes of school history, and these were also to have an influence on the role which computers might play in teaching and learning in school history. The implications of these changes are discussed later in this chapter.

And yet, for all these changes, a study of the literature on the use of computers in schools reveals that the 'majority verdict' is that ICT has not revolutionised teaching and learning in schools to the extent that it has impacted on other areas of society, and that as in other countries, there is a 'rhetoric-reality gap' between claims made for the use of ICT in education, and what is current practice (see Chapter 2). Even one of its most bullish advocates, Education Minister Charles Clarke (1998, 2003) acknowledged that the National Grid for learning was failing to develop as expected, and that the potential of ICT to enhance teaching and learning in schools was as yet still largely unfulfilled.

Judgements on the impact of ICT on teaching and learning in school subjects can not be made simply by reporting the statements made in policy documents, curriculum specifications and teacher training regulations. Just because change is mandated by politicians and policy makers does not mean that it is delivered in practice as specified.

Advances in communications technology, and in particular in the use of the internet have meant that the pace of change in developments in new technology has accelerated, and the political will to place ICT at the heart of education policy has intensified over the past few years. Yet there are still many history classrooms which do not look

remarkably different to the classrooms of the 1980s (see Chapters 4 and 5). There are still many history teachers who make little or no use of computers in their teaching (DfEE, 2001b, Harrison *et al.*, 2002).

The extent to which ICT has had an impact on teaching and learning in secondary history is a contested issue. A study of the range of sources on the use of ICT in secondary history presents a confusing and uncertain picture, with some sources portraying a very optimistic and positive picture, and others much more sceptical and cautious.

This chapter will attempt to get at 'the truth' about the use of ICT in secondary history by critically comparing and evaluating the sources which provide the information available in this field. In the words of Aldrich (1997: 5):

> Some history as constructed is better than other history, and the most important criterion for making such a judgement is the extent to which history, as written or otherwise presented, reflects the past as it actually was. Some historical writing may indeed be, as Hayden White has stated, "a narrative discourse, the contents of which are as much imagined/invented as found" (quoted in Jenkins, 1995: 144). Most historians however, do find more evidence about the past than they imagine or invent, and the quality of that evidence coupled with the quality of the necessary selection, ordering and presentation of it, is one important distinction between good history and bad.

The next section of the chapter will consider the extent to which computers have been used in teaching and learning in secondary history, and explore some of the reasons which have been suggested for 'deficits' in the deployment of ICT. The literature on the use of ICT in history also provides a range of sources on history teachers' attitudes

to the use of computers in their subject, and as with the extent to which ICT has been used in school history, the sources do not present a clear cut and unambiguous picture.

Although ascertaining the extent of computer use in secondary history is one of the aims of this chapter, the study will go beyond simply attempting to quantify the extent of computer use, and the following sections go on to explore the ways in which teachers used computers in secondary history. What *did* history teachers do with these developments in technology, and how did their conceptions of their subject discipline influence the deployment of ICT?

The chapter then looks at the extent to which the (disparate) aspirations for ICT use were realized as they related to secondary history, and how the rationale for computer use, and ideas about how ICT might be of benefit changed over the period in question. This extends to a consideration of the impact of ICT on the quality of teaching and learning in secondary history. The point is not just to try to establish how much ICT has been used in secondary history, but to establish to what extent it is capable of enhancing teaching and learning in the subject, and to identify in exactly what ways it has been of use thus far. Finally, some conclusions are drawn, and a case is made for linking the examination of the historical record to some empirical enquiries of the author.

How much use have secondary history teachers in England and Wales made of computers since their deployment in schools?

The developing consensus that children should use computers as part of their learning in school history has not been accompanied by an equivalent degree of agreement over the extent to which this has happened in practice.

Information on the prevalence of the use of computers in the history classroom can be gained from a variety of sources. Before the mid 1980s, there was little in the way of statistical surveys to quantify the extent to which computers were being used in classrooms. Blow and Dickinson (1986) claimed that the use of computers in school history was growing rapidly, and there were a number of articles in *Teaching History* which described some of the early forays into computing in school history, but it was difficult to establish precisely the prevalence of such experiments. It was only from the mid 1980s onwards that survey evidence became available.

One of the most important sources of information on the use of computers in schools comes from the work of the Department for Education, which from 1985 onwards conducted a (roughly) biennial survey of the use of computers in schools in England and Wales. These were large scale surveys, embracing over 1,000 schools, with the 2001 survey extending to 1,868 schools, of which 753 were secondary schools. Other large scale surveys have been conducted for the National Foundation for Educational Research, with returns from 600 schools (Harris and Preston, 1994). What these surveys had in common was that information was derived predominantly or exclusively from interviews or questionnaires given to the 'providers' of ICT in schools, in the form of questions posed to head teachers, heads of department, teachers and ICT co-ordinators.

Other sources of information have been provided by academics and educational researchers into the use of ICT in schools, such as the National Council for Educational Technology (NCET, reconstituted as BECTa from 1998), and researchers working in university departments of education. These enquiries have also used 'providers' to elicit information, but in some cases, they have also taken into account the views and experiences of 'users' of ICT in schools, i.e. pupils and former pupils. The Ofsted

inspection of schools put in place by the Education Reform Act of 1988 has also provided a source of information on the use of ICT in the history classroom. In this case, the evidence is provided principally by inspectors going into schools and observing what, if anything is being provided in terms of ICT in the history classroom. The picture of ICT use in secondary history which emerges from Ofsted inspections, as against questionnaire surveys of 'providers', such as those undertaken by the DfE and NFER, is radically different. Several smaller scale studies undertaken by academics also reveal findings which are in stark contrast to official DfE figures.

i) The story told by Department for Education surveys

Apart from a 'blip' in the early 1990s, the biennial statistical bulletins from the Department for Education showed an 'ever onwards and upwards' increase in the use of computers in the history classroom, until an abrupt downturn in 2002.

The first of the surveys (DES, 1986) stated that only 23% of history departments were making any use of computers in the classroom. The 1993 report (DfE, 1993) claimed that 22% of secondary history teachers were making 'regular' use of ICT in their teaching (defined as twice a week or more), double the figure for the 1988 report, and that computers were being used in five per cent of history lessons – down from 11% in the 1991 report (DfE, 1991). ICT was claimed to be making a 'substantial' contribution to teaching in eight per cent of history departments. By 1995, it was claimed that only 17% of secondary history departments were *not* making use of ICT, with over 20% of history teachers using computers 'regularly' in their teaching, with this being defined as 'at least twice a week on average' (DfE, 1995a). The 1997 report (DfEE, 1997a) estimated that ICT was now making a substantial contribution to teaching and learning in seven per cent of history departments, and that only 12% of

departments made no use of ICT. By 1998, this figure had dwindled to nine per cent, and it was estimated that computers were being used in eight per cent of history lessons in secondary schools (DfEE, 1998a).

By the time of the 2000 survey, 30% of departments were said to be making substantial use of ICT, rising to 42% in 2001 (DfEE, 2000, DfES, 2001b). Although this still left 58% of departments being reported as making little or no use of ICT (the 'some use' category having been discarded in the 2001 survey), the overall picture emerging from the surveys was that the use of computers in secondary history had increased substantially, with the exception of a temporary dip in the early 1990s, which some commentators attributed to the inception of the National Curriculum in 1991 (see, for example, Dickinson, 1997).

The surveys seemed to lend support to the 1985 HMI prediction that 'at the present rate of technological progress and revolution in real costs, the use of computers in the classroom is likely to become commonplace within the next decade' (DES, 1985: 38). However, other surveys were to tell a different story about secondary history teachers' use of ICT (see below). The dramatic fall in the percentage of history teachers who were judged to be 'regular' users of ICT in the 2002 DfES survey – from 42% to ten per cent (DfES, 2002a) – also suggested that ascertaining a reliable picture of ICT use was problematic. The DfE surveys did not attempt an analysis of the reasons for such fluctuations.

ii) The story told by other large scale national surveys

Other surveys seemed to give support to the 'high use' findings reported by the DfE surveys. A survey commissioned for NFER produced evidence to indicate that the use of ICT was gradually percolating across the curriculum and embracing a majority of

history teachers (Harris and Preston, 1994). The NFER findings revealed a big variation in history departments who were making 'significant use' of ICT applications, and 'a little use', but reported that only a small minority of history departments were making 'no use' of computers in the teaching of history. Overall, the survey seemed to corroborate the DfE findings that the substantial majority of history teachers made some use of computers in their classrooms (Harris and Preston, 1994).

Not all large scale surveys corroborated these findings however. In 1984, a BBC survey suggested that only eight per cent of secondary history departments were making use of computers (BBC, 1984), and in 1994, NCET reported that 'although teachers see computers as curriculum tools and many express confidence about their future use, very few actually use them' (NCET, 1994: 25). More recently, the ImpaCT2 Report (Harrison *et al.*, 2002) – another large scale survey — found that classroom use of ICT in secondary schools was quite low, and that it was mainly home-based use of ICT that was impacting on pupils' achievements in school subjects.

iii) The story told by HMI and Ofsted Reports

An HMI report on newly qualified teachers found that only six per cent used computers in their first year of teaching (HMI, 1988). The report did not disaggregate computer use by school subject, but several other surveys suggested that the use of computers in history tended to lag behind several other subjects (see below).

In her keynote address to the first International Computers in the History Classroom Conference at Leeds University in 1988, History HMI Carole Baker acknowledged the limited information base on the use of computers in history at that time, with only ten out of approximately 150 HMI visits to secondary schools having anything substantial to say about computer use. What evidence there was pointed to 'slow, piecemeal

progress' and pockets of more rapid progress in some areas, with over 50% of schools in Leicestershire making use of ICT in history (Baker, 1990, Wilkes and Blow, 1989: 35).

From the early 1990s, Ofsted reports on the teaching of history in primary and secondary schools in England and Wales contained a brief section on the use of computers in the teaching and learning of history, and presented a less positive view of the extent to which ICT was being used in the history classroom than that portrayed by the DfE surveys.

The 1992/3 report (Ofsted, 1993: 30-5) noted the 'often relatively limited' use of computers in school history, and found that 'the availability and use of IT... was satisfactory or better in less than a quarter of the schools'. The report stated that the use of a range of ICT applications needed to increase at all key stages. The 1993/4 report concluded that ICT was 'underused in many of the schools, often for lack of access to hardware' (Ofsted, 1995: 16).

At a time when DfE findings were quite positive about the extent to which computers were being used in secondary history (computers used in about one in twelve lessons, 22% of history teachers making regular use of computers), an analysis of 37 Ofsted inspection reports, focusing on comments about the use of ICT in history suggested a different story, with only five departments reported as making good use of ICT, and 24 out of 37 making little or no use of computers (Harrison, 1996).

Some progress appeared to have been made according to the Secondary Subject Report for History 1999-2000, in that the proportion of departments not making effective use of ICT had fallen to 40%, but the report felt that developments in the use of ICT in history were taking place 'only very slowly in many schools', and that in a

number of schools 'regular access to ICT as a planned part of the curriculum is not physically possible' (Ofsted, 2000: 1-4).

The report for 2000-1 stated that the use of ICT remained 'an area of weakness in the large majority of schools because of a lack either of the necessary skills and enthusiasm or of regular access', whilst noting that 'a small number of very good lessons demonstrate the potential of ICT as a tool in history' (Ofsted, 2002b: 5).

In 2002, as part of a government enquiry into the effect of their initiatives in ICT, Ofsted reported on a series of inspections of secondary history departments designed to explore the extent to which investments in ICT were producing positive outcomes. The seven page report gave more depth of detail than the annual subject reports, but did not attempt to provide an estimate of the extent or frequency of ICT use in secondary history. However, the overall tenor of the report suggested that ICT was still not having a radical or transformative influence on the teaching of history in secondary schools (Ofsted, 2002a). In a book chapter which provided further information about the findings of the inspection, Harrison (2003: 38-9) cited as two of the main findings that 'in only a small minority of schools is there a regular coherent use of ICT to support learning in history', and that 'most often, pupils' experience is erratic and there is no entitlement to work in history using ICT'.

iv) The story told by academics from university departments of education

One of the characteristics of several of the surveys on computer use in secondary schools by researchers working in university departments of education was the attempt to elicit information from 'users' of ICT in schools (pupils or former pupils), rather than, or in addition to that elicited from 'providers' (teachers, head teachers, ICT coordinators). Surveys which have incorporated information from 'users' of ICT

in schools, rather than simply relying on 'provider' information, or which asked classroom teachers, rather than head teachers, suggest that even Ofsted figures might be inflating the use of computers in history.

A survey of secondary schools in Dorset by Beard (1985) found that only between one and five per cent of history departments had purchased any history software, and that actual teaching experience with computers in history was very limited. A survey of computer use in history departments in Leeds, conducted in 1988, painted a similar picture, with 25% of heads of history reporting that they sometimes used computers, 25% rarely, and 50% never (Almond and Tomlinson, 1990).

A survey of the experiences of students studying for 'A' level history (Haydn, 1993) also seemed to confirm the generally more pessimistic picture of ICT use presented by studies from university researchers, compared to the DfE figures. Easdown's (1994) study of the experiences of PGCE history trainees at Oxford University highlighted the difficulties students found in observing ICT being used by history teachers in the classroom. The surveys of Mellar and Jackson (1992, 1994), on students in the early stages of their initial teacher training course, found that their school use of computers lagged behind their use of ICT at university and in the workplace. Under ten per cent of the trainees reported using computers in the classroom 'sometimes', and only four per cent used computers in schools 'frequently'. Mellar and Jackson found that of PGCE students aged over 22, between 87% to 98% used computers 'rarely or never'.

In another survey of PGCE students at the same university, it emerged that very few of them had used computers 'frequently' at school. Lienard (1995: 118) concluded that during the 1980s, there had been a very small increase in pupils' use of computers in schools:

> Although the percentage of "computer illiterates" has gradually diminished over the course of the past four years, with many students having experience of computers in previous employment, the percentage of students who had gained experience of computers whilst at school remained relatively static, with "frequent use" in school having gone up from three to four per cent over the past year.

Within these findings, history emerges as one of the subjects where computer use is low compared to several other curriculum areas. In Lienard's surveys, history ranked ninth out of 15 curriculum areas in 1993, seventh out of 13 in 1994 (Lienard, 1995). Of 67 History graduates from the 94-95 cohort, four acknowledged 'frequent' use of computers at school, two used computers 'sometimes', 45 stated that they rarely or never used computers at school.

Although the scale of the Mellar and Jackson and Lienard enquiries falls short of that of the DfE biennial surveys, they nonetheless encompass several hundred students. Unlike head teachers responding to official 'government' questionnaires, it is difficult to think of any factors or pressures which might have induced the trainees to present a misleading picture of their experience of computers in school.

Other surveys also revealed that the use of computers in secondary history classrooms compared unfavourably to other curriculum areas. Simkin (1989) claimed that whereas 84% of Maths departments were using computers, less than ten per cent of history departments did so. Studies by Cuckle *et al.* (2000) and Williams *et al.* (2000) also placed history towards the bottom end of the continuum in terms of the extent to which history teachers and trainee teachers made use of computers in their teaching.

Overall, a review of the studies conducted by independent academic researchers lends support to Easdown's (2000: 19) judgement that 'a growing body of both

anecdotal and research evidence has shown that computers are the exception rather than the rule in history classrooms'.

Reconciling the stories about the use of ICT in secondary history

Given the very different findings of studies on the use of ICT in history – not least the wide disparity between the DfE figures and the findings of Ofsted inspection reports – it is difficult to feel completely sanguine about DfE figures.

One hypothesis which could be advanced is that the particular combination of questions posed by DfE surveys made it difficult for head teachers to justify not using computers in the classroom. In addition to the pressure generated by Ofsted inspection reports and National Curriculum specifications relating to the use of ICT, the DfE surveys also made it apparent that provision for, and access to computers in schools had increased significantly. With one computer for every six pupils, and an explicit curriculum requirement that computers be part of children's learning experience in school history, what excuse could history teachers give for not incorporating computers into their history lessons? This is not to suggest that head teachers were wilfully and cynically misrepresenting what was happening in their classrooms, but to give some indication of the psychological pressures which might lead them to err on the generous side when asked to give a rough estimate of the extent of computer based learning in their schools. It seems implausible that head teachers kept a written audit of computer usage across the curriculum, given the many other administrative burdens which they had inherited. The methodology of the surveys invited an impressionistic response from heads. The vagueness of the categories in the DfE and NFER surveys allowed head teachers a degree of latitude in their responses – only 'regular use' is precisely defined, as indicating twice a week or more; terms such as 'substantial', 'some', and 'little' are

more malleable. Given that expenditure on computers per pupil had gone up from under £3 in 1985, to £66 in 2001, and the massive increase in the numbers of computers in schools, it would be a brave head teacher who admitted that no-one was making much use of them.

In the climate created by league tables, inspection, audit and target setting, and the impact of market forces on pupil numbers and school funding, schools were understandably subject to a degree of trepidation about the publication of Ofsted inspection reports, league table scores and other information which might enter the public domain. In such a climate, it is at least conceivable that there might be a temptation slightly to inflate the extent to which computers were being used in the classroom, when use of ICT was generally perceived to be good practice and where the most convenient way of estimating the prevalence of classroom use of computers was to ask teachers and head teachers to give a rough estimate.

The methodological frailty of simply asking 'providers' how much computers were being used in schools is also illustrated by Freeman's findings (1996) from a survey of 91 Local Education Authorities on the use of ICT in history. In answer to the question 'What are schools in the LEA doing in history with IT?' responses indicated that in 96% of LEAs schools were using CD-roms for research, and the same percentage were using word processing for extended writing. It was claimed that 93% were using historical simulations, 89% desktop publishing, 78% investigating historical databases, 54% using newsroom simulations, and over 30% using timeline programs and spreadsheets.

As Yeomans (1997: 88) pointed out, 'it is notoriously difficult to research the extent to which a cross-curricular element is in fact occurring across the curriculum. The accounts of teachers who have a stake in claiming that computers are used across the curriculum cannot be considered reliable on their own.'

As for the reliability of Ofsted judgements on the use of ICT in the teaching of history, there is the advantage of actually being in schools and being able to witness what is going on in history classes first hand. In addition to being able to scrutinise relevant documentation, lesson plans, schemes of work etc, they are also able to talk to both 'providers' and 'users' in a way that provides for a form of triangulation not present in the DfE surveys. Set against this are the caveats that a typical inspection lasts three to four days in every four to six years, and as such is something of a 'snapshot' judgement, and what goes on in those few days, and in the period of preparation for inspection, may not be typical of the pattern of ICT use over the longer term.

The surveys conducted by academics have generally been on a smaller scale than those of the DfE, and NFER (Harris and Preston, 1994) studies, but the methodology underpinning the studies, in several cases involving a degree of triangulation in terms of the incorporation of a variety of perspectives (Elliott, 2001), may be more appropriate for 'telling the truth' about the use of ICT in the history classroom. In two presentations on the ImpaCT2 Report, Somekh pointed out the pressure on researchers commissioned by the DfEE to come up with positive outcomes that would be helpful in securing further funding from the Treasury for new technology in schools (Somekh 2003a, 2003b). Unfunded research may be generally smaller in scale than funded projects, but it is also free from some of the pressures and constraints which affect researchers who are commissioned by government departments or associated agencies, in an era where 'evidence based practice' is a buzzword, and where *dirigiste* policymakers may be looking to researchers to validate their policies and practices.

There is sufficient divergence of opinion and judgement in the sources examined above to justify a degree of scepticism about the reliability of the DfE surveys, and to make a case for further enquiry into the use of ICT in secondary history.

What has been the attitude of history teachers and trainee teachers to the use of ICT in school history?

If we are trying to gain understanding and insight into the part that ICT has played, and might play, in secondary history teaching, it would be helpful to have some knowledge and understanding of what secondary history teachers think about the role and potential of ICT in the teaching of their subject.

While some surveys have pointed to problems of access to computers, other commentators have blamed the 'rhetoric-reality gap' on the luddism of teachers. Cohen (1999) quotes a DfEE document as describing teachers as 'a hurdle to be overcome', but the view of teachers as methodologically conservative and resistant to pedagogical innovation is not confined to politicians and policymakers. As Dawes (2001: 61) notes, 'The history of educational computing reveals that teachers have long been seen by educational technologists to exhibit a range of obstructive behaviours from incompetence to sheer bloody-mindedness, doggedly resisting change.'

Several studies have explored why teachers as a whole have sometimes been slow or reluctant to explore the use of ICT in their teaching (see, for example, Fisher, 1996, Williams *et al.,* 2000), with reasons ranging from problems of access, teacher confidence, lack of technical support, inappropriate software, lack of time, pressure to cover curriculum content and concerns about classroom management emerging as reasons for not using computers.

But there are also factors which relate to the nature of the subject discipline being taught. As the previous section demonstrated, several surveys suggested that the use of computers in history tended to lag behind several school subjects. Cuckle *et al.* was one such study, with a survey of 285 PGCE trainees revealing that history trainees were in the 'lowest use' category, along with languages, religious education and English. As Cuckle plausibly suggested, 'There may be more obvious uses of ICT for more numeric subjects such as the sciences and maths, as opposed to less numeric subjects such as humanities and languages' (Cuckle *et al.*, 2000: 14).

This section of the chapter looks at the historical record which relates particularly to the attitudes of history teachers towards the use of ICT, in an attempt to gain insight into the ways that teachers' conceptions of the nature of their subject discipline influenced their disposition towards, and use of ICT.

It should be borne in mind that by the 1990s the use of ICT was no longer regarded as 'optional', or the preserve of eccentric enthusiasts. There was now considerable pressure on teachers in all school subjects to incorporate ICT into their teaching, for reasons that were not always directly related to the delivery of their subject. In the words of MacDonald (1993: 143), the failure to use computers in the classroom was seen as:

> increasingly unacceptable in a society where computer competence is perceived as a necessary outcome of the educational process. In Eraut's terms, goals which were expressed in statements like "through IT you can teach xxxx better" are being replaced by those which try to answer questions like "Where are you developing IT competence?" Such goals now have more compulsion and all teachers now have to come to terms with IT in the classroom.

There were other forms of pressure on teachers to use computers in their teaching. As well as the fear of negative comment in Ofsted inspection reports if computers did not feature in departmental schemes of work and in practice, (sometimes two different things; see Harrison, 1996, Haydn, 1996), HMI's attitude to computers was broadly positive, albeit in a measured and cautious fashion:

> Teachers of history cannot afford to ignore the computer and its associated software as teaching aids. Currently there are too few programs and too little evidence of classroom experience available to gauge accurately how big the impact of computer assisted learning (CAL) will be on the way that history is taught.
>
> (DES, 1985: 38)

History HMI Carole Baker's keynote address to the first Computers in the History Classroom Conference at Leeds University in 1988 (Baker, 1990) was another indication of HMI's stance on the role of ICT in history, although approbation was couched in more measured terms than many of the comments of politicians and 'techno-fundamentalists'. A 1988 report, whilst generally welcoming early experiments with computers warned that 'teachers should be on their guard against uses of IT which, posing questions ostensibly set in past times, do not really stimulate pupils to ask historical questions' (DES, 1988: 20).

Pressure to use ICT in subject teaching did not stem purely from 'official' sources. Nichol (1987: 223) echoed the concerns of many history teachers about the status and security of their subject within the curriculum; 'if history does not rise to the computing challenge, its failure to do so could be a factor in its being a subject at risk within the curriculum.'

It is possible that these various pressures to use ICT in history, together with teacher anxieties about their technological competence (Easdown, 1997a), may have evinced a hostile counter-reaction, but this is something that is difficult to quantify. How many teachers, when asked about why they don't use computers are going to say that it is 'because I am pedagogically inadequate and scared'?

In reading through HMI and Ofsted comments about the use of ICT in history, it is interesting (to me at least) to correlate them against my own experiences as a history teacher at the time, in the late 1980s and early 1990s. Although I was not aware of all these statements at the time, my recollection of 'official' attitudes to the use of computers was very much that they were seen as 'a good thing'; that good heads of history ought to be doing things with computers in classrooms (irrespective of any intrinsic benefits to learning outcomes in history), and that heads of history who were not doing anything with computers might be perceived to be 'past their sell-by date' by advisors and school managers. At meetings of heads of history, ICT activity in the department was seen as a way of gaining 'brownie points' in the eyes of the local history advisor, and was also seen as a source of anxiety for those heads of history not in the vanguard of technological change. It was certainly seen as being an advantage if one was more *au courant* with computer applications in history than the advisor.

So how did history teachers respond to the pressures to use ICT, and to the increasingly strident claims made for the use of computers in education (see Chapter 2)?

As early as 1989, Wild claimed that there was a general consensus in favour of ICT in the history teaching community, stating that 'the idea that the discipline of history has much to gain from the widespread use of computers in teaching and learning is nowadays accepted by all but the most determined of technological reactionaries'

(Wild, 1989: 22). An almost diametrically opposing view was advanced by Nichol (1987: 220): 'In general, history teachers and trainee teachers see the computer as a potential threat. Teacher and student concern can be phobic.' Nichol argued that not just in Britain but in Australia, New Zealand and Norway there was

> suspicion of the claim that the computer can play a major role in the teaching of humanities subjects, suspicion which can spill over into hostility and anger. Where does this negative concept of computing come from, the removal of which is essential for the development of computing as a natural element within the teaching of history to all age and ability groups?

In considering the question 'Why are so few history teachers actually using microcomputers in lessons?', a survey carried out with 21 heads of history in Leeds in 1988 found that that over half the teachers surveyed had 'deep rooted worries and criticisms about the use of computers' (Almond and Tomlinson, 1990: 28). Interestingly, the survey found that the use of computers did not figure prominently in their views on significant recent developments and important future issues for history teachers. Only one respondent identified the use of computers as a major issue, and only 19% felt that using computers was a significant recent development for history teachers. Was this area of Yorkshire a Luddite enclave, or might this small survey be broadly representative of a broader constituency of history teachers?

The work of Easdown (1994, 1997a, 1997b, 2000) and Summers and Easdown (1996) suggested that history teacher and trainee teacher reservations about the use of ICT in school history were not confined to the West Riding of Yorkshire.

In a survey of the preconceptions and attitudes to computers of 62 history and geography PGCE trainees at the University of Oxford (31 of each), carried out in 1994-

5, when asked for a 'gut reaction' to computers, 18 out of 30 history PGCE trainees gave a negative response, whereas the majority of geography trainees responded positively. Seven history trainees felt that computers had little importance in the teaching of their subject, as against only one geography trainee, with the remaining 28 regarding computer use as an important part of being able to teach their subject (Summers and Easdown, 1996).

In a 1997 report of the same survey, Easdown noted significant differences in the attitudes of the trainees in the two subjects, with geography trainees being both more positive and clearer in their rationale for teaching with computers. Fourteen of the historians identified a positive role for IT but 'references to specific applications and subject specific software were absent from the data from historians. It seems that while many historians were aware that IT could be useful they were uncertain as to what those uses might be' (Easdown, 1997a: 105). Nine of the historians were ambivalent or sceptical about the part that computers might play in school history and appeared to believe that history could be taught equally well without computers, with comments such as 'IT is an added extra', and 'History as a subject can stand independently of IT and is therefore not important in teaching.' Another gave a grudging recognition of a role for IT but concluded that 'worryingly, it may have increasing uses'.

In analysing the responses, Easdown concluded that 'for a substantial minority, beliefs about the nature of their subject and its pedagogy may play an important part in the way they view IT' (Easdown, 1997a: 108). He also discerned amongst the trainees 'a distinct group of historians who exhibit a very high degree of anxiety about IT and who express their views in very emotional terms' (107).

In other papers which focused on the attitudes of the experienced history teachers who were acting as mentors for the trainees, Easdown reported on the responses of

history mentors to the trainees' views. He recounts that on one occasion, when, as a teacher trainer in higher education, he reported to a group of history mentors that one of his students regarded ICT as devoid of any use or relevance for the teaching of history, there was a spontaneous cheer from most of the teachers present. As with the trainees, many of the experienced history teachers had reservations about the ways that computers were being used in school history, including concern that they were being asked to deliver aspects of the technology orders that had nothing to do with history, and that this would detract from their function as history teachers. Mentors felt reasonably comfortable about the use of databases 'which seemed to conform to the mentors' conception of what it meant to be an historian and to do history', but rejected simulations because 'they didn't do the sorts of tasks which historians would have to do and presented pupils with very simplistic models of historical issues and events and rather limited opportunities to develop their understanding' (Easdown, 1997b: 158-9). The overall tenor of his earlier surveys suggests strongly that many history trainees and experienced history teachers had ambivalent or hostile attitudes to the use of ICT.

A later survey of history teachers in Staffordshire (Easdown, 2000) suggested that attitudes may have mellowed and become more positive, with 82% of the 62 respondents expressing a positive or fairly positive attitude to the use of ICT in history, but there was still a concern expressed about how the use of computers related to subject pedagogy. One respondent said, 'I perceive my attitude to computers as realistic. However, because they are so educationally politically correct, I think they have a weight of propaganda behind them that indicates goggle-eyed enthusiasm is the appropriate response.'

Other responses included the following:

- 'In terms of transferring historical skills, its impact is minimal.... It's a useful tool... but you don't need it to teach the key elements other than possibly key element five.'
- 'Not essential, though useful. History could be taught without them.'
- 'History can be taught perfectly well without ICT.'
- 'It is a tool and has a place; however, video has much more to offer than computing at this stage.'

(Easdown, 2000: 23)

The DfE surveys on the use of computers in schools did not focus on teacher attitudes other than in terms of 'teacher confidence' in using computers. The 1996 survey (DfEE, 1997a) reported that 55% of secondary history teachers felt confident in the use of computers, and this rose to 61% in the 1998 survey (DfEE, 1998a). Subsequent surveys delineated only in terms of type of school rather than subject, with teacher confidence in the use of computers in secondary schools rising to 70.2% in the 2001 survey (DfES, 2001b).

History teacher attitudes to the use of ICT are another area where study of the present knowledge base does not provide a clear cut and unambiguous picture of how things stand in relation to the use of ICT in schools. Not only are there conflicting and contradictory sources, it is also possible that in the light of significant developments in this area over the past few years, history teachers' attitudes to the use of ICT have changed since some of the earlier studies cited here.

What does emerge from a study of what has been written about teachers' attitudes to ICT is that there are differences between school subjects, and that perceptions of the

usefulness and value of ICT are related to teachers' ideas about the nature of their subject discipline and the purposes of school history.

What use *did* history teachers make of ICT during this period?

The aim of this section is not to give a comprehensive catalogue of software, projects and examples of computer use in secondary history. Nor is it possible to give an accurate quantitative picture of computer use by application in secondary history from the sources available. An attempt is made to provide an overview which gives some insight into the ways in which computers have been used in secondary history, and how use has changed over time, which is as accurate as possible given the limitations of the sources available. This then serves as part of the basis for considering what advantages ICT appears to offer to teaching and learning in history.

General surveys on the use of computers in schools suggested that in the earlier period (from the late 1970s to the mid 1990s), wordprocessing and datahandling were by some way the two most commonly used applications in secondary schools (see, for example DES, 1993, DfE, 1995a, Harris and Preston, 1994, Trushell *et al.*, 1995). In the early 1990s, graphics packages and CD-roms began to be used more widely, and as the 1990s progressed, the internet became an increasingly influential element of ICT use by teachers and trainee teachers (Murphy and Greenwood, 1998, Cuckle *et al.*, 2000, DfEE, 2000, DfES, 2001b, 2002a), although it is interesting to note that as recently as 2000, one survey found that wordprocessing and datahandling remained the most commonly used applications (Williams *et al.*, 2000). More recently, multimedia and web authoring, electronic and video conferencing and the use of presentation software such as PowerPoint became more commonly used applications of ICT, in at least some schools (see, for example, Haydn and Counsell, 2003).

It is however, difficult to form a precise picture of exactly which ICT applications were used in how many history classrooms over the period in question. Most of the surveys on the use of ICT in secondary schools, including the DfE surveys, did not disaggregate the prevalence with which particular applications were being used by school subject.

One large study did attempt to find out which particular ICT applications were being used in particular school subjects. Embracing 150 secondary schools, it reported that wordprocessing was being used by 84% of history departments (with 42% using word processing 'very widely', or 'significantly'). Desktop publishing, mainly to produce newspaper 'front pages', was thought to be used by 66% of schools (12% 'very widely' or 'significantly'), database software by 65% (26%), and simulations, 81% (21%). Some 68% of departments reported that they found the history software which they used to be 'useful', and 20% deemed it to be 'very useful' (Harris and Preston, 1994).

Another, albeit smaller survey, attempted to discover how many history departments were using particular applications, and this largely served to corroborate the picture presented by the Harris and Preston survey, in terms of which ICT applications were most commonly used in secondary history. A survey of Dorset schools, conducted in 1990, found that simulations were used in 17 secondary history departments (59% of the total), and that four schools (14%) were using databases. Word processing/desktop publishing was used in 34% of schools, and graphics software in 13% of schools but these latter two figures did not distinguish between primary, middle and secondary schools (Martin, 1992).

More recently (2000-1), the Fischer Family Trust conducted a survey of the ways in which history teachers used ICT resources, based on a questionnaire survey of 122 history departments. The results give an indication of some of the changes in emphasis

which have resulted from more recent developments in ICT. Wordprocessing was still one of the main applications used, with Microsoft Word emerging as the most common response, mentioned by 55 departments. Desktop publishing also remained popular (26 responses), but most of the other uses of ICT that featured prominently were either websites or multimedia CD-roms. Amongst the web sites, *Spartacus Education*, *The Learning Curve*, the *BBC History* website and the *History Channel* were mentioned most frequently. The multimedia encyclopaedia CD-rom *Microsoft Encarta* was mentioned by 52 departments; other CD-roms which elicited more than 15 responses were *Castle Explorer*, the British Library CD-roms on British History, and CD-roms on the First and Second World Wars. Amongst other 'generic' applications, Excel (spreadsheet program) was mentioned by 20 departments, digital cameras by nine, and PowerPoint by seven. Over 90% of departments reported that using wordprocessing and spreadsheet programs enabled them to work more efficiently and to save time (Fischer Family Trust, 2002).

This level of specificity is hard to come by in most of the sources that provide information about the use of ICT in secondary history. The 1980s and early 1990s saw a proliferation of different software packages for history, with NCET estimating that by 1994, there were over 250 history software programs (NCET, 1994). Even where departments possessed particular programs, it was almost impossible to ascertain the extent to which they were used in practice, or even whether they were used at all.

The increase in the amount of published literature on the use of ICT in school history did however make it possible to see which types of ICT application were being talked about, reviewed, evaluated and discussed. *Teaching History*, the main professional journal for history teachers in England and Wales, with its regular *Computer Updates* section, articles, and special issues on ICT, is a particularly helpful source for providing

some indication of which types of ICT application were 'in the news' and being trialled by practising history teachers. The journal also reported on many of the initiatives which were launched to promote the use of computers in school history, and these projects again give an indication of what was being used in secondary history classrooms.

An analysis of articles in *Teaching History* about the use of computers in this early phase reveals that simulations and databases were the main ways in which attempts were made to incorporate the use of computers into school history (Labbett, 1979, Ennals, 1980, Worrall, 1981, Ross, 1983). Early projects in history supported by the Microelectonics Support Unit (MESU) and the Microelectonics Project (MEP), agencies which had been put in place to support the development of computer use in education, included the *Humanities Teaching and Computing* project (Nichol, 1984), the *Computer Education and History Teaching in Oxfordshire* project (Bennett, 1986) and *Project HIT: Humanities and IT* (described in 'Computer Update', *Teaching History* No. 53, October 1988: 39).

The proceedings of the 1988 *Computers in the History Classroom* Conference at the University of Leeds (Martin and Blow, 1990) and the first of the 'special issues' of *Teaching History* to focus on ICT, which included Simkin's review of history software programmes currently used in secondary schools (Simkin, 1989), suggested that even as late as 1990, the use of simulations and databases remained the main avenues for trying to exploit the potential of the computer for enhancing teaching and learning in history, although there were still nagging doubts about how many history departments made regular use of such programs (Nichol 1987, Haydn, 1993). Schick's (1990) volume *Teaching History with a computer* demonstrated that in the United States also,

simulations and databases dominated early attempts to use computers in the teaching of history.

The inception of the National Curriculum for history (DES, 1991b), with its emphasis on the cross-curricular delivery of ICT, and the idea that 'key skills' would be developed through all school subjects (DfE, 1995b), was a complication for the development of ICT as a means for enhancing teaching and learning in history. The non-statutory guidance on capability in ICT which accompanied the National Curriculum Orders (NCC, 1991) endorsed the use of computers in history to deliver ICT attainment objectives. The 'cross-curricular' approach to ICT meant that subjects were at least to some extent to be regarded as 'service' subjects for developing pupils' ICT skills. As Abbott (2001: 44) remarked, this created 'an unresolved tension around the issue of ICT as a subject in its own right or as a set of tools with which to deliver and absorb the other subjects in the curriculum'.

Instead of just thinking about what would make for a better history lesson, history teachers were under pressure to demonstrate to curriculum managers in schools how their subject was contributing to the development of pupils' competence in ICT. It was not uncommon for schools to construct a curriculum grid which required particular departments to ensure that every pupil in the school experienced a specified ICT activity, so that full breadth of exposure to ICT development could be 'ticked off' when Ofsted or LEA inspectors came into the school. Thus in my own department, all children in year 7 (11-12 year olds) had to be 'certified' as having undertaking the production of a 'historical' newspaper front page through the use of a desktop publishing package. Not only did this put something of a straightjacket on the use of ICT, it was rather like dipping sheep.

The 1990s also saw the replacement of fairly primitive BBC B Masters computers with much more powerful personal computers, with increasing numbers of them possessing 'multimedia' capability. This was to have several important effects on history teachers' use of ICT. One element of 'collateral damage' arising from this transition was the disappearance of the vast majority of history simulations which had elicited the enthusiasm and interest of many history teachers. *Into the Unknown, Wagons West, Attack on the Somme, 1914, The Great Plague, Wall Street Crash, Presidential Elections, Russian Revolution, French Revolution, 1066* were just some of the simulations which went into the dustbin of educational technology history with the demise of the BBC B computer. The programs did not work on the PC and Archimedes computers which superseded them, and at the 1996 *History and IT* Conference sponsored by NCET (8 March, Coventry), it was explained that it was not commercially viable to develop updated versions of them.

Balanced against this were the greater power, speed and memory of the new generation of school computers, and the development of history CD-roms which could take advantage of the multimedia capabilities of the new computers.

Freeman's study of the uses of ICT for teaching history which was presented at the 1996 NCET conference demonstrated that there were several new developments in the field of school history and ICT (Freeman, 1996). According to her survey of over 40 LEAs, in addition to the more 'traditional' applications such as databases and desktop publishing, history departments were using 'Timeline' software programs to develop pupils' grasp of chronology, wordprocessing exercises to develop pupils' abilities in extended writing, authoring packages, and newsroom simulations of unfolding historical crises. Some departments were also starting to make use of graphics packages and clip art software. Freeman's paper reported that according to LEA feedback, most history

departments were making use of CD-roms, but it should be kept in mind that they also claimed that history departments were making wide use of just about everything.

The development of history CD-roms elicited substantial interest in *Teaching History* and other history and ICT publications. The British Library series of CD-roms on British History received glowing reviews in the history education press (see, for example, West, 1994, Counsell, 1998), and history CD-roms made rapid strides forward in terms of instructional design, teacher support materials, and relevance to National Curriculum content and structure. This was achieved in part, as exemplified by the British Library CD-roms, by securing the close involvement of practising teachers, history advisors, and tutors involved in ITT, rather than relying extensively on commercial and ICT experts.

But in spite of these improvements, the high profile accorded to CD-roms, and the enthusiastic comments of politicians about the potential of CD-rom technology in education, their use was not unproblematic. As well as the high cost of many history CD-roms (the British Library CD-rom *Making of the UK* originally retailed at £150), there were often problems with networking, memory and speed. Also, as Entwistle (1994: 41) noted, 'it is not easy to avoid the temptation to browse through this sort of resource without a serious attempt at investigation'. Walsh (1998: 6) coined the term 'Encarta Syndrome', to describe the tendency for many pupils to simply cut and paste information from CD-roms indiscriminately, often without even reading it. It was found that several schools which were given a multimedia computer and a package of several CD-roms to promote the use of ICT did not subsequently add to their collection of CD-roms and that history trainees found it difficult to incorporate them into classroom use (Hooper, 1996, Haydn, 1999). The development of the internet, which did not involve departments in the capital costs which the purchase of CD-roms

entailed, may also have served to reduce the impact of CD-roms in the history classroom. It did not turn out to be the 'killer application' which would mark a 'sea-change' in the fortunes of ICT in school history, that some had predicted.

Two developments which were helpful for helping history teachers to explore the use of ICT in their teaching came about gradually in the latter half of the 1990s. First, there was an acknowledgement that there was no necessary correlation between the sophistication of new technology and its potential for enhancing teaching and learning in history. Whereas politicians' interest in ICT tended to focus on 'cutting edge' applications such as multimedia, video-conferencing and the internet (see Chapter 2), many of those more closely involved in INSET and development work in ICT (Walsh, 1998, Martin, 2003) argued that 'fitness for purpose' and affinity with the nature of the subject discipline were more important considerations, and that 'blunt edge' applications could be extremely helpful in history teaching. This was acknowledged by SCAA in a 1996 policy statement on the use of computers in history:

> Progression in IT capability and historical understanding do not go hand in hand. Sophisticated historical thinking can be developed by using simple software, while the complex use of IT applications may not require pupils to undertake demanding historical analysis.
>
> (SCAA, 1996: 2)

It could be argued that the ICT applications which made most impact on secondary history teaching tended to be comparatively less complex and sophisticated in terms of the level of technology involved.

Activities which involved wordprocessing and datahandling were more commonly used than exercises in multimedia authoring and inter-school videoconferencing. Austin's work on the use of videoconferencing (Austin, 1994, 1995a, 1995b, 2000)

demonstrated that it could be used to great effect in school history, to facilitate discussion on the causes of World War One between sixth formers (16-18 year olds) in different European countries, or to promote dialogue between pupils studying history in Northern and Southern Ireland, for example. But Austin acknowledged that not all schools possessed the facilities to use video conferencing, or history teachers who possessed the technological confidence and know-how to use this application.

HiDES (Historical Document Expert System) software was another example of what could in the right context be dazzlingly ambitious and complex use of ICT in sixth form teaching, allowing pupils to make judgments on the comparative adequacy of differing interpretations of historical events, and then receiving feedback on their responses from 'the historian in the computer' (Colson, 1997, Jenkins, 1997).

But both these examples seemed to substantiate the assertion of Davis *et al.* (1989), that ICT applications needed to be a) perceived to be useful by teachers, and b) easy to use, if teachers were to make widespread and frequent use of them. Simplicity, convenience, reliability and straightforwardness (plus not taking up too much curriculum time), were perhaps more influential factors than sophistication, complexity and ambition.

The other helpful development which made it easier to explore the potential of ICT in school history was the move away from using history to teach ICT, and the recognition that a better way forward would be for ICT to be used in whatever way best suited the needs of the subject. In Selinger's words, training in ICT began to be targeted 'not at teachers' basic ICT skills, but in the use and application of new technologies for subject teaching' (Selinger, 2001: 7). This was explicitly recognized in many of the curriculum and initial teacher training documents which were published in the late 1990s (see, for example, DfEE, 1998b, TTA, 1998). It meant that teachers could concentrate on

thinking about how ICT might make for a better or more enjoyable lesson, rather than how to satisfy the school curriculum mapping audits for ICT.

In 1996, the DfEE funded a major project which aimed to produce curriculum materials and guidance that would help to 'move things forward' in history and ICT and broaden the base of teachers who would make regular use of computers in their teaching. The project, *History using IT*, was undertaken by NCET (later BECTa), working in conjunction with members of HABET, the Historical Association's advisory committee on ICT. The main outcomes were two resource packs, one focusing on the use of wordprocessing to develop pupils' extended writing in history, and another focusing on the use of databases (NCET/Historical Association, 1997, 1998). Sales of the resource packs 'exceeded all expectations' (Dickinson, 1998: 17), reaching well over half the secondary schools in England and Wales. There was some evidence to suggest that the materials were more successful in getting substantial numbers of history teachers to incorporate computers into their classroom practice than some of the previous initiatives (Dickinson, 1998, Counsell, 1999b).

A development which was less helpful for the integration of ICT into classroom practice in history was the move towards concentrating computers in networked computer suites, rather than having them dispersed in teaching rooms (DfEE, 1997a, DfEE, 1998a). This was to have important (negative) effects on the use of computers in secondary history. Harris and Preston's (1994) survey of ICT use in schools found that history departments had fewer computers in them than any other subject. Given the difficulties of securing access to ICT suites, and history teachers' ambivalence about using them (see Chapters 4 and 5), this tended to discourage regular 'integrated' use of ICT into classroom teaching in history. It is interesting to note that as early as 1987, when Nichol (1987: 227) posed the question of what might change the negative

disposition towards computers exhibited by some history teachers, one of his suggestions was that 'a minimum requirement would be a single micro(computer) and 2 large VDUs (visual display units/large monitors)' in history classrooms. In spite of the substantial increase in the number of computers in secondary schools, the way that they have been deployed means that 15 years later, this 'minimum requirement' has still not been met.

Two further developments in ICT were to have an impact on history teachers' use of ICT in the later period, in the late 1990s and the first years of this century.

One was the development of the internet. A survey of more recent editions of *Teaching History* gives some indication of its growing importance; since 1998, over a dozen articles have focused on some aspect of the use of the internet, more than any other ICT application (this trend is even more pronounced in one of its American equivalents, *History Computer Review*).

The development of the internet radically changed ideas about *how* history teachers would use computers in their teaching. With the revolution in communications technology in the 1990s, ICT offered 'an extraordinary supplement to the resources normally available for the study of history' (Harrison, 2003: 39).

There is emerging evidence from several recent studies (Ofsted, 2002, Walsh, 2003; see also Chapters 4 and 5), which suggests that increasingly large numbers of history teachers, trainee history teachers (and pupils) are making regular use of ICT, in the form of using the internet to assemble 'bits and pieces' which will form some component of or contribution to their lessons. Walsh (2003) refers to this process as 'building learning packages'. This might seem an unremarkable phenomenon, given how quickly the internet has permeated the consciousness of education professionals, but in terms of history teachers' use of ICT it represented a radical departure from the paradigm which

was prevalent in the early 1990s, with its emphasis on 'hands-on' experiences for pupils which would generally have some form of measurable 'pay-off' in terms of pupils' ICT capability. This mode of ICT use often involved a once a term (or once a year) visit to the ICT suite to undertake the set-piece ICT 'special' which would satisfy the school ICT audit, and demonstrate to the outside world (i.e. Ofsted), that ICT was taking place. This 'incidental' use of ICT, which did not necessarily involve 'hands-on' experience for all pupils was not the sort which politicians had in mind, but it seemed to be emerging as an important development in secondary history teachers' use of ICT.

A second recent development in history teachers' use of ICT, even more embryonic than the use of the internet, was the deployment of data projectors in history classrooms, or large monitors such as Hantarax screens, or even large television screens with an appropriate connection to a computer (Harrison, 2003, Walsh, 2003). These could be used to provide whole class projection facilities within the history classroom. Again, this (the use of large monitors) was not an application which had evinced the interest of politicians and policymakers, and there are still very few data projectors or large monitors in secondary schools in England and Wales (see Chapter 5), but a tentative hypothesis advanced in later chapters is that these large monitors had considerable potential for helping to bridge the 'rhetoric-reality gap' between the benefits that computers *might* bring to school history, and its record in the period which has just been examined.

What claims have been made for the potential of ICT to improve teaching and learning in history during this period?

The claims made in general for the use of ICT in schools have been considered elsewhere (see Chapters 1 and 2). This section of the chapter attempts to assess the

plausibility of the claims advanced for the use of ICT in secondary history in particular, as identified in the literature which has emerged in this field.

It is important to keep in mind who was making these claims. Baker (1983: 208) warned of the 'overhyping' of ICT, 'led by technocrats and AI (Artificial Intelligence) buffs with inadequate understanding of learning issues and subject values'. Were the claims made by curriculum theorists, politicians and ICT 'advocates', working at some distance from the world of real classrooms, or by history teachers working with ICT with real, live children? And how much evidence was there to substantiate these claims? Were they largely impressionistic assertions, sometimes made by the instigators of the ICT innovation themselves, evaluating their own project, or were they supported by credible research evidence?

The following section of the chapter attempts to classify (and qualify) the various claims which have been made for the potential of ICT to enhance teaching and learning in secondary school history.

i) The close correlation between the attributes of computers and the mental operations involved in 'doing history' meant that computers were a useful tool for developing pupils' historical skills.

Wild (1987: 286) talked of the potential of the computer 'as a tool which is able to mirror the processes involved in doing history'. Reflecting on an evaluation of computer assisted learning software (QUEST and Viewdata) which had been trialled in schools, he argued that the computer made it possible to create learning environments of a type which involved pupils in cognitive processes especially relevant to history, for example

> the nature of making and testing hypotheses to form deductions, that is a hypothetico-deductive process, becomes essential practice to students, who use a powerful data-handling system in their work. Moreover, using the computer in this way may serve to heighten a student's conceptual understanding of historical methodology.
>
> (Wild, 1987: 290)

Pupils used the datahandling software to analyse a datafile on the plague which had 1,100 records. Wild claimed that this exercise would have been difficult or unmanageable without the computer, and argued that the following learning outcomes were achieved:

> Students were able to reach a number of tentative but important conclusions on the role of routeways, nurse-children, in spreading the plague. More importantly, both the limitations and potential of burial registers as evidence of social life in the seventeenth century were now better appreciated.... The need to turn to other source material... to test further and more refined hypotheses also became apparent.
>
> (Wild, 1987: 295)

The claim that computers made it easier to develop pupils' conceptual understanding of history as a form of knowledge was also advanced by Blow (1987), in her evaluation of the use of eight computer assisted learning packages which had each been trialled in 'up to' 20 schools across the UK. e argued that simulations of historical events, (including counter-factual simulations such as *Palestine 1947*) could be effective in teaching historical concepts:

> Pupils will not simply learn about the past, but about the nature of history, and in such a way that is useful to them – if only to help them to make sense

> of the present.... Causal models are often employed in the physical and social sciences and provide a way of visualizing what cannot be directly observed, and for making predictions about the performance of physical and social systems under extreme conditions. Such models might seem inappropriate in history, which is not subject to covering laws in the same way as physics, for example. But it is a useful aid in revealing to pupils the underlying structure of events in an information rich subject.
>
> (Blow, 1987: 286)

In a separate trial of computer based materials, Lewis, a secondary history teacher, argued that interrogating and interpreting computerized census data could help develop pupils' cognitive development in 'comprehension and cross-referencing skills, awareness of bias and awareness of reliability, to name but a few aspects' (Lewis, 1985: 160).

Reflecting on his extensive experience in early projects on history and computing, Nichol (1987: 235) also argued that in attempting a skills based approach to school history, the use of computers could help pupils to develop an understanding of history 'as a separate domain of knowledge, with its own procedural and propositional knowledge'.

These claims were based on small scale case studies, not major national surveys, and not all those involved in history education agreed with them. In a highly critical review of two early volumes on History and ICT, Barker questioned both the moves towards 'skills based' history, and the claims made for computers within that approach:

> You study the French Revolution to learn about empathy or enquiry, not because Danton or Napoleon are of especial interest. Now EDFAX and interactive programs have been substituted for detective games and sepia

> tinted "sources", one period or topic will serve as well as another for teachers with vocational aims and electronic methods.... Study skills seem to replace academic disciplines; content with its subtle meanings becomes secondary to "information processings", is lost in pure technique.... Acolytes like Dickinson, Wild and Blow are seduced by multi-coloured graphics, flickering VDUs and sonic beeps.... Teachers tempted by similar glitter can find themselves side-tracked from history into a futuristic life of programming, software and data-banks.... The superficial facility of electronic methods will not make complex statistical questions any easier, however "motivated" pupils seem.
>
> (Barker, 1987: 30)

Easdown's research suggested that Barker was not the only history teacher to reject some of the claims made for ICT in history.

Another counter-argument to this particular claim for the use of computers (and to the skills-based approach more generally) was the time which such methods involved, resulting in reduced content coverage, and a generation of school leavers who had consequently very limited knowledge of the substantive past (see, for example, Starkey, 2003).

ii) The development of communications technology increased history teachers' and pupils' access to resources and information

In the foreword to a recent volume on school history and ICT, Copeland (1997: viii) pointed out that until the development of the internet, 'of all the information pertinent to a historical issue, a very small percentage has typically been available to students'. On a school visit, observing pupils accessing Public Record Office documents on the

Trimdon Grange mining disaster of 1882, Prime Minister Tony Blair echoed this enthusiasm for this particular attribute of ICT: 'it's going to bring libraries and archives right into the classroom. The children can access virtually anything they want' (*Guardian*, 7 November, 1998). History HMI Scott Harrison (2003: 39), who had recently carried out a programme of inspections of secondary history departments to ascertain the impact of ICT on teaching and learning in history noted as one of the striking developments in this area, the 'extraordinary supplement to the resources normally available for the study of history'.

In celebrating the arrival of 'the information rich' history classroom, Copeland (1997) also pointed to the enhanced opportunities which this provided for undertaking activities on historical interpretation, because of the vast increase in access to sources.

Arnold (2000: 18) pointed out that the Greek word which has become 'history' originally meant 'to enquire', 'and more specifically, indicated a person who was able to choose wisely between conflicting accounts'. The 'communications' strand in ICT had transformed the scope for presenting pupils with a range of differing interpretations and representations of the past, and 'conflicting accounts'. Given limitations of space in even the best of text books, it served to increase the opportunities for pupils to learn history 'by reading multiple texts on the same topic, and by discussing controversies of interpretation' (Britt *et al,* 2000: 438). The internet, and some of the more recently produced history CD-roms made it much easier for the history teacher to set up an argument or problem relating to the past, in such a way that pupils would have to think, reason, and make judgments and decisions about information, rather than simply 'learning it'.

Yet even in this respect, the increase in access to information was not seen by all as an unalloyed benefit. Bonnet (1997: 155) warned that 'volume of content does not

equate with richness of experience.... One of the chief dangers of information overload is that it can, at one and the same time, inhibit authentic thinking, and seduce us into believing that all we need to solve problems is yet more information.'

Counsell argued that for many pupils, yet more information was the last thing that would help them to make sense of history, and that the real challenge for the history teacher was to move pupils beyond 'the hunter-gatherer' mentality, and towards the marshalling and deployment of information to address a particular historical question (Counsell, 1998).

iii) The speed with which computers could process and manipulate data enabled pupils to spend more time on higher order thinking in history, rather than in transcription and manual calculation and graphing.

It is difficult to dispute the fact that datahandling software makes it possible to interrogate large datasets more quickly and effectively. Datahandling packages mean that pupils do not have to add up tallies, or draw graphs manually, they simply press a button, and it is done in an instant. As Wild (1987: 291) pointed out, 'the characteristic memory powers of the computer allows rapid handling of vast amounts of data, providing the freedom for students to actually use and think about the information effectively'. As an example of this, Lewis (1985: 163) cites a pupil response to a database exercise using census materials:

> The computer was very useful in analyzing the information in the census, enabling us to carry out the exercise quickly and efficiently. Without it, the exercise would have been very time consuming. Using this form of computerized census also revealed the vast amounts of information which need to be studied before any conclusions could be reached. However, the

census only contained basic details about the people (name, age, jobs etc) and in order to gain a true impression of them their feelings too must be studied. For this, other sources are needed, i.e. newspapers, diaries.

Although ICT does offer these advantages, this does not mean that the time saved is automatically transferred into time spent on 'difficult' higher order thinking. Some research suggested that students simply acquired a taste for eschewing difficulty, and tried to look for quick and easy solutions to the challenges involved in learning, looking for 'shortcuts' to the right answer, or simply guessing, in order to 'get a result', and be able to proceed to the next stage of the exercise (Schick, 1995, Haydn, 1999, Britt *et al,* 2000). This corresponds to my own experience of observing learners using history simulation packages such as *1914*, *Wall Street Crash*, and *Attack on the Somme,* where even MA students tended to make choices before reading all the information available, in order to 'get on with the game'.

Counsell makes the point that it is not just about technology replacing effort, but about getting the emancipatory facets of technology to persuade learners that difficult and challenging activities are worth persevering with:

> I do not want my Year 7s to spend an hour typing in data; I do want them to see the historical relationship between two ideas. I do not want them to search for yet more information: I do want them to select items, to convert them into causes or consequences, and to experiment with language for doing so. I don't want them to fuss over box size on a leaflet design: I do want them to choose or reject alternative field headings in a database. I don't want them to do low-level word matching or phrase-spotting: I do want them to be so motivated to read for meaning, that they pause, and think and ponder and reconsider – and ask *why*. I want to clear away the clutter

and to get pupils to focus on the interesting historical puzzle. I want to slow them down.

(Counsell, 2000: 2)

There is also the question of whether it is desirable for pupils to be involved in the construction of datasets. Wild (1987) argues that allowing pupils to do so gives them more control over their own learning and 'embeds' learning more powerfully, Cunningham (2001: 74) on the other hand argues that 'the time required to input large amounts of data is often not cost effective in terms of children's learning'. Munro recounts that even quite basic simulations slow down curriculum coverage considerably, especially when there are not enough computers to go round, and the computer is part of a 'carousel' of activities to get around this problem: 'it took one group of pupils 40 minutes to "travel the trail across the American Rockies" and there are eight groups in most classes' (Munro, 1999: 115).

iv) The information handling facilities of computers helped pupils to select, organise and deploy historical information effectively

David Rollison, Director of the Faculty of History at Durham University, has argued that doing history today 'is about learning to manage complex subjects and manipulate data' (*Daily Telegraph*, 29 October, 1998). If we accept this assertion, the computer would appear to have something to offer to teaching and learning in history, given its facilities for organizing and manipulating information.

The attributes of wordprocessing software, with the facility to make tables and columns, 'drag and drop', 'cut and paste', and highlight text lent themselves to the sorting, reordering and prioritizing of historical information. As Counsell (1997) argued in what was to prove an influential publication, one of the principal difficulties

which many pupils faced in school history was how to cope with the amount of information involved. The wordprocessor could be a helpful form of 'scaffolding' to assist pupils in the organisation, selection and deployment of information. In the words of Walsh (1998: 6),

> It can search, annotate, organise, classify, draft, reorganise, redraft and save that fundamental of the historian, the printed word. When we consider these processes, and the implicit difficulties they represent for so many of our pupils, the true power and value of the word processor becomes clear. It is not a typewriter; it is an awesome tool for handling information.

(Walsh also pointed out that one 'fringe benefit' of the word processor was that 'at least history teachers didn't have to give out worksheets that looked like ransom notes').

Sales of the NCET/Historical Association software package on using word processing to improve pupils' writing in history (NCET/Historical Association, 1997), which was purchased by over 2,000 secondary schools, seemed to provide some evidence that history teachers found this facet of ICT helpful, and a set of activities from the package (on the causes of the English Civil War) was sent out to all secondary schools and ITT providers as exemplification of the potential of ICT in secondary history (although there is no guarantee that all these history departments made extensive use of the package).

Even here, however, there was evidence to suggest that some of the claims made for the use of text manipulation and writing frame exercises may have been overstated. Prior and John (2000: 32) found that many pupils simply 'phrase-spotted' rather than engaging fully with the information and the problems presented. The facility to copy and paste information may also have been a mixed blessing. Evans talks of 'the uncritical downloading of information' and the prevalence of pupils 'with no

understanding of what they had found because they had simply been incorporating that information into their work *verbatim*' (Evans, 1993). Research on the effect of multimedia and hypertext on learning reported that the weakening of linear or narrative structure in such programs adversely affected learners' comprehension (Plowman, 1991, Stratfold, 1994, Laurillard, 1998). This would appear to have particular significance for a subject like history, where narrative was an important element of the discipline.

v) ICT proved to have attributes and characteristics which promoted 'interactive' learning, which provided more powerful and effective learning experiences for pupils in history.

Interactivity is a facet of ICT which was frequently mentioned in justifying the educational potential of ICT in history, but there were different ideas about what exactly constituted 'interactivity', and in precisely what ways it might improve teaching and learning in school history.

Bill Gates (1995) defined interactivity as processes and methods which mean that 'the learner controls what he or she sees or hears'. In one sense, this meant that a television remote control handset was 'interactive', but in the educational context, Gates (and other enthusiasts of 'interactivity') referred to the facility for learners to negotiate their own, individual pathways through learning materials through the use of hypertext links, and to programming that enables computers to respond to particular choices or decisions made by the learner and present new choices for decision making.

An example of such notions of interactivity in history teaching in the UK would be the development of 'interactive' online quizzes which are a feature of many history websites (see for instance the BBC's *History of Medicine* materials, http://bbc.co.uk/education/medicine/swcontent.html, or the Schools History Site

http://schoolshistory.org.uk). 'Quizmaster' technology enabled pupils to mark the quizzes themselves, work out which questions they answered correctly, and have further attempts to 'get it right', (or look at the correct answers) before moving on.

If we think in terms of ideas about 'hierarchies' of learning (Bloom, 1956, Krathwohl, 1964, Taylor, 2000) the sort of interactivity involved in such exercises only addressed the lower 'rungs' of the learning hierarchy, such as retention and comprehension. Such activities were less helpful in terms of developing higher order learning such as interpretation, analysis and evaluation.

How big a problem this was, in terms of ICT' s ability to provide interactive learning experiences in history, depended on two things: first, ideas about what constituted effective learning and second, ideas about what school history was trying to achieve. Some researchers in the field of ICT and education argued that the 'interactive' dimension of learning through ICT had been overstated (Barker, 1987, Jacobs, 1992, Robertson, 1998). As Abbott (2001: 66) put it:

> Much that appears interactive in educational software may in fact be very traditional in its reliance on rote learning and drill and practice. The recent history of educational software development can be seen in terms of behaviourist versus constructivist models of learning.

As indicated in Chapter 2, although politicians seemed attracted to simple 'transmission' models of learning, 'constructivism', and the acknowledgement that learning was a far from straightforward process had become increasingly influential in teachers' thinking (see, for instance Lightman and Sadler, 1993). There was also a growing consensus amongst the history teacher community that there was more to progression in history than the aggregation of substantive or 'subject content'

knowledge, a state of affairs acknowledged in History National Curriculum documentation from 1991 onwards (DES, 1991b, DfE, 1995b, DfEE/QCA, 1999).

In addition to developing an understanding of history as a body of knowledge, school history was now seen, at least in part, as a 'form of knowledge' approach which attempted to pick out the central features of a discipline and find ways of developing children's understanding of those features (Lee and Ashby, 2000). A key part of this was helping to develop pupils' ability to compare, analyse and evaluate historical sources, representations and interpretations of the past. This necessitated handling the difficulties involved 'intelligently', in the sense of learning to use some of the procedures which historians would use to 'make sense' of the differing accounts or explanations of the past (Britt *et al,* 2000, Lee and Ashby, 2000). As Lee and Ashby were keen to stress, this was not 'a retreat from the importance of students acquiring historical knowledge', instead, '"knowledge" was treated seriously, as something that had to be understood and grounded' (Lee and Ashby, 2000: 200).

The problem with the 'interactive' online quizzes in history was that in terms of their interaction with the materials, learners were often asked to do fairly low-level, meretricious or even pointless things with the information given, either uncritically accumulating information, or using hyperlinks to browse 'pinball' fashion around a topic, often using them to avoid going near screens which had too much text on them (Hillis, 2002).

Another form of interactive learning through ICT was the development of 'Integrated Learning Systems', sometimes termed 'drill and skill' software. This relied on the repetition of simple steps forward in learning, with very gradual increases in the incline of difficulty of questions posed.

One of the aspirations for this form of program was that ICT would, in the words of Schools Minister David Miliband, 'make a reality of personal learning paced to meet individual needs' (*Observer*, 7 June 2003). But this form of 'interactive' learning through ICT was one of the most powerful demonstrations that what computers had to offer in education varied from one school subject to another. Integrated Learning Systems were capable of working well in mathematics, but were not transferable to learning in history. Progression in history simply did not work in such a straightforward, linear way.

Another definition of 'interactivity' in learning in history was suggested by Schick (1995). Schick had written and researched extensively in the area of history education and ICT in the United States, was author of one of the earliest books in the United States to focus exclusively on the use of ICT in history teaching (Schick, 1990), and had written several papers on interactivity in history education (Schick, 1995, 2000a, 2000b). The following quotation is taken from the first of these papers. The paper is quoted at some length, as the extract provides a very different conception of 'interactivity' to those cited by Gates and Blair, and links to ideas about the teaching of history which were becoming increasingly influential in the UK:

> The term "interactive" involves two related issues: control and response.... In practice, both control and response basically mean that the user does something to the machine – provokes another screen. What should also happen is that the machine does something to the user – provokes another idea. It is here that much "educational" software fails.
>
> Designers of educational software must consider what cognitive skills are involved in the interaction and what questions the user takes away from the interaction.... We must not simply move the user from "Place A", where

the user begins, to "Place B", where the program ends, but beyond the immediate topic to provide information which the user can apply to other problems, to strengthen cognitive skills for processing new data or to ask questions which challenge the user to think differently about the past.

In education, the vital interaction should take place in the student's mind. Without this the potential for learning diminishes significantly. No teaching has occurred if students do not understand.

(Schick, 1995: 9-11)

In a later article Schick, (2000a) argued that the eye-catching features of multimedia had deflected attention away from more meaningful facets of interactivity. Did the activity force the learner to think, rather than simply remember, did it put the seeds of a new idea in learners' minds? Did it make them think about 'connections' (either temporal or geo-political) that had not occurred to them before, including links to present day problems and dilemmas? Did the question posed intrigue the learner in a way that encouraged him/her to read in more depth, and persevere in a difficult enquiry? Did it disturb his/her preconceptions?

The strong emphasis in the US History Standards on the development of students' abilities to compare competing historical interpretations of events (NCHS, 1996: 2) meant that many ICT history programs in the US incorporated the presentation of different perspectives and interpretations of the past into the instructional design of their materials (see for example, *The Sourcer's Apprentice*, Britt *et al.*, 2000). It was ICT's facility for 'problematising' the past that that provided worthwhile interactive learning.

Several researchers in the field of history education regarded the 'real' gain in interactivity as the increase in discussions between pupils working in small groups using computers, rather than interactivity between pupil and computer (Cardall, 1987,

Lang, 1989, Coates, 1990, Cunningham, 2001: 77). In the words of Cunningham, 'the vital element is discussion; discussion of the historical concepts and discussion of the ways in which the technology has helped or hindered us. Turn the computer off and talk!' Dickinson and Lee (1984: 36) also argued that the use of computers could 'shift the basis of school experience away from writing in the direction of talking'.

Others claimed that the increase in interactivity between pupils and history came in the form of increased motivation and interest in the subject; pupils enjoyed using computers in the history classroom, and it increased their commitment to learning in the subject (Baker and Paterson, 1989, Freeman, 1996, Manchester, 2001).

vi) The use of ICT helped to improve learning outcomes in secondary history

Many of the claims cited in the previous section rested on case studies and small scale projects rather than large scale surveys. Until the late 1990s, there was very little in the way of quantitative assessment of improvements which ICT might have brought about in secondary school history. However, much of the government's investment in research into ICT in schools over the past few years has focused on the impact of ICT on 'standards' (school grades, test scores, exam passes, 'contribution to teaching and learning'), and there is now more information available in this area. In spite of these developments, this is still a problematic and contested facet of ICT use.

More recent DfE surveys have asked head teachers to assess the contribution of ICT to teaching and learning in particular school subjects, as well as asking about how much ICT was used. Thus, ICT was reported as having had 'substantial benefits' in 45% of secondary history departments in the 2001 survey (DfES, 20001b: 22). A glance at the methodology used for the surveys shows that head teachers were simply asked to tick a box to indicate that ICT had either a 'substantial' or 'little/none' beneficial effect on

teaching in the subject. Selwyn (2003: 84) describes such data as 'spurious' and 'of a highly subjective nature', and concludes, perhaps charitably, that such data 'needs to be approached cautiously'.

Perhaps more rigorously, the Fischer Family trust survey (2002), reporting the views of 122 Heads of History, found that the use of ICT was thought to have had several positive effects on teaching and learning, including improving pupil motivation, the quality of lesson resources, pupils' presentation of work, pupils' independent learning, and 'critical interaction with texts'.

Set against this were the Ofsted enquiry into the effect of ICT on standards in secondary history (2002a), which found that lessons which used ICT were on average less satisfactory than those where ICT was not used, and the ImpaCT2 Report which found that unlike in science and CDT, high ICT use in history did not produce a significant difference in pupil achievement in the subject (Harrison *et al.,* 2002).

Perhaps one of the most powerful arguments against the potential of ICT to improve teaching and learning in school history was that throughout the period, and in the face of increasing pressure, a substantial majority of secondary history teachers made little or no use of computers in their teaching. If computers had a lot to offer, surely teachers would make use of them?

Conclusions

It is difficult to quantify ICT's contribution to teaching and learning in secondary history over the past quarter of a century, not just because of gaps and weaknesses in the sources available, but because of the problems involved in isolating and assessing one variable in processes (teaching and learning) which are affected by a wide range of factors. As this chapter has attempted to indicate, there are conflicting accounts of how

much ICT has been used in secondary history, and about history teachers' views about ICT. In several cases, the extent to which ICT brought about improvement and advantage for history teachers is contested, with critics pointing to negative unintended outcomes, or 'collateral damage' caused by the use of computers.

The potential of ICT for improving learning outcomes in school history was also influenced by changing ideas about the purposes of history in schools (see, for example, Phillips, 1998, Lee and Ashby, 2000). If progression was seen in terms of the aggregation of subject content knowledge, ICT, with its facility for 'drill and skill' exercises and the rapid transfer of information might be extremely helpful; if it was concerned with the development of more sophisticated understanding of history as a form of knowledge, its advantages were less obvious.

The question of what exactly constituted effective or optimal use of ICT in secondary school history, and the extent to which progress had been made in this area, was also complicated by the existence of very different views about what computers were for in education (see Chapter 2). Was it frequency and extent of use, the breadth of applications used, the extent to which it developed pupils' 'key skills' in ICT, the extent to which it developed children's historical understanding, the degree to which it had raised 'standards'?

In spite of these complexities, however, it is possible to identify changes in the use of ICT in secondary history, to spot where there are gaps or weaknesses in the current knowledge base in this area, and to suggest areas of enquiry which are worthy of further research.

A reading of the available sources on the history of ICT in secondary history reveals that in some respects it is possible to present a reasonably clear picture of the role which ICT has played.

First, in terms of the use of computers in secondary history, a reading of the historical record in this area seems to bear out Selwyn's verdict that in spite of the increase in funding and machines in schools, 'an enduring picture of educational use of ICT remaining inconsistent and sporadic' emerges (Selwyn, 2003: 75). Even DfE statistics, which, it has been argued, present an inflated picture of ICT use, suggested that as recently as 2001, 58% of secondary history departments made 'little or no use' of ICT (DfES, 2001b: 21).

Another area of consensus in the field of ICT and school history was the existence of a 'rhetoric-reality gap'; the verdict that computers had not delivered all the benefits claimed for them, and had not had a revolutionary impact on classroom practice in secondary history (Harrison, 2003, Ofsted, 2002a, Haydn, 2003, Nichol *et al.*, 2003, Selwyn, 2003).

It is also possible to gain some insight into the ways in which history teachers made use of ICT over the period, although the use of new technology in education is an area that is subject to rapid change, and it is possible that even some of the recent findings may not give a full and accurate picture of current use. The information that is available suggests that there are some changes and some continuities in the use of ICT in history. Some applications became obsolete during the period in question, such as use of the Concept Keyboard, and the use of others fluctuated. Simulations – one of the main applications in the early period, virtually disappeared with the demise of the BBC B Master in schools, and have recently made a reappearance with the development of 'second generation' simulations made possible with 'Shockwave' graphics and animation programs.

Databases in particular were to remain one of the few 'constants' in the use of computers in secondary history, with their use stretching right through from the earliest

experiments in the late 1970s to the present (see, for example, Labbett, 1979, Martin, 2003). Not only did they appeal to history teachers as being genuinely consistent with the discipline of history (Easdown, 1997b), improvements in the speed, power, capacity and reliability of computers and datahandling software, and the accessibility of high quality databases on the internet meant that they became much less slow and cumbersome to use, and much more teacher and pupil 'friendly'. As Martin (2003) argued, they also made it possible to bring together 'the general and the particular' – the big picture, and the fate of individuals – which helped pupils to make sense of the past, and which helped to bring the subject to life.

Although wordprocessing was another of the 'constants' in ICT use in history, *the uses to which it was put,* changed radically, from being used mainly for pupils to make a neat copy of their handwritten work, to being used as a tool for organizing, selecting and deploying information (Walsh, 1998, Haydn and Walsh, 2003).

The extent to which history CD-roms were integrated into classroom practice in secondary schools is less clear-cut. The Fischer Family Trust survey (2002) of 122 secondary history departments indicated that some departments made substantial use of them, but this was still in less than half of the departments surveyed, and other evidence suggested that CD-roms had not had the transformative effect on classroom practice that early advocates had suggested (see Chapters 4 and 5 for further development of this point). Electronic and video conferencing were other 'cutting edge' applications which did not embed themselves widely into classroom practice.

The Fischer Trust survey also suggested that history teachers were increasingly turning to 'generic' programs, such as Word, Excel, PowerPoint and the internet, often used in combination, rather than purchasing history specific software.

The other application which was emerging as an important influence on history teachers' use of ICT was the internet. The ImpaCT2 report (Harrison *et al.*, 2002) reported that around 30% of teachers and pupils made regular use of the internet, and that 'home use' had more impact on pupils' learning than ICT use in schools.

Given the increasing order brought to the internet, and the ability to find information on particular historical topics easily, (see Haydn, 2003 for further development of this point), history teachers' use of the internet tended to be in the form of collecting 'bits and pieces' to use as components of lessons, and not necessarily in a way that would provide 'hands-on' ICT experience for pupils. Moreover, the experience of the *History using IT* project suggested that materials generally had to be adapted to suit particular teaching situations, and that it was difficult to simply apply 'off the shelf' ICT packages as they stood (Counsell, 1999b).

It is worth noting that throughout the period in question, from the late 1970s until at least 1995 (and probably until 2003 – see Chapters 4 and 5), history teachers did make regular and extensive use of one form of new technology: the television and video recorder. Sharp's (Sharp, C., 1995) survey showed that 74% of secondary history departments made regular use of schools' television broadcasts. In spite of this, apart from Sharp's 1995 survey, comparatively little attention focused on this facet of new technology. The DfE did not include the use of television and video in its biennial surveys, and there is very little data available in this area from other sources. Nobody seemed to take an interest in, or even notice this, in spite of the fact that according to Sharp's report (and the author's own experience of working with history teachers and trainees), in terms of the use of new technology, television and video were unquestionably the applications that had most impact on classroom practice in secondary history. This point will be returned to in subsequent chapters.

One further discernible change of emphasis can be gleaned from a study of the history of ICT in secondary school history. The idea of using history lessons to develop pupils' capability in ICT had almost disappeared from view, at least within the history teaching community. There was no longer a requirement for the history department to deliver a particular element of the school's ICT audit; the emphasis in National Curriculum, ITT and teacher ICT INSET documentation moved towards the use of ICT to enhance teaching and learning in school subjects. As Selwyn (2003) pointed out, the DfE surveys made it clear that the most common uses of ICT in subject teaching were 'low level' ICT such as wordprocessing, rather than advanced 'creative' use such as web authoring or video conferencing. This no longer seemed to matter. What did matter was that ICT was to be used to enhance teaching and learning in school subjects, and integrated into regular classroom practice.

In other facets of the use of ICT in school history, it is hard to draw precise conclusions. One of the pertinent questions arising from a study of the literature on the use of ICT in secondary history is why history teachers seemed so reluctant to make routine use of ICT when so much was claimed for it, and when there was such pressure on them to use ICT. As noted earlier in this chapter, Easdown's earlier studies pointed to a degree of 'ideological' resistance to the use of computers; the belief that computers did not have much to offer teaching and learning in history, because of the disjunction between what the computer had to offer, and the nature of the discipline of history. The extent of history teacher antipathy to computers was a matter of dispute, and some surveys suggested that teacher confidence and competence in ICT was an issue. Harris and Preston's (1994) survey showed that there were fewer computers in secondary history departments than in any other subject. To what extent was access an issue? Ofsted reports consistently reported this as having a negative impact on history

teachers' use of ICT. Also, given the pressure on history teachers to use ICT in their teaching, it is difficult to tell whether when they did use ICT, it was primarily because, as Cox *et al.* (1999) suggested, 'they felt they ought to', or because they believed it made for better lessons, better teaching and learning. Would they use it 'when no one was looking'? This question is explored in the next chapters of the thesis.

Also, there is only a limited amount of information about the views of history teachers and teacher trainees on what interventions and resources might be most helpful in enabling them to make best use of the potential of ICT to enhance teaching and learning in history.

It was these uncertainties, the conflicting reports, and the 'gaps' in the knowledge base in some of these facets of ICT and school history which formed the impetus to pursue some of these avenues in terms of empirical enquiry. The deployment of historical perspectives provides some insight into the role and potential of ICT in school history, but further insight might be gleaned by exploring these 'grey areas' by undertaking empirical research. The next chapters in the thesis report the views of history teachers and trainees in these areas.

Chapter 4

Secondary history teachers and ICT, 1995-2003

Introduction: the context of the empirical enquiry

Vansina (1974: 110) argues that in terms of research questions, historians and researchers often 'start off with a hunch, an idea, which leads them to an interest'. In the case of this enquiry, the 'hunch' or idea stemmed from the apparent difference between 'the public record' about the use of new technology in school history, and my own experience in schools and in working in initial teacher education.

The movement towards a systematic enquiry into the use of ICT in secondary history was given impetus by the experience of a one week summer school for 'A' level history pupils at the Institute of Education, University of London, in July 1993. This included a workshop session on the use of ICT in school history. Concerned that some of the pupils might already have encountered some or all of six 'commonly used' history ICT programs, I conducted a quick check to ascertain the extent to which the pupils were familiar with them. When totals for the two sub-groups were added together, it transpired that only one of the 27 pupils had encountered any of the programs. Rather taken aback, and intrigued by this response, as a starting point of enquiry, I asked how many of them only used ICT 'occasionally – say once a term', in history lessons. The question elicited spontaneous laughter from one group, and one of the pupils suggested that a more appropriate starting point would be to ask if any of them had ever used a computer in a history lesson. Another mentioned in a matter of fact manner that she had not used a computer in school since her second year in secondary school. Several other pupils indicated that computers had not significantly impinged on their experience of learning in secondary school. In all, four of the 27 pupils acknowledged that they had used computers in their history

lessons, albeit occasionally. Further questioning revealed that this state of affairs was not confined to history, and seemed broadly representative of the extent to which ICT had permeated across the school curriculum in their experience. The 27 pupils were at the end of their first year in the sixth form and came from 21 different schools and colleges. None was from technology colleges but otherwise the schools formed a reasonably representative cross section of London schools. The pupils were pleasant, well motivated and articulate, and I had no reason to suppose that their comments were in any way inaccurate or distorted. It is difficult to think of any pressures which might have led them to miscalculate their exposure to ICT in the classroom and they displayed no sense of feeling aggrieved by their limited exposure to computers.

Further enquiry revealed that 16 out of the 27 pupils had used a computer 'mouse', nine had used some shape or form of 'windows', but 'MS-DOS' was a term only understood by one of the 27 pupils. Eight had used computers in school for word processing purposes, five for desktop publishing, six had used databases and four had used spreadsheets (across all school subjects).

The following year, at a similar course for 'A' level pupils, of 41 students attending the conference, 34 estimated that they used computers in history once a year or less, reinforcing the impression that computers had not had a major impact on pupils' learning experiences in secondary school history.

There were also some similarities between the feedback which I obtained from the 'A' level pupils, and that derived from my experience of working with PGCE history students, visiting history departments, talking to history teachers and taking in-service training (INSET) courses on ICT. These contacts aroused a degree of

scepticism about DfE claims for the use of computers in the history classroom. The following extract from a PGCE student assignment is one example of this:

> From my own experiences dating from 1984 to 1989, I began to evaluate the potential impact computers had on my own learning experience. I can honestly only remember coming into contact with a computer once during my entire secondary education.... Shocked by my own experience, I asked my contemporaries (*fellow PGCE students*) and they too presented me with similar answers from their experiences at schools in differing parts of the country.

This comment reflected the institutional audit of PGCE trainees' experience of using computers in schools which was conducted at the start of the course. Out of 67 history trainees from the 1994-5 cohort, six reported that they had used computers 'sometimes', or 'frequently' in school, the rest reported computer use as 'rare' or 'never', affirming Mellar and Jackson's and Lienard's findings that under ten per cent of PGCE trainees had gained wide experience of ICT use at school, and that where trainees had gained proficiency in the use of computers, this derived from employment rather than school experience (Mellar and Jackson, 1994, Lienard, 1995).

These initial questions about the use of computers in school history came at a time when DfE reports on the use of ICT in schools in England and Wales suggested that computers were making a significant contribution to teaching and learning in most school subjects, including history (see Chapter 3).

Although it is obviously important to be circumspect about the reliability of the impromptu, small-scale and 'snapshot' nature of my questions to the 'A' level pupils, as against the much larger scale studies carried out by the DfE, the scale of the

disparity between DfE reports and the comments made by the 'A' level pupils, and the fact that the methodology used in the DfE studies did not incorporate (at least directly) the perspectives of classroom teachers and pupils suggested that there was at least a case for further enquiry.

It was at this point that other questions about the use of ICT suggested themselves, beyond the question of how extensively computers were used in school history. The DfE surveys reported that the prevalence of computer use varied from one school subject to another, and that their use in history was less than in several other 'main' school subjects. The survey did not report, comment or speculate on why there were differences between school subjects in their use of computers, or differentiate in what ways different subjects made use of computers (DfE, 1993, 1995a). These also seemed to be questions worth asking, given the increasingly high profile of ICT in education, and the considerable investment in putting computers in schools. Also, given the acknowledgement (even in DfE reports) that in spite of the high hopes invested in the use of ICT in education, many teachers were not regularly incorporating computers into their classroom practice, the reasons for non-use seemed to be worth exploring. If computers were so wonderful, why weren't more teachers using them?

Preliminary investigations: the first phase of data collection, November 1995-March 1997

The experience of the summer schools for 'A' level history pupils was the catalyst for further investigation of the use of ICT in secondary history. A number of research instruments were devised over several years in order to gain insight into various aspects of ICT use in secondary history. In some instances, the questions

focused on areas which had been researched by others, such as the prevalence of ICT use in history classrooms, and history teacher and trainee teacher attitudes to ICT (see Chapter 3). Other questions related to areas which had been considered 'generically', but which had not been extensively explored in a subject specific context, such as teacher perceptions of barriers to the effective use of ICT. In some cases, there was an attempt to refine approaches to gaining insight into aspects of ICT use, such as the extent to which and the ways in which access to ICT influenced its use in secondary school history. As Selwyn (2003) has noted, this is quite complex, and goes beyond computer to pupil ratios and percentages of schools with an internet connection.

The focus of the questions posed by the research instruments has changed over time. This is partly a function of the speed with which things change in the field of ICT in education. As noted in Chapter 1, the use of ICT in education is a difficult area in which to impose a template for longitudinal research. Although the DfE surveys span over a decade, the format of the survey has changed substantially over time, and there are only a few areas (such as expenditure on ICT per school, computer to pupil ratio) which have remained 'constants'. More recent surveys include questions on the number of pupils with school e-mail addresses, and about school websites; questions which were not appropriate before the advent and more recent widespread impact of the internet. The speed at which the use of new technology changes in education was brought home to me when I asked successive cohorts of history PGCE trainees how many of them had accessed the internet in the course of the PGCE year. From the 1992-3 cohort, only one trainee had used the internet; the following year, well over half of the trainees had used the internet in the course of the year.

Although the main research method for the empirical element of this study has remained that of survey through questionnaire and interview (see Chapter 1), changes to the focus of enquiry have been made not just on account of the revolution in educational technology (for instance, the development of data projectors and interactive whiteboards in the latter part of this study), but because of questions emerging as a result of the preceding enquires. This is in line with Elliott's paradigm of action research (1991), where investigations do not typically result in clear-cut 'answers' and solutions, but throw up further issues and questions for investigation. In the words of Glaser and Strauss (1967: 29), 'the process of data collection for generating theory, whereby the analyst jointly collects, codes and analyses his data and decides what data to collect next, and where to find it, in order to develop his theory as it emerges'. Thus, earlier instruments tended to focus on what history teachers and trainee teachers perceived to be the principal deterrents to using computers in their teaching. Later equivalents also tried to gain insight into what forms of intervention or support teachers felt would be most effective in removing barriers to ICT use. In the later stages of the study, an attempt was made to elicit from trainee teachers which particular moments and experiences had impacted most powerfully on their practice in history and ICT.

In other cases, research instruments were amended or revised in the light of weaknesses and flaws which emerged from analysis of the data. Thus, the wording of questionnaires asking about access to computers was changed to improve the quality and manageability of data in this area. Later instruments also made it easier to delineate between the ways in which history teachers were using ICT in their teaching: the degree to which it was for preparation, teaching or administration. Although this makes the discerning of changing patterns over time more problematic,

this is partly compensated for in terms of the improved clarity and precision of the data emerging from later enquiries.

The first attempts to gain insight into history teachers' use of ICT were undertaken between November 1995 and March 1997, and were in the form of questionnaires to history teachers attending one day in-service training courses on the use of ICT in secondary history at the Institute of Education, University of London.

The first instrument (see Appendix 1) simply attempted to elicit the views of secondary history teachers on what they perceived to be the main barriers to the use of ICT in their teaching. The format of the questionnaire was partly influenced by an attempt to minimize the intrusion of the exercise on the training session. It is perhaps interesting to note that just under 75% of course participants (60 out of 82) chose to complete the questionnaire, and many of those who did not complete the questionnaire failed to do so because they left before the end of the day rather than because of a reluctance to respond or indifference. This was a much higher response rate than that obtained for a subsequent questionnaire. One reason for this may have been the brevity of the form – a single side of A4, as against the five page questionnaire which was used later in the study (see Appendix 5).

The instrument used a ranking scale (see Sammons *et al.*, 1997, Simmons, 2001) to ask respondents to indicate which of ten statements were factors which had deterred them from using ICT in their classroom teaching of history, and to place them in order of influence (1= most important, 2= next most important and so on). This method produced two measures giving an indication of history teachers' perceptions of barriers to the use of ICT in their classroom teaching; first, how widespread perceived deterrents were, and second, which factors were most influential in deterring them from using ICT in the classroom.

In terms of the number of teachers citing factors as a barrier to ICT use, 'access' emerged as the most commonly mentioned factor, cited by 44 of the 60 respondents. This was followed by 'lack of confidence/knowledge in using history software available', mentioned by 38 respondents. The third most commonly cited barrier was 'lack of confidence/knowledge in using computer hardware', and fourth was 'lack of time to prepare computer based lesson and the materials for it'. Fifth in terms of frequency was 'pressure to cover the taught curriculum' (33 out of 60 respondents). It was interesting to find that 'ideological' resistance to the use of computers in history came next to last of the ten factors, but was still noted as a relevant factor by almost a quarter of the respondents (14 out of 60). This percentage rose to 35% when isolating the responses for an in-service training session for history teachers from independent schools. The only factor to score lower in terms of frequency was 'hardware changes' (some schools were moving between different computer platforms, either from BBC B microcomputers to IBM compatible/'PC' systems, or from Archimedes or Apple systems to IBM/PC systems).

Full details of responses are given in Table 4.1. The results are presented in descending order of frequency rather than in the order in which the various factors were placed in the form.

Table 4.1: Number of respondents citing factor as a deterrent to the use of computers in the history classroom (1995-7) (n= 60)

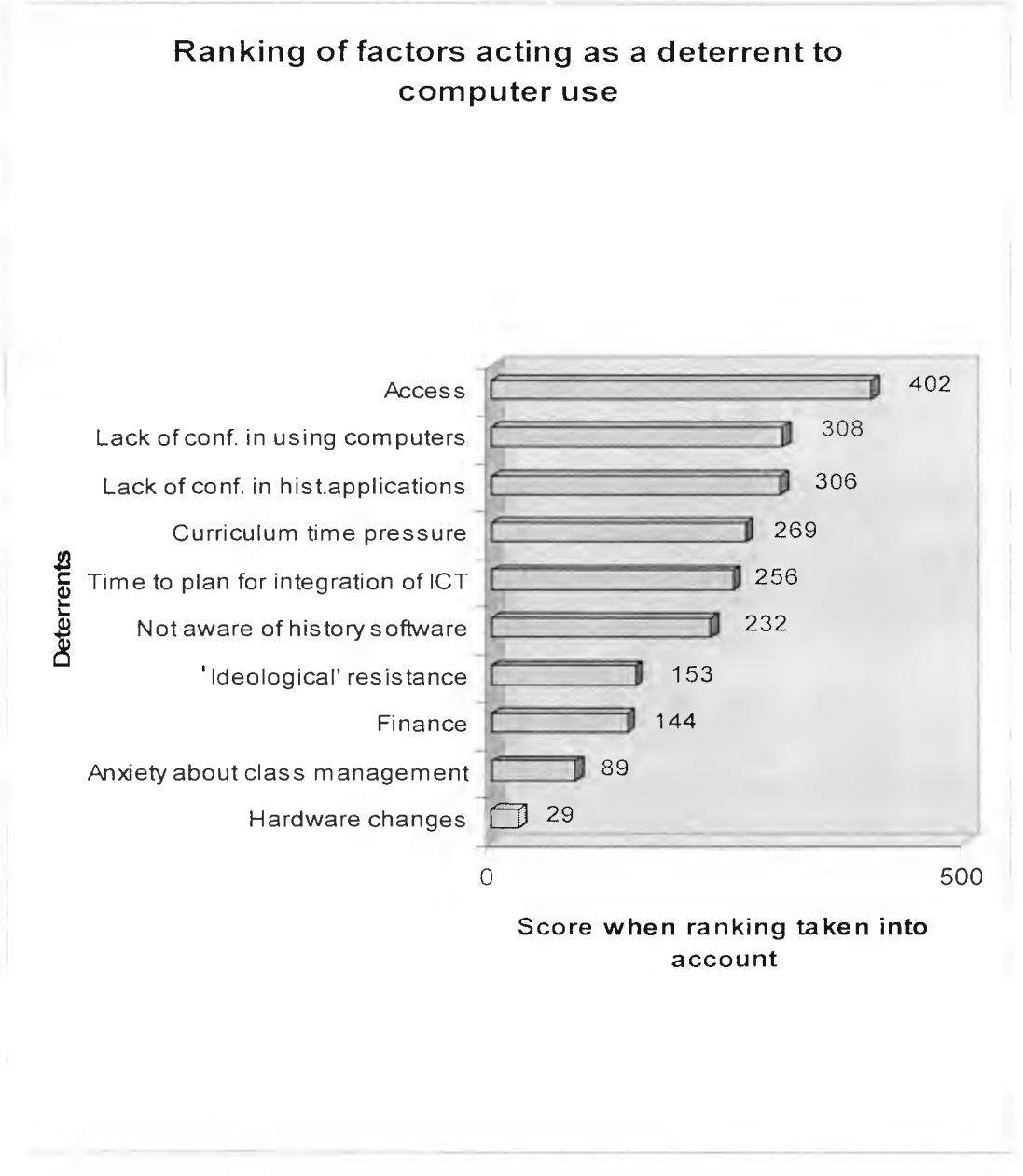
a) Access to computers	44
c) Lack of confidence/knowledge in using history software available	38
b) Lack of confidence/knowledge in using computer hardware	37
e) Lack of time to plan computer based lessons	34
f) Curriculum time pressure	33
h) Not knowing what 'good' history software is available	32
g) Finance – money to purchase history software	22
d) Worry about the classroom management implications of using computers	22
j) Ideological resistance: you don't believe that the use of IT helps to contribute to the development of pupils' historical skills and understanding	14
i) Hardware changes	7

When analysed according to the weighting of the various factors which acted as a deterrent to ICT use, a similar picture emerged, but there were some changes to the overall rank order of the deterrents. 'Access' again emerged as the most important deterrent, with 'lack of confidence/knowledge about using computer hardware' rising to second place, just above 'lack of confidence/knowledge in using history software', which had ranked second in terms of frequency. 'Pressure to cover the curriculum' moved up to fourth place, just above 'time to plan for computer based lessons'. 'Ideological resistance' moved up from ninth to seventh most influential factor when calibrated in this way. As with the frequency scale, the views of history teachers in independent schools impacted strongly on the position of this factor. Three of the 13

respondents ranked this as the most influential reason for not using computers, and two more put it in their top three factors.

Figure 4.1 shows the comparative weighting accorded to the ten factors when history teachers were asked to rank them in order of influence. The 'points' score is worked out by giving ten points for respondents deeming a factor as being most influential, nine points for next most influential and so on.

Figure 4.1: Comparative importance attached to factors acting as a deterrent to the use of computers in the history classroom (1995-7)



When considering the data emerging from the two methods of calibrating the data (frequency and ranking), it seems reasonable to conclude that problems in gaining access to computers emerged as the most commonly cited and influential factor in deterring history teachers from using computers in the classroom. Confidence issues also emerge as important deterrents, both in terms of familiarity with history software applications, and in terms of confidence in using computers in general.

Lower down in history teachers' concerns, but still cited by more than half of the 60 respondents, were issues of time for planning the integration of computer based lessons, lack of awareness of what history software is available, and pressure to cover the taught curriculum. This last factor seemed to bear out the hypothesis advanced by Dickinson (1997), and supported by Department for Education statistics pre and post the inception of the National Curriculum in 1991, that the use of computers in the history classroom 'dipped' because teachers were worried that they would not be able to cover all the prescribed content in the National Curriculum for history.

More than a third of the 60 respondents mentioned concern about the class management implications of using computers as a deterrent, and just under a quarter cited 'ideological' objections to the use of computers in history, in the sense that they did not believe that computer applications were helpful or appropriate for developing pupils' historical knowledge, skills and understanding because of the nature of history as a subject discipline.

The only factor which appeared to have a negligible deterrent effect was the change to hardware systems which affected some schools at this time. This was mentioned by only seven of the 60 respondents.

There are several reasons for questioning the reliability of this data, even apart from the limited sample size. These include the question of whether history teachers who attend ICT INSET courses are a representative sub-set of history teachers as a whole, and whether responses can be accepted at face value – are problems of access a convenient excuse for history teachers who are nervous or 'phobic' about the use of computers? Moreover, in this instance, respondents were not provided with the opportunity to provide information about other barriers to computer use which might have fallen outside the scope of the ten factors given on the form.

A second instrument for exploring aspects of history teachers' use of, and attitudes to the use of ICT in the history classroom was also used within the same time frame as the first form. As with the form which attempted to elicit information about barriers to the use of computers, the questionnaire was used in the course of INSET days at the Institute of Education, University of London, but the scale of the sample was rather smaller (40 secondary history teachers in all). A copy of the instrument is provided in Appendix 2.

The second instrument was introduced in order to go beyond simply exploring barriers to the use of computers, and extended to trying to gain insight into the breadth of teachers' use of computers, frequency of use, reasons for using computers and history teachers' perceptions of the impact of using ICT on pupils' motivation and learning. The question on breadth of applications used was included partly because of Ofsted criticisms of the tendency for history departments to confine themselves largely to the use of word processing and simulations, in spite of 'new developments' such as CD-roms, multimedia authoring and the internet (Ofsted, 1995).

In all, 40 secondary history teachers provided information on various aspects of their use of ICT, in the period from November 1995 up to March 1997. In terms of the breadth of ICT applications used, two stated that they had not used computers at all in relation to classroom history teaching, 29 reported that they had used between one and five different computer applications in their teaching, and nine had used between five and ten applications. The applications which they had used are detailed in Table 4.2.

Table 4.2: ICT applications which had been used in the classroom (1995-7)

(n= 40)

Application	Number of teachers who had used this application in classroom teaching
Wordprocessing	21
To enhance display and project work	19
CD-roms	13
Desktop publishing	9
Simulations	7
Data handling	7
Graphics/drawing packages	3
Concept keyboard	2
Spreadsheets	2
Quizzes/games	2
Newsroom simulations	2

The results seemed to bear out Ofsted concerns that computers were being used in school history primarily for wordprocessing purposes and to improve the presentation of pupils' work. CD-roms were the only other application that had been used by over a quarter of respondents.

One of the weaknesses of the questionnaire as a survey method which emerged from this phase of the study was the inability to ask 'supplementary' or follow-up questions to gain more depth of understanding about issues raised by the initial questions. Thus it was not possible to ascertain the extent to which wordprocessing and desktop publishing had been used simply to get pupils to transcribe or 'copy up' work which had been done by hand, simply to make it look better, rather than to add in any way to pupils' knowledge and understanding of history. Similarly, the questionnaire did not allow for any disaggregation of the feedback on the impact of various computer applications on pupils' learning; whether, for example, the use of multimedia CD-roms had a more beneficial impact on learning outcomes compared to 'older' applications such as datahandling and simulations.

Table 4.3 gives the teachers' estimations of the frequency with which they used computers in their classroom teaching.

Table 4.3: History teachers' estimation of the frequency with which they used computers in their classroom teaching (1995-7) (n= 40)

Frequency	Number of teachers using computers with this frequency
Once a week or more	3
Once a month	9
Once a term	8
Once a year	7
Less than once a year	5
Never	5
No response	3

It should be borne in mind that although the author of this study (the leader of the INSET session) might not instill the same degree of trepidation and concern as an

Ofsted inspector asking the same questions, there is nonetheless the danger of some distortion and inaccuracy in the responses. Harrison (1980) warns of the inherent difficulties in the reliability of such data, arising both from deficiencies of memory and the possible wish of respondents to present themselves in a favourable light.

The teachers were also asked about their reasons for using computers in their lessons. Again, the failure to provide an 'other reasons' option was a flaw in research design. The responses are provided in Table 4.4.

Table 4.4: Reasons given for using computers in the classroom (1995-7) (n= 40)

Reason for using computers in the history classroom	Number of responses indicating this as a reason for computer use
Because it makes for an easy, relaxing and enjoyable lesson	10
Because I feel I should once in a while	15
Because Dearing/Ofsted/Head of Dept/Senior Management Team say I should	4
I don't use computers in my lessons	10
No response	1

The last question on the questionnaire asked the teachers to consider whether and to what extent the use of computer assisted learning had improved the quality of pupils' learning, work, and motivation. (The question did not invite them to disaggregate these elements, although one teacher wrote that 'they clearly enjoy the use of it'). The responses are given in Table 4.5.

Table 4.5: 'Computer assisted learning has improved the quality of learning, the quality of pupils' work and motivation in my lessons.....' (1995-7) (n= 40)

'Not at all'	3
'A bit'	10
'Quite a lot'	12
'Enormously'	3
Responded 'Not applicable'	2
No response	10

In the light of Ofsted's recent findings (2002a) that secondary history lessons involving the use of ICT had on average lower gradings than those where computers were not used, it is interesting to note that the option that computers might have had a negative influence on learning outcomes was not provided.

These instruments were the first exploratory, (and perhaps 'crude') attempts to develop insights into secondary history teachers' use of ICT, to see whether the 'hunch' that ICT use had been overstated in some of the large national surveys on the use of ICT in schools had some substance to it, and to consider what questions were worth asking about history and ICT. The experience of using these questionnaires also provided some guidance and insight into the complexity of questionnaire design, and the limitations of questionnaire methods of survey which was useful in refining subsequent enquiries.

So what tentative conclusions or hypotheses could be derived from these exploratory investigations? In terms of the frequency of use of computers in history classrooms, the responses seemed to bear out the views of Ofsted (1995, 2002b), Mellar and Jackson (1994), Lienard (1995) and Selwyn (2003) that computers were not having a radically transformative impact on classroom practice. The figures bore

more resemblance to the feedback from sixth formers and PGCE trainees (see pages 150-2 of this chapter) than to the figures emanating from DfE surveys from this period.

In terms of history teachers' perceptions of the barriers to the use of computers, difficulty in obtaining access to computers emerged as by some way the most commonly cited factor, both in terms of the frequency with which it was cited as a deterrent, and in terms of the degree of importance accorded to it as a deterrent. The form of questioning about access to computers did not in this instance delineate between the use of ICT in designated history classrooms, and access to networked computer suites. This was to be built into later instruments.

Confidence and 'awareness' issues were in what might be termed a second tier of influence, with confidence issues relating both to teachers' anxieties about using computers in general, and using, or being *au fait* with history specific software.

Lower down the hierarchy of deterrents, and less commonly cited, were concerns about the class management implications of using computers and what I have termed 'ideological' resistance to the use of ICT. This last factor was cited by just under a quarter of the 60 respondents from the first of the two questionnaires. Given the importance attached to this factor in the surveys of Summers and Easdown (1996), and Easdown (1997a), which both suggested that 'ideological' reservations about ICT were widespread amongst both practising and trainee history teachers, this raised the question of which studies most accurately represented the prevalence of ideological antipathy to ICT in school history. This divergence was a factor in continuing to explore this facet of history teachers' attitudes to ICT in subsequent enquiries.

The second questionnaire explored a wider range of questions about history teachers' use of and attitude to ICT. The responses suggested that a large majority of secondary history teachers rarely used computers in the classroom, and the percentage of teachers who used computers regularly in this study was much lower than in the (much larger) DfE survey, which suggested that almost a quarter of history teachers were using computers in the classroom 'twice a week or more' (DfE, 1993: 17).

The question asking teachers to detail which applications they used in the classroom seemed to bear out the views of Ofsted (1995), and later Selwyn (2003), that ICT use was largely confined to 'low-level' applications such as word processing, as against the 'hi-tech' applications (such as multimedia CD-roms) which had elicited the enthusiasm of politicians (see Chapter 2). These preliminary investigations took place before the internet 'took off' and became such a dominant element in the educational use of ICT. Later instruments obviously had to take account of the revolution in communications technology, and the changing 'landscape' of ICT applications.

Some elements of the enquiry were not pursued further, for instance, no further attempts were made to gain information about the number of different applications which secondary history teachers used in their teaching. This did not seem to the author to be a particularly worthwhile field of enquiry, but in amended form, attempts were made to explore other aspects of history teachers' use of ICT, such as their reasons for using ICT. This initial survey seemed to bear out the findings of Cox *et al.*, (1999), that many teachers used computers because they felt they ought to, under pressure from either senior colleagues in school, or because they were

worried about Ofsted, rather than because they felt that it would make for better or more enjoyable lessons.

The outcomes of these preliminary investigations, combined with the continuing high profile of debates about the use of ICT in education, and what seemed to be the continuing comparative neglect of subject specific dimensions of ICT use, led to a second phase of enquiry, which attempted to gain further insights into secondary history teachers' use of ICT.

The second phase of data collection, May 2000-March 2001

This section of the chapter summarises the results of a small scale survey of secondary history teachers in the UK, which explored a range of questions related to history and ICT. A copy of the survey is given in Appendix 3.

In some respects, the survey operated in the same 'territory' as work done by Easdown (1994) and Bardwell and Easdown (1999) on history teacher and trainee teacher attitudes to ICT. It also attempted to gain information into the extent to which history teachers made use of ICT in their classroom teaching; an area which was a feature of DfE surveys on the use of ICT in schools. The precise nature of the questions posed, and the methods of data collection used both differed from these surveys, and in other respects, the survey attempted to gain insights into aspects of ICT use which had not hitherto been considered in a subject specific context. These included the ranking of ICT applications according to their perceived usefulness to history teachers, and factors deterring history teachers from using ICT. In the case of the ranking of ICT applications according to perceived usefulness, a conscious decision was made to include the use of television and video recorder. This was because of Sharp's findings (Sharp, C., 1995), which accorded with the general

perceptions of the author from regular contact with history departments and trainee teachers, that use of the television and video recorder was more prevalent than the use of computers. What was it about television and video that made it more popular?

The survey also explored history teachers' views on the usefulness of some of the materials and resources which had been designed to exploit and reinforce the potential of ICT to enhance learning outcomes in schools, such as the National Grid for Learning (NGfL) – a high profile national initiative, and the Teacher Training Agency's *Identification of training needs* resources (TTA, 1999b). The second phase of data collection also explored history teachers' views on what forms of investment in ICT would be most helpful.

In view of the limitations of a purely questionnaire based approach exposed by the first phase of data collection, in this phase of the study data collection was done by telephone interview, and in most cases, the respondents had the opportunity to look at the questions posed before the telephone interview itself. In three instances, respondents e-mailed or posted responses. In all, 42 history teachers responded: 28 were in their first 5 years of teaching, and 14 had taught for longer than five years. Experience and seniority ranged from teachers with only three years of teaching experience and no responsibility allowances, to heads of department with over 20 years experience. Two forms were returned blank and no telephone interview was conducted with these respondents. This may have been an administrative error, but the forms have been included in the data analysis for reasons of fidelity in the presentation of data, although they have not been counted in terms of the total number of 'active' respondents. Data was analysed using a mixture of SPSS and

Filemaker Pro Software. Data collection took place between May 2000 and March 2001.

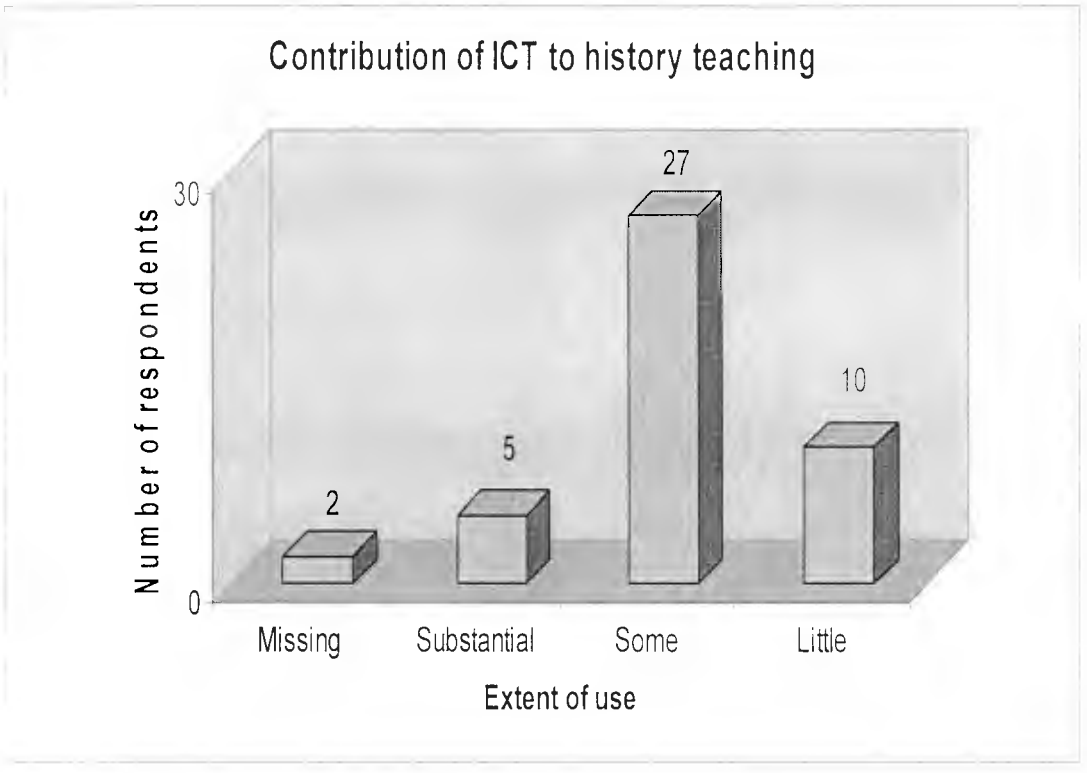
It is important to note that in the second phase of data collection and some elements of the third phase of data collection, the respondents were known to and had a working relationship with the researcher. In the case of history teachers, they were mentors who worked with PGCE trainees together with the researcher, in some cases over several years. In the case of trainees, some of them worked directly with the author and would have been aware of the interest of the author in ICT issues. This raises the question of 'insiderness' effects (Elliott, 1988), such as personal, institutional and regional influences. Although Elliott argues for caution and awareness of such influences, the potential influence of personal working relationships is not entirely negative, and in terms of openness and 'unguardedness', there may well be some advantages in such 'convenience sampling' (Cohen *et al.*, 2000) as long as the researcher maintains a critical awareness of areas where the respondent may wish to give a positive impression or a response which they feel will please the researcher. This is particularly to be kept in mind over information relating to the prevalence of computer use in classroom teaching.

History teachers' use of ICT

In terms of the general contribution of ICT to history teaching, response was roughly in line with other recent surveys of history teachers' use of ICT (Bardswell and Easdown, 1999, DfEE, 2001b), in that only a small minority of the sample claimed to make 'substantial' use of ICT in their history lessons, with most respondents falling between 'some', and 'little' use. The only exception to this was in terms of 'no use' of ICT. Whereas 14% of the Bardwell and Easdown survey 'confessed' to

not using ICT in the history classroom, all 42 respondents claimed to have used ICT at least once. Again, one might be careful about accepting these responses at face value; it is conceivable that teachers might feel awkward about being ICT 'refusers' given the overall climate about the use of ICT in education (see Chapter 3). Few teachers in the survey used computers in more than ten per cent of their history lessons, and the biggest group fell into the 'between 1 and 5%' category. Figure 4.2 gives the responses to the question, 'How big a contribution does ICT make to your history teaching?

Figure 4.2: How big a contribution does ICT make to your history teaching? (2000-1) (n=44)



In terms of the nature of computer use, responses indicated that computers were used much more frequently for researching information on historical topics and the preparation of teaching materials than in the classroom itself. Although the use of ICT to improve and streamline assessment procedures has been prominent in recent

coverage of ICT issues in the education press, very few respondents reported using ICT extensively for assessment purposes.

When asked to identify the new technology application which they found most helpful for teaching history, by some way the most popular application was television and video; the first choice of over 50% of respondents. The internet was the next most popular choice, with six out of 42 history teachers regarding it as the most helpful new technology application. Word processing and spreadsheets came next, and there was also a residual affection for simulation packages in history, with several respondents bemoaning the failure to replace the aging 'BBC model B' history simulations with more modern equivalents.

In addition to identifying a single ICT application as being most helpful to the history teacher, interviewees were asked to rank 11 different ICT applications in order of their usefulness for teaching history. This second strand revealed an interesting difference in emphasis, with 'wordprocessing' emerging as the application which scored most highly, mentioned by 34 respondents and totalling 360 points (using a 1-11 point scale, with 11= most helpful application), followed by television and video (mentioned by 36 respondents, and totalling 341 points), and the internet (36 respondents, 337 points).

Almost all respondents said that they used television and video more often than computers, often massively so: 'by huge amounts', 'fifty times more – probably even more than that', were not untypical of responses to this question. When asked why television was used more frequently than computers, the most commonly given response was convenience, ease of use, not having to book another room, or move pupils around the school. The facility to use short extracts from television programmes was also commonly mentioned as a 'flexibility' type factor; 'you can

just use it for five minutes, to make a point vividly or powerfully', 'you only need one television for 28 kids', 'most rooms have access to TV and video in the room... a bank of resources... you can just use a ten minute clip', 'taking kids up to the ICT room takes a lot of preparation'. Several interviewees made the point that the department had accumulated a considerable 'archive' of appropriate television programmes, and a similar 'stock' of computer based materials had not yet been collected. More than one respondent felt that the television provided a way of making history 'come alive' in a visceral or emotional way, in a way that computer materials did not. For some interviewees, the use of television and video was an important tool for making the past seem 'real' to pupils.

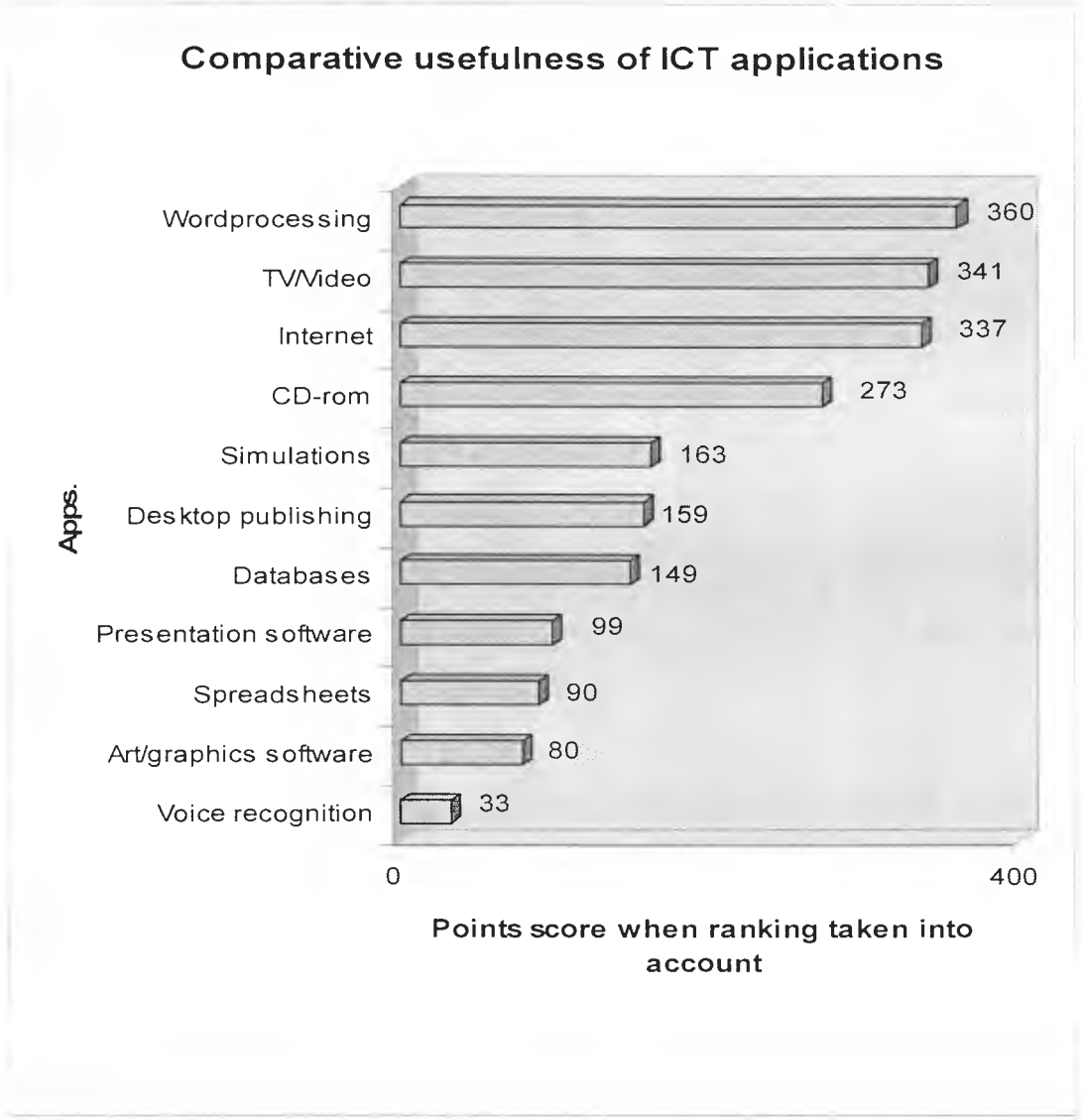
So what were history teachers doing with computers, and what were their views on the various facets of new technology in education? The survey asked teachers to rank a range of new technology applications in order of their potential for enhancing teaching and learning in history.

Table 4.6 shows the frequency with which history teachers felt that applications were useful for teaching history, and Figure 4.3 gives the results when teachers' ranking of the applications in order of utility is taken into account (11 points for the application which was seen as most helpful, 10 points for the next most helpful and so on). The applications are presented in descending order of frequency rather than in the order in which they appeared on the form

Table 4.6: Number of history teachers considering ICT applications to have potential to improve teaching and learning in history (2000-1) (n=42)

ICT application	Number of teachers citing it as having potential to improve teaching and learning in history
TV/video	36
Internet	36
Wordprocessing	34
CD-roms	33
Simulations	24
Desktop publishing	24
Art software	20
Spreadsheets	20
Multimedia authoring/presentation software	18
Databases/datahandling packages	13
Voice recognition software	13

Figure 4.3: Perceived usefulness of ICT applications for improving teaching and learning in history when ranking of applications taken into account (2000-1):



When ranked in this way, wordprocessing exercises, television and video and the internet emerge as the applications which history teachers perceive to have the most utility for improving teaching and learning in history. The appeal of databases and datahandling packages, and to a lesser extent simulations, seemed to have diminished when these figures are compared with the findings of earlier surveys (see Chapter 3).

The last question on the survey asked history teachers to identify any specific occasions where the department had used ICT in a way which was felt to have improved the quality of teaching and learning in history. The results are given in Appendix 4. Only three respondents felt that ICT had not presented any opportunities for improving teaching and learning in history; most were able to suggest at least some examples of the use of ICT which had helped to enhance learning outcomes in the subject. The examples covered a range of applications, but one feature of many of the descriptions was the way in which ICT had been used as a *component* of a lesson, rather than being central to it (see Appendix 4). This is a step away from the idea of pupils in a computer laboratory engaged for a whole lesson in historical activities which are developing 'computer skills' which will be of vocational use. Several of the interview transcripts suggested that the once in a while 'all singing, all dancing' ICT special in a networked computer room was not seen as the ideal paradigm for ICT use. One example is given here:

> There are big problems in working in the computer suite. The system crashes several times a day, for several weeks – cause unknown. There are often several blank screens, reducing the number of computers available. There is the problem of pupils stealing mouse balls – not even particularly troubled pupils, it's just a current game. At school, access is difficult and slow – much better for them to do things at home on faster connections. Most teachers I know don't like the 'set-piece' ICT lesson.

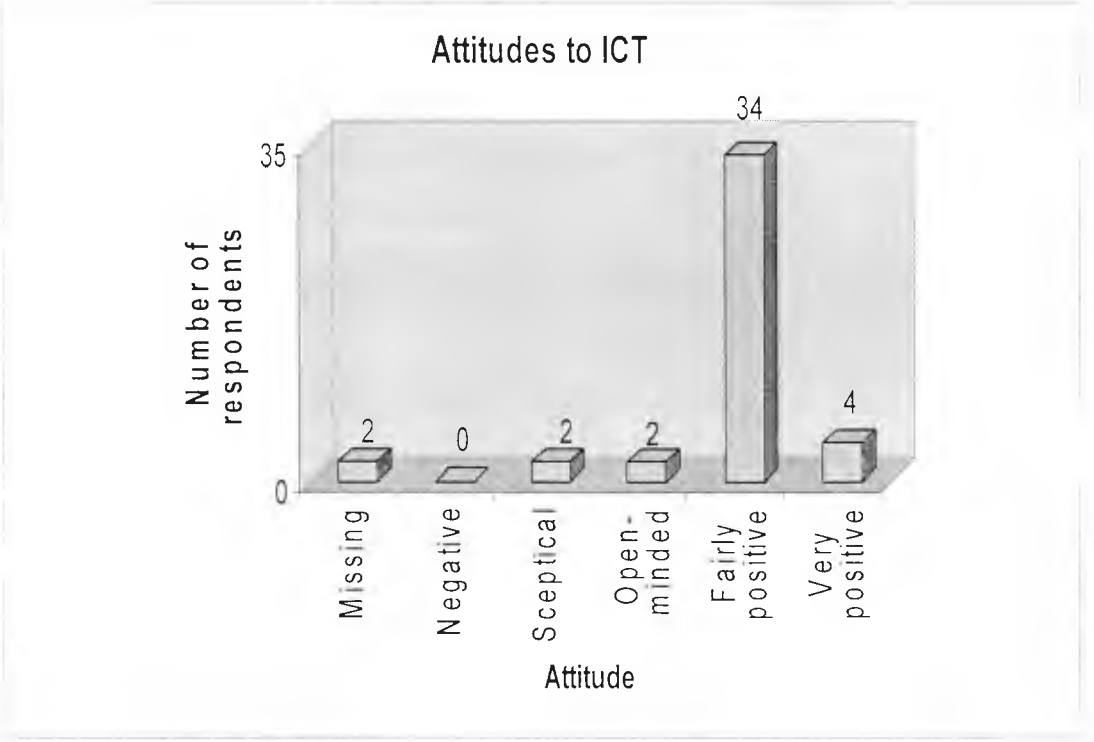
Overall, responses suggest that most history teachers have derived some benefits from using ICT, but not in the way and form that policymakers and politicians envisaged (see Chapters 2 and 3).

History teachers' attitudes to the use of ICT

Most teachers in the survey expressed 'fairly positive' views about the potential of ICT to improve teaching and learning in history (see Figure 4.4), although many also stated that they felt under pressure to use computers in their teaching. When asked about where the pressure came from, responses varied from 'the head' or 'school management team', to the fear that if computers were not seen to be used, it would reflect badly on the department in an Ofsted Inspection, to the perception that the pupils enjoyed using them, or that they ought to use them because 'computers are becoming more and more important'. This again lends some support to the claims of Cox *et al.* (1999), that teachers were often using computers 'because they felt they ought to', rather than because of strong evidence of beneficial outcomes.

Full wording of the coding of the question on history teachers' attitudes to ICT is given in Appendix 3.

Figure 4.4: History teachers' attitude to the use of ICT (2000-1) (n=44)



It is interesting to note that none of the respondents responded to the 'Negative' option ('I don't think that computers have much to offer teaching and learning in history'), but was this because of the strides forward in ICT in terms of access to hardware, better programs etc, or was it because such a position was no longer comfortable (Easdown, 2000)? The formal relationship between the researcher and the respondents was the same as that between researcher and respondents in the Easdown study.

The results of the survey suggest that there is at least the possibility that 'ideological' resistance to the use of computers was in decline. As Figure 4.4 indicates, a substantial majority of the respondents were 'fairly positive' about the potential benefits of ICT in history teaching, although only four respondents declared themselves to be 'very positive' about ICT.

In terms of the government's financial commitment to ICT in education (see question 14, Appendix 3), the majority of respondents were equivocal in their responses, cautiously welcoming some investment in ICT, but often with the caveat that this should be balanced with expenditure on books and other resources, such as artefacts and funds for more field trips and museums visits. Several responses indicated a concern that this balance was not being adhered to. One respondent felt that school investment in ICT had been at the expense of the school's library facilities. Another felt that 'a book each to take home would be more beneficial', and another remarked that 'ICT will never replace written evidence which kids can actually handle as opposed to reading off a screen', another simply said 'Get more books!' Another respondent remarked that 'We need text books *then* computers... you need resources that you can use quite easily, without having to move kids about.... Computers come second but they are important.' Very few interviewees felt that investment in ICT was not needed, or that it should be substantially reduced. In was interesting to note that many of the comments which were supportive of investment in ICT were on the grounds that it was an area that would be important to pupils when they left school ('Reasonable thing to invest in... skill that pupils will need in the work place', 'Reasonable enough... it's the way forward in industry etc'). There were fewer responses which were positive because of the immediate benefits to teaching and learning in the history classroom, although there was one unequivocally response of this nature: 'We've got to put in as much as we can... We've just installed broadband... instant internet access... it's great, you can get so much more done.'

Reasons given for not making greater use of ICT in history teaching

When asked to rank a list of factors which might deter them from making greater use of ICT in their classroom teaching (see Table 4.7 and Figure 4.5), 'lack of time to plan how to integrate the use of computers into lessons', and 'access' emerged as the most influential, and the most commonly mentioned barriers to ICT use. 'Lack of time to plan how to integrate the use of computers into your lessons' was mentioned as a deterrent by 32 out of 42 respondents, and when 'weighted' on a scale of 1 to 9 (9= most important deterrent), scored 262 points. Next to this came, 'access', mentioned by 30 interviewees, and scoring 250 points. The third most influential factor was 'pressure to cover curriculum content', mentioned by 22 teachers, and scoring 150 points. Factors which were seldom mentioned as deterrents, or which were low on the list of teachers' concerns were:

- 'lack of confidence/knowledge of how computers work', (six respondents, 31 points)
- 'anxiety about the classroom management implications of the use of computers', (three respondents, 15 points)
- 'ideological' resistance to the use of computers – 'you do not believe that computers have much to offer in developing pupils' historical knowledge and understanding.' (six respondents, 36 points).

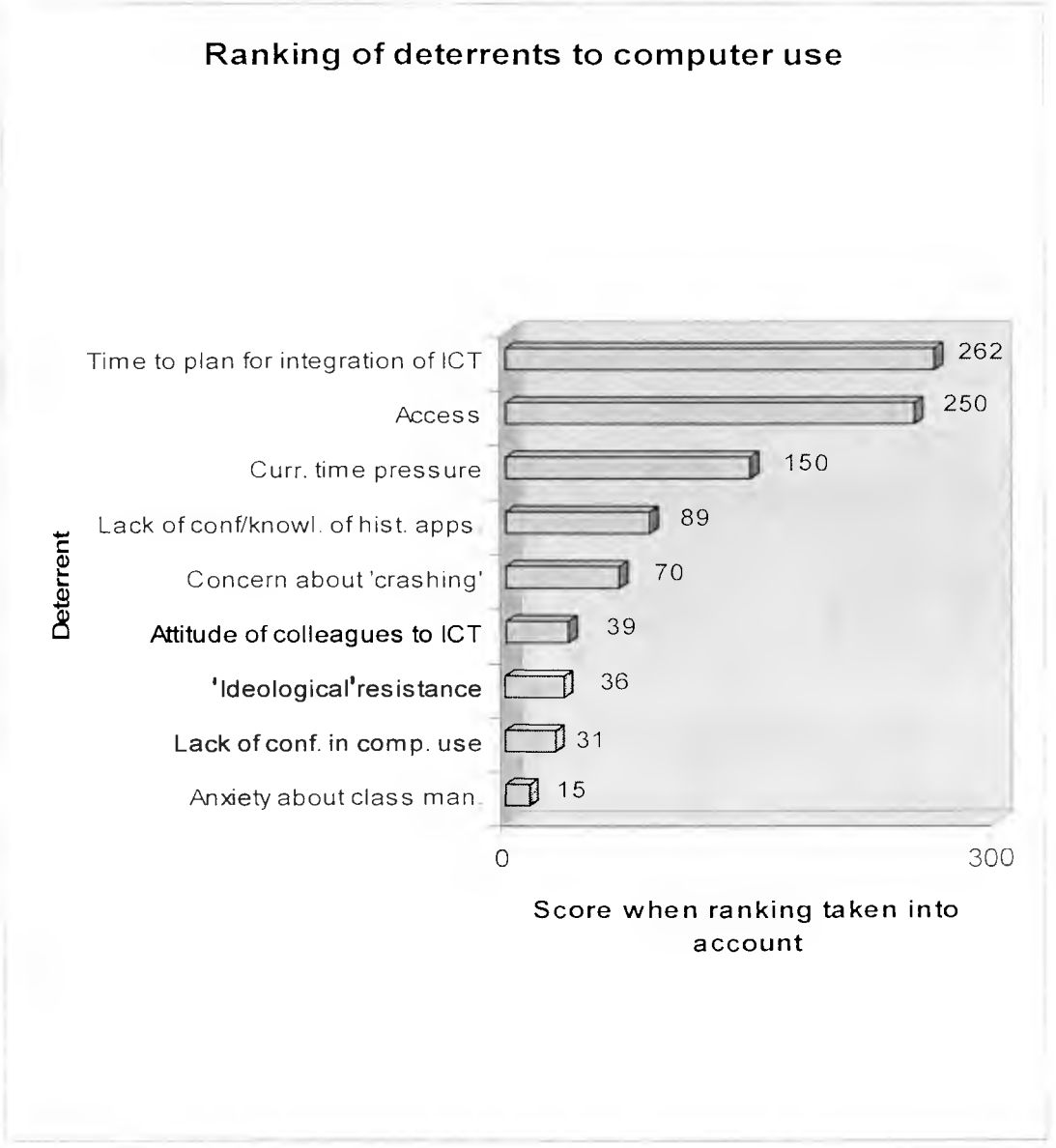
The most striking change in emphasis from the findings of the preliminary investigations in 1995-7 was the reduction in 'lack of confidence in how computers work' responses. There was also a reduction in the proportion of history teachers citing 'ideological' resistance to ICT (from 23.3% to 16.6%). Lack of confidence/knowledge about 'what to *do* with computers in history lessons' had not been reduced as much as confidence in computer use generally, and was still cited as

a deterrent by almost a third of respondents. There had also been a substantial drop in the number of teachers mentioning 'class management concerns' as a deterrent to the use of ICT. Lack of time to plan how to integrate the use of computers into history lessons had overtaken access issues as the most influential and frequently cited barrier to the use of ICT in secondary history classrooms. These changes should be treated with caution, not least because the wording of several of the statements had been changed, in order to try and find a better form of 'probe' into teacher perceptions. There were also some changes to the factors which were suggested. 'Changes to hardware platforms' had been dropped, and a 'peer pressure' factor had been introduced. This last factor was cited by eight of the 42 respondents as a factor which contributed to their limited use of ICT. Responses are presented in Table 4.7. The results are presented in descending order of frequency rather than in the order in which the various factors were placed in the form. Figure 4.5 presents the responses where ranking of comparative influence has been taken into account.

Table 4.7: Number of teachers citing factors which acted as a deterrent to the use of ICT in the history classroom (2000-1) (n= 42)

Factor	Number of teachers citing it as a deterrent to ICT use
e) Lack of time to plan how to integrate computers into your lessons	32
a) Difficulties in getting access to computers	30
f) Pressure to cover curriculum content	22
c) Lack of confidence/knowledge of what to *do* with computers in history lessons	13
i) Concern that computers might crash/not work	11
h) The attitude/approach of teachers in the history department you work in.	8
g) Belief that computers do not have much to offer in developing pupils' historical knowledge, skills and understanding	6
b) Lack of confidence/knowledge in how computers work	6
d) Anxiety about the classroom management implications of the use of computers	3

Figure 4.5: Comparative importance attached to factors acting as a deterrent to the use of computers in the history classroom (2000-1)



History teachers' use of the National Grid for Learning/Virtual Teachers Centre and the TTA's *Identification of training needs for the use of ICT in subject teaching* materials

Both these resources, and particularly the National Grid for Learning, represented major policy investments in promoting the use of ICT in classrooms. High hopes were invested in the potential of such internet education gateway sites, as 'hubs' for the dissemination of educational resources and information (see, for example, DfEE,

1997b). Figure 4.6 gives the responses of history teachers to the question, 'How much use do you make of the NGfL/VTC?' Many teachers said they had not looked at it, or were unaware of its existence. Together with lack of awareness of its existence, 'lack of time' to consider its use was frequently given as a reason for not making use of the NGfL/VTC (see Figure 4.7).

Figure 4.6: How much use do you make of the NGfL/VTC? (2000-1) (n=44)

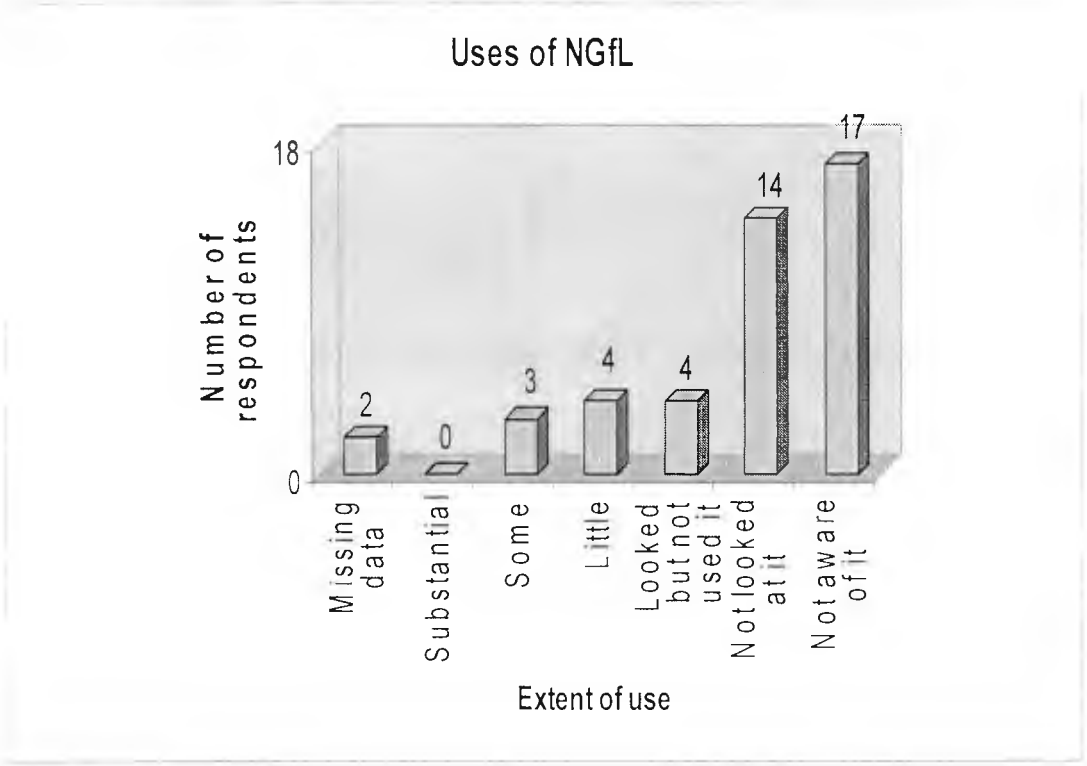
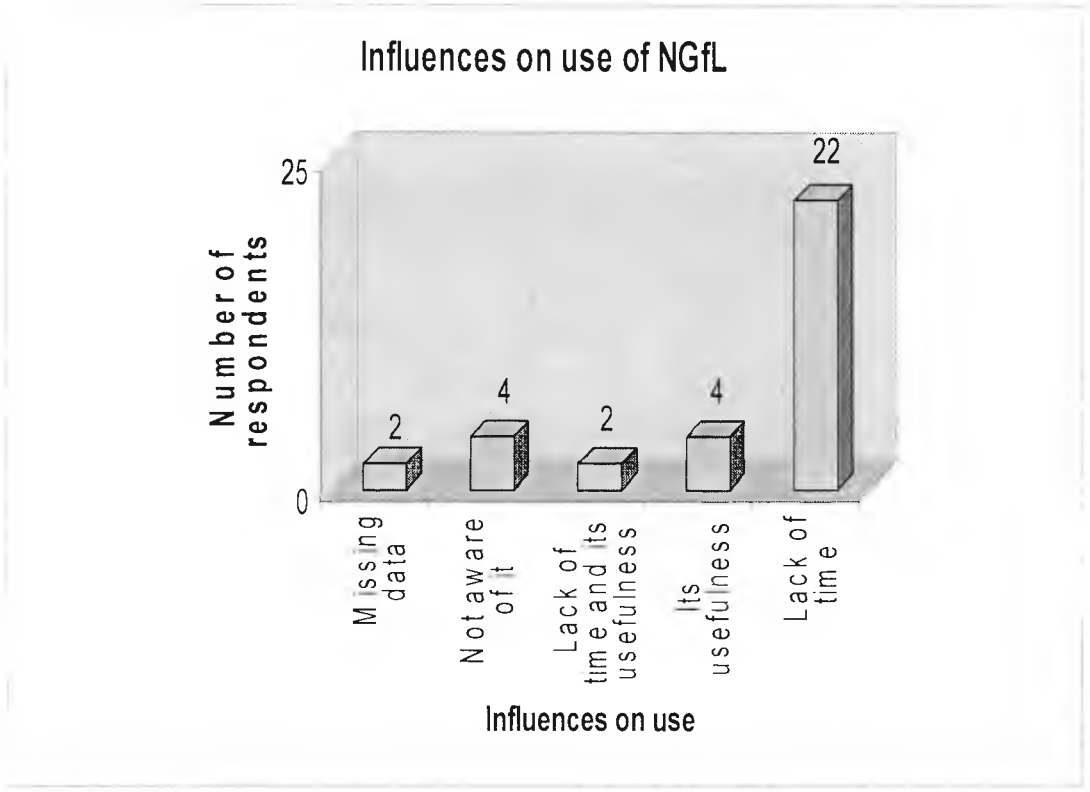


Figure 4.7: Influences on use of NGfL/VTC (2000-1) **(n=44)**



Similarly, the information booklet designed to help subject teachers to identify their training needs in ICT (TTA, 1999a) was poorly received, with respondents either being unaware of its existence, finding it unhelpful, or feeling that they did not have time to fully consider the materials (Figures 4.8 and 4.9).

Figure 4.8: How helpful did you find the *Identification of training needs for the use of ICT in subject teaching* materials? (2000-1) (n=44)

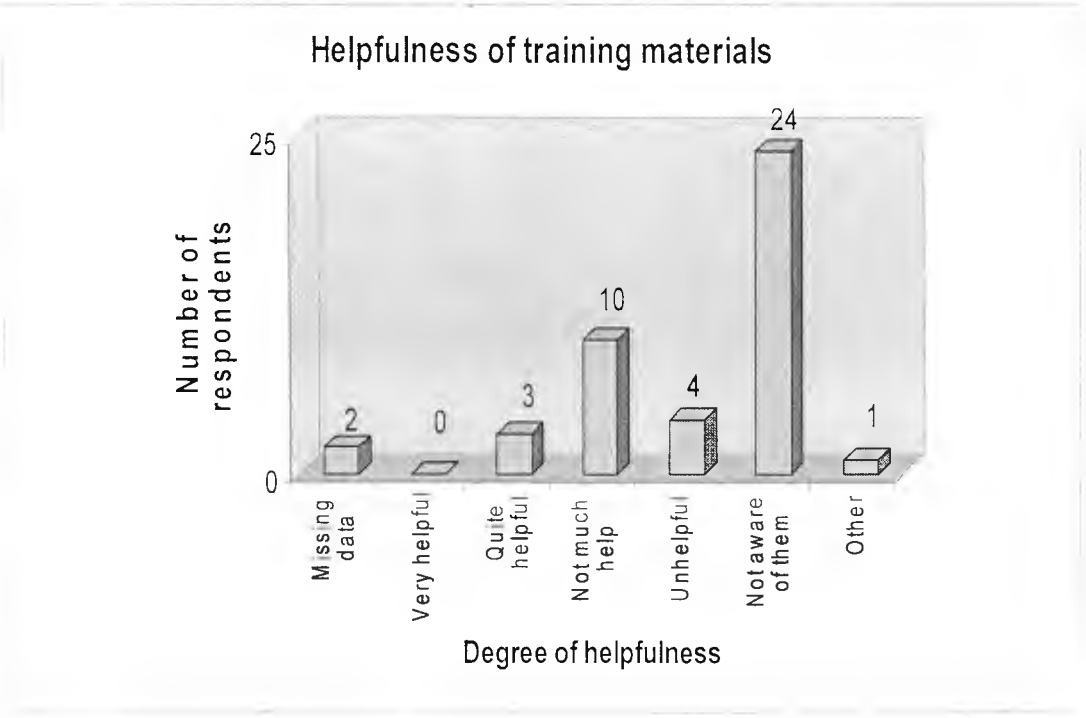
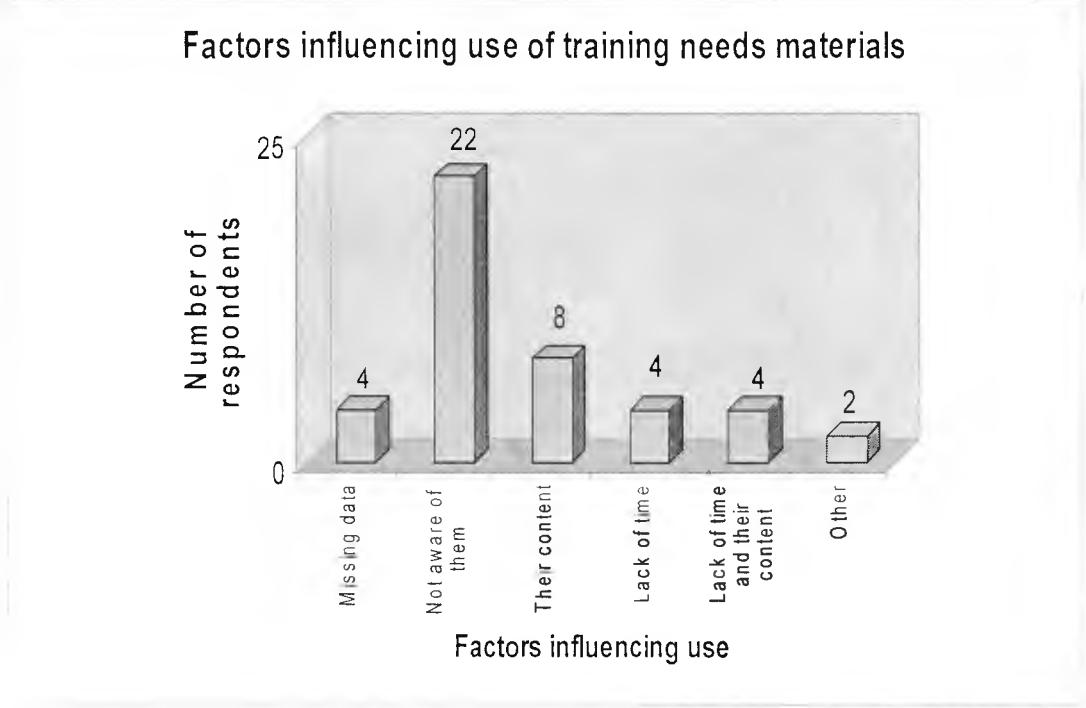


Figure 4.9: Factors influencing views on the usefulness of *Identification of training needs for the use of ICT in subject teaching* materials (2000-1) (n=44)



History teachers' views on investment in ICT

Interviewees were asked to rank a range of strategies for developing the use of ICT in subject teaching. The data analysis made it possible to identify the number of 'first choices' for investment, the frequency of respondents who felt that particular forms of investment would be helpful, and the comparative 'points score' arrived at by totalling points according to ranking (6= first choice). It is interesting to note that although more dedicated time for departmental development of ICT was by some way the first choice for investment in ICT (see Figure 4.10), overall, there was no great polarisation of views in this area (see Figure 4.11).

Figure 4.10: First preference for investment in ICT (2000-1) **(n=44)**

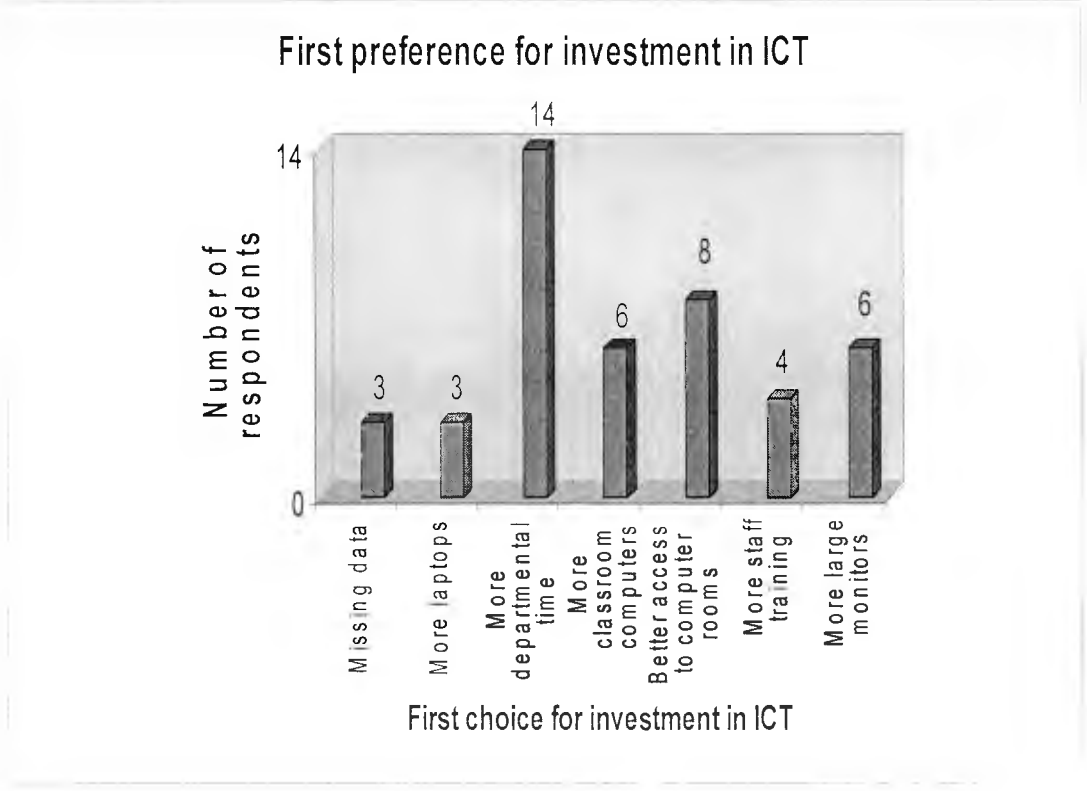
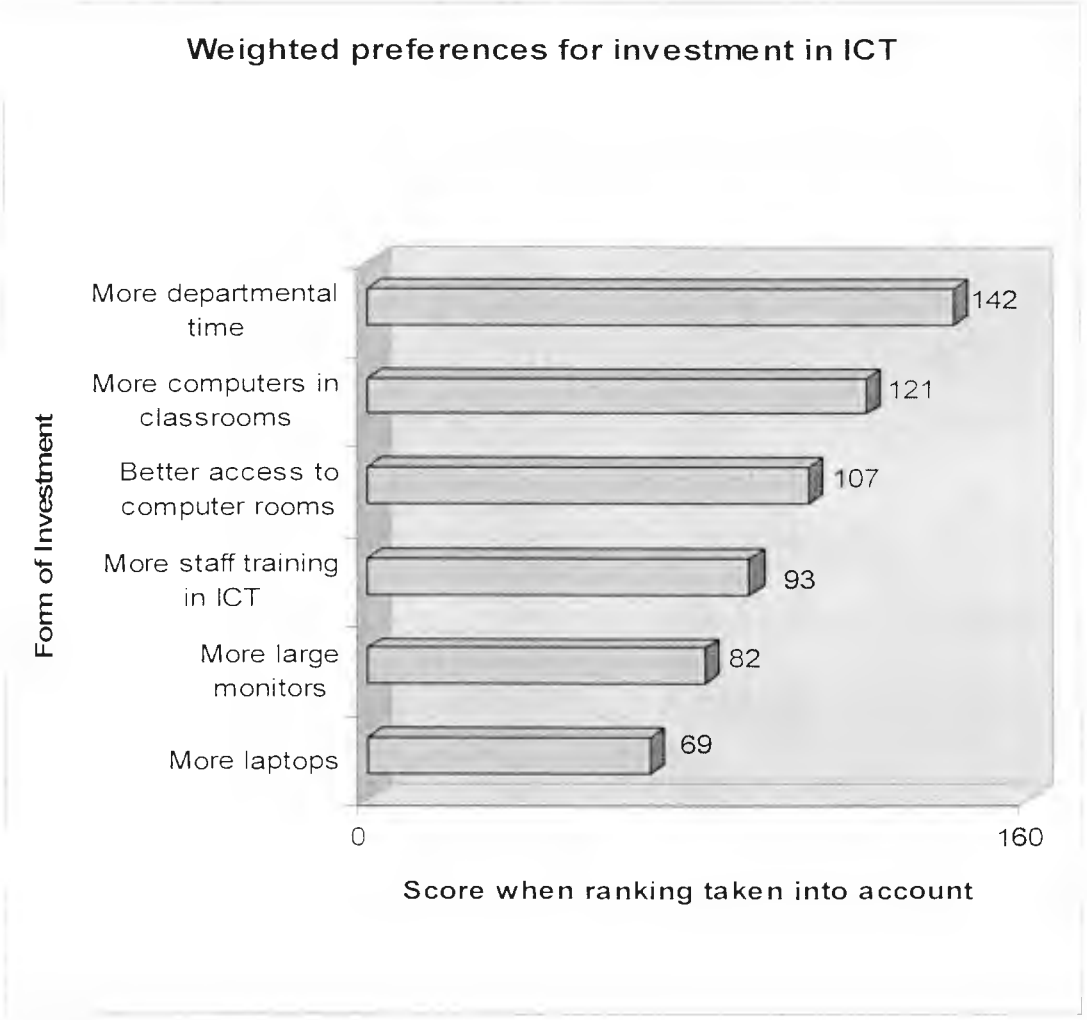


Figure 4.11: Weighted preferences for investment in ICT (2000-1)



Both in terms of 'first choices', and overall points score, teachers' time again emerges as an important factor, with 'provision of more dedicated time for departmental development of ICT' perceived as being most potentially helpful in moving forward in history and ICT. More time for staff training, more computers in history classrooms and more large monitors for whole class display all emerged as more desirable priorities than the provision of personal laptop computers for history teachers.

The third phase of data collection: October 2003 survey

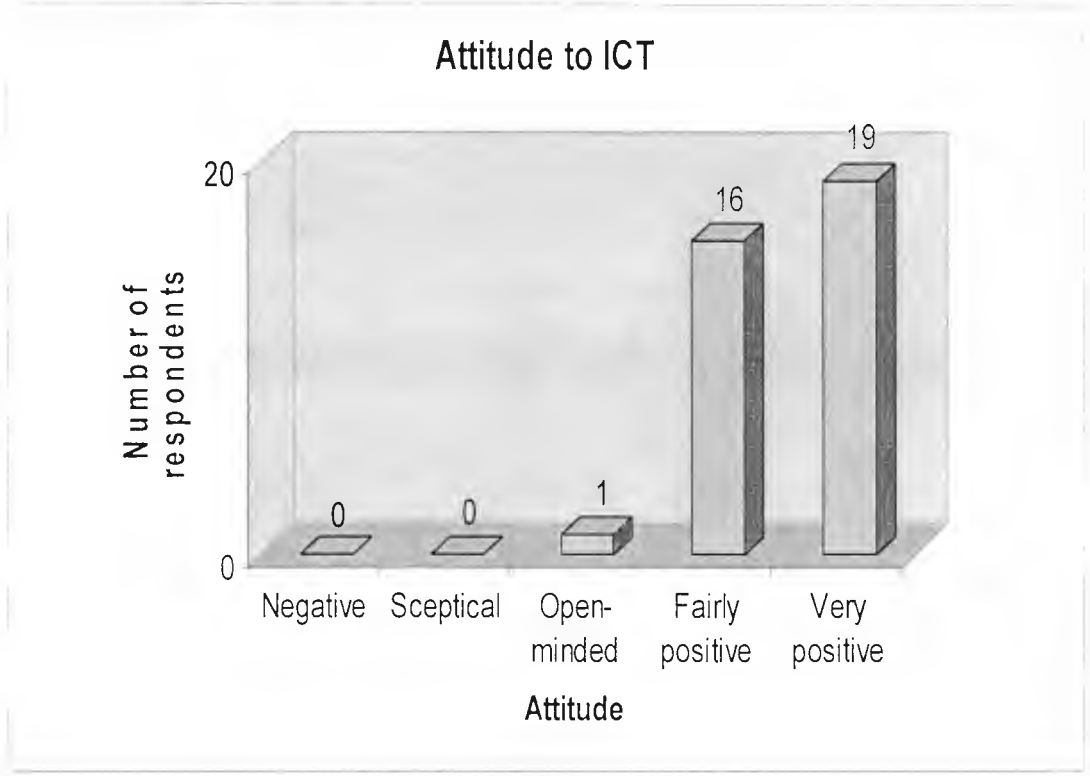
An invitation to survey history teachers attending a conference about the use of ICT in school history (sponsored by BECTa and the Historical Association) provided the opportunity to gain an updated insight into history teachers' attitudes to the use of ICT. Given the rapid changes in the field of ICT and education, this provided a chance to triangulate some facets of the data from preliminary investigations (1995-7), and the main phase of data collection (2000-1), and to explore the extent to which history teachers' use of, and attitude to ICT had changed over the period in question. The fact that the survey had been commissioned by an outside agency placed some constraints on the questions posed. Although it was possible to 'follow up' several strands of the earlier surveys, it was not possible to do this with all facets of the enquiry. Two areas which were not pursued, purely because they fell outside the specification for the survey, were teachers' views on, and use of television and video, and history teachers' perceptions of which particular ICT applications were most helpful for enhancing teaching and learning in history.

The data obtained derives from a questionnaire survey (see Appendix 5), and unlike phase two of data collection, there was no chance to interview respondents in a way which might add to the depth or 'richness' of data collection. The questionnaire was given to all the 85 history teachers who attended the conference, and at the end of the day conference, 40 questionnaires were returned, a response rate of 47%. Of these returns, four were from primary teachers, and these have been omitted from the analysis which follows.

History teachers' attitudes to ICT: 2003

Figure 4.12 gives the responses to the teachers' responses to the question 'Which of the following statements most closely accords with your attitude to the use of ICT in history teaching?' (The wording is the same as that used in the 1995-7 survey, apart from the addition of the category 'none of the above').

Figure 4.12: History teachers' attitude to ICT (2003) **(n= 36)**



This is a survey of a different group of history teachers from those surveyed in the first phase of data collection between 1995-7, and the conference may have attracted teachers who differed in their motivation for attending the event compared to those attending the INSET courses between 1995 and 1997. The October 2003 conference took place on a Saturday, as opposed to days in the working week for the in-service courses. It was held in Lincoln, a small provincial city, as opposed to the middle of London. These caveats notwithstanding, a comparison with the number of teachers

citing 'ideological' objections to the use of ICT in school history in the first phase of data collection is quite striking.

A comparison between Figure 4.12 (2003 results) and Figure 4.4 (2000-1 results, page 178) shows that even when compared to the teachers in the 2000-1 survey, this cohort of respondents had a much more positive attitude to the role of ICT in school history, with over half the respondents feeling 'very positive' about the role of ICT in school history, as opposed to just under 12% in the earlier survey.

Reasons given for not making greater use of ICT in history teaching: 2003

The wording of this question was the same as that used in the 2000-1 survey, apart from the addition of the 'Any other factors?' option. Table 4.8 gives the number of teachers citing factors as a deterrent to the use of ICT, Figure 4.13 the number of teachers citing a factor as the most influential factor in deterring them from using ICT, and Figure 4.14 the factors deterring teachers from using ICT when ranking of degrees of influence is taken into account. The factors are given in descending order of frequency rather than in the order in which they appeared on the form.

Table 4.8: 'Factors which you feel have limited your use of ICT in the history classroom' (2003) (n=36)

Factor	Number citing this as a deterrent to the use of ICT
Difficulties in getting access to computers	31
Lack of time to plan how to integrate computers into your lessons	27
Pressure to cover curriculum content	17
Concern that computers might crash/not work	12
Lack of confidence/knowledge of what to *do* with computers in history lessons	11
Anxiety about classroom management implications of use of computers	7
The attitude/approach of the teachers in the history department you work in	6
Lack of confidence/knowledge about how computers work	5
You do not believe that computers have much to offer in developing pupils' historical knowledge, skills and understanding	2

Figure 4.13: Number of history teachers identifying a factor as the most influential barrier to the classroom use of ICT (2003) (n=36)

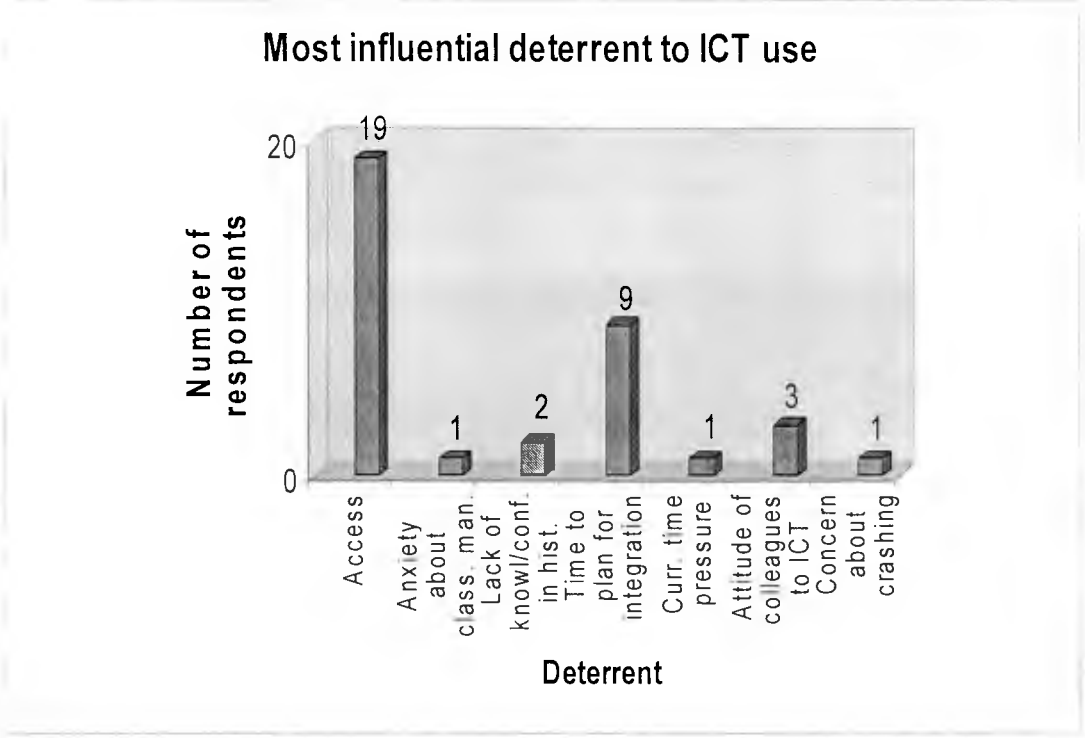
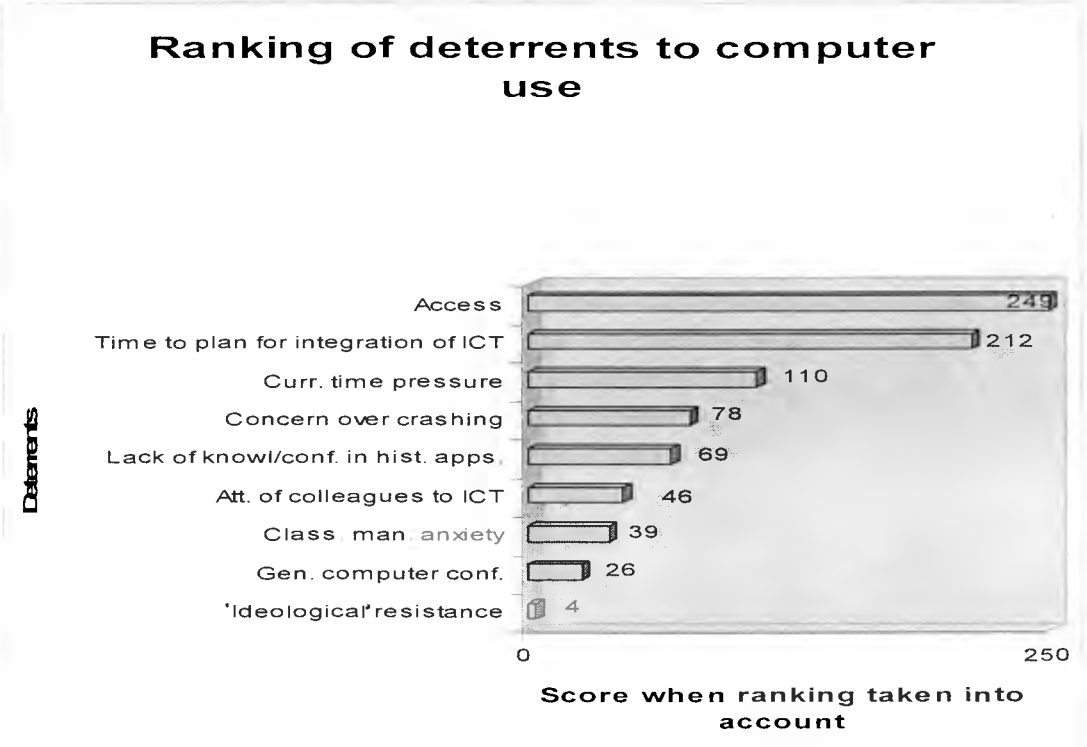


Figure 4.14: Comparative importance attached to factors acting as a deterrent to the use of computers in the history classroom (2003)



In terms of shifts in attitude from the earlier surveys, access and time to plan for the integration of ICT into history lessons remain the most influential factors, but there is a marked reduction in the prevalence of confidence issues as a barrier to the use of ICT, and 'ideological' objection to the use of ICT barely figures in the 2003 responses.

History teachers' views on 'ways forward' for the use of ICT in the history classroom

The format of this question was substantially the same as in the 2000-1 survey, apart from the inclusion of one additional category, 'provision of more published support materials and web based help sites'. This was included as it was of interest to the sponsors of the survey (BECTa). There was also a slight change to the wording of the statement about whole class projection facilities, from 'large monitors for whole class computer display in history classrooms', to 'provision of data projectors/whiteboards for whole class projection facilities'. This was done to keep in step with the most commonly used descriptions of such equipment.

As with the 2000-1 survey, the format made it possible to identify the number of 'first choices' for further investment in ICT, the frequency with which respondents identified particular investments as being helpful, and the comparative 'points score' arrived at by totaling points according to ranking (7= first choice, 6= second choice etc).

Figure 4.15, Table 4.9 and Figure 4.16 provide the results of the October 2003 survey. These can be compared with the results of the 2000-1 survey, which are given on pages 187-8.

Figure 4.15: First preference for investment in ICT (2003) **(n=36)**

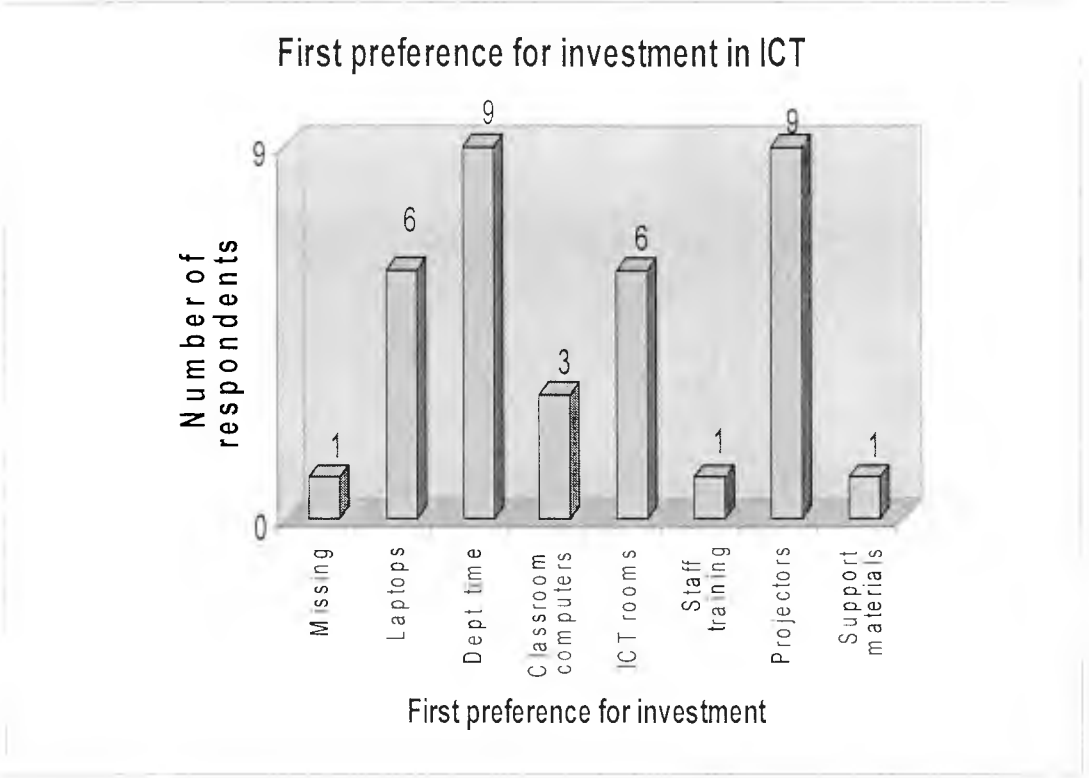
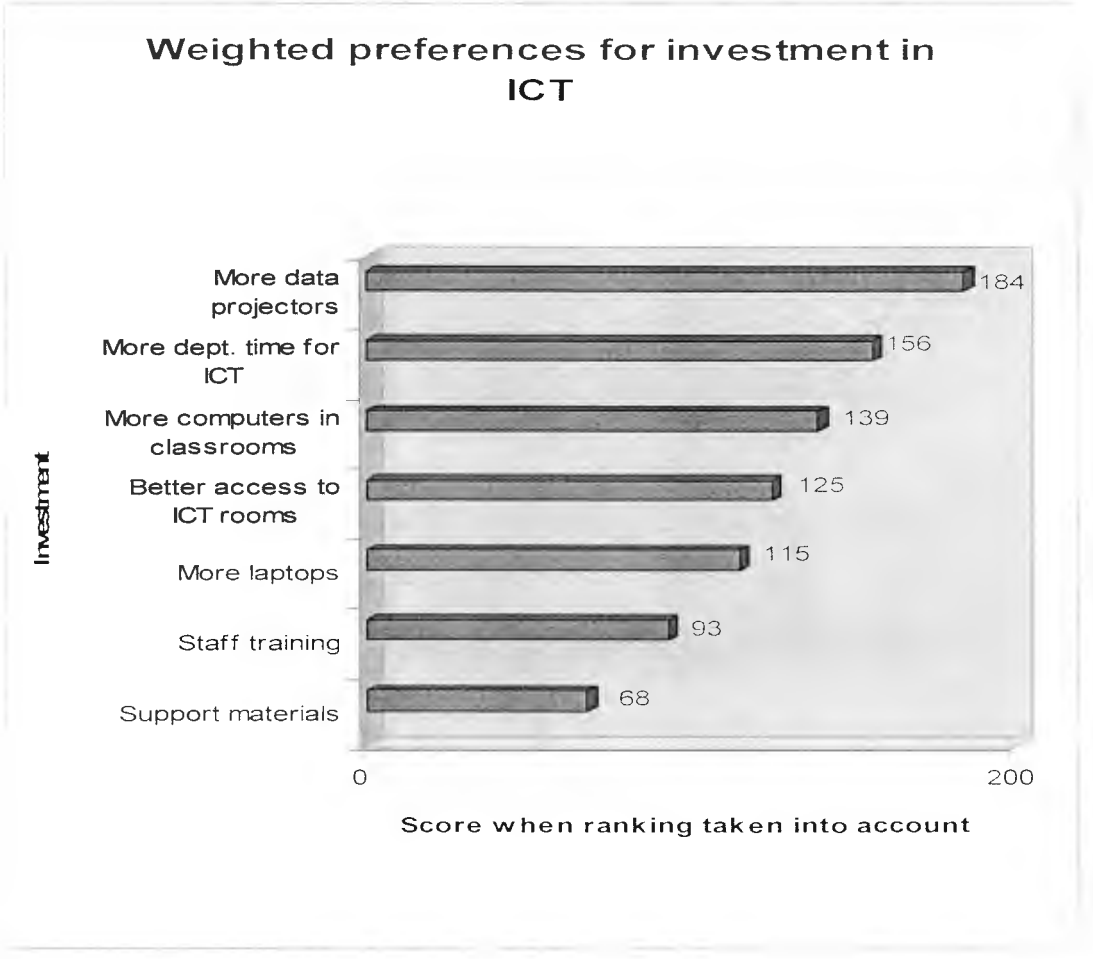


Table 4.9: Number of teachers mentioning particular investments in ICT as potentially helpful (2003) **(n= 36)**

Data are presented in descending order of frequency rather than in the order in which factors appeared on the form.

Investment	Number of teachers citing this as potentially helpful
Provision of more data projectors/whiteboards for whole class projection facilities	**36**
Provision of more computers in history classrooms	**33**
Provision of more dedicated time for departmental development of ICT	**30**
Provision of laptop computers for history teachers	**28**
Better access to networked computer rooms	**26**
More staff training in ICT	**23**
Provision of more published support materials and web based help sites	**21**

Figure 4.16: Weighted preferences for investment in ICT (2003)



Desire to have more time for departmental development of ICT remains an influential factor, but the responses indicate that there has been a pronounced move towards a preference for the deployment of ICT within the 'normal' history classroom compared to the 2000-1 survey, either by having computers in history classrooms, or having data projection facilities in history rooms. The new category of 'more support materials and web based help sites for ICT' did not evince as much support as the other options. It is also interesting to note that in spite of the general improvements to the reliability of computers over the past few years, concerns over machines 'crashing' remained a fairly common deterrent to use. Also, the responses suggest that both experienced and trainee teachers are sometimes influenced by the views of their colleagues in terms of their use of ICT.

History teachers' use of ICT

Some changes were made to the format of the question relating to history teachers' use of ICT in their subject teaching. The changes offered some advantages in terms of making it possible to present a more precise picture of the ways in which history teachers were making use of ICT.

The 2003 survey suggested that large numbers of history teachers were making use of ICT to teach history, but not in the ways envisaged by policymakers in the late 1990s (see Chapter 3).

Section four of the questionnaire asked teachers to estimate how big a contribution ICT made to their history teaching in terms of preparation of lessons, classroom use, and assessment and administration activities. They were also asked to estimate in roughly what percentage of lessons they used computers in the classroom. Figures 4.17-4.20 give the responses to these questions.

Figure 4.17: How big a contribution does ICT make to your history teaching in terms of your preparation of lessons? (2003) **(n= 36)**

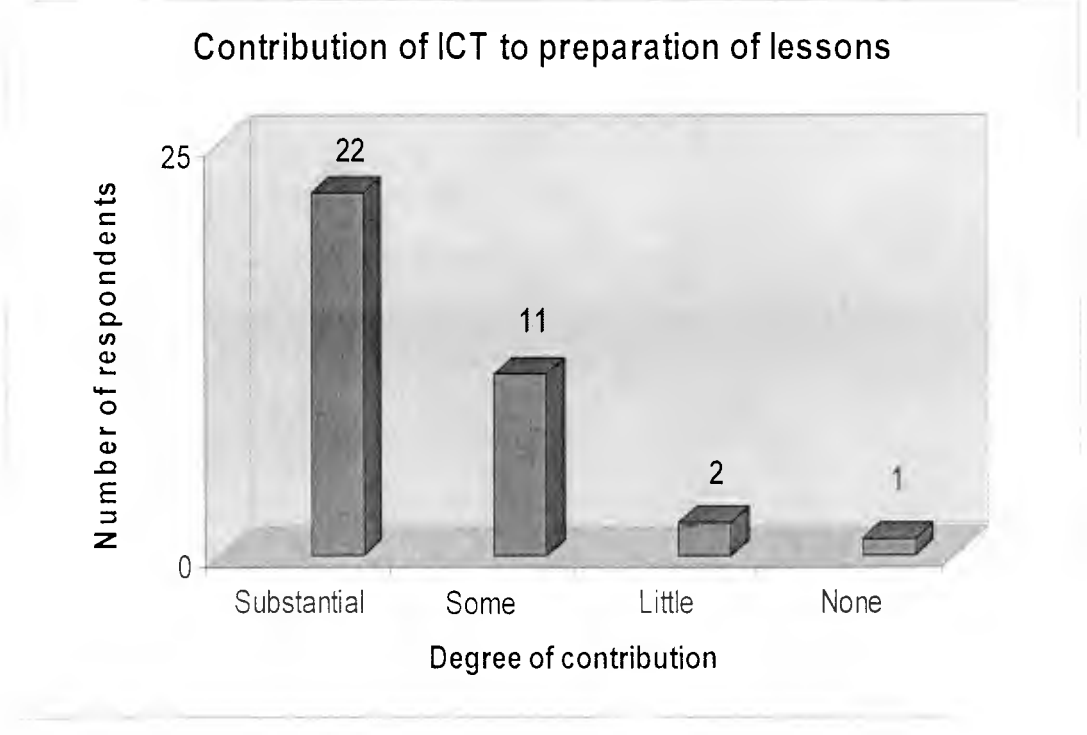


Figure 4.18: How big a contribution does ICT make to your history teaching in terms of classroom use of ICT? (2003) **(n= 36)**

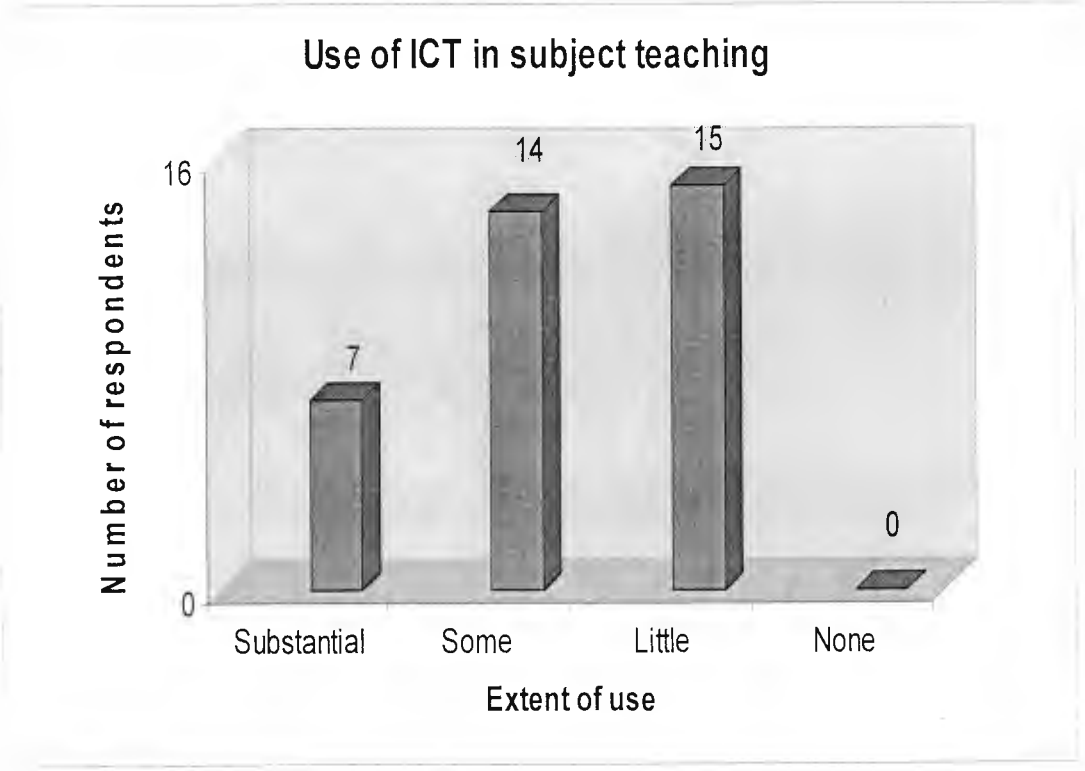


Figure 4.19: How big a contribution does ICT make to your history teaching in terms of assessment and administration? (2003) **(n= 36)**

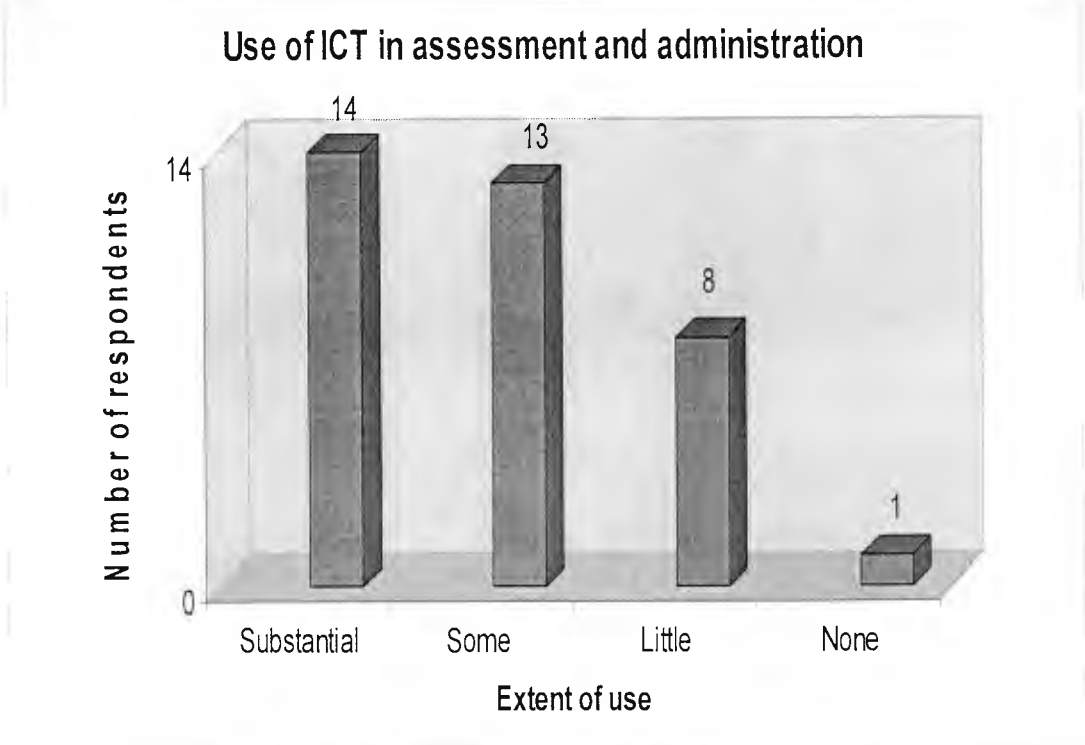
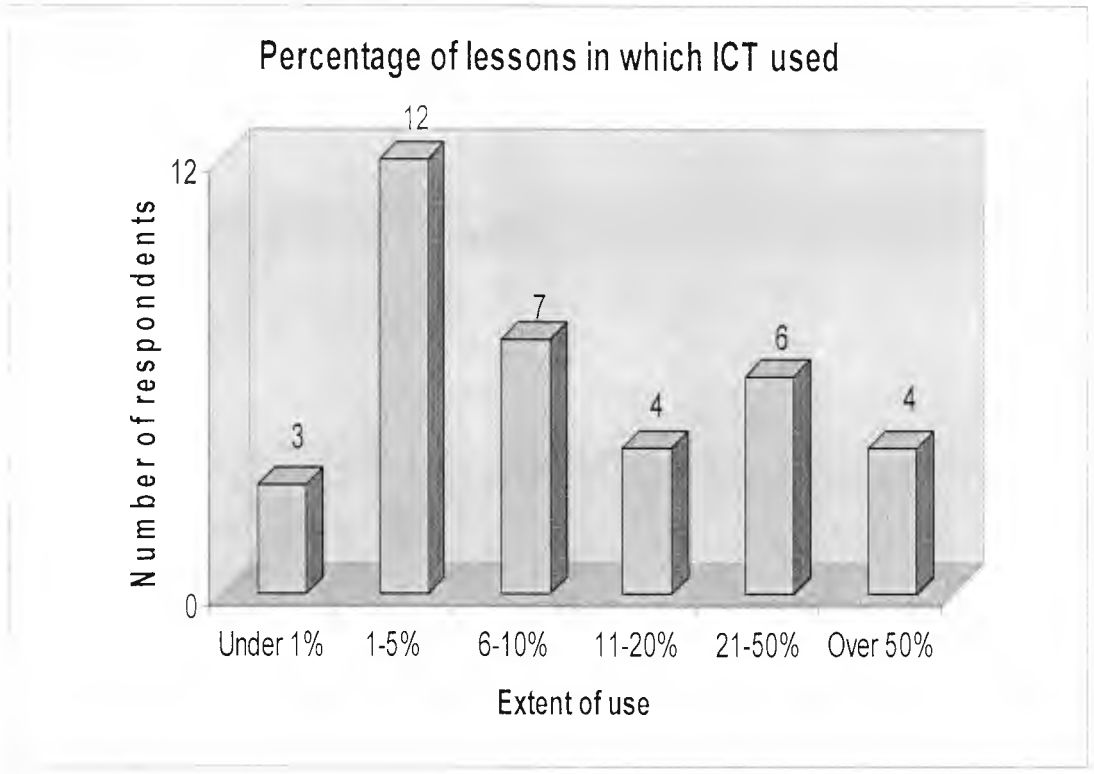


Figure 4.20: In roughly what percentage of lessons do you use computers in your classroom teaching? (2003) (n= 36)



Although the classroom use of ICT in secondary history perhaps remains sluggish, with only 19.4% of respondents claiming to make 'substantial' use of ICT in their classroom teaching, in other respects the figures show an increase in use, compared to both recent DfES surveys (DfES, 2000, 2001b, 2002a) and to earlier surveys in this study. According to the October 2003 responses, over 60% of history teachers were making substantial use of ICT in their preparation of lessons, with only 8.4% of history teachers not making 'some' or 'substantial' use of ICT for preparation of lessons. Almost 40% were making substantial use of ICT for assessment and administration – again, more positive responses than those obtained in the 2000-1 survey. Even in terms of classroom use, 38.9% of respondents claimed to be using computers in over ten per cent of their lessons, a considerable step forward compared to the 2000-1 figures.

Cross-tabulation of the data on access to ICT with the figures on frequency of classroom use showed that teachers who had good access to ICT – in terms of either ordinary classroom use or good access to ICT suites – were much more likely to make frequent classroom use of ICT. This was particularly marked where the teachers had easy access to data projectors or computers in the history classroom.

As noted earlier, these figures should be taken with a 'health warning' in terms of the data not being triangulated against pupil data on the use of ICT, but the same pressures to err on the side of 'the positive' also applied to the earlier phases of data collection in this survey, and the 2003 figures suggest that considerable progress has been made in terms of history teachers' attitude to and use of ICT since the first phase of data collection in 1995-7.

What were history teachers doing with ICT in 2003?

One of the 'open' questions on the 2003 survey asked history teachers to think of an example of effective practice in using ICT in the classroom. This was one of the last questions on the survey, and many teachers completed the survey towards or at the end of a one day in-service course which took place on a Saturday.

Perhaps unsurprisingly, responses tended to be fairly cursory, and in seven instances (out of 36), no response was given. In three cases, respondents stated that they were not able to identify an example of the effective use of ICT in the classroom. In the other 26 cases, respondents did identify an example of the classroom use of computers which they felt had worked well. The responses are given in full in Appendix 6.

In terms of shifts from the 2000-1 survey (see Appendix 3), the use of the internet, and in particular the use of images from the internet, was a common response,

mentioned explicitly in 12 of the 26 responses, while the use of PowerPoint presentation software was mentioned by four respondents. The use of wordprocessing to help pupils to organize information and to develop their skills of extended writing was mentioned by two respondents, and two teachers mentioned the use of datahandling activities to look for patterns in historical information.

Aspects of access to ICT for secondary history teachers

As with teachers' use of ICT, the form of questioning in this area had been revised from the earlier surveys. This was partly in the light of weaknesses of the forms of questioning used earlier and partly because of changes in the 'landscape' of ICT in schools. When the enquiry started in 1995, pupil access to the internet in schools was so negligible as to be hardly worth exploring, and data projectors and whiteboards had not generally percolated into the general life of most secondary schools.

The 2000-1 survey suggested that a majority of history departments did not have any computers in their teaching rooms. This seemed to be quite an important and perhaps surprising finding. The format of the 2003 survey did not permit this finding to be followed up as explicitly, but it did provide a better basis for obtaining feedback on secondary history teachers' perceptions of a range of aspects of access to ICT. The details are given in Figures 4.21-4.24.

Figure 4.21: Access to ICT in secondary history: how easy is it to get access to computer rooms for your classes? (2003) (n=36)

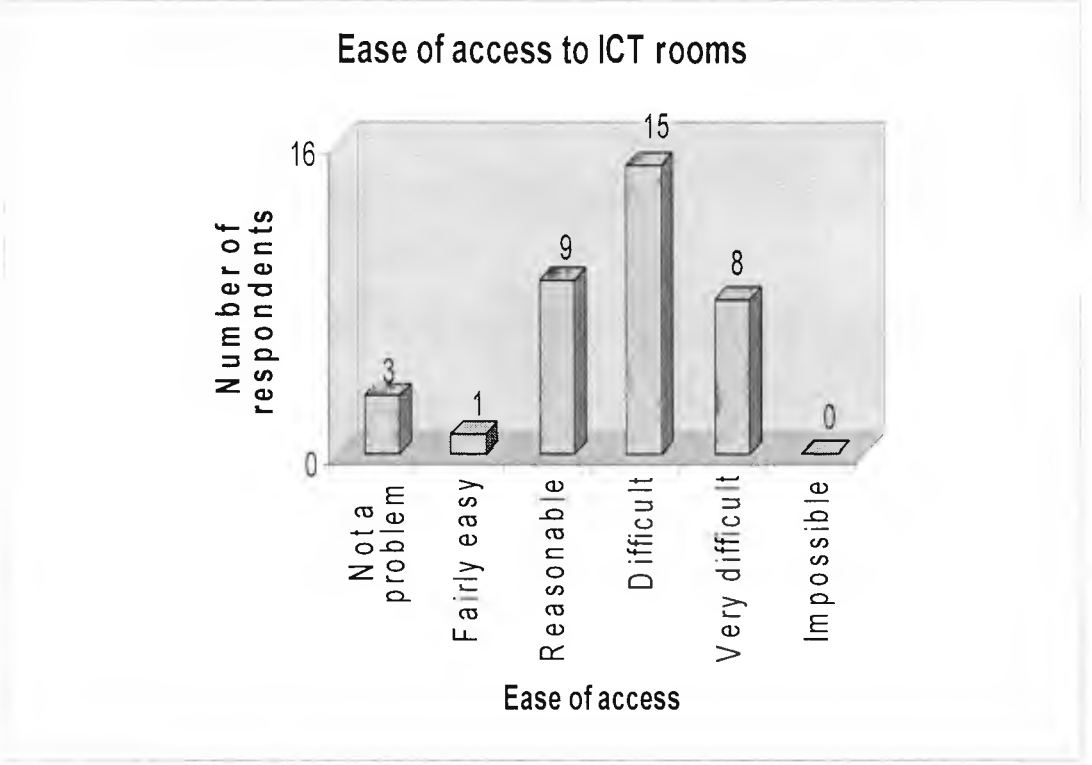


Figure 4.22: Access to ICT in secondary history: how easy is it to use computers in designated history rooms? (2003) (n=36)

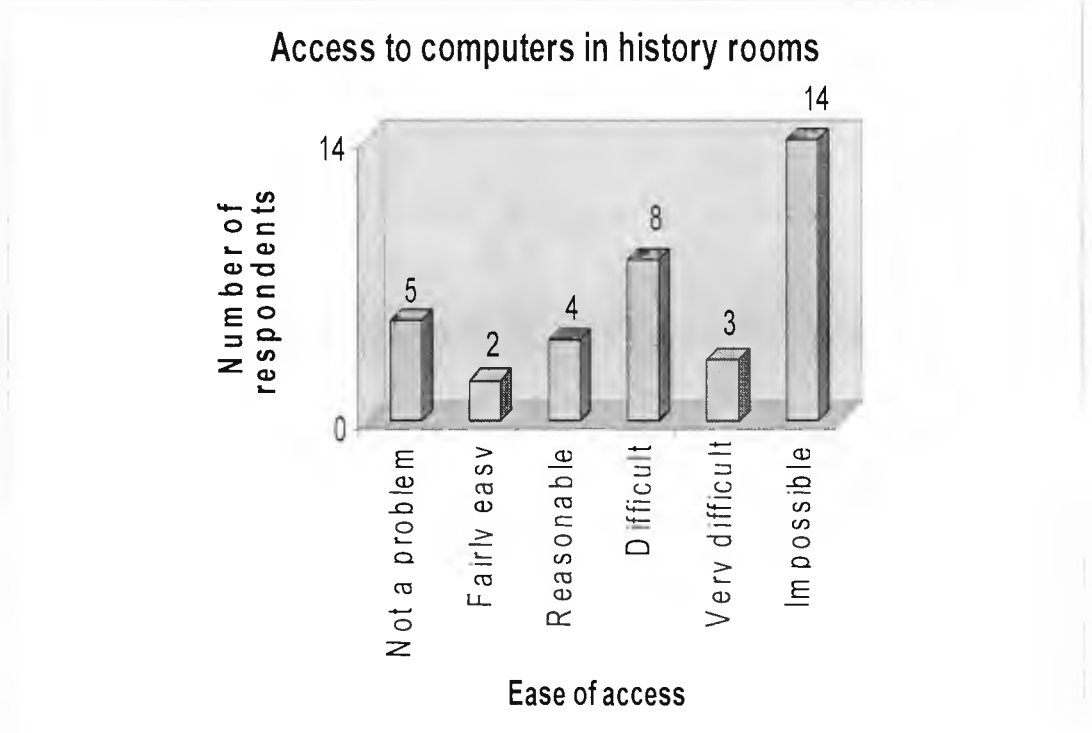


Figure 4.23: Access to ICT in secondary history: how easy is it for pupils to get internet access in your school? (2003) (n=36)

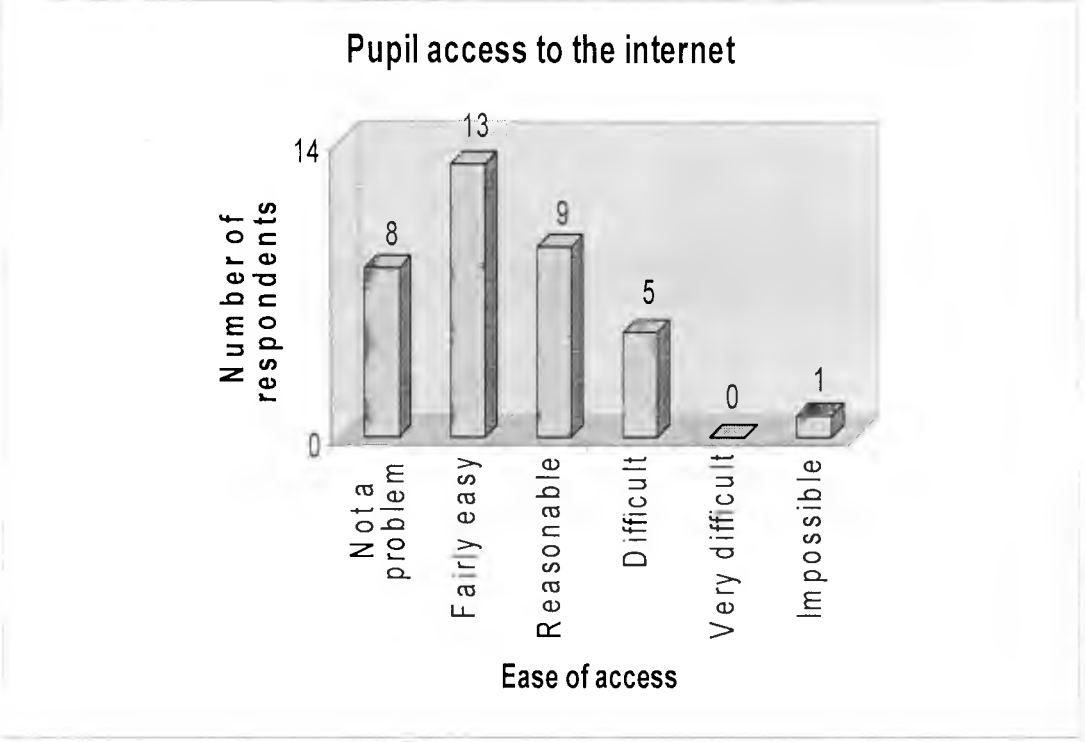
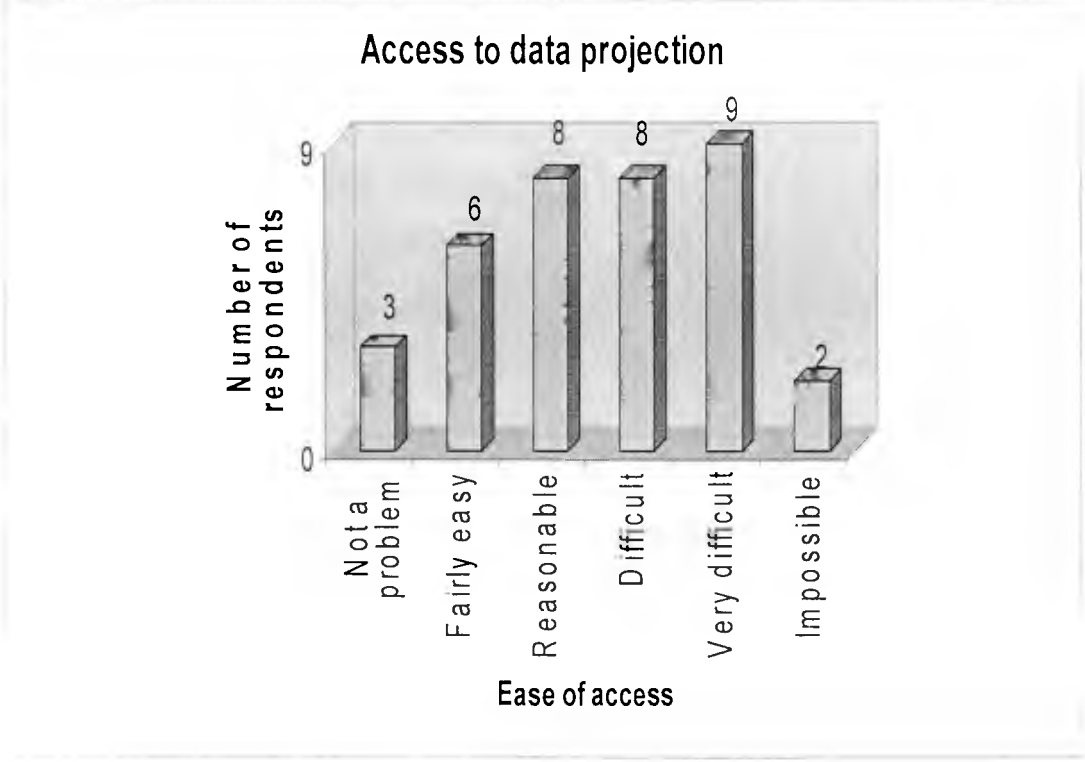


Figure 4.24: Access to ICT in secondary history: how easy is access to data projectors/whiteboards/large monitors for whole class projection in history lessons? (2003) (n=36)



Overall, the responses suggested that access to ICT is still a problem for most secondary history teachers, and may be one of the reasons why history teachers still accord such a prominent place for the use of television and video in the pantheon of new technology applications.

In terms of access to ICT rooms, only 11.1% of the respondents regarded access to ICT rooms as 'not a problem' or 'fairly easy', whereas 63.9% felt that it ranged from difficult to impossible. Several teachers scribbled the comment that it was often difficult to integrate the use of ICT into medium term lesson planning because of the overall demand for ICT rooms within the school.

There was a similar pattern for views on the ease of access to computers in designated history rooms; 19% thought that this was 'not a problem' or 'fairly easy', 69.4% thought it 'difficult' or 'very difficult'. It is important to note that 38.9% of respondents reported that it was 'impossible' to use computers in designated history rooms. It might be inferred that this is because there are no computers in the history rooms. Although if this is the case, it is a reduction from the situation in 2000-1 where the majority of history departments did not have any computers in their teaching rooms, the fact that almost 40% of history departments still may not possess a single computer for classroom use is an interesting finding.

One area where there seemed to have been substantial progress since the earlier surveys was in terms of pupils' access to the internet in schools, although again, there was a degree of polarisation in the responses. The responses showed that 58.3% said that pupil access was 'not a problem' or 'fairly easy', sometimes with the caveat that this was the case if one included pupil use at lunchtimes and after school. Only 16.7% felt that pupil access to the internet was difficult or impossible at school.

This raises interesting questions about the possibility of history teachers being able to set internet based homeworks (see concluding chapter).

With regard to the availability of whole class projection facilities, 25% regarded this as 'not a problem' or 'fairly easy', a big step forward from 2000-1 responses, but still, over half of the history teachers surveyed (52.6%) felt that access to whole class projection facilities was difficult to impossible. Given that this form of investment in ICT emerged as the most favoured choice by history teachers in the 2003 survey (see pages 195-7), the scale of the problem of this facet of access to ICT is worrying. Is it possible that New Opportunities Fund money for investment in ICT in schools has focused too much on the provision of more ICT suites, at the expense of 'teaching convenience' forms of ICT provision, which is more in accord with what history teachers want? This point is discussed in more detail in the concluding chapter.

History teachers' views on the usefulness of ICT support web sites

Part of the October 2003 survey (which was commissioned by BECTa) aimed to find out the views of history teachers on the usefulness of ICT web sites designed to support teachers in their use of ICT in subject teaching. The history teachers at the one day history and ICT conference were asked their views on four particular ICT support sites; BECTa's *ICT Advice* site (www.ictadvice.org.uk), *National Curriculum in Action* (www.ncaction.org.uk), *Virtual Teachers Centre* (www.vtc.ngfl.gov.uk) and *Teacher Resource Exchange* (http://tre.ngfl.gov.uk). The last two sites are part of the government's NGfL project, a high profile government initiative for education and ICT which (see Chapter 3) was viewed as a central platform for the delivery of ICT in education (DfEE, 1997b).

One example from the responses will be cited here. Figure 4.25 gives teachers' responses to the question on how useful they found the *Virtual Teachers Centre*, Figure 4.26, the reasons given for their views on this site.

Figure 4.25: How helpful have you found the following support web site: Virtual Teachers Centre (www.vtc.ngfl.gov.uk)? (2003) (n=36)

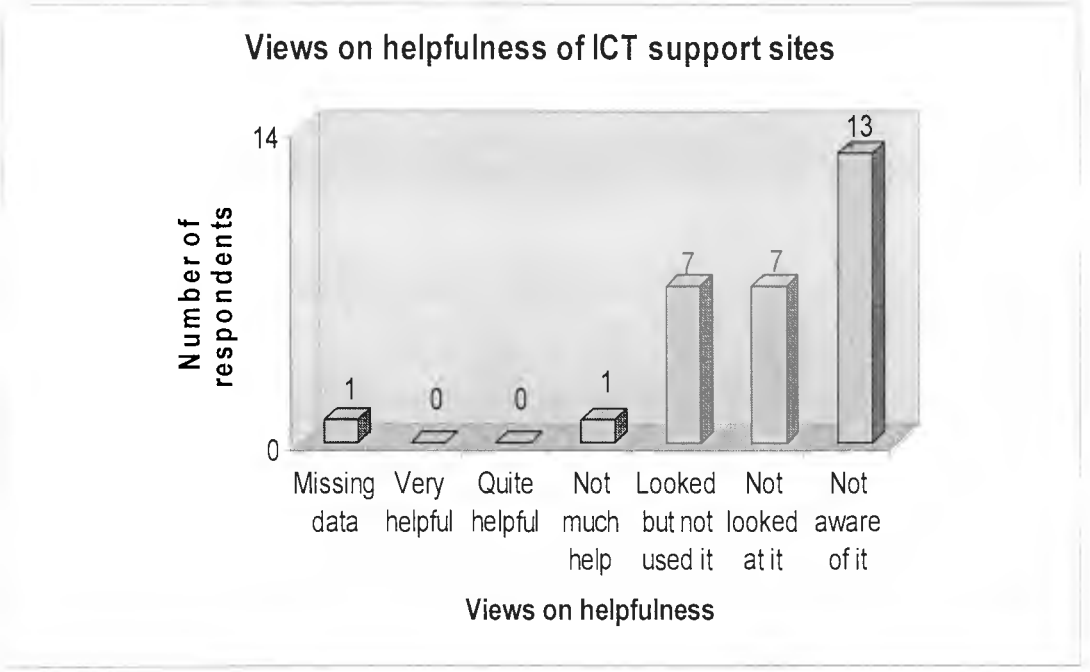
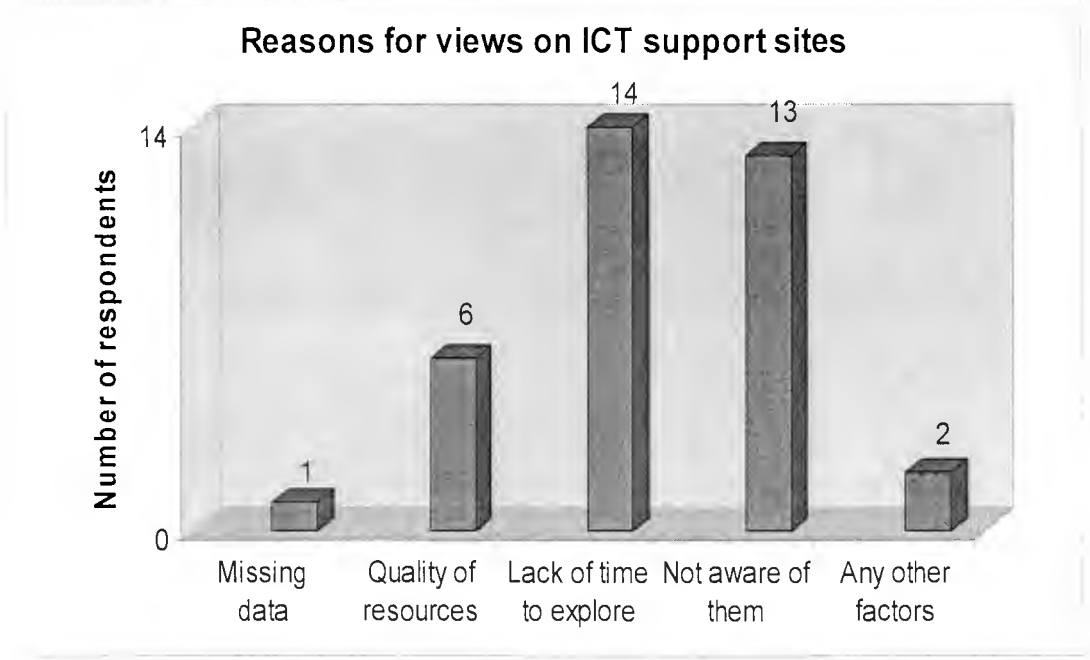


Figure 4.26: Reasons for teachers' views on the ICT support websites (2003) (n=36)



Although the figures differed slightly for the four sites mentioned, the overall picture was that very few teachers had found them to be helpful for developing the use of ICT in subject teaching. This was less a reflection on the quality of the resources and materials to be found on the sites, than lack of time to explore them, or lack of awareness of their existence. Under the category 'any other factors', two respondents noted that the sites were large and difficult to navigate.

Conclusions

After the preliminary investigations and enquiries which were undertaken between 1995 and 1997, a survey conducted between 2000 and 2001 elicited the views of 42 secondary history teachers on the use of ICT in history. In October 2003, a survey was undertaken which obtained responses from 36 history teachers. The 2003 survey focused on many of the same areas as the earlier surveys, and in the case of the 2000-1 survey, with a considerable 'overlap' in terms of questions posed.

The findings from the first phase of the survey (1995-7), particularly when related to the findings of Mellar and Jackson (1994) and Lienard (1995), suggest that in spite of the small scale nature of these surveys in comparison to the Department for Education surveys, there is a case for a degree of scepticism about statistics relating to the use of computers in schools which have not been triangulated against information gained from history teachers, pupils and former pupils about the prevalence of computer use in classrooms. During this period, access to computers and time to plan for the integration of ICT into subject teaching emerged as the major deterrents or barriers to the use of ICT, but confidence issues were also quite prevalent, and almost a quarter of respondents had some reservations about the

degree to which ICT was suited to the development of pupils' historical knowledge, understanding and skills.

The outcomes of the second phase of the survey (2000-1) suggest that in spite of the high profile of computers in education, and the belief of politicians and policy makers in the UK in the transformational potential of computers in education, it is difficult not to come to the conclusion that the use of television and video recorder may have had a far more profound impact on the teaching of history than the computer.

One of the key changes since the original round of data collection in 1995-7 was the extent to which the internet had become a dominant strand of the educational discourse on the use of new technology. In spite of this change, when asked to identify the most useful ICT application for educational purposes, over 50% of the respondents cited television and video, as against only six out of 42 who cited the internet. Many of the respondents reported using television and video fifty to a hundred times more frequently than they used computers. Rather than putting pressure on teachers to use computers in their teaching, and asking them to take 'a leap of faith' in the use of ICT (DfEE, 1997b, quoted in Cohen, 1999), it might be more helpful to consider exactly what it is about television and video that leads history teachers to use them more often than computers. The responses to the questions on the use of television and video strongly suggest that convenience, 'manageability' and ease of use are key considerations. Further research might explore the implications of this finding, and the concluding chapter gives some attention to the phenomenon of the dominance of television and video in history classrooms.

It seems possible that the moves towards networked suites of computers in schools may have increased access problems for history teachers. In spite of Abbott's assertion that 'UK schools are approaching optimum numbers of computers in classrooms' (Abbott, 2000: 46), many of the respondents in this survey did not feel that they had easy access to networked computer rooms, few history departments possessed or had easy access to large monitors for whole class display using computers, and many history departments either had no computers in history classrooms, or only had obsolete or unreliable machines. The 2000-1 survey showed that 22 (out of 42) history departments had no computers in their designated teaching rooms. Seven had only one machine for the whole department, and five had only two computers in the department. Responses included remarks such as 'BBC machines only', 'One in each room. They don't work', 'Three prehistoric Macs that don't work', 'One machine but it crashes a lot'. The fact that 14 out of 36 respondents in the 2003 survey described access to computers in designated history rooms as 'impossible' suggests that there may still well be many history departments which have no computers.

In the 2000-1 phase of the enquiry, access to networked computer suites was deemed to be 'difficult' by 19 respondents, 'reasonable' in 21 cases and 'easy' by only three. Internet access for pupils was judged to be unproblematic in 11 of the schools, reasonable in 17 and difficult in 14. There were 24 respondents who reported that there was no access to whole school projection facilities in the form of data projectors, whiteboards or Hantarax monitors. There were seven teachers who reported that access to data projection was reasonable, eight that such facilities were difficult to access, while only three felt that such facilities were easy to access. These findings seem to substantiate Selwyn's point that there is more to 'access' as

an issue than computer to pupil ratios and percentages of schools with an internet connection (Selwyn, 2003).

These figures give some indication of the complexity and protracted nature of access issues in the use of computers. In terms of the use of television and video, the 2000-1 survey indicated that access and ease of use was not an issue for most history teachers; nearly all departments had easy access to both television and video, because they were either directly available in every history classroom, or at worst, they could generally be wheeled into a classroom so that the whole class could see any video extract the teacher wanted to use, without the need to book ahead or move pupils from one room to another. The only exception to this seemed to be when the class was in prefabricated classrooms where steps made the movement of television and video on a trolley impracticable.

The position with computer use was much more problematic, and the 2003 figures suggest a polarisation of the situation with regard to ICT access, with some history teachers stating that various forms of ICT access were 'not a problem' or 'fairly easy', and others claiming that access in various forms was difficult to impossible. This seemed to be another element to 'the digital divide' (OECD, 2000). Study of the responses suggest that the problems of access were not an 'either-or' situation; there is little to suggest that schools either have good subject classroom access or good computer suite provision. Where access was felt to be 'not a problem', 'fairly easy' or 'reasonable', it tended to be so across the board, in all four categories (access to ICT rooms, availability of computers in history rooms, pupil access to the internet, access to data projectors). It would seem that some schools have much better access to ICT generally than others.

Although 'access' emerged as one of the most commonly cited 'main factors' in limiting ICT use in history, when 'points' totals and 'number of respondents mentioning it as a factor' are used, 'teachers' time' also emerges as a major issue, particularly as recent government plans to provide in-service training in ICT for all serving teachers required them to undergo training in their own time. The limited use made of ICT education portals such as the NGfL and of the TTA's support materials was attributed primarily to lack of time to explore them rather than deficiencies in the resources themselves.

The survey also suggests that some of the government strategies for 'delivering' ICT – and implementing education policy in general – may be limited in their effectiveness. The faith in the 'communications' strand in ICT, the ability to disseminate information 'down the wires', does not automatically mean that the message gets through. There is evidence to suggest that the establishment of the various electronic sites, (for example, the National Grid for Learning, The Virtual Teachers Centre, The Standards Site, The Qualifications and Curriculum Authority Site) is creating an information overload which means that teachers do not have time to digest all the information being transmitted, and do not have the time for professional dialogue with colleagues, and reflection on personal practice, which may be more effective ways of making progress in the integration of ICT into day to day teaching.

The evidence from this survey suggests that access is still a problem for many history teachers, and that simply increasing the number of networked computer suites in schools will not resolve all access problems. History teachers' comments on the use of television and video in their classroom teaching suggest that there is scope to develop more flexible use of ICT. Lessons, typically, consist of several

components, rather than one long activity, and the facility to use whole class projection in history classrooms, together with some computers for 'hands-on' use, would offer the possibility of using ICT for 'bits and pieces' of lessons, in the same way that they use video extracts.

One example of the potential of whole class projection facilities to transform classroom practice is given below. A head of history described the impact which the purchase of a lead to connect a classroom computer to a large TV screen (about £130) made on the department's use of ICT:

> It has meant that we are beginning to use ICT more routinely. It's not as good as a data projector, but it enables us to do a range of things.... I can present topics in a more powerful and accessible manner.... With Tollund Man, I used some pictures from the internet in my introductory talk and it made it much more effective. We are making more use of the CD-roms which the department has bought... short animations and simulations. We use it mainly to help us to teach rather than 'hands on' for pupils, or sometimes we can get three pupils working from the screen, and two around the computer itself.
>
> We've found that PowerPoint has a lot to offer, it's good for introductions, and to get the pupils to summarise. Our computer suites don't yet have data projectors, so we can present and explain what they will be doing in the computer room and 'set up' the activity so that we make more effective use of time when we are in there. When we couldn't do a field trip because of foot and mouth, we found it was really useful for local history... the pupils worked using the internet instead, and produced really good work. We're still finding out and experimenting.

> We will still use books, but I now think that it *will* change things over the next few years.... It will be colossal; it changes very dramatically what you can do.

Large display monitors are not 'cutting edge' technology, and have not elicited the interest and enthusiasm of politicians and policy makers, and yet one of the main reasons why the video recorder has had a far greater impact on history teaching in the UK than computers (Sharp, C., 1995) is the obvious advantage that in terms of the logistics of the classroom, a single large television screen can be used very conveniently with a large class of pupils. The provision of large monitors in classrooms would do more than anything to make it easy to incorporate the use of computers into day to day teaching, for pupil or teacher demonstration, and interactive whole class teaching.

There is little to suggest that 'Luddite' tendencies, or technological inadequacy are major factors in the limited use of ICT. Together with flexible access to the use of ICT, 'teachers' time' emerges as the most precious resource in education, and the granting of time for teachers to work together to explore the potential of ICT may be more helpful than maintaining the flow of information from the centre which is creating 'information overload' on teachers. In the 1970s, many local education authorities granted one year secondments to substantial numbers of teachers to develop their professional skills on taught postgraduate degree courses. Financial retrenchment reduced, and virtually eliminated this form of professional development. There is a case for giving teachers substantial amounts of time to explore how to integrate ICT into their pedagogy.

Although access to computers, and time to plan for their use were seen as problems throughout the period of the enquiry, in other respects, there has been a

shift in history teachers' general attitude to the use of computers over the period of the surveys. In general, they are much more positive about ICT; 'ideological' objection to the use of ICT has declined, and confidence in computer use has strengthened considerably. According to the responses given in the second and third phases of data collection, lack of technical competence in ICT did not seem to be a major factor in the use of computers; all but one of the teachers in the 2000-1 survey felt 'generally confident', or 'to some extent confident' in their personal use of computers, with 68% 'confident', and 29.3% 'to some extent' confident. A slightly lower proportion felt fully confident in the use of ICT within the history curriculum (58.5%), but again, only one respondent did not feel confident in history and ICT. By the time of the 2003 survey, 88.9% of history teachers said that they felt either 'very confident' or 'quite confident' in their general use of computers, with confidence in the use of ICT in history lagging slightly behind this (77.8%).

Access and pressures on teachers' time emerge as the major constraints on the development of ICT in history teaching. There is little evidence in the later surveys to suggest that 'ideological' opposition to new technology or technological inadequacy are major factors in history teachers' unwillingness to use ICT more regularly in their classroom teaching. There is some contrast here with Easdown's earlier survey (1994), which suggested that many mentors of history trainees, and trainees themselves, questioned the utility of ICT to teach history.

In terms of teachers' use of the NGfL and other web based ICT support sites, the results of the 2003 survey largely confirmed the findings from the 2000-1 survey, that very few made any use of such sites, and the majority of them had either looked at the sites but not used them, not looked at them, or were unaware of their existence.

Time for teachers to explore and develop the use of ICT again emerges as an important factor. The results suggest that policymakers may have overstated the potential of 'distance based delivery' of ICT in education. In spite of the fact that nearly all the teachers in the 2003 survey had home access to the internet (33 out of 36), it would appear that just making information available on the internet does not seem to be an effective way of helping teachers to develop the use of ICT in their subject teaching. There is little from this survey to suggest that increasing the flow of information from 'the centre' is an effective way of effecting change in ICT and education. It is not a question of filling up teachers' 'hard disk space' with information about ICT, it is at least in part about providing the time and access which will enable them to develop more powerful information processors in relation to learning and new technology.

More generally, the outcomes of these enquiries suggest that simply putting more computers into schools, including large numbers of ICT competences in the initial teacher training curriculum, and providing in-service training for teachers will not, in themselves, fully realise the potential of ICT for improving teaching and learning in schools.

Chapter 5

Secondary history trainee teachers and ICT, 1995-2003

Introduction

The impetus for empirical investigation into the use of ICT in school history by teachers and trainee teachers was given in the first section of Chapter 4. Whereas Chapter 4 dealt with qualified history teachers and ICT, this chapter focuses on trainee history teachers during the same period. Some strands of the enquiry mirror the areas investigated in Chapter 4: attitudes to and confidence with ICT, perceptions of barriers to the use of ICT, frequency of use and views on the comparative usefulness of ICT applications for improving teaching and learning in history. In the case of trainee teachers, however, an attempt was also made to explore the degree to which they felt they had made progress in their use of ICT in subject teaching during the course of the PGCE year, and what factors had been helpful in enabling them to make progress.

As with the enquiry into history teachers' use of ICT, the process of data collection can be divided into three stages: preliminary investigations and pilot enquiries (1995-6), a main phase of data collection (1999-2002), and an 'update' phase (June 2003). The gap between the initial investigations and the main phase of data collection was occasioned by a change in the work commitments of the author which made it difficult to devote substantial amounts of time to data collection between 1997 and 1999.

Preliminary investigations: the first phase of data collection, 1995 and 1996

In 1995, a survey of history and science PGCE trainees' attitudes to the use of ICT was undertaken at the Institute of Education, University of London (for full results of the

survey, see Haydn and Macaskill, 1996). In terms of general attitude to the use of computer assisted learning, the majority of history trainees stated that they had a positive view of computers, with only two out of 47 responses indicating negative perceptions of the use of computers. A follow up survey by the author in 1996 showed that out of 55 history trainees, only three expressed negative views about computers. This forms an interesting contrast with Downes' (1993) survey of Australian trainees and Easdown's (1994) survey of the preconceptions which trainees on the Oxford PGCE course had about the prospect of encountering computers in the course of their PGCE year. Although there may be institutional or 'tutor' effects influencing the differences between the two surveys, the Haydn/Macaskill survey took place approximately half way through the PGCE year, when trainees had a reasonable idea of what was 'on offer' in terms of support and guidance, whereas Easdown's survey was conducted at the start of the course, and focused on trainees' pre-course preconceptions of computers. This might also have had an influence on the outcomes of the surveys, although a survey of incoming trainee teachers' attitudes to ICT in Scotland (Simpson *et al.*, 1998) found that over 80% of trainees expressed positive attitudes to ICT use.

Although the vast majority of history trainees in the Haydn/Macaskill survey were keen to develop personal and classroom expertise in ICT, a majority of them were pessimistic about the prospect of being able to do so under prevailing course and placement arrangements. (In a 1996 follow up survey, 49 of the 55 respondents expressed the desire to become competent in the use of computers, but 46 of them expressed concern about the possibility of achieving this under prevailing partnership arrangements).

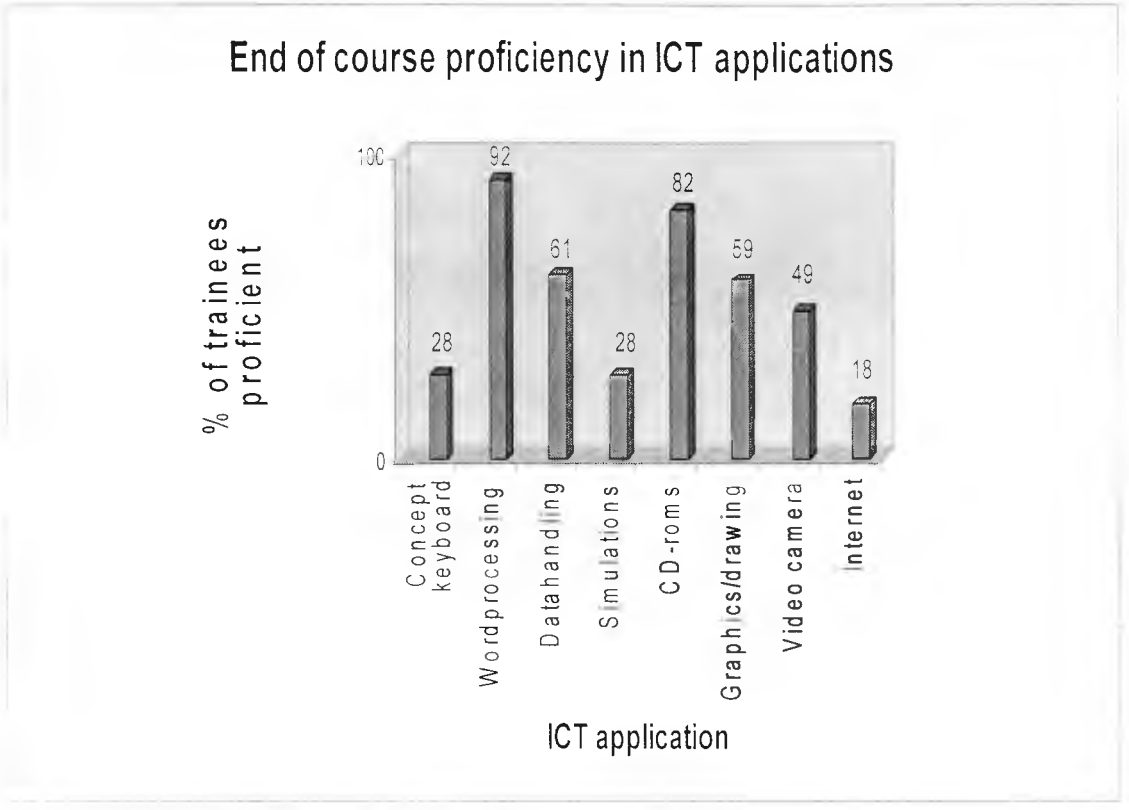
On the last day of the course for the 1994-5 cohort (in June 1995), the trainees were asked about their experiences relating to the use of ICT in the course of the PGCE year,

and about what factors had proved either helpful or inhibiting in the development of their personal and classroom proficiency in ICT. The responses indicated that the trainees had encountered a wide variety of experiences regarding the use of computers in schools.

In terms of personal proficiency in the use of ICT applications, the results of the survey were perhaps surprisingly positive (in terms of the proportion of trainees who had expressed reservations about the chances of developing competence at an earlier stage of the course). Almost all the trainees claimed to be proficient in word processing, and a substantial majority claimed to be competent in data handling and the use of history CD-roms. Over half knew how to use at least one desktop publishing package and the video camera. Given that proficiency in the use of the internet is now assumed for history graduates entering the PGCE course, it is perhaps interesting to note that only 19% claimed to be capable internet users by the end of the PGCE year – an indication of the speed with which things change in the field of ICT and education. Figure 5.1 gives the trainees' responses in terms of their personal proficiency in ICT applications, given as a percentage of the trainees responding to the survey.

Figure 5.1: History trainees' end of course personal proficiency in ICT applications, 1994-5 cohort (June 1995) (n= 38)

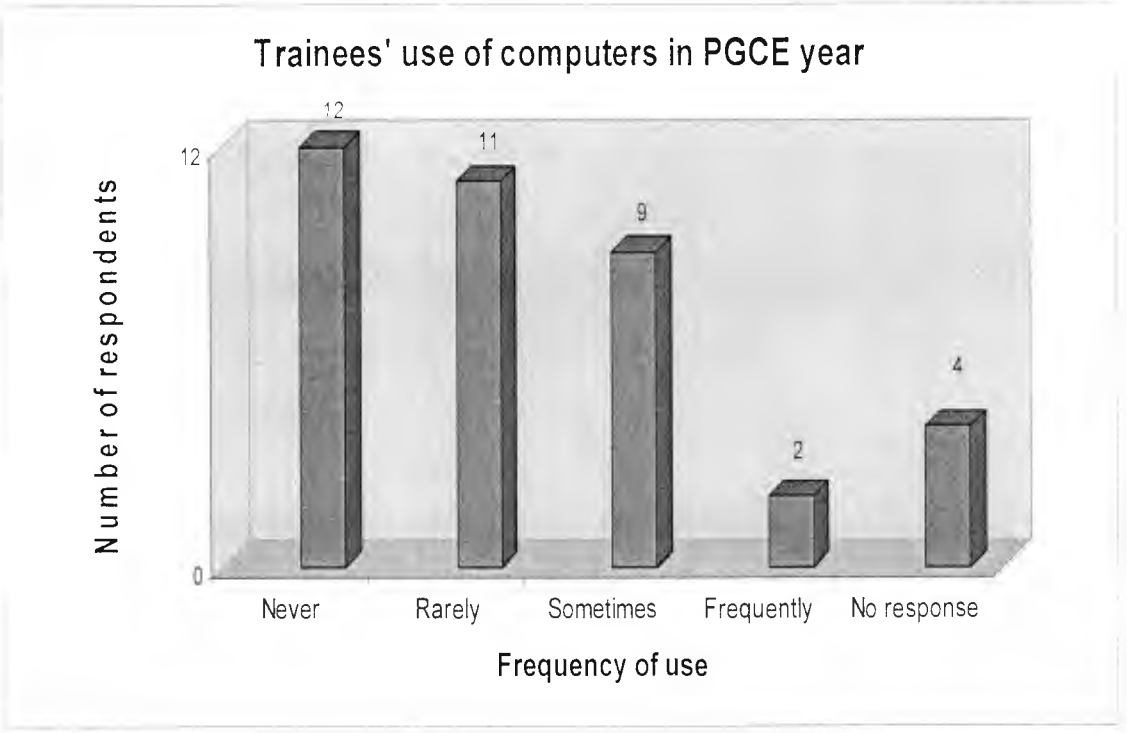
(Figures are given as percentage of respondents claiming proficiency in the application)



It is only when ICT competence is looked at in terms of classroom application and experience rather than personal competence that the survey is less positive about the use of ICT in school history.

The responses on the trainees' use of computers whilst on school placement appeared to confirm NCET (1994: 25) findings that 'although teachers see computers as curriculum tools and many express confidence about their future use, very few actually use them'. Of the 38 trainees surveyed at the end of the course, only two reported that they had used computers 'frequently', whereas 12 trainees admitted that they had not used computers in their classroom teaching, and a further nine acknowledged that they had only used them 'rarely'. Nine trainees claimed to have used computers 'sometimes' and four trainees did not provide a response to this question.

Figure 5.2: Trainees use of computers in the course of the PGCE year, 1994-5 cohort (June 1995) (n= 38)



Not only was classroom use, and observation of classroom use, much less prevalent than use for preparation of lessons, but several trainees acknowledged that they had not used a computer in the classroom in the course of their school experience, and ten of the 38 trainees completed the PGCE year without having seen a computer being used in the classroom. Of those who had used ICT in their classroom teaching, several had been encouraged by pupils' response to the use of computers; ('It met with enormous enthusiasm.... Classroom management problems disappear', 'I'm keen to develop the skills to use it well in lessons – the kids love it').

Just under half of the trainees made positive comments about the personal guidance and support which they had received with regard to ICT, but a similar proportion felt that they had either been discouraged or had found little enthusiasm or experience in the use of ICT in the departments they worked in. In terms of their evaluation of their ICT experiences in the university based components of the course, many trainees reported

that the taught sessions had been helpful, but many also commented that not enough time had been dedicated to ICT, and that not enough 'hands-on' experience had been provided.

More than half of the respondents reported that they had been asked about the use of ICT in their interviews for teaching posts, suggesting that the use of computers was becoming more 'high profile' in terms of 'issues' in history teaching. Several reported that it was made apparent to them at interview that as NQTs they would be expected to take a role in the departmental development of ICT. One remarked, 'the school expects me to magically produce computers to use in the department, purely because I have just completed a PGCE'. This reinforces Easdown's (1994) contention that NQT and trainee teachers were being seen as a resource which would help to assist or even rescue history departments which were struggling to incorporate ICT into their schemes of work.

In a survey of 63 history trainees from the 1995-6 cohort, carried out by the author at the end of the trainees' period of practical teaching, trainees were asked about barriers to the use of ICT. There was a degree of correspondence between the views expressed by trainees, and those of experienced history teachers (see Chapter 4), but also, some interesting divergences. As with experienced history teachers, access to computers emerged as the most influential deterrent to their use, but lack of confidence and knowledge in using computers in general was more common with trainee teachers. Paradoxically (given that they were not in the position of budget holders), trainees felt that lack of finance to purchase history software was an impediment to the development of ICT in school history. Divergences might in part be attributed to the fact that with the survey of trainees, opinions were derived from a full cohort, whereas only a

particular 'subset' of history teachers (those who had chosen or been asked to attend an ICT INSET course) provided the data from experienced history teachers.

The instrument used to elicit the views of trainees on barriers to computer use was the same as that used to canvas the views of practising teachers during the same period (see Appendix 1). Figure 5.3 gives the number of trainees who cited particular factors as the most influential deterrent to the use of computers. Figure 5.4 gives the total score when ranking of deterrents is taken into account (10 points for most influential deterrent, 9 for second most influential etc.)

Figure 5.3: Most influential deterrents to the use of computers, 1995-6 cohort (June 1996) (n=63)

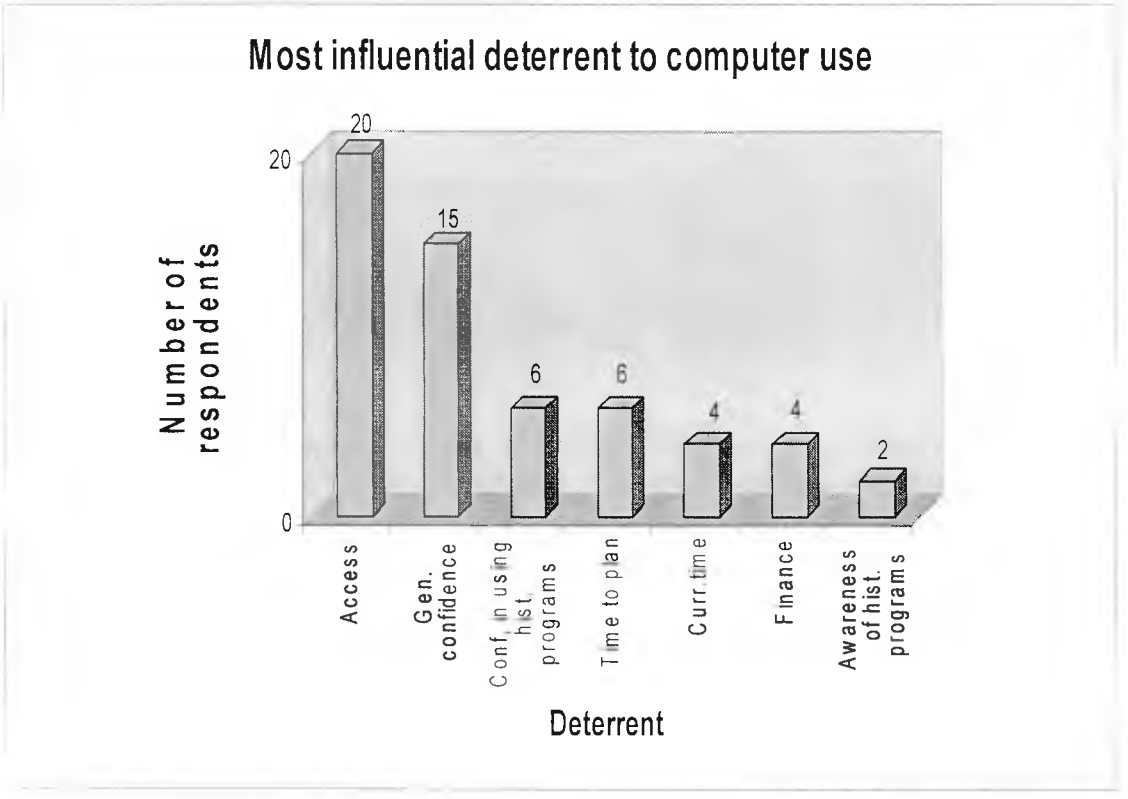
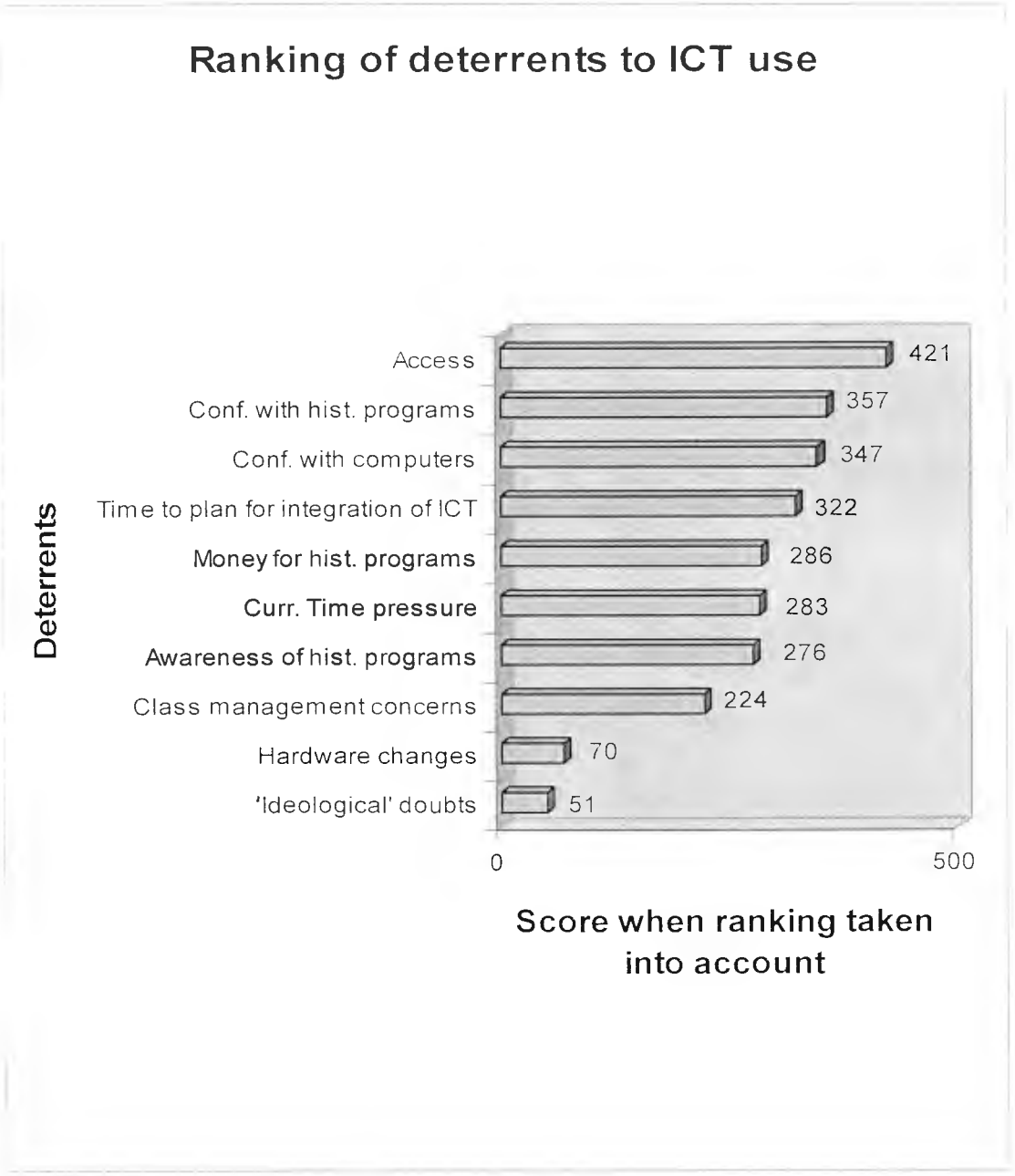


Figure 5.4: Ranking of deterrents to use of ICT, 1995-6 cohort (June 1996) (n=63)



With both ways of looking at the data, 'ideological' doubts ('Ideological resistance – you don't believe IT develops pupils' historical skills and understanding') do not seem to be an influential factor as a deterrent to the use of computers. Only one of the 63 respondents put it in the top five of the factors that deterred them from using computers in their teaching. In other areas, however, the different ways of considering the data do make a difference. Of the 63 trainees, 15 cited a lack of knowledge and confidence in

using computers in general as the most influential deterrent to their use of computers in teaching, as opposed to only six who placed lack of knowledge/confidence in using history software programs at the top of their list. However, when overall ranking is taken into account (Figure 5.4), lack of knowledge/confidence in using history programs emerges as a slightly more influential deterrent overall.

The results suggest the need for differential provision for history PGCE trainees; courses appeared to be still receiving a significant proportion of trainees who were lacking in general confidence in the use of computers at this point. Ten of the 63 respondents cited it as the most influential deterrent to the use of computers in their classroom teaching, and 32 – a majority of the sample, placed it in the top three factors which acted as a barrier to the use of ICT. As with experienced history teachers, time pressures also emerge as a commonly cited impediment to the use of ICT, both in terms of 'time to plan computer based lessons and the materials for them', and 'curriculum time pressure'. It could be argued that 'not knowing what good history software is available' was also to some extent a function of lack of time to devote to the development of ICT in history. At this point, the differences and fluctuations in hardware platforms in secondary schools (varying between Apple, Acorn and IBM compatible machines) were also a relevant factor – cited by 23 of the 63 respondents, although generally placed quite low in the scale of importance assigned to it. Anxiety about the classroom management implications of using computers emerged as a more influential deterrent, cited as a relevant factor by 38 trainees, but with only six trainees placing it in the top three factors which acted as a deterrent to computer use. One of the 'missed opportunities' of this phase of the survey was the failure to explore the influence which the attitude of experienced teachers might have on trainee perceptions of the role of ICT in history as part of the survey, given that this emerges as a

significant factor in other studies of PGCE trainees use of and attitude to ICT (see, for example, Downes, 1993, Husbands, 1995, Barton, 1996, Easdown, 2000).

The years which followed these preliminary investigations saw intensification in interest in the use of ICT in education and in political commitment to the deployment of computers to improve educational outcomes. But in spite of this interest and commitment, and the continually improving computer to pupil ratio in secondary schools, the 'rhetoric-reality gap' between claims made for ICT in education, and the reality of classroom practice remained (see Chapters 2 and 3).

This was one reason for continuing to explore the use of ICT in secondary history teaching. A second factor was the continuing neglect of subject specific approaches to the use of ICT in schools, with many studies giving little consideration to the proposition that the precise ways in which computers might lend themselves to the improvement of teaching and learning might vary substantially according to the nature of the subject discipline in question (see Chapter 3). A third reason for perseverance was some of the interesting divergences between these initial investigations and other findings on the use of ICT in schools. Feedback from trainees suggested that their own experiences of the use of computers in schools was at some variance to the picture painted by the Department for Education surveys covering this period, and was much closer to the picture painted by the Lienard (1995) and Mellar and Jackson (1994) studies, and Ofsted inspection reports (Ofsted, 1993, 1995).

Trainee responses suggested that they were conscious of the high profile of ICT in their induction into the profession, not least because of the time given to the use of ICT in the taught course and the prevalence of questions about ICT in interviews for first posts. Although many of them had not used computers in the course of their teaching

placement, this was not because 'the thought did not occur' (Downes, 1993: 23), and was a source of some concern, angst and pressure for many trainees.

There were also some interesting divergences from other studies which did focus more specifically on history trainees. Whereas 'ideological' resistance to the use of ICT emerges as a consistent strand of the findings of Summers and Easdown (1996) and Easdown (1994, 1997a, 2000), this did not seem to be one of the major deterrents to ICT use for the London based trainees in my own surveys.

The complexity of the factors which were perceived to be barriers to the use of ICT was another finding which seemed to be worthy of further investigation. Although access emerged as the most influential and commonly cited deterrent, questions of confidence, time and class management issues were also clearly part of the 'rhetoric-reality' problem.

These initial investigations also suggested further areas of interest in the field of ICT and secondary history which did not seem to have been extensively mined by other studies. What was the nature of the access problem? Was the answer more computers in history classrooms or better access to networked computer rooms? The question was further complicated by advances in technology, with the development of the data projector and electronic whiteboard, and the increasing influence of communications technology and consequent marginalizing of subject specific software programs (Walsh, 2003). There was also the possibility of approaching the issue of ICT in school history from a more positive standpoint rather than the 'deficit model' used in these preliminary enquiries. What *did* trainees find ICT helpful for in teaching their subject, and what interventions in terms of course components, competence specification, support materials, school experience and investment in ICT did they find helpful?

It was for these reasons that a second phase of data collection was undertaken, between 2000 and 2002.

The second phase of data collection, 2000-2

This took the form of questionnaire surveys of history PGCE trainees, and a smaller number of interviews with PGCE trainees and curriculum tutors from university departments of education about aspects of trainees' progress in the use of ICT.

Some changes were made to the instruments used to elicit information about history trainees and ICT. This was partly in response to weaknesses in the format of the instruments used in the preliminary investigations. In exploring trainees' perceptions of barriers to the use of computers in classrooms, some questions seemed to have become redundant, and others more pertinent. By 2000 changes to hardware platforms in secondary schools were not a common problem, (although there were still a handful of trainees who reported the existence of rather moribund Acorn machines in some departments). Even by 2000, the availability of funding to purchase history specific software was not a crucially relevant question to pose, given that so many of the uses of ICT in history derived from 'generic' applications (the internet, word processing, data handling, PowerPoint, graphics software) which schools possessed in any case, so this question was also dropped from the revised version of the question on barriers to the use of ICT.

Other changes were occasioned by changes in the landscape of ICT in Initial Teacher Training (ITT). Some of the literature emerging in the field of trainees' use of ICT suggested that the attitude and practice of teachers working alongside trainees was a significant influence on their own use of ICT (Downes, 1993, Easdown, 1994, Barton, 1996), so this was incorporated into the list of potential deterrents to ICT use. Also, by

this stage, options for the use of ICT in schools had widened, with the injection of New Opportunities Fund (NOF) finance for ICT in schools to expand the number of dedicated computer rooms in schools, or/and provide whole class projection facilities through the deployment of data projectors and electronic whiteboards for 'ordinary' classrooms.

In *Connecting the learning society* (DfEE, 1997b), the government spelled out a vision of an electronic 'National Grid for Learning' which would transform connectivity across the educational system, and which would play an important part in the development of trainee teachers' ICT skills and awareness.

A new set of criteria for the award of Qualified Teacher Status (QTS) had also been introduced, which substantially expanded the range of ICT competences required of trainee teachers, with Annex B of the 4/98 Standards for the award of QTS (the section relating to ICT) alone extending to 15 pages, and detailing over a hundred discrete ICT competences. In 1998, Anthea Millett, Chief Executive of the Teacher Training Agency, argued that by spelling out more comprehensively than ever before the competences which trainee teachers would be obliged to possess before being licensed to teach, these new 'improved' Standards for the award of QTS would ensure that the breadth of newly qualified teachers' competence – in ICT and all other facets of teaching – would be higher than ever before (Millett, 1998). To add further rigour to the process, and further ratchet up standards, the Teacher Training Agency announced the introduction of online 'Basic Skills Tests' in literacy, numeracy and ICT, which all trainees would have to pass before QTS could be granted.

These changes, together with reflection on the outcomes of the preliminary investigations, occasioned changes in both the format and range of questions asked about trainees and ICT. One area of enquiry which seemed particularly pertinent, given

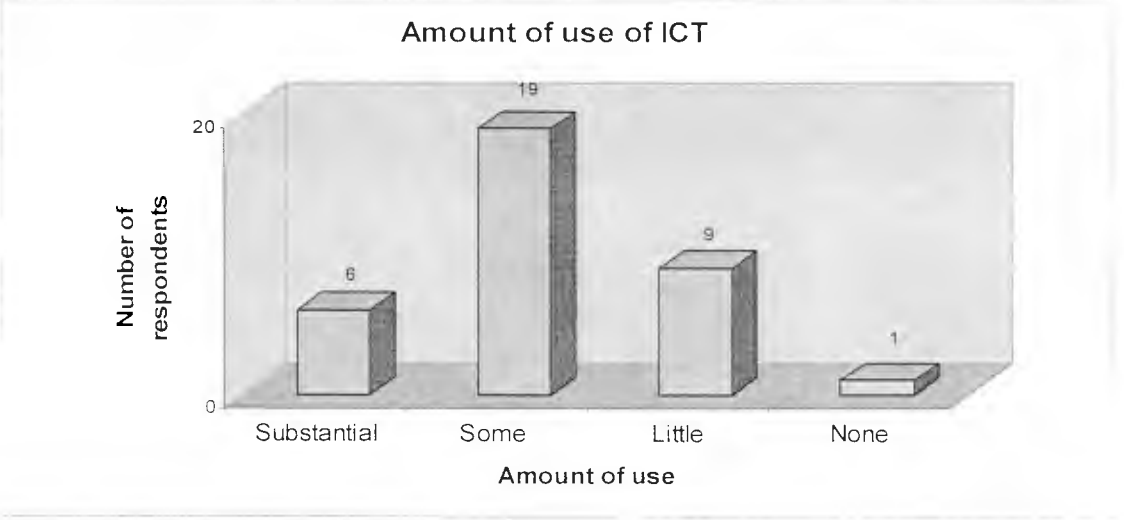
these changes, was the view of trainees themselves on the things which served either to assist or hinder them in developing their ability to exploit the potential of ICT for improving teaching and learning in school history.

In June 2000, (towards the end of the PGCE year), a questionnaire was completed by 35 history PGCE trainees from two university departments of education. In addition to questions about trainees' use of ICT in their teaching, and their perceptions of barriers to the use of ICT, they were asked to provide information about their access to the use of computers whilst on school placement and at home, their confidence in aspects of ICT use, their attitude to ICT and the degree to which they found the new National Curriculum for the use of ICT in subject teaching (Annex B of the 4/98 Standards) helpful (DfEE, 1998b).

Trainees' use of ICT (June 2000)

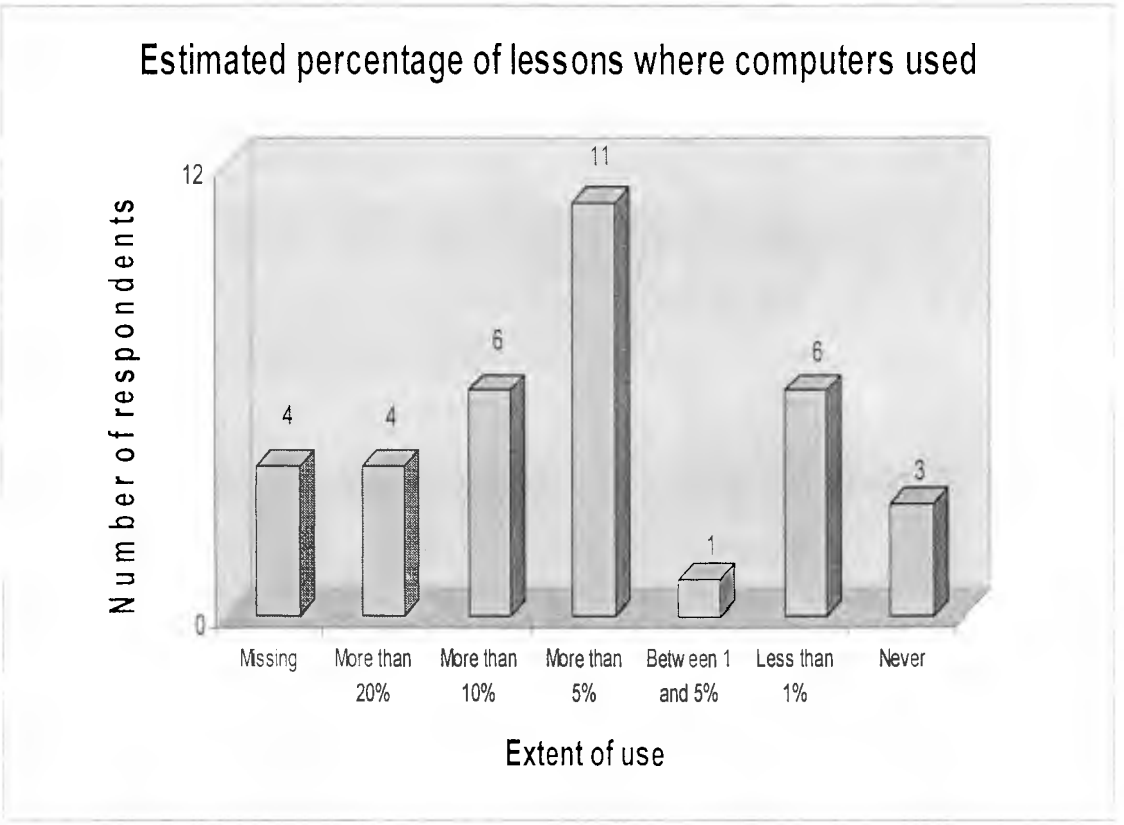
Only one trainee explicitly stated that he/she had not used ICT in their teaching in the course of the PGCE year; with 25.7% reporting that ICT had made 'little' contribution to their teaching, and only 17.1% reporting 'substantial' use of ICT (see Figure 5.5).

Figure 5.5: How big a contribution did ICT make to your history teaching in the course of the PGCE year? (June 2000) (n=35)



When asked to estimate the percentage of lessons in which ICT had been used, the modal average was between five and ten per cent of lessons, with over two thirds of trainees claiming to use computers in over five per cent of their lessons. Just under 20% acknowledged using computers in under one per cent of lessons.

Figure 5.6: In roughly what percentage of your lessons did you use computers? (June 2000) **(n=35)**



These figures do not differ markedly from the responses given by experienced teachers (see Chapter 4), or from the figures elicited by the DfEE survey at this time (DfEE, 2000), but they suffer from the same lack of triangulation by reference to pupil and former pupil feedback on computer use that affects the Department for Education studies.

One of the sources of impetus for this study as a whole was the gulf between the Department for Education figures on computer use in schools and the general

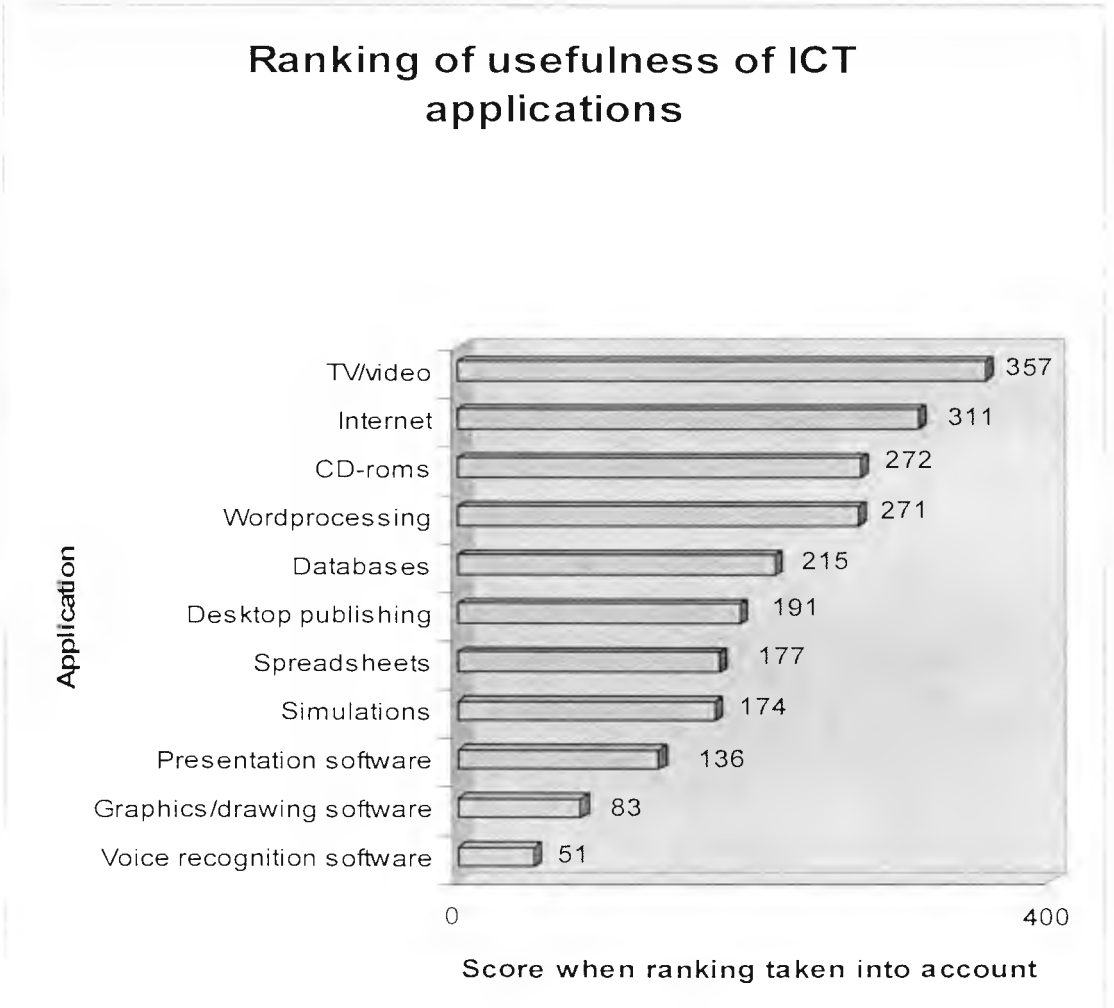
impression of computer use gleaned from working in and visiting schools, and from questioning 'A' level students about computer use (see pages 150-52). My original hypothesis was that teachers might feel less inclined to overstate computer use when responding to an individual researcher as against reporting for the purposes of a government departmental survey or an Ofsted inspection team. The figures emerging from this survey (both for teachers and trainees) and the follow up one in 2003 still felt suspiciously high compared to the general feel for computer use that one gets from talking to trainees and mentors about ICT use on school placement visits. Another source of triangulation was the trainee evaluations of their experiences relating to the PGCE year which were completed on the final day of the course as part of Quality Assurance procedures (see Appendix 7). Analysis of these returns suggested that a majority of the history departments in which the trainees were working did not have any computers in designated history teaching rooms (20 out of 34 returns). Only five out of 34 departments were described as 'frequent' users of ICT ('most weeks, some use of ICT'), seven were described as 'occasional' users, 13 as 'rare' users and 11 as 'non-users' of ICT. ICT was felt to be fully or 'to some extent' integrated into departmental schemes of work in 11 out of the 34 departments in which the trainees had worked. These figures are a further caution against the danger of accepting 'self-reporting' at face value.

What ICT applications did trainees think were helpful for enhancing teaching and learning in history?

In spite of the high profile of computers and the apparent potential of communications technology to improve educational outcomes (DfEE, 1997b), the use of television and video remained the first choice of most trainees in terms of educational technology. Of

35 respondents 22 ranked television and video highest in their judgment of which ICT applications had most potential for enhancing the quality of teaching and learning in history. The internet came second (four first choices), CD-roms third (three first choices) and wordprocessing fourth (two first choices). When ranking was taken into account, television and video again emerged as the most helpful aid to teaching and learning in history. The ranked responses to the question are given in Figure 5.7.

Figure 5.7: Trainees' ranking of the usefulness of ICT applications for enhancing teaching and learning in history (11 points for first choice, 10 for second choice etc) (June 2000) (n=35)



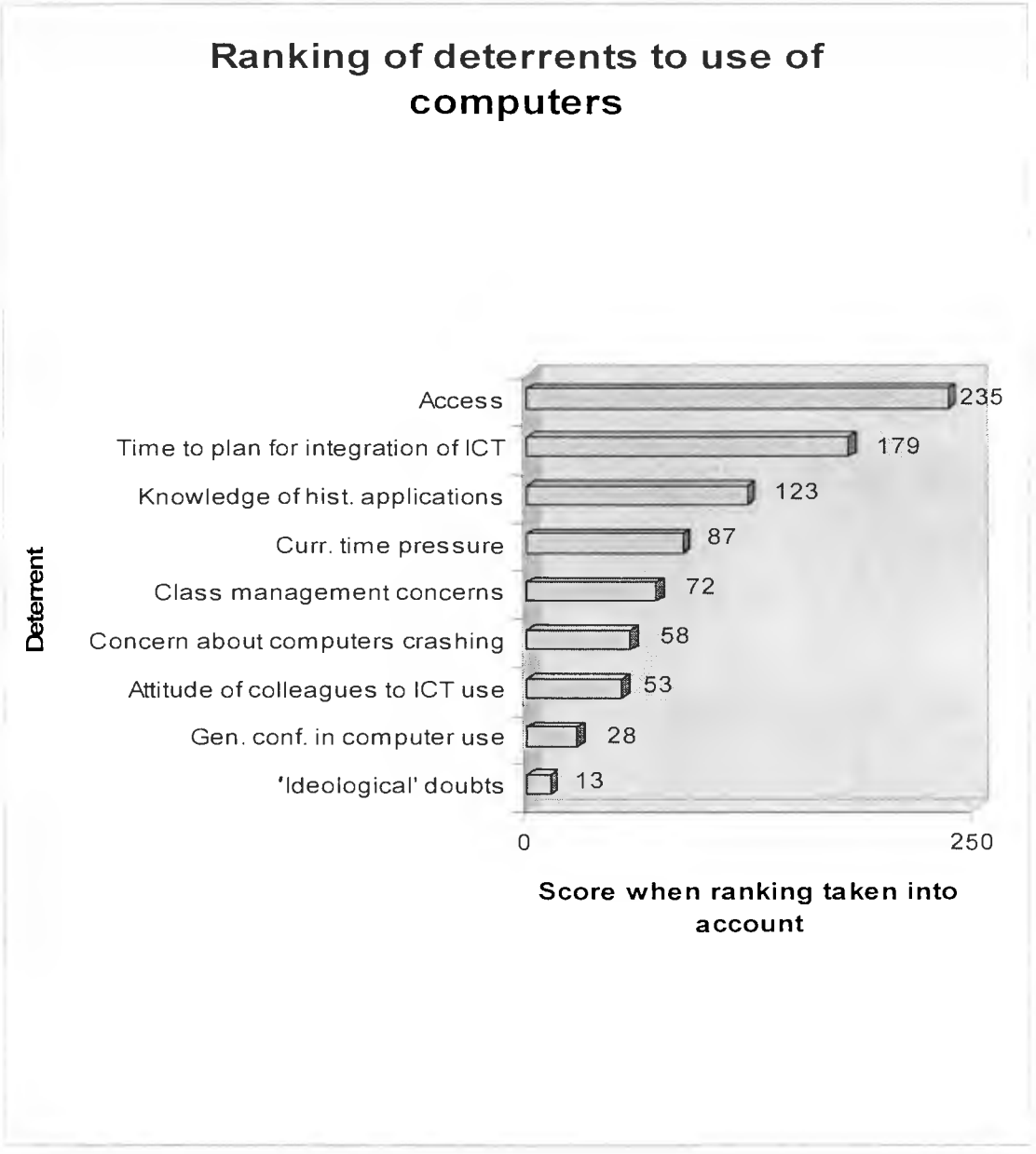
Trainees' perceptions of the barriers to ICT use

Although access to computers remained the most influential barrier to the use of ICT in school history, close examination of trainees' ranking of obstacles to the use of computers revealed some shifts of opinion from the 1995 and 1996 surveys.

In terms of the number of trainees' citing 'access' to computers as the most powerful barrier to ICT use, this factor emerges as even more dominant than in the earlier survey (see Figure 5.3, page 223), with 22 of the 35 trainees identifying access as the principal deterrent to ICT use. Concern over computers breaking down was cited by five trainees as the most influential reason for not using them, with two trainees identifying concern about class management factors as the main deterrent, and two reporting that uncertainty over what to do with computers in history teaching was their main concern.

However, when ranking of factors is taken into account, it becomes apparent that some factors had diminished in influence, leaving access out on its own as the main barrier to ICT use. Figure 5.8 gives the overall ranking of trainees' perceptions of barriers to the use of computers in classroom teaching.

Figure 5.8: Trainees' views on factors which they felt had limited their use of computers when ranking of factors is taken into account (9 points for first choice of deterrent, 8 points for second choice etc) (June 2000) (n=35)



When compared with the responses from the 1995-6 surveys, the most striking change is the reduction in the part played by lack of confidence in the use of computers in general as a deterrent to ICT use. Trainees' confidence and awareness of what they might do with computers *in history teaching* seems to have improved, but is still a fairly prevalent concern. It had now fallen below 'lack of time to plan how to integrate the

use of computers into lessons' as a deterrent to the use of ICT. As with the earlier survey, 'ideological' opposition to computer use was not ranked as a major deterrent, although under 'any other factors' one trainee remarked that 'the thought that we could do a similar task without computers in half the time' could fall into the category of 'ideological' opposition. The inclusion of 'attitude and approach of teachers in the department you work in' seemed to strike a chord with some trainees, but rarely figured as a principal deterrent.

Trainees' views on access to computers whilst on school placement

In terms of the availability of computers in designated history classrooms, the trainees' responses seemed to bear out the returns from the whole course evaluation of their ICT experiences over the course of the PGCE year. Of 29 comments which history trainees made about the availability of computers in teaching rooms, 15 reported that there were no computers in the history teaching rooms. A further three comments reported the presence of (what they considered to be) moribund or obsolescent Acorn machines, and one noted that there were some 'ancient' Apple Macintosh computers in the history rooms, which were purely ornamental.

Of 38 comments on the ease of access to networked computer rooms, 26 described this as difficult, with nine reporting that access was good or very good, and three describing access as reasonable. Access to the internet was also problematic for a majority of trainees; three of 22 comments on this described the prospect of getting access to the internet for pupils as 'impossible' or 'not practical', and seven described it as 'difficult'. Only six responses indicated that internet access was 'good' or 'easy'.

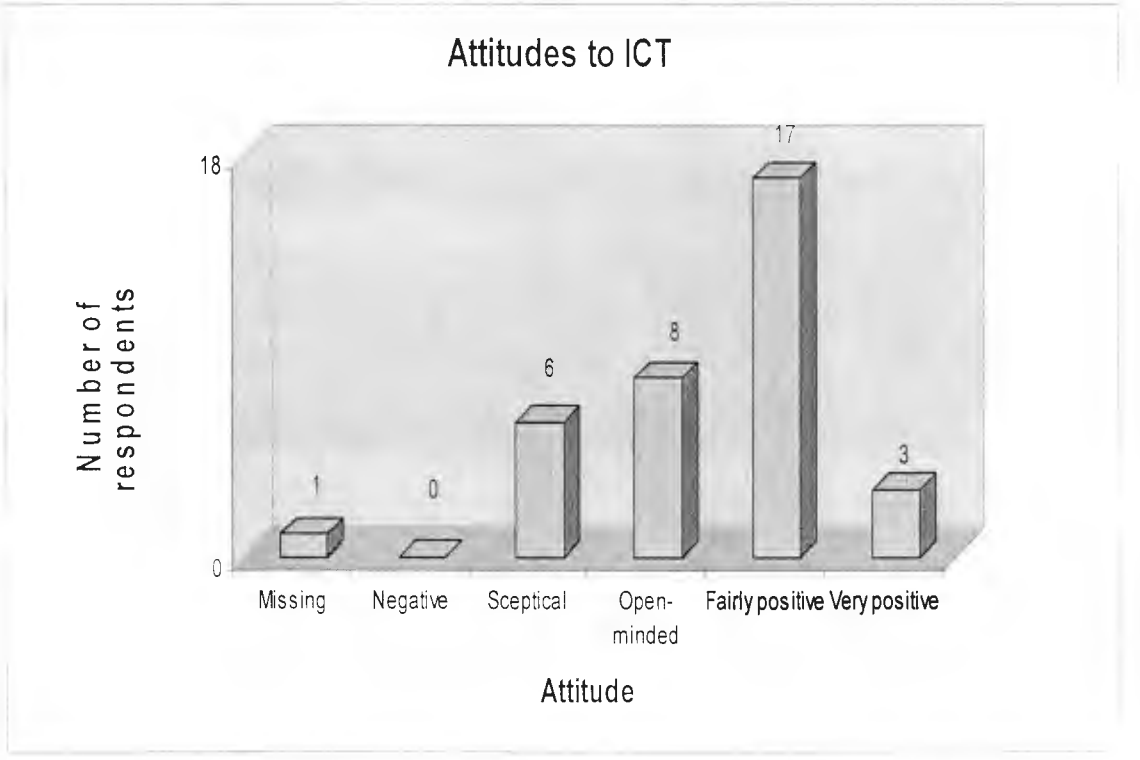
Data projectors and electronic whiteboards did not seem to have commonly impinged on trainee experience; of ten comments on the availability of some form of whole class

projection facility for the use of a computer, seven said that it was not possible to get access to the use of a data projector, two described the availability of data projectors as 'reasonable' and only one described access as 'good'. There did not appear to be any history departments or humanities faculties which possessed their own data projector, and one trainee reported that his school did not have a data projector and had to borrow one from a neighbouring comprehensive when one was needed for management presentations, interviews etc. In terms of home access to a computer, 79.4% of the trainees had access to a computer; this figure rose to 84.1% when 'partial' or shared access to a computer was included. In this phase of data collection, trainees were not asked whether they had home access to the internet. This omission was rectified in the 2003 survey.

Trainees' attitude to ICT

Trainees were asked to indicate their attitude to the use of ICT in history teaching, on a scale ranging from 'negative – I don't think that computers have much to offer teaching and learning in history' to 'very positive – computers have enormous potential for enhancing teaching and learning in history. I see computers as one of the most important priorities in terms of improving teaching and learning in history' (see Appendix 4 for full details of descriptors). Figure 5.9 gives their responses to this question.

Figure 5.9: Trainees' attitude to the use of ICT in subject teaching (June 2000) (n= 35)



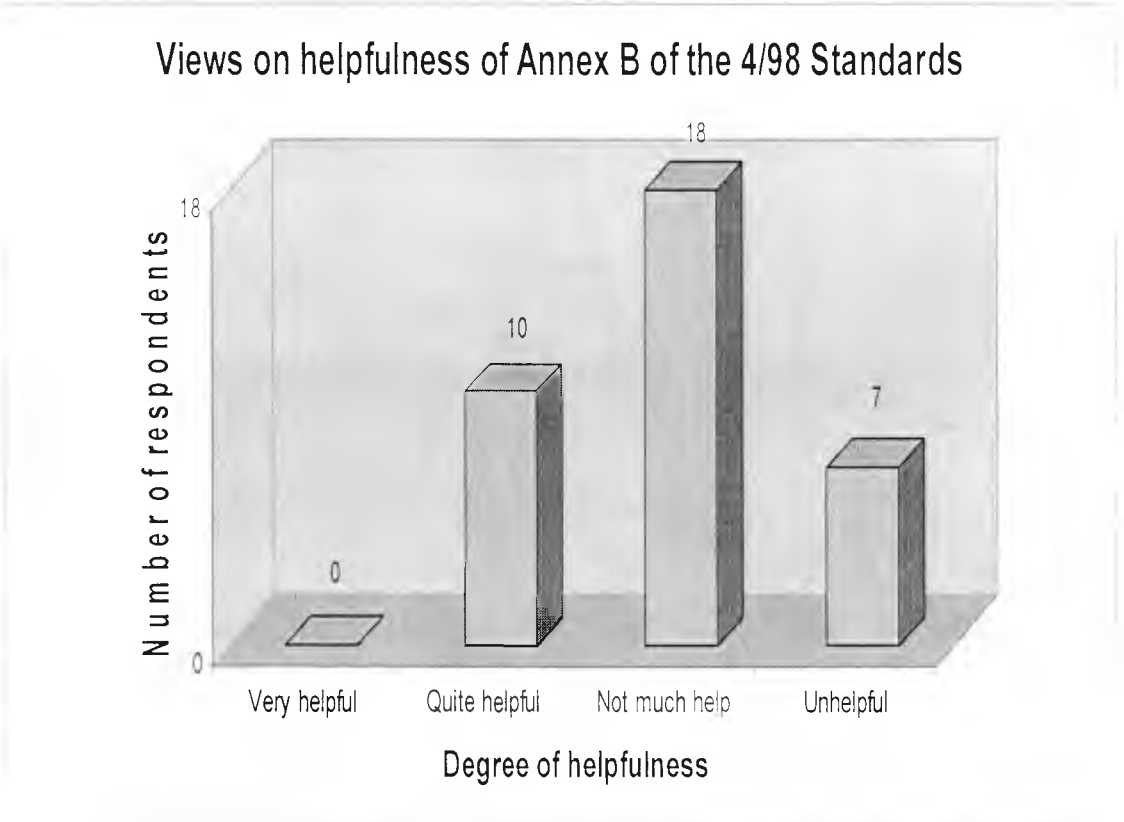
None of the trainees described their attitude to ICT as 'negative', although six (17.6%) were 'sceptical', agreeing with the statement that 'the importance of computers has been overstated'. Eight trainees indicated that they felt 'open-minded' about the use of ICT ('computers seem to have much to offer but it remains to be seen whether they will bring major benefits to history teachers and learners'). Just under half of the respondents described themselves as 'fairly positive' about the use of ICT, with three trainees (8.8%) describing themselves as 'very positive'.

In terms of their confidence in the use of ICT (questions 5 and 6, Appendix 3), there was a substantial difference between the trainees' general confidence in the use of computers, and the degree to which they felt confident in the use of computers within the history curriculum. In terms of general confidence, 82.9% felt confident in the use of computers, a figure rising to 97.2% if 'confident to some extent' is included in the

total. This compares with only 40% feeling confident in the use of computers within the history curriculum, with 14.3% reporting that they did not feel confident in this area.

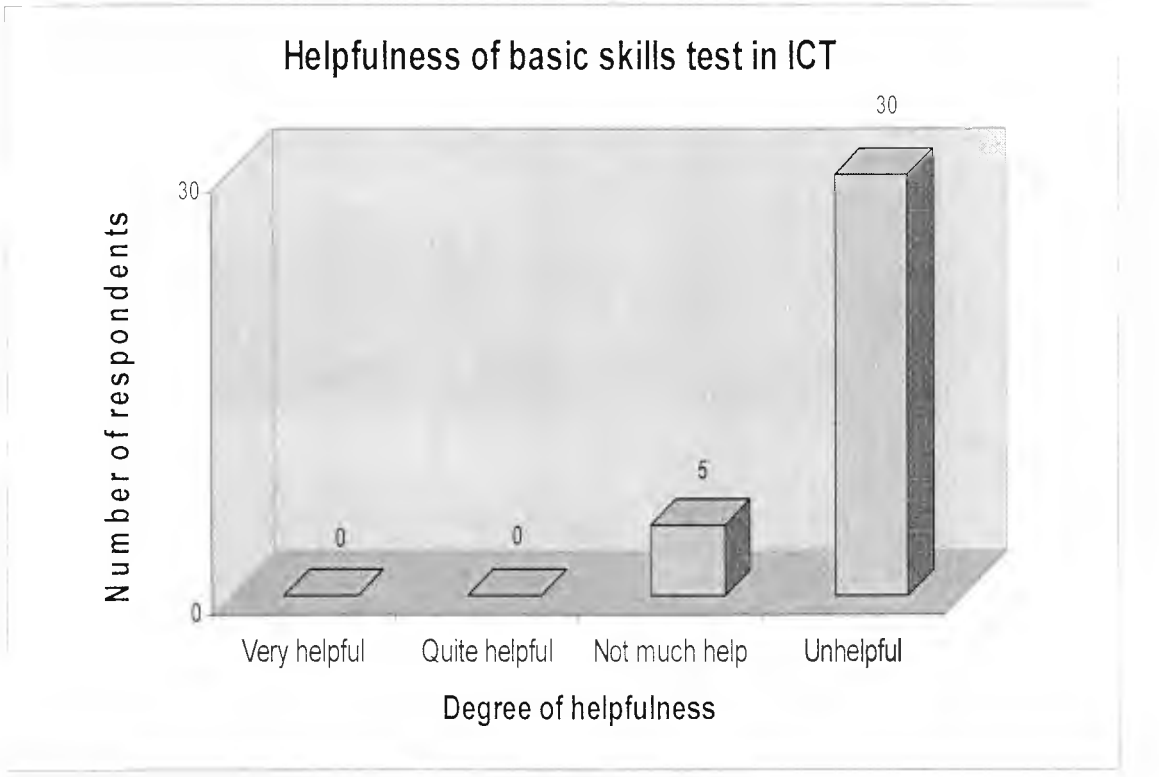
One of the factors relating to trainees' experience of ICT in the PGCE year which had changed since the initial survey was the introduction of the National Curriculum for the use of ICT in subject teaching, Annex B of the 4/98 Standards for the award of QTS (DfEE, 1998b: 17-31). Trainees were asked for their views on the helpfulness of the new framework for assessing competence in ICT. Although none of the trainees found Annex B to be 'very helpful', ten described the new framework as 'quite helpful', with 18 trainees finding it 'not much help', and seven describing it as 'unhelpful'. Figure 5.10 presents the responses in the form of a bar graph.

Figure 5.10: Trainees' views on the helpfulness of Annex B of the 4/98 Standards for the award of QTS (June 2000) (n= 35)



Trainees' views on Annex B emerged as reasonably positive in comparison with views on the other major innovation in the area of ICT in initial teacher training, the online 'basic skills' online test in ICT competence. These views emerged from a separate survey of the entire cohort of secondary PGCE trainees which was conducted by the author (see Haydn, 2003 for further details of this survey). Figure 5.11 gives the trainees' views on the helpfulness of the online basic skills ICT test.

Figure 5.11: How helpful did you find the online basic skills test in ICT in preparing you to be a history teacher? (June 2000) (n=35)



Although the questionnaire simply asked the trainees to place the test on a continuum between 'very helpful' and 'unhelpful' and did not invite further comment, several respondents nonetheless found space to write in more detail about their feelings about the test and it was apparent that some trainees had strong views about the test. A representative selection of their comments is given below:

'Very patronising test indeed'.

'Too simple. Illogical'.

'Pointless and insulting'.

'They are a joke. The type of question which asked you to save an e-mail or attachment will not raise standards. A chimp with training could pass the test. Pointless. The questions were far too easy and basic and will not have any effect on standards of teaching.'

'Would be more helpful if it was more like a package we could actually use rather than their made up thing – was the copyright too expensive?'

'They are like no application that people use everyday, so what does it prove?'

'Extremely unhelpful – they have got in the way of my teaching and have been an unnecessary distraction. The government should immediately stop these irrelevant tests (do GSCE/A levels count for nothing?)'

'Merely another hoop to jump through'.

'Just an extra worry which should not be necessary'.

Trainees' experience of being asked about ICT at interviews for first teaching posts

One further facet of history trainees' experience of ICT was explored between 1996 and 2003, and that related to the frequency with which history PGCE trainees were asked about ICT when they went to interviews to apply for their first teaching post. In June 1996, a cohort of trainees was asked to give as a fraction (one out of five, two out of three etc) the proportion of interviews in which they had been asked a question about ICT. It was difficult to gain a precise figure as some trainees responded in a way that

made it impossible to estimate a proportion (by responding, for example, 'all of them'). Such responses were discounted, and a percentage was formulated from those responses where it was possible to estimate the proportion of interviews in which ICT had been mentioned. The results suggested that trainees were likely to be asked about ICT at interview; in the 1996 survey, this amounted to 80% of interviews (63 out of 79 interviews). The question was followed up in subsequent years, sometimes through the end-of-course ICT quality assurance evaluation, sometimes (as in 2003) through the main questionnaire which had been used for the purposes of this chapter. Table 5.1 gives the results from this question in the years in which it was asked of trainees towards the end of the PGCE year.

Table 5.1: Frequency with which trainees were asked about ICT in interviews

Year	Percentage of interviews where ICT question asked	Figure as a proportion of interviews undertaken
1995-6 cohort	80%	**63/79**
1997-8 cohort	85%	**29/34**
1998-9 cohort	70%	**28/40**
1999-2000 cohort	85%	**34/40**
2000-1 cohort	70%	**14/20**
2001-2 cohort	90%	**28/31**
2002-3 cohort	75%	**18/24**

The consistency of these findings, which suggest that year on year, ICT is likely to feature as a question at interview for history trainees, has been quite helpful in making the point at the start of the PGCE year that the development of competence and experience in ICT is likely to be explored when they attempt to find a job at the end of the course. It also gives an indication of the extent to which ICT has become a high-

profile issue in history teaching when compared to the Almond and Tomlinson findings (1990) roughly a decade previously.

How do history trainees 'get better' at ICT? Trainees views on 'what works' in history and ICT

Consideration of the outcomes of the questionnaire survey described above led to one further element of data collection.

The results of the questionnaire suggested that some of the arrangements which had been instigated to develop trainee competence in ICT were not found to be helpful or appropriate, most notably, the online basic skills test in ICT. In terms of 'what questions are worth asking' about history trainees and ICT, their views on what did and did not help them to make progress in using ICT to enhance teaching and learning in their subject seemed to be worthy of further exploration.

With this in mind, towards the end of their PGCE year, semi-structured interviews were undertaken with a number of trainees from the 2001-2 cohort to try and find out what experiences and interventions they felt to have been helpful in developing their ability to use ICT effectively in their subject teaching. This made it possible to explore in more depth what trainees felt had enabled them to make progress in ICT during the course of the PGCE year, both in the university-based elements of the course, and whilst on teaching placement.

What did trainees feel had helped them to make progress in the use of ICT in subject teaching?

All of the ten trainees who were interviewed felt that they had made progress in the use of ICT in history over the course of the PGCE year. Extracts from transcripts which give an indication of their views on their progress in ICT are given below:

(Responses to 'Have you made progress in history and ICT?')

'Yes'.

'Yes.... Quite a lot'.

'Yes, I think I've made quite a lot of progress.'

'Yes, definitely.... I was probably one of the dimmest ones when we started.'

'Perhaps I still am, but I've improved enormously. My partner looks at what I'm doing and passes comment on the transformation.'

'Definitely'.

'Definitely; slightly worrying at the start. Some people already seem to have very good skills in ICT.... B had been a journalist, R seemed to know lots of things already.'

'Yes, I do, certainly, there were lots of things I hadn't thought of... different ideas of what to do'.

'Definitely, quite a lot'.

'Yes'.

'Absolutely, yes... at least fourfold.... I remember the ICT quotient thing, all sorts of stuff I'd never even thought of, I couldn't have focused an OHP.... I'm looking forward to doing things with it over summer, getting a laptop so that I can prepare PowerPoint things and take them into the classroom, even if the kids have got to look at it in small groups. I can do all sorts of things I couldn't do before and have really enjoyed that bit

of the course. I have a friend who works in ICT and he would not believe it, I used to just use the computer as a wordprocessor.'

In terms of the taught sessions at the university, the responses showed that there were several particular 'inputs' which were remembered as having 'made a difference'. Many of these instances related to seeing someone doing something with ICT that trainees wanted to be able to do themselves. Several mentioned the experience of working in groups to create presentations for a historical hero or heroine to be subjected to balloon debate. Another experience which evinced several comments was seeing parts of a picture being enlarged for scrutiny using PowerPoint. Some illustrative examples are given below:

(What did help you to get better? University experience)

'The curriculum sessions were helpful in some ways but not others. The PowerPoint ones were interesting and enjoyable.'

'Just things like downloading images from the net... not difficult but if someone doesn't say.... Finding out about PowerPoint and the things we did on interpretation, I so enjoyed doing that.... X's session on making web pages.'

'Those university sessions in our curriculum group. X teaching us how to make web pages, the introduction to PowerPoint session to get us up to speed.... Just being prompted and encouraged to use it.'

'Where X came in and showed you how to make a web page in HTML. He showed you something, modelled it.... And it looked good and it motivated you to want to do it.'

'PowerPoint sessions – when you saw how it could be used and that it was fairly easy to get going in it. Gave you ideas about how you might be able to use it.'

'Seeing things that you wanted to be able to do – like the PowerPoint thing where you can blow bits of pictures up.'

Trainees' views on working in groups in ICT sessions

The question of working in groups was not straightforward. For several trainees the collaborative element was an important factor, but it depended on the nature of the group, and there would appear to be a case for changing the composition of working groups over the course of the PGCE year, so that trainees develop an understanding that some group situations are more fruitful than others:

Trainees' views on working in groups

'You felt you were all learning together... gradually getting to grips with things... things like the session on making web pages… how to write code, step by step. I was with J; he knew how to paste clip art into slides… it was just an easy and relaxing, non-threatening way of quickly picking things up, sharing expertise. You could make mistakes or not know things together and it didn't matter.'

'Working as part of a group? It helped for me working in groups, I learned loads from R; prefer that to struggling on your own.'

'One of the problems was that the group I was in had someone who was really good at ICT, but they went too quickly… you just got lost.'

'Working as part of a group? Depended on the composition of the group, if you were all about the same it worked well, if you were with one of the stronger ones, they tended to do most of it.'

'I found it useful to be in a group; I was with M, and he was… is, quite a lot better than me so I just watched him doing things and asked him questions.'

'Seeing things done, getting ideas about what to do with it, quite liked it, easier to have someone to take you through it.... I was the dim one, but you could ask people to go through it with you, not big deal.'

'People showing me what to do – demonstrating things and then taking you through it a step at a time. X went through some things with me and I found that really helpful. Working as part of a group in the curriculum sessions at UEA was helpful.... I wasn't very confident at ICT when we looked at what you could do with PowerPoint but X was in my group and he took me through it a step at a time, press this, press that, and that was helpful.'

'Definitely a social thing, telling someone about it and showing someone are two different things.'

'Working as part of a group? It depended; sometimes you were working with someone who was really good, and they'd sort of take over.... I'm poor to average... if I can't do it I tend to give up easily.'

One further aspect of working in groups which emerged from the interviews was the degree to which it appeared, in some cases, to enhance the trainees' enjoyment of the sessions, and to reduce anxiety induced by possible feelings of technological inadequacy. There was clearly a difference in 'climate' in such situations, compared to the environment of the online basic skills test in ICT.

Trainees' views on what helped them to get better (school experience)

It was apparent from the questionnaire responses that access to ICT varied enormously across partnership schools. Some trainees went from schools where it was extremely difficult to use computers, either in classrooms or computer suites, to schools which

were very rich in ICT resources, and where both data projectors and ICT rooms could be booked fairly easily.

The same variation was apparent in trainees' perceptions of the 'human resources' element of ICT provision in schools. In terms of progression in ICT during trainees' school experience, the 'social' and personal contact models of learning were again mentioned by several trainees; 'one (member) of the department was quite good with computers and showed me some things'; 'depends on your mentor'. This reinforces the findings of Easdown (1994), Husbands (1995) and others, that the quality and regularity of professional dialogue about the use of ICT between mentor and trainee was an important factor in trainee progression. Other factors which were mentioned as being helpful were the availability of whole class projection facilities such as data projectors, so that computers could be used as contributory components to lessons, and the availability of computers in classrooms rather than their being confined to ICT suites.

School experience in history and ICT

'It depends on the school and your mentor.... In X there were only 2 computers in the staff room so you felt a bit guilty if you went on them... in school Y there are lots of computers so there isn't a problem.'

'It's great here because X (mentor) is very good with ICT and goes through things with me, and there are several computers in the history classrooms so that makes it a lot easier to use ICT.'

(What about at your other placement school?)

'Not as easy to fit ICT in... no computers in the history rooms.... X (one of the dept.) was quite good with computers and showed me some things though.'

'Chance to get your hands on things and try them out... at X (first placement) I was able to use the whiteboard and the video camera... to have a go.... It's always easier when

you can sit down and have a play with things. I did this revision thing on Publisher using images form the internet... interactive click on worksheet... good. Frustrating ... the idea of wanting to use ICT conflicts with being able to do it in a feasible way… not possible at Y (second placement) you have to book weeks in advance, not easy.'

'Not an awful lot really; they didn't use it much at the schools I was at. It depends where you are; K was at X school, and she learned a lot. I learned a bit about class management aspects of being in the ICT room, which is quite important really, but not much apart from that.'

'Depends on school facilities and your mentor; at X it was very difficult to get into the computer rooms, at Y with the link up computer to big TV screen it was yours, to use whenever you wanted it. Also, the pupils at Y knew what they were doing… more adept.'

Several trainees also mentioned the importance of being able to practise, repeat and reinforce the things which they had encountered either in school or in teaching sessions at the university, and that having access to a computer at home was an important part of this.

'Does it help having a computer at home?'

'I learned a lot of things on my own after doing things in curriculum sessions. There were things that you saw but didn't quite grasp, and you needed to go home and work through it, and when you could do it on your own, it stuck with you.'

'Yes, you can do things at your own speed, you can practise soon after you've done things at the university so that you remember how to do it.'

'Definitely – couldn't live without it. You can practise some of the things that you've just picked up so that you don't forget how to do them.'

One further point emerging from the interview data was the degree to which trainees had enjoyed many of their experiences and teaching sessions on ICT, both at the university and in schools (with the exception of the online basic skills test). When asked about the ways in which they might use ICT in their NQT year, many responded positively and enthusiastically; some indicated that they just 'felt better' about ICT. As one trainee remarked, 'at the end of the course, you're just prepared to experiment a bit more, to just have a go, and you don't worry as much about things not working. At first you're a bit scared of the technology.'

Trainees' views on interventions, experiences and resources which had not proved helpful

The feedback from questionnaires indicated that many trainees had not found the specifications outlined in Annex B of the 4/98 Standards helpful, and that there was a profound and widespread antipathy to the online test for ICT.

These findings led me to ask trainees about their use of our own UEA produced course materials which related to the use of ICT. A substantial section of the course handbook and subject specific handbooks was devoted to ICT issues, and it became apparent that many trainees had found these no more enticing or helpful than the many other detailed sources of support and guidance which were available. The following responses were not untypical:

'How helpful did you find Annex B, and the section in the Blue Book, and the ICT section of the History Course handbook?'

(Laughs and shakes head) 'Did anyone read right through them? No just too much to take in... not much use really.'

'No, there's just too much to read.... It needs condensing or summarising more.'

'Not really.... I did glance through it but there was too much to take in – perhaps if it had just been two pages but it was quite off-putting.'

'Not very... a bit dense really... off-putting, too much to take in.'

'I don't think I even looked at it.'

Almost all forms of 'official' documentation, whether from the DfE, the TTA or the course itself seemed to have very limited impact. Even some of the most conscientious of trainees suggested that there was just too much to take in and act on effectively. There also seemed to be real limits to the effectiveness of many of the websites, distance learning and electronic conferencing resources sponsored by the DfE, TTA, and BECTa which had been designed to support trainee teachers. Some trainees had reservations about the appropriateness of the materials, but lack of time to navigate through the sites to explore their potential was a more commonly cited reason.

Centrally run university courses on ICT applications also failed to elicit the enthusiasm of trainees. They were thought of by many trainees as dull, laborious and not sufficiently geared to the realm of classroom application. Generic tasks divorced from subject relevance were also seen as unhelpful. Given the limited amount of time available to cover the wide range of competences required to be an effective teacher, the trainees seemed to prefer to 'short-cut' to ICT activities that would have a direct 'pay-off' in their teaching.

'Tick list' type audits and tasks which had to be 'ticked off' as having been done seemed to be resented. One respondent compared the latter process as rather like 'dipping sheep'.

Given that many hours of time were invested in developing ICT competence over the PGCE year, the transcripts suggest that a few key moments had a powerful impact on

many trainees. These included a 30 second video extract showing 'losses' in learning after teaching (Sadler, 1994), the moment when HTML code turned into a web page with image, link and marquee, and the procedure where parts of a portrait were 'blown up' using PowerPoint. Given the apparent ineffectiveness of some of the very 'weighty' resources which have been designed to develop competence in ICT, some attention might be devoted to the sorts of learning experience which seem to provide the powerful 'impact learning' which trainees felt enabled them to make substantial steps forward in ICT.

The perspective of university history curriculum tutors

History PGCE tutors might also reasonably be expected to have some insight into issues relating to history trainees and ICT, so interviews were conducted with six history PGCE tutors during the same period.

As with the trainees, tutors' views on the helpfulness of Annex B of the 4/98 Standards (DfEE, 1998b: 17-31) tended to be negative:

'As with any checklist, it can look formidable.... In a sense this is a distraction from "nuts and bolts" issues which actually merit more time than ICT at the beginning of the year.... The Standards drive everything.'

'The presentation is awful – a mechanistic, checklist approach, lacking content and meaning.'

'Deeply, deeply, deeply unhelpful. I still don't understand it... it's one of those documents.... I just completely ignore it. It just confused me. Absolutely dreadful.'

'A bureaucratic nightmare, not accessible... it was frightening people – so large it was unmanageable, for many people the language and layout was not accessible.'

'It seems a very disjointed document. It is certainly hard for mentors to get their heads around and indeed, I think it frightens them. It is also unhelpful to have another document outside the standards – cannot the two be welded together? It elevates ICT above the position it should have in terms of what are the best ways to operate with young people in history classrooms. Why do we need a separate document for ICT?'

All the tutors interviewed expressed positive views about the potential of ICT for improving teaching and learning in school history. They saw restricted access and lack of time to think about how to make best use of the wealth of resources available through ICT as the main deterrents to the integration of ICT into classroom teaching. One tutor felt that pressure to cover curriculum content was less of a problem since the 'freeing up' of Key Stage 3 history in Curriculum 2000 (DfEE/QCA, 1999); 'they can sometimes afford to spend four lessons on something in a way that they couldn't do before.' Increased pre-course trainee proficiency in ICT was also mentioned as a step forward, as was the attitude of mentors in schools:

> One thing that has changed is the attitude of mentors. They now accept the idea of a student teacher's entitlement in this area, even if they are not convinced or capable... they do believe that it's important for the student and put their own discomfort aside.

Tutors' assessment of factors deterring trainees from using computers placed 'ideological' resistance to computer use quite well down in the list of factors suggested. This seems to bear out the responses from the trainees themselves. Tutors' views on which ICT applications had most potential for improving teaching and learning in history and on which forms of investment in ICT might be most helpful did not differ markedly from the views expressed by trainees. As with trainees, in terms of

investment in ICT, more time for teachers to explore the potential of ICT and better access to computer use in history classrooms emerged as the most favoured options.

Tutors were asked whether they agreed with the statement that 'it doesn't matter whether or not a majority of history teachers use ICT in their classrooms, what does matter is that history is part of the curriculum and that it is taught well' (quoted in Dickinson 1998: 16). Their responses reveal that as with trainees, concern with future developments was part of the rationale for supporting the use of ICT, and that 'potential' was a more prominent feature of responses than elucidation of the ways in which ICT had already contributed to enhanced learning outcomes in history.

'At the present time I cannot disagree with this statement. But it doesn't look to the future. The classroom of the twenty first century is barely distinguishable from the classroom of the nineteenth century. But some school infrastructures are changing and history teachers need to be open to the possibilities presented by interactive digital technologies.'

'In our modern technological world it's hard to imagine being able to continue to teach really well without considering using ICT.'

'It can help – does make a difference, can improve clarity and access – it's improved things even in terms of this low level use of ICT, but it doesn't really have that much impact at the moment.... I feel that compared to the emphasis on ICT, there's nowhere near enough rigour in terms of their understanding of cause, for instance.... We put less emphasis into addressing that than ICT... with ICT, you make sure it's in the handbook, that it's visible'.

'I totally disagree with the statement. Good teaching is always the main criteria, but if history does not embrace ICT and show that it can enhance skills in the area then it will be under even more pressure in the curriculum than at present. A major selling point for

history should be the role which ICT could play in teaching and learning in the subject – remember Latin!'

'I agree with the statement wholeheartedly. We need exciting history – this can be delivered through many approaches. I have to say that I have sat in some fairly dull ICT history lessons where the tasks would have been better done through using pens and pencils, or orally.... However, what we must also consider is that ICT properly developed does have the potential to really excite pupils.... We really need to do more thinking on what we are trying to do with ICT.'

'Use has tended to be limited to presentation and internet research... not enough in pupil learning... the effect has been indirect, not necessarily doing much on learning in history.'

Tutors were also asked what they were hoping to achieve in the PGCE year with their trainees in terms of ICT. Extracts from their responses are given below:

'To try and get them to not just use it to smarten up worksheets, use power point – even to get them into the simple BECTa stuff – as low as that really, to get beyond word processing.'

'Use their knowledge about ICT in conjunction with their growing knowledge of pedagogy. For some, help ensure reasonable level of technical competence but increasingly, I think that should be their responsibility.'

'Three things really: to improve their level of proficiency – what's e-mail? Technical things that they've got to grasp. To develop their awareness of its educational potential – in a positive and negative sense... and to encourage them to use ICT creatively and purposefully.'

'Most PGCE historians I now feel are ICT literate, where they are not this seems to be easily rectified in the university setting. What we aim to explore are the pedagogical issues about its use. We are also trying to make our sessions as realistic and practical as we can so that when they start to use ICT in schools they have an awareness that what they can do can be restricted.'

'The main thing is a portfolio of ICT achievements which are related to the standards. I want them to be able to engage in conversations with tutors, colleagues, LEA staff, Ofsted inspectors and not be "thrown" by questions that relate to the standards. I want them to be able to say "Yes, I have used ICT strategies relevant to this standard when I did....."

Overall, the responses of tutors mirrored those of trainees in that there was a sense of belief in the medium and long term potential and (beneficial) impact of ICT on teaching and learning in history, without a feeling that teaching or learning had yet been transformed in any radical or widespread way. Nor was there much evidence, in trainee or tutor feedback, of 'blue skies' activities at the cutting edge of ICT practice, such as video conferencing or digital video editing. The overall picture at this point was not dissimilar to the picture painted by history HMI Scott Harrison in the 1999-2001 Ofsted survey of ICT in secondary history, 'slow growth, some green shoots' (Harrison, 2003: 38).

The third phase of data collection, June 2003

In an attempt to ensure that this study was 'current', reflecting an up-to-date picture of the ways in which the use of ICT by secondary history teachers and trainee teachers had evolved over the past several years, a final phase of data collection was undertaken in 2003.

In terms of data collected from trainee teachers, this consisted of a questionnaire completed by 20 PGCE trainees on the final day of their PGCE course. The instrument was the same as that used to survey history teachers and trainee history teachers in the second phase of data collection (see Appendix 3), which meant that there was an opportunity to explore developments over time and make some comparisons with the findings from the survey of the 1999-2000 cohort. The only addition to the earlier version of the questionnaire was a question asking trainees to give information about the proportion of interviews in which they were asked a question about ICT. This was included because information was available on this aspect of trainees' experience from other years from 1996 onwards from sources other than the questionnaire used previously.

Trainees' use of ICT (June 2003)

According to the questionnaire returns, there had been an increase in the extent to which trainees had used ICT in the course of the PGCE year. Whereas in the survey of the 1999-2000 cohort (June 2000), most trainees made use of ICT in the preparation of their lessons, but less commonly in their classroom teaching and for administration and assessment purposes, almost all the 2002-3 cohort (18 out of 20) said that they had used ICT for preparation *and* classroom teaching, although only eight trainees reported that they had used ICT for assessment purposes. Only one trainee reported that the use of ICT had made 'little' contribution to his/her teaching, and frequency of use was higher than in the earlier survey. Of the 20 trainees, 13 reported that they used computers in over ten per cent of their lessons, with seven placing the figure at over 20 per cent. Unsurprisingly, high-frequency users had worked in schools where it was comparatively

easy to use ICT within the history classroom, rather than being reliant on access to networked computer rooms.

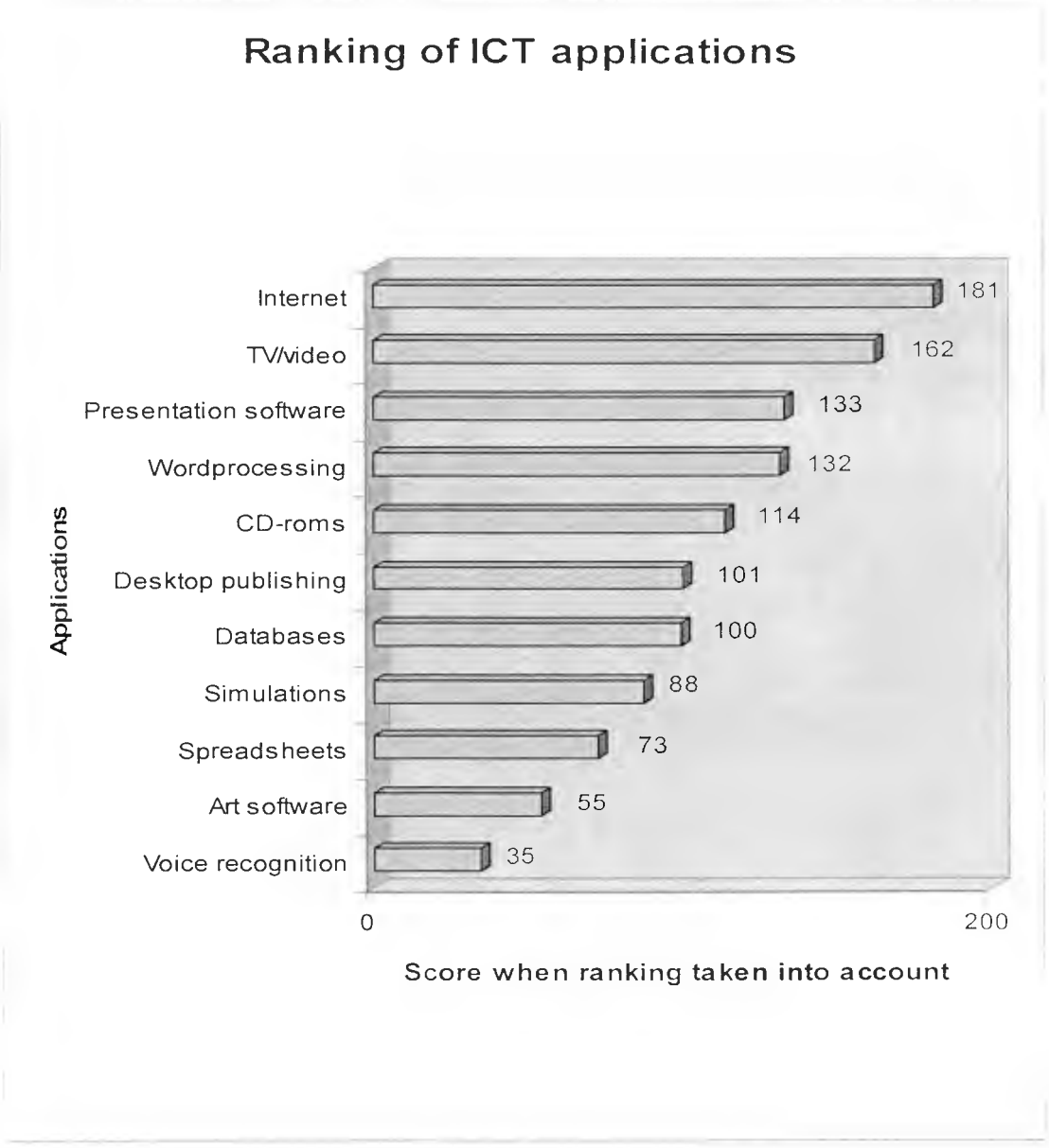
In terms of trainees' perceptions of the comparative utility of ICT applications for educational purposes, there were again some shifts from the earlier survey. The internet seemed to have overtaken television and video as the form of technology which was judged to have most potential for improving teaching and learning in history (see Table 5.2 and Figure 5.12). PowerPoint had overtaken wordprocessing, and the use of databases had slipped to seventh place when ranking was taken into account.

Table 5.2 gives the number of trainees who cited particular applications as their first choice when ranking for utility, with the data from the 2000 survey in the middle column and from the 2003 survey in the right hand column. Figure 5.12 gives the views of trainees in the 2003 survey when ranking of applications is taken into account (11 points = first choice, 10 = second choice etc).

Table 5.2 'Most favoured' ICT application, 2000 and 2003

Application	2000 survey (n= 41)	2003 survey (n= 20)
PowerPoint	2	3
Simulations	3	1
Spreadsheets	4	0
Internet	6	6
DTP	0	1
Word processing	4	1
TV/Video	22	6

Figure 5.12: Ranking of ICT applications (June 2003) **(n=20)**



It should be kept in mind that these perceptions might not relate to trainees' actual use of ICT. When asked whether they used television and video more than computers (see question 4, Appendix 3), 15 of the 20 trainees said that they did – often by a factor of 20 or 50, but this gap between computer use and the use of television had narrowed according to these figures, with five trainees stating that they used computers as much as, if not more, than television and video.

Some insight into the enduring appeal of television and video, and their perceived advantages over computers was provided by the responses to question 11c of the questionnaire ('If so, why do you think you use TV and video more than the computer?') Not only is access not generally a problem, the responses indicate that there is in most departments an 'archive' of video materials, often 'tried and tested', which are easy to use, and which conveniently provide a 'component' of a lesson which can be fairly effortlessly integrated into the other elements which the trainee has prepared. Advantages were largely those of access and convenience. In the earlier survey, some responses also suggested that video extracts often had a powerful visual and emotional impact on pupils, in a way that computer screen resources did not. Some responses to question 11c are given below to illustrate the sort of reasons which trainees gave:

'It's in the classroom already. I have a better knowledge already about what video/TV resources might be available.'

'They are easier to use'.

'Easier access and more resources'.

'Reliability and access'.

'Confidence and pressure of time – I only see classes once a week'.

'Easier to manage the whole class at the same time'.

'I do not yet know how to use ICT as effectively as TV'.

'I feel that I can draw more information and ideas out of video use'.

'Because it is in the classroom'.

'TV and video in every classroom'.

Some of the shifts between the two surveys might be explained by 'temporary phenomena'; the 2000 survey was undertaken at a time when the NCET/Historical Association booklet on the use of wordprocessing in history (NCET/Historical Association, 1997) was (in history and ICT terms) a best selling publication (see Chapter 3). Other changes may have been the result of improvements in some forms of access to ICT; the increase in the availability of data projectors and electronic whiteboards over this period meant that PowerPoint presentations by pupils and teachers in the history classroom were now much easier to use. The development of history portals on the internet such as the *BBC History* site, *The Learning Curve*, and *School History* was also much more developed by the time of the 2003 survey, with real advances in the quality and range of resources and activities available.

But in terms of exactly what trainees were doing with computers in the history classroom, their responses to question 16 of the questionnaire ('Can you think of any occasions where you or your department use ICT in a way that you feel improves the quality of teaching and learning in history?'), tended to support Selwyn's (2003) assertion that the use of ICT was rarely in 'cutting edge' areas such as digital video editing, website creation or videoconferencing, and tended to be more prosaic use of wordprocessing or PowerPoint software. This is not to suggest that there is any necessary correlation between the sophistication of the technology and the degree to which it has the potential to improve teaching and learning in history (see Haydn and Walsh, 2003). One of the reasons for including voice recognition software in the list of application on the questionnaire was to explore the proposition that hi-tech applications may have limited usefulness in some school contexts. The responses to the surveys suggest that 'blunt edge' applications may have more to offer teaching and learning in history than more complex and sophisticated applications. Alternatively, these

responses may reflect trainees' reluctance to use more ambitious applications, or difficulties in accessing 'hi-tech' equipment, and mentors experienced in the deployment of video-conferencing and digital video editing equipment.

Table 5.3 gives the responses of the trainees to question 16 of the questionnaire. The most striking change from earlier surveys is the apparent increase in the use of PowerPoint.

Table 5.3: Can you think of any occasions where you or your department use ICT in a way that you feel improves the quality of teaching and learning in history? (June 2003)

1	**No response**
2	**'The internet is used alongside word processing to produce "jazzier" worksheets that seem to engage pupils more. Websites are used with worksheets to teach either whole topics or to introduce topics.'**
3	**No response**
4	**No response**
5	**No response**
6	**'Organisation etc. Internet for resources. Photo class lists which I could download were invaluable!'**
7	**'Internet research on a topic allows the pupils to take control and responsibility for their own learning.'**
8	**'Rackheath USAF box project was an online resource in an individual research project to empathise with and understand the impact of the USAF in Norfolk.'**
9	**'When I try to get pupils to do presentations ICT is invaluable as it gives them the materials to research, produce and display.'**
10	**'I feel the kids tend to engage more in an ICT lesson. They don't seem to see it as "work". The classroom management side of things is so much easier in an ICT based lesson.'**
11	**No response**
12	**'Text and pictures on screen, answer questions on screen whilst having the**

	pictures and text in front of you. Use the original piece of text to get more students onto more difficult work.'
13	**'To start a topic off – short PowerPoint show to get the kids thinking.'**
14	**No response**
15	**'Data projector/PowerPoint presentation on Art.'**
16	**No response**
17	**No response**
18	**'It keeps pupils' attention. All materials can be prepared prior to the lesson.'**
19	**No response.**
20	**'Good to use PowerPoint presentation as a novel way of introducing a topic.'**

In terms of frequency of classroom use of computers, responses suggested that this was more prevalent than in the earlier survey, with four trainees claiming to use computers in over half of their lessons, and a further three in over 20% of lessons. Only one trainee estimated that he/she used computers in less than 5% of lessons. Although there is a danger of these responses containing an element of 'wishful thinking' in terms of trainees' estimates of their classroom use of computers, given the high profile accorded to this facet of the PGCE year, the same danger of exaggeration pertained to the 2000 survey.

As with other phases of the survey which pertain to the actual use of ICT, there are dangers about accepting all aspects of the trainees' responses at face value. Although many trainees ranked CD-roms quite highly in terms of their utility in teaching history, very few cited instances of them being used in practice. Respondents who had intimated that they were regular users of ICT did not always provide examples to illustrate where ICT had been of benefit, although this may be a question of 'questionnaire fatigue' rather than lack of transparency. (This was the last question on

the questionnaire, and was an 'open' question). The responses illustrate some of the disadvantages of questionnaire as against interview approaches to surveys.

Trainees' attitude to ICT

The 2003 'update' survey of trainees saw a continuation of the move towards more positive attitudes to ICT. As with the 2000 survey, half the trainees declared themselves to be 'fairly positive' about ICT, but whereas only 17.1% of trainees in the 2000 survey were 'very positive' about ICT, this figure had risen to 22% by 2003, and only one trainee (5.5% of the sample) was 'sceptical' about ICT, as opposed to 17.6% in the 2000 survey.

In terms of their reasons for using ICT, and the question of whether trainees felt 'under pressure' to use ICT (see question 10, Appendix 4), most trainees (13 out of the 18 who responded to the question) reported that they used ICT out of 'interest/belief/enthusiasm', rather than because they felt under pressure to do so. Those who did feel under pressure to use ICT gave the following reasons:

'Pressure in terms of lack of resources and time'.

'My next school is very keen'.

'Awareness of the importance of ICT as a key skill'.

'I believe I should be more aware of the use of ICT in history'.

'From school – they have pressure from government'.

'School/government initiatives'.

In some respects, these concerns corresponded to those of experienced teachers (see Chapter 4), but it was interesting to note that 'Ofsted' did not feature in the trainees' responses, whereas it had featured in teacher responses.

Perceived barriers to the use of ICT

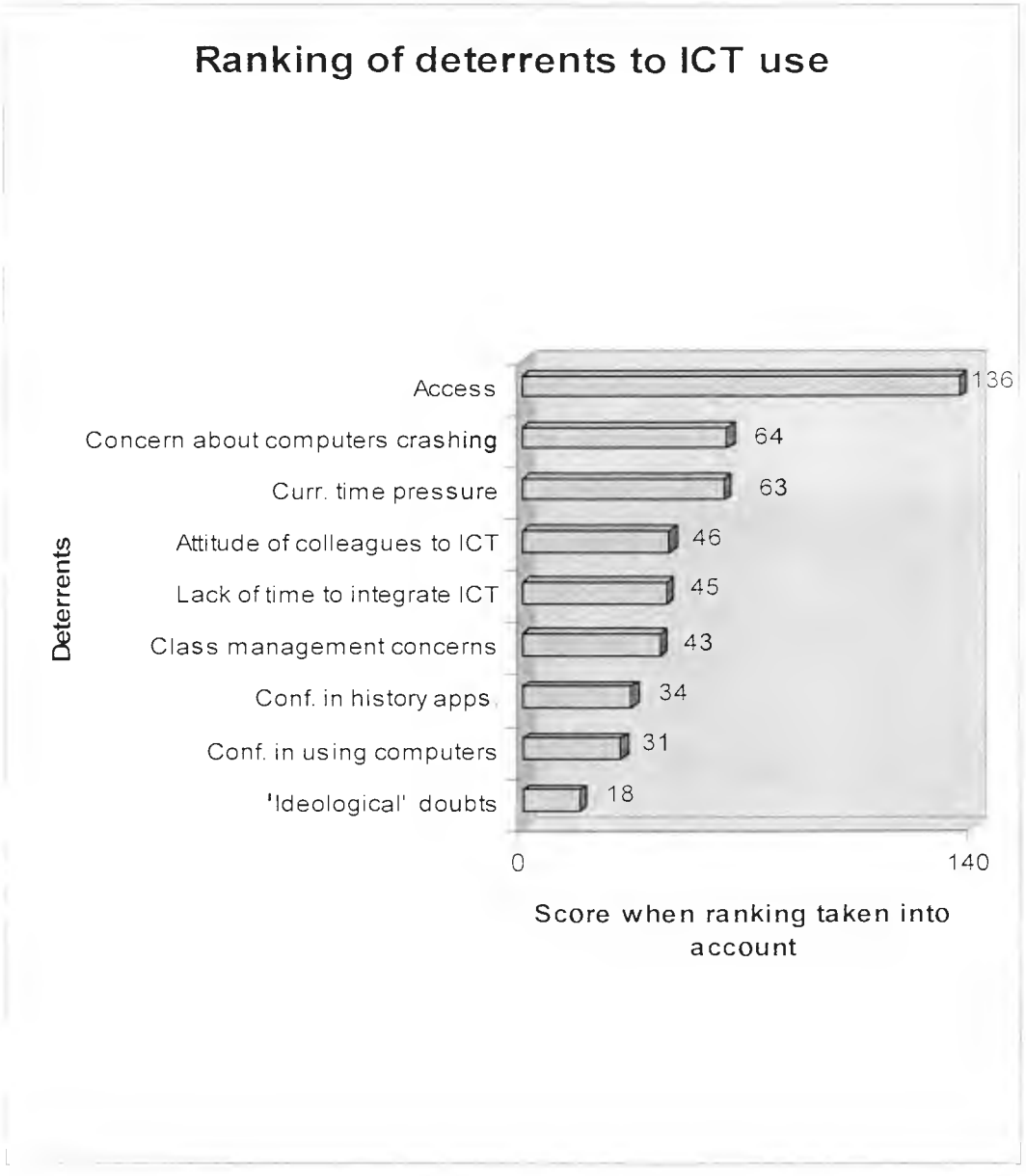
In spite of the continuing improvement in the computer to pupil ratio in secondary schools, and in internet connectivity (DfEE, 2000, DfES 2001b, 2002a), difficulty of access remained by some way the most commonly cited disincentive to the use ICT in teaching. This was cited by 12 of the 20 trainees as the most influential barrier to ICT use (with class management concerns emerging as the next most prevalent prime deterrent, cited by three trainees).

When ranking of factors is taken into account, as in the 2000 survey, access emerged as the major barrier to the use of ICT in teaching. The responses to the 2003 survey do, however, suggest a continuing shift in the ranking of other deterrents to the use of computers (see Figure 5.13).

Figure 5.13: Ranking of deterrents to the use of ICT in teaching (June 2003)

(n= 20)

(9 points for most influential deterrent, 8 for next most important etc)



The influence of 'ideological resistance' to the use of ICT ('You do not believe that computers have much to offer in developing pupils' historical knowledge, skills and understanding') declines, with only one respondent citing it as one of the top three deterrents to ICT use. 'Confidence' issues, both in terms of computer use generally, and confidence/awareness of history specific applications also decline compared to

worries about computers breaking down, and the influence of teachers who the trainees are working with. Time pressures – both in terms of pressure to cover the curriculum, and to plan for the integration of ICT into classroom contexts – remain an important factor. When compared with the data from the initial investigations from 1995 and 1996, the decline in the part played by confidence and 'ideology' issues is even more marked (see pages 223-4).

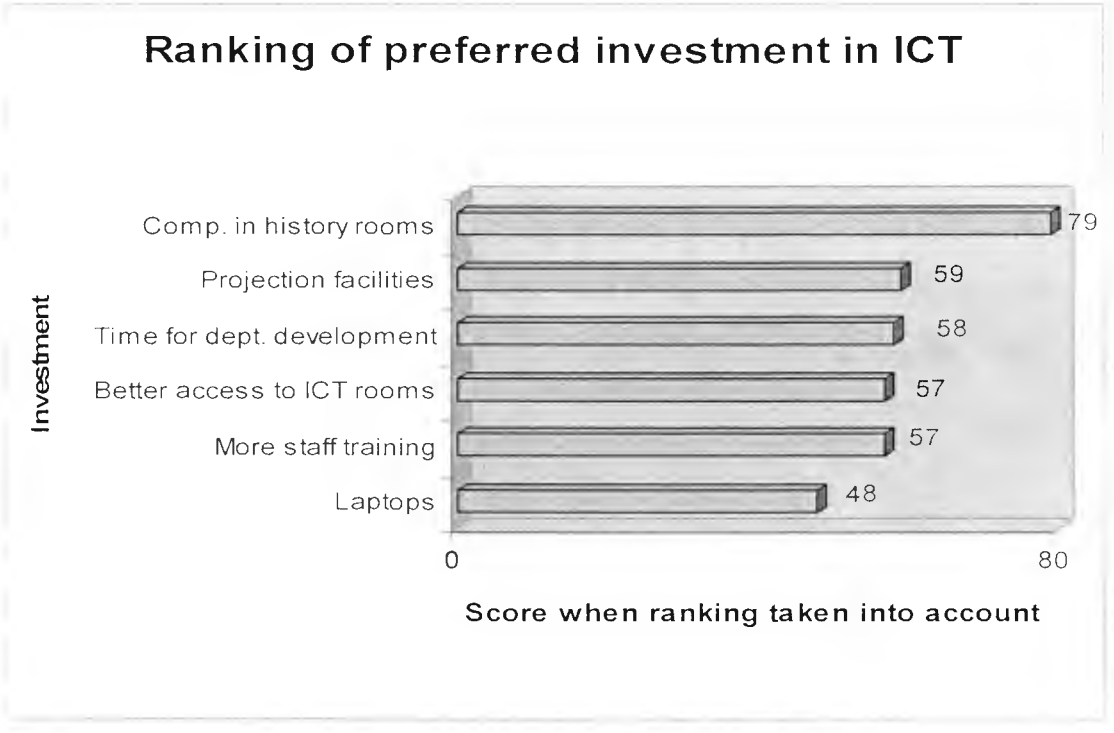
Trainees' perceptions of access to ICT

The 2003 survey suggested that there had been some reduction in the number of history departments which did not have any computers deployed in designated history teaching rooms, but there were still five departments where this was the case, two departments with only one computer, and four with only two. Only one trainee found access to networked computer suites unproblematic whilst on school placement, but 11 out of 20 described access as 'reasonable' – an improvement on the 2000 figures, and eight respondents described access to computer rooms as 'difficult'. There appeared to have been a substantial improvement in pupil and teacher access to the internet in schools, with 15 trainees describing this as 'good' or 'reasonable', but out of 14 comments on access to whole class projection facilities, ten described the situation as 'difficult' or 'impossible'. It would appear that most history departments and humanities faculties still do not possess a data projector, and that there are still very few computers in history classrooms. In terms of home access to a computer, all the trainees reported having access to a computer, with 16 out of 20 also having internet access.

Trainees' views on investment in ICT

When presented with a list of options for investing in the development of ICT to improve teaching and learning in history (see question 13, Appendix 3), the least popular option was the provision of laptop computers for history teachers, followed by 'more staff training'. There was no clear consensus on 'best ways forward' for investment in ICT, with some support for all of the six options provided. When rank order was taken into account, more money for data projectors and more computers in history classrooms were the two investments which evinced most support (see Figure 5.14).

Figure 5.14: Trainees' views on what would help to develop the use of ICT to improve teaching and learning in history (June 2003) (n= 20)



As with the 2000 survey, the responses suggested that the government's faith in the power of the National Grid for Learning and Virtual Teachers Centre to act as radical catalysts for educational change (see DfES, 1997b) might have been over optimistic. Of the 20 responses to the question on their use of the NGfL (see Appendix 3, question 3),

eight trainees had looked at it but not made use of it in their teaching, and a further eight had not looked at it. One trainee was unaware of the existence of the NGfL, and three trainees had made 'a little' use of it. When asked for what influenced their views on the NGfL, the responses suggested that the lack of impact was more due to lack of time to look at the resources (14 responses), rather than being a reflection on the quality of the NGfL itself, although one trainee pointed out that the sites were not easy to navigate.

The TTA's materials for the identification of training needs in ICT in subject teaching also continued to fail to make a major impact on the trainees' experience in the course of the PGCE year. Ten of the trainees were unaware of the existence of these materials, and only one trainee reported that he/she had found the materials 'very helpful.' Again, this was mainly (13 responses) attributed to lack of time to consider the materials rather than being a reflection on their quality or appropriateness.

As in other sections of the survey, trainees' time emerged as an important finite resource, and simply providing more booklets, or more web pages to help support the development of trainees' competence in ICT in subject teaching did not appear to be an effective way forward. As well as being inundated with information, feedback on views on the 4/98 Standards (DfEE, 1998b) suggested that the trainees were also drowning in competences. Whereas McDonald (1993) cites ICT as one of 38 competences required of trainees under Scottish regulations for initial teacher training (SOED, 1992), at the period of the main phase of data collection, ICT competence alone consisted of over 100 statements of competence, out of several hundred statements overall (DfEE, 1998b).

Conclusions

In the period between the preliminary investigations in 1995 and 1996, and the third phase of data collection in 2003, some things changed, and some things stayed the same. Also, new questions relating to the use of ICT by history trainees emerged as the enquiry progressed

In terms of the classroom use of computers in secondary history, this small scale enquiry tended to echo the findings of the ImpaCT 2 studies (Harrison *et al.*, 2002), in that it seemed to suggest that many history trainees, like their more experienced colleagues, did not make regular use of computers in the classroom, in spite of the improvement in the computer to pupil ratio during this period. Responses to enquiries about the ways in which trainees used ICT tended to bear out Selwyn's assertion (2003) that much of the use of ICT was 'low-level', rather than involving the more sophisticated applications of ICT which had elicited the enthusiasm of politicians and policymakers.

Throughout the period of enquiry, responses suggested that in spite of the increase in the number of computers in schools, there were still many history departments which had no computers in designated history classrooms, nor was there easy access to whole class projection facilities in the form of data projectors or whiteboards. The responses tended to bear out DfEE (1993) and Harris and Preston's (1994) findings that history departments lagged behind some school subjects in the extent to which they had classroom access to computers. Even in the last phase of data collection (June 2003) there appeared to be a large number of history departments with no classroom access to computers. In terms of their view on future investment in ICT, both trainees and curriculum tutors placed better access to the use of computers within ordinary teaching rooms as their preferred option.

Other factors which remained relatively static throughout the period of enquiry were trainees' reservations about access to and use of ICT computer suites, and their attachment to the use of television and video as their 'first choice' of ICT application, although the last phase of data collection in June 2003 showed the internet beginning to challenge the position of television and video.

Throughout the period of the study, trainees were likely to face questions about the use of ICT in interviews for teaching posts, with this figure consistently running at over 70%, and exceeding 85% of interviews in some years.

The interviews which were conducted with trainees provided insight into which strategies, structures and interventions they found helpful in developing their ability to make effective use of ICT in their subject teaching, and which they found less helpful.

At the bottom of the pile was the online basic skills test for ICT, which was resented as a waste of time by the overwhelming majority of trainees. The National Curriculum for the use of ICT in subject teaching (Annex B of the 4/98 Standards) which was introduced in 1998 also evinced predominantly negative responses (from both trainees and curriculum tutors), although not on the same scale as the online test. Further probing in the interviews revealed that internal course documentation and a wide range of resources designed to support their development in ICT (both online, such as the NGfL, and in the form of information booklets from the TTA) were also found to be unhelpful. This was largely because of lack of time to consider and digest the information rather than criticism of the quality or appropriateness of the resources. It seems possible that in the fervour to accelerate their development in ICT, trainees have been overwhelmed with information.

'Social transmission' of ICT skills emerged as trainees' view of the best way to make progress in ICT, both in schools and in the university-based elements of the course.

Seeing things demonstrated that they wanted to be able to use in their teaching, and working in groups, with support and guidance, were popularly regarded as good ways forward, with the caveat that some groups worked better than others. There would seem to be a case for changing the composition of ICT 'working groups' over the course of the PGCE year, so that trainees gain insight into the 'chemistry' of successful group learning. In terms of school-based experience, the comments of trainees suggested that 'human resources', someone to talk to, to take them through things, to model ICT use, were at least as important as the quality of the school's ICT infrastructure and facilities (see also Cloke and Nikolopoulou, 1989, Collis, 1993).

Some facets of trainees' views on ICT in subject teaching did change over the course of the study. At the time of the preliminary investigations (1995 and 1996) there were many trainees who expressed scepticism about the potential of computers to improve teaching and learning in school history, and lack of confidence in the use of computers generally was one of the major causes of negative attitudes to the use of ICT. By the time of the later questionnaire surveys (2000 and 20003), 'ideological' opposition to the use of computers had almost disappeared, and confidence issues were much less influential, although confidence and awareness of subject-specific applications still lagged behind general confidence in the use of computers. Several earlier surveys suggest lack of confidence as a major deterrent to the use of computers (see, for instance, Blackmore, 1992, Easdown, 1994); the findings from this study indicate that confidence issues have diminished in importance in relation to concerns over access and time to integrate ICT into classroom practice. One of the paradoxes which remained at the end of the study was the contrast between the number of trainees who expressed positive or very positive sentiments to the use of ICT, and the small numbers who made extensive use of ICT in their day to day teaching. Both for trainees and curriculum

tutors, approbation for ICT was couched principally in terms of its importance for the future of the subject and optimism over future developments, rather than on the basis of what it had already delivered.

As at the start of the enquiry, access remained an important issue in spite of improvements in the computer to pupil ratio. In the same way that road use expands with the building of motorways, the increase in the number of computer suites in schools was matched by increased demands from a range of subjects wanting to use them (see Andrews, 1997). For most trainees, access to ICT suites remained problematic. The one area where reports on access seemed to have improved dramatically between the first and third period of data collection was in pupil access to the internet. The findings at all three stages of data collection tended to support McMahon's (1999) suggestion that lack of time to explore ICT agendas because of other work commitments was also a powerful barrier to progress in ICT.

Although there appeared to be no radical transformation in the frequency with which trainees made use of ICT in their classroom teaching, responses indicated a big increase in the frequency with which trainees used ICT in their preparation of lessons. It is easy to underestimate the pace at which the internet has become an integral part of trainees' experience in the PGCE year. Campbell and Davies' (1995) survey of trainees' use of the internet found that 15 out of 17 history trainees had not used the internet on commencing the course, and four did not know what it was. Whereas at the start of this study, less than half of the trainees made use of the internet, by the time of the 2003 survey all the trainees were making regular use of the internet to gather resources and activities for teaching. Although use of 'official' web portals such as the NGfL and VTC was not common, 19 of the 20 respondents in the June 2003 survey reported making use of the *School History* website. As well as regular use of the internet and e-

mail, the use of presentation software such as PowerPoint was much more prevalent in later surveys, while the prominence of datahandling and simulation applications (which dominated the early stages of ICT use in history) declined, and some applications, such as Concept Keyboards, became obsolete.

Responses from the last two phases of data collection also suggested that the *nature* of ICT use in history shifted – away from set-piece, special occasion lessons in the ICT suite, and towards the incorporation of ICT components within 'ordinary' lessons, where facilities made this possible. Examples included using PowerPoint for the teacher or pupils to deliver presentations or introductions to lessons, or the use of images drawn from the internet to make points more vividly and powerfully.

One further finding emerges from the survey of trainee perceptions of the use of computers in schools, and this derived from the early phases of the study. The preliminary investigations which enquired into trainees' perceptions of computer use as *pupils* rather than as teachers (see pages 150-52), suggested the possibility that figures on the use of computers which are based purely on the self-reporting of teachers or trainee teachers, with no triangulation against pupil reports (or Ofsted/HMI findings) on computer use, should be regarded with a degree of caution.

Chapter 6

Conclusions

Introduction

The concluding chapter is divided into four sections. First, there is a reflection on the approach taken in this study and the implications of this for the way that public knowledge is constructed in this field. In the second section, there is a summary of the contribution which the thesis makes to knowledge in the field of ICT in secondary school history. In the third section, there is a brief consideration of the implications of this study for policy making in the use of ICT in schools more generally, i.e. in other school subjects as well as in history. In the final section, conclusions are drawn on the implications of this thesis for the future role of ICT in secondary school history.

The importance of a cumulative approach

The approach adopted in this thesis points out the importance of taking into account not just multiple perspectives on educational problems and issues (and in particular, insight into the views of practitioners), but also, the essential benefits to our understanding of the use of ICT in secondary school history (and to intelligent policy formation) of taking into account all that has gone before. This is what Hargreaves (1996) and Alexander (2003) term 'cumulation'. In the words of Alexander (2003: 17), 'that most essential condition for the growth of knowledge and understanding and the improvement of the future human condition, by which researchers in all disciplines are bound absolutely – *cumulation,* knowing what has gone before, learning from it, evaluating it, building on it.'

Foray and Hargreaves (2003: 7-9) argue that 'the capacity to produce and use knowledge' is a problematic area in the professions, that the education sector is characterised by 'relatively slow knowledge production and dissemination', and that educational research is weak in terms of 'knowledge spillovers'. Hargreaves (1996) argues that the gulf between education researchers and education practitioners, and the fact that much research in education does not impact on teachers' practice, has made it easy for policymakers to marginalise or disregard education research findings. Other criticisms have come from Smithers (*Times Educational Supplement,* 22 January 1999), who argued for the quick transmission of findings 'in disposable form', and from Millett (1997) who claimed it was reasonable to expect 'crisp summaries written in plain English' which emphasised the practical implications of research findings.

Although the government has acknowledged the importance which should be attached to evidence based practice, here also there is a concern that 'those who want this information can get it easily and quickly' (Blunkett, 2000: closing words).

There are some dangers in this demand for quick and 'disposable' research knowledge, particularly in a climate where policymakers may be seeking to use education research as a means of validating their policies (Somekh, 2003a, 2003b). In the words of Edwards (2000: 302) 'the temptation to form premature theories upon insufficient evidence... can apply to researchers eager to get their findings noticed, but the temptation appears more often to afflict policymakers whose usual disregard of research is interrupted by drawing conveniently selective conclusions from what it has shown.'

In such a climate, there is a danger also of 'presentism', with a tendency to disregard or be dismissive of what has gone before, on the grounds that 'old solutions do not fit the new circumstances' (Rein, 1976: 23). Alexander (2003: 17) writes of the

'lamentable detachment' of policymakers from questions of history, 'my third vital domain of pedagogical discourse'.

One example of this can be found in Clarke's assertion (1999a) that ICT was 'not even considered something that should form part of initial teacher training' until the Labour Party came into office in 1997. If policymakers deny the existence of any discourse about ICT in teacher education before 1997, there is no possibility of drawing on such knowledge to inform policy. A study of such knowledge (see, for example, Davis, 1992, Haydn, 1993, Easdown, 1994, Summers and Easdown, 1996) would reveal that then (before 1997) as now, many trainee teachers made limited use of ICT in their teaching. When considered together with more recent findings (see Chapters 4 and 5), it becomes apparent that although there is continuity in terms of practice, the reasons for non-use of ICT have changed considerably. Thus, the triangulation of past and present knowledge affords a deeper insight into the changing nature of trainees' non-use of ICT.

The principles of procedure of the discipline of the history of education, 'which has at its core respect for evidence – and truth' (Aldrich, 1990: 53), offer a scholarly and objective counterbalance to the pressures on educational research to produce 'quick' and 'disposable' knowledge, and to produce 'a result' that might suit the aims of sponsors, in an area that is contested, subject to pressures from interest groups, and characterised by a range of claims, assertions and research findings.

The history of education can provide a distinctive approach to research into current educational issues and concerns, but it can also work in concert with other research approaches. The combination of historical perspectives and empirical approaches is not without precedent (see, for example, McCulloch *et al.,* 2000), but it does offer particular advantages in contexts which, like the use of ICT in education, are subject to rapid change and where there are a range of factions with an interest in, and influence on

policymaking. The combination of approaches allows for the interplay of the historical record and the outcomes of empirical enquiries to inform and update lines of enquiry. The issue of 'what questions are most worth asking about the use of ICT in secondary history?' changed even within the eight years of the empirical enquiry in this study.

This thesis demonstrates that there are advantages to be derived from taking a research approach that combines empirical approaches with historical perspectives. In the same way that qualitative and quantative methods have been combined in order to advance our understanding of the use of ICT in schools (Harrison *et al.,* 2002), the deployment of historical perspectives in conjunction with empirical investigations of current developments offers the opportunity to be more 'fully sighted' in our understanding of educational issues and problems.

A cumulative approach also affords a way of compensating for some of the methodological weaknesses of the empirical element of the thesis (possible institutional, tutor and regional effects, the influence of 'convenience' sampling, comparatively small sample size). Having acknowledged the limitations of this and other studies (see Chapters 1-3), what reasonable conclusions can be drawn from the empirical elements of the study, and what can be said with confidence about the use and impact of ICT on history teaching during the past quarter of a century?

Contribution of the thesis to knowledge in the field of ICT in secondary school history

One of the main research 'products' arising from this study was a dataset of secondary history teachers' and history PGCE trainees' views on aspects of ICT use. When considered in conjunction with the historical record of the use of ICT in secondary history, the thesis advances knowledge in this field in several areas.

i) History teachers' and trainees' attitudes to the use of ICT

The thesis updates and expands on previous studies in this area (see Chapter 3).

The research of Summers and Easdown suggested that many history teachers and trainees were anxious about the use of ICT, and that many of them had 'ideological' reservations about the use of computers in school history. The initial phase of data collection in this study (1995-7) supported these findings to some extent, in that a substantial minority of teachers and trainees cited 'ideological' reasons for not using ICT, and a majority of respondents also admitted to a lack of confidence in using computers. The Summers and Easdown (1996) and Easdown (1994, 1997a) studies, however, were conducted at the start of the PGCE year, whereas the surveys described in Chapter 5 of this thesis were conducted later in the PGCE year, and indicated that by that stage, most trainees had positive attitudes to the use of ICT and were keen to develop proficiency in this area.

This study also disaggregated the issue of ICT 'confidence' in a way that was not a feature of the DfE surveys. Analysis of the data from the 1995-7 surveys showed that lack of general confidence in computer use *and* lack of awareness of subject specific applications were both commonly held concerns amongst both trainees and experienced history teachers, and that the latter was a more influential deterrent to ICT use than the former.

The last two phases of data collection (2000-2 and 2003) showed that there had been a marked shift in attitudes to ICT since the 1995-7 surveys, and that the vast majority of secondary history teachers and trainees had positive attitudes to ICT and were confident about the general use of computers, although fewer were fully confident in history

specific applications of ICT. Experienced teachers were generally more confident in both general and subject specific use of ICT.

There is very little evidence from the second and third phases of data collection to suggest that substantial numbers of history teachers were 'phobic' about using computers, or 'ideologically' resistant to their use on the grounds that computers had no relevance to teaching and learning in history. There were still some teachers and trainees who were anxious that computers might break down, but it could be argued that this is entirely well-founded given the reality of computer quality and reliability in schools, and that this should not be regarded as antipathy to ICT *per se*.

There is, therefore, evidence to suggest that there has been a shift in history teachers' and trainees' attitudes to the use of ICT over the past eight years, and that they are generally more positive about the use of computers than was the case in the mid 1990s.

ii) History teacher and trainee perceptions of barriers and deterrents to the use of ICT in subject teaching

The thesis provides a more nuanced and up to date understanding of the factors which history teachers and trainees perceive to be barriers to the use of ICT than previous studies, and of the ways in which these factors have fluctuated in comparative importance over the past eight years.

In terms of barriers or deterrents to the use of ICT in subject teaching, there were some consistencies and some changes in teachers' and trainees' views over the course of the surveys detailed in Chapters 4 and 5. The use of ranking scales in addition to consideration of the frequency with which factors were deemed relevant, and the frequency with which factors were mentioned as 'first choice' deterrent provided a form of triangulation in terms of which factors were most influential overall.

When looked at over the period of the three phases of data collection between 1995 and 2003, a complex picture of a range of factors emerged as influencing the extent of computer use and there were some fluctuations over the period of data collection.

In the first phase of data collection, a substantial minority of teachers and trainees had reservations about the usefulness of ICT applications for helping them to teach history more effectively, mirroring the findings of Easdown's (1994, 1997a) and Summers and Easdown's (1996) findings that both history trainees and their supervising mentors had 'ideological' objections to computer use, founded on their feelings about the nature of the subject discipline of history. In this first phase, the problem of encountering differing hardware platforms in schools was also an issue for some trainees, and trainees also saw lack of funding to purchase history specific software as a problem in some cases.

These three concerns diminished in the latter two phases of the study. By the time of the second phase of data collection, almost all schools had gone over to IBM compatible machines so variation in hardware platforms was no longer an issue. By the time of the later surveys, the prevailing use of ICT in school had moved towards the use of generic applications rather than subject specific software (Harrison, 2003, Walsh, 2003), so finance for subject specific software was no longer as important an issue. 'Ideological' resistance to the use of computers was much less influential in the responses of both teachers and trainees, and by the time of the final phase of data collection in 2003, had almost disappeared, with under 5% of respondents mentioning it as a relevant factor, and in only one case ranking it as one of the more influential deterrents.

The other big change over the course of the three phases of data collection related to confidence and awareness issues, both in terms of confidence in using computers in general, and knowledge/awareness of aspects of computer use that related specifically to

history teaching. In the early period, confidence issues were mentioned as a reason for not using computers by over half of the respondents, and were often rated as amongst the most important factors. By the time of the 2003 surveys, very few teachers or trainees cited general confidence in computers as a factor, and although there were more respondents who had only limited confidence in history applications, this had also fallen below several other factors, such as concerns about classroom management, about computers 'crashing', and 'the attitude and approach of teachers in the department you work in', in order of importance.

'Lack of time to plan how to integrate the use of computers into lessons' and 'difficulties in gaining access to computers' emerged as by some way the most influential deterrents to computer use, with the former overtaking access as an issue for history teachers in the second phase of data collection (2000-2). As they emerged as the most influential problems, these issues will be considered in more detail.

a) The issue of teachers' time

The speed at which ICT applications have developed and the exponential increase in the amount of information which is potentially of use to history teachers have meant that it has been difficult for pedagogy to keep pace with technological change.

The interviews with teachers and trainees in the second phase of data collection showed that they often found it difficult to cope with the volume of information relating to the use of ICT. A majority of respondents placed 'time' issues in the top three deterrents to the use of ICT. Trainees' responses consistently pointed out what they regarded as the unrealistic expectations of what they were expected to assimilate in terms of information relating to ICT.

Many of the teachers and trainees surveyed suggested that making more time available for teachers to work collaboratively to develop the use of ICT in subject teaching would be a useful way forward. Very few felt that the provision of more support and guidance packages should be a priority in terms of investment in ICT.

The findings at all three stages of data collection suggest that lack of time fully to explore ICT agendas because of other work commitments was a powerful barrier to progress in ICT.

b) The issue of access to computers

This emerged as strongly in the 2003 surveys as in the earlier phases of data collection, with 48 out of 56 of the respondents citing it as a problem, and a substantial majority of them regarding it as one of the most influential deterrents.

This paradox might be explained by the increasing demand for access to computers. Access emerges as an issue which is more complex than computer to pupil ratios. There is also the issue of where computers are deployed in schools, and the results of the surveys reported in Chapters 4 and 5 suggest that throughout the period in question, history teachers and trainees found it difficult to get access to computers in 'ordinary' history teaching rooms.

Currently, as Chapters 4 and 5 illustrate, the majority of history departments do not have easy access to a networked suite of computers, nor to whole-class projection facilities in any history room. The move towards investment in networked suites has meant that some history departments still do not possess *any* computers in their teaching rooms. This makes it very difficult to integrate elements of ICT into day to day teaching, so that computers can be used 'not as a special event, or to impress others, but naturally, when the need arises' (Ogborn, 2000: 26).

In terms of future investment in ICT, one way forward would be for history departments to have at least one teaching room with a computer and video linked to whole class projection facilities, whether it is a data projector or the cheaper option of a lead connecting a computer to a large television screen. In interviews with history teachers in the second and third phase of data collection, there were several instances of support for this option.

Among the reasons most frequently given by history teachers and trainees for using television and video more than computers in their teaching was convenience, flexibility, and the ease of using short extracts as 'components' of a lesson, in a way which was not possible with computers without whole class projection facilities.

iii) The nature of history teachers' use of ICT

The thesis provides insights into the ways in which history teachers and trainees make use of ICT, and the ways in which there have been changes in their use of ICT since the introduction of computers to secondary history classrooms.

Trainees' responses suggested that there are already some schools where computer access means that it is possible for history teachers to set homeworks and preparatory tasks which involve internet use. Not only does this offer the opportunity to improve the quality of such tasks, it offers further opportunities for pupils to 'do history' outside the classroom, an important consideration given the limitations on curriculum time afforded to history in secondary schools.

Wordprocessing software, in spite of being a comparatively 'low-tech' application, has remained influential in terms of history teachers' use of ICT. This is a good example of an ICT application having a particular affinity with the nature of the subject discipline being studied. With its facility to manipulate, re-order, sort and classify

information, it can help young people with 'the quality of the necessary selection, ordering and presentation' of evidence which Aldrich characterises as one of the things that distinguishes good history from bad (Aldrich, 1997: 5).

Another important dimension to the changing use of computers has been the move away from 'set-piece' special occasion lessons in computer rooms, and towards 'incidental' use, where facilities permit, so that ICT is often no more than a contributory component of a lesson. This has meant that one of the main uses of ICT for history teachers more recently has been in accumulating resources from the internet and integrating them into other applications such as PowerPoint. Several respondents to the surveys in Chapters 4 and 5 reported that simply using the internet to obtain visual images of the past was an invaluable facet of ICT. In conjunction with the scanner, the internet emerged as a valuable resource for developing pupils' visual literacy, given the wealth of images, portraits and cartoons which could be accessed from the internet.

The crucial advantage of whole class projection facilities, whether in the form of data projectors, Hantarax monitors, whiteboards or simply a computer linked to a large television screen, is that it enables history teachers to use computers in the same way that they use television and video, as and when they please, for as long or short a period as needed. This appears to be a development which has a potentially transformative influence on the use of ICT in secondary school history.

The findings which emerged from the second and third phases of data collection support Phillips' (2002: 22) claim that the key ICT skill for history teachers in future will be 'integration literacy', meaning 'the ability to use computers and other technologies combined with a variety of teaching and learning strategies to enhance students' learning'. The most significant conclusion to be drawn from this study in relation to history teachers' use of ICT is not whether they use application A more than

application B, but the context in which they use ICT applications in general. There is a marked preference for using ICT within an 'ordinary' teaching environment, as against a specialist ICT room.

iv) The extent of ICT use in secondary history

Although part of the 'preliminary investigations', one of the activities which had a powerful impact on the thesis was the questioning of 'A' level history students and history PGCE trainees in the first phase of data collection (see pages 150-52). Their responses to questions about ICT use were in stark contrast with DfE (1995a) suggestions that over 20% of secondary history teachers were using computers 'regularly' (defined as twice a week or more) in their classroom teaching, and that over 80% of history departments were making 'substantial' or 'some' use of ICT in their teaching.

The second and third phases of data collection confirmed the tentative hypothesis arising out of the initial questioning of 'A' level students and PGCE trainees: that DfE and NFER (Harris and Preston, 1994) studies of ICT use in schools were overstating the extent of computer use in secondary history.

The surveys of ICT use detailed in Chapters 4 and 5 suggest that even now, few history teachers or trainees make regular classroom use of ICT, but there does seem to have been a substantial increase in the extent to which ICT is used in the preparation and resourcing of lessons over the course of the three phases of data collection.

The 2003 survey also showed that many history teachers and trainees were now using ICT for administration and assessment purposes, with 32.1% of the 57 history teachers and trainees reporting that they made 'substantial' use of ICT for assessment and administration purposes, and 69.6% reporting 'some use'.

v) Questions about ICT in interviews for first teaching posts

The thesis provides insights into the frequency with which history trainees have been asked about ICT in interviews for first teaching posts. In the seven years in which figures have been obtained in this area since 1996, the percentage of interviews where history trainees were asked a question about ICT never fell below 70% (1998-9 cohort), and rose to 90% with the 2001-2 cohort.

There are no other studies which address this facet of history trainees' experience of ICT. One of the potential uses of this data is to impress upon trainees the status which is currently accorded to this aspect of their professional training, and the importance of developing competence in ICT in terms of their prospects of gaining employment at the end of the PGCE year.

vi) History teachers' and trainees' views on priorities for investment in ICT

The second and third phases of data collection asked history teachers and trainees to rank a range of options for investing in ICT. No other studies in the field of school history and ICT have explicitly asked history teachers and trainees for their views on investment in ICT for subject teaching.

In the second phase of data collection (2000-2), when comparative ranking of preferences for investment in ICT was taken into account, 'more dedicated time for departmental development of ICT' emerged as the most favoured option, followed by 'provision of more computers in history classrooms'. The least popular option was 'provision of laptop computers for history teachers'.

In the third phase of data collection (2003) the most favoured option for investment was 'provision of data projectors/whiteboards for whole class projection', followed by

'more dedicated time for departmental development of ICT' and 'more computers in history classrooms'. The least supported option for investment was 'more published support materials and web based help sites'.

Time for teachers to think about exactly what they were going to do with ICT was clearly an important factor in both surveys. 'Better access to networked computer rooms' did not emerge as amongst the most strongly supported options in either survey, and the 2003 survey, with strong support from both teachers and trainees for more data projectors and more computers in history classrooms showed a shift towards a preference for ICT use in 'ordinary' teaching rooms rather than in networked computer suites.

vii) History trainees' perceptions of the effectiveness of interventions and strategies to develop competence in ICT

Chapter 2 of the thesis illustrated the tendency of politicians and policymakers in the UK to underestimate the complexity of factors influencing the effectiveness of teaching and learning processes. Strategies for developing trainee competence in ICT were largely characterised by a tendency to 'throw information' at the 'problem' of ICT in schools, and paid insufficient heed to the very variable impact which particular interventions had on learners in this facet of teaching competence.

The interviews conducted with history trainees towards the end of their training (see Chapter 5, pages 244-52) suggest that policymakers' zeal to provide guidance and support for trainees in developing their capability in ICT led to a situation where they felt they were simply overwhelmed with information. The transcripts of several of these interviews indicate that the response of trainees is to 'switch off' and not seriously

engage with any of the wide range of (fairly substantial) information sources available to them.

The faith which policymakers have invested in 'distance learning' through the use of communications technology (DfEE, 1997b) would appear to have been misplaced. In spite of the substantial sums invested in the NGfL and other electronic portals for teachers aimed at advancing the use of ICT (such as the 'Virtual Teachers Centre', 'Teacher Resource Exchange' and 'ICT Advice'), a substantial majority of the history teachers and trainees who were surveyed had either looked at them but not used them, not looked at them, or were not aware of them. The distance learning element of the 'New Opportunities Fund' scheme for training teachers in the use of ICT was also criticised by many respondents.

The spelling out of a battery of a large number of ICT competences (DfEE, 1998b) was another element of ICT policy which was found to be unhelpful or at best 'not much help' by a substantial majority of history trainees (see Chapter 5, pages 239-40).

Real anger and resentment was limited to the online basic skills tests. There was almost universal rejection of the idea that the tests were in any way helpful, and many trainees felt that they were worse than useless, in that they were felt to be a nuisance, they caused stress and anxiety, took time away from worthwhile activities and engendered negative attitudes to ICT.

Analysis of trainees' views on what experiences and interactions *had* been helpful in enabling then to make progress in their ability of use ICT in their teaching (see Chapter 5) suggest that 'social' learning in non-threatening contexts was found to be helpful; being taken through something by a mentor, seeing someone modelling an ICT skill that trainees wanted to be able to use, and in particular, being given the time to explore ICT applications whilst working as a group.

The evidence from this study suggests that making people do low challenge/high stress tests in an inconvenient and unpleasant environment, compiling extensive lists of technological competence to be 'ticked off', and inundating trainees with hundreds of pages (and webpages) of 'support' information does not appear to be an effective way of developing a technologically empowered teaching force. An alternative audit of the effectiveness of ICT provision in ITT courses might add two pertinent questions. What activities and experience proved helpful in enabling trainees to develop effective use of ICT in their subject teaching, and how strongly motivated are they to continue to explore the use of ICT in their teaching?

Policymaking and the use of ICT in schools

This study of the use of ICT in secondary history suggests that progress in making the most of the potential of new technology for enhancing teaching and learning has been hampered by policymaking decisions which have failed to take sufficient account of teacher perspectives on the use of computers, the nature of pedagogy in particular school subjects and the complexity of the factors influencing teaching and learning.

It is only in the 2003 policy document *Transforming teaching and learning through ICT in schools* that mention is made of the need to focus on the pedagogical implications of using ICT as part of the 2003-2006 *ICT in schools* programme (DfES, 2003: 4-6). The data from the empirical enquiries detailed in Chapters 4 and 5 suggest that it has been a mistake to neglect this facet of ICT use, as if in some way the pedagogical implications of ICT use come 'after' the provision of computing infrastructure in schools.

Davis *et al.* (1989) and Cox *et al.* (1999) found that the two most influential determinants of the degree to which ICT applications would be adopted by teachers

were perceived usefulness, and perceived ease of use, and that the application must have both to persuade teachers to use ICT. Chapters 4 and 5 demonstrate that the vast majority of history teachers and trainees do consider a number of ICT applications to be potentially useful. They do not however find that they are easy to use. This is important because policy statements from the DfES (see, for example, DfES, 2003) suggest that the infrastructure to use computers in schools is now in place and that the issue is now about how to persuade teachers to integrate ICT into routine classroom practice. There is still a need to consider the ease with which teachers can use computers in 'ordinary' teaching rooms and the balance between investment in computer suites and computers in classrooms. The evidence from the empirical element of this study is that history teachers have a clear preference for investment in ICT which lends itself to use within ordinary teaching rooms.

Chapters 2 and 3 of the thesis showed that politicians and teachers had different views about the function of computers in schools. Study of the statements of politicians on the use of ICT in schools (see Chapter 2) showed an enduring attachment to an economic/vocational rationale for the use of computers in schools.

The evidence from Chapters 3, 4 and 5 demonstrates that 'helping our businesses to compete', supporting a vibrant British software industry, and creating the most ICT-skilled workforce in the world (Blair, 1997) may be legitimate concerns of politicians, but that they are not at the forefront of history teachers' thinking about ICT. Teachers' concerns about what to do with computers were bound up with how to improve the quality of teaching and learning in their subject rather than how to contribute to the delivery of a technologically empowered labour force.

One of the lessons to emerge from both the review of literature on the use of ICT in secondary history, and from the surveys of history teachers and trainees conducted by

the author of this study is that ideas, expertise and effective practice in the field of ICT and school subjects cannot simply be 'copied and pasted' by electronic transfer. The responses of both history teachers and trainees to questions about their use of the NGfL (see Chapters 4 and 5) show clearly that 'distance learning' is more problematic than had been envisioned by the architects of the NGfL. The failure of 'official' web portals to impact on history teachers' and trainees' practice illustrates the difficulties of attempting to construct a science of teaching 'from the outside' (Edwards, 2000: 299).

The findings from this study support Hargreaves' (1992: ix) contention that 'teachers don't merely deliver the curriculum. They develop it, refine it and reinterpret it, too.' There is very little evidence in any of the three phases of data collection of history teachers simply downloading and delivering a history and ICT 'package' which had been devised elsewhere. Whatever the website, CD-rom or software package, teachers generally had to adapt and refine the materials to suit their pupils, their facilities and their preferred modes of use. Extracts from the semi-structured interviews undertaken in phase 2 of data collection (see Chapters 4 and 5) show that what teachers felt really made the difference to whether the use of ICT in secondary history 'worked' or not was the skill with which the whole orchestra of teaching techniques – introduction, questioning, exposition, use of group work, pacing of lesson components, plenary etc. – were integrated with the deployment of ICT (see also Counsell, 2003). The idea that someone could devise ICT activities in history 'that worked' which could then be effortlessly transferred 'down the wires' and implemented in classrooms across the country – an idea that underpinned the grand project of the NGfL (DfEE, 1997b) – has not been borne out in reality.

Chapter 3 of the thesis argued that in investing in ICT in schools, policymakers had given insufficient thought to the nature of subject disciplines, and the ways that this

influenced the potential uses of ICT in school subjects. Analysis of politicians' pronouncements on ICT demonstrate a tendency to think of ICT in generic terms, to assume that it offers the same advantages in all subjects, and to underestimate the importance of understanding the nature of the subject discipline being taught, and the importance of this in informing the instructional design of resources and activities which involved the use of ICT. This might help to account for the limited use made of general education portals such as the NGfL. Although trainees generally had made little or no use of this site, almost all of them had made regular use of the sites of practising history teachers such as Schoolhistory.co.uk and Activehistory.co.uk. These findings support Wynne's contention (2001: 29-30) that 'at the core of the enterprise are the domain-specific skills of the history educator.... Experienced history teachers are not content-managers of some bureaucratic, teacher-proof canned curriculum. They are managers of meaning and content transformers through their own agencies.'

The review of literature on the use of ICT in secondary history (Chapters 1 and 3) revealed that (until this study), no attempts had been made to elicit the views of subject teachers on what forms of investment in ICT they might find most helpful. Whereas Foray and Hargreaves (2003: 7) cite 'schoolteachers' as an example of a community of practice, the fact that ICT applications vary in utility from one school subject to another means that a more meaningful community of practice is the subject community of history teachers.

There is clearly scope for further exploration of the questions addressed in this study. The limited sample size (150 trainees and 140 practising history teachers, falling to 78 experienced teachers and 55 history trainees for questions that were included only in the second and third phases of data collection) does not lend itself to robust statistical analysis if further disaggregated in terms of age, gender, and different types, sizes and

locations of secondary school. Further research to follow up questions posed in this study could however consider such issues, given that gender is an issue in *pupil* use of ICT (Cockburn, 1985, Culley, 1988, Taylor, 2001). This study also provides at least tentative evidence that there may be a 'digital divide' issue in terms of levels of access to ICT in different types of secondary school (see Chapters 4 and 5, see also Tarleton, 2004).

This study has consciously focused on teachers' and trainee teachers' perspectives on the use of ICT in secondary school history, but these areas could usefully be complemented by research in other aspects of the use of ICT in school history. Pupil perspectives on the use of ICT in secondary history have not been explored in any systematic or direct way. Nor has there been a major study of trainees' perceptions of the extent to which and the ways in which ICT might assist in the development of pupils' understanding of substantive and second order historical concepts.

The outcomes of the thesis suggest that the combination of historical perspectives and empirical enquiry can provide forms of triangulation which systematic literature review and random controlled trial research conducted separately (see Furlong, 2003) do not offer.

One proposition arising out of this study is that future research on the extent of computer use in schools should incorporate information from 'users' (i.e. pupils) as well as 'providers' (head teachers, ICT coordinators), as a form of triangulation, in order to get as accurate a picture as possible of the use of computers in schools. It is not just DfE surveys which have confined their enquiries to 'providers'. Other recent surveys on the extent of ICT use in schools have continued to limit their enquiries to ascertaining the views of 'the grown ups' rather than incorporating pupil perspectives

(see for example, Jervis and Steeg, 2003, National Centre for Social Research, 2003, quoted in *Times Educational Supplement*, 8 August 2003).

In the past, the 'headline' statistic which has tended to be used in terms of access to ICT in schools has been the computer to pupil ratio, with the percentage of schools connected to the internet also given prominence in more recent DfE surveys. Chapters 4 and 5 suggested that there was a correlation between access to whole class projection facilities and regular use of ICT in subject teaching. Given the views of teachers in this study on access to ICT and preferred modes of use, future research on access to ICT in schools might also focus on the number of classrooms which have whole class projection facilities.

Another neglected area of research in the field of ICT in schools is the views of practitioners in different subject communities on investment in ICT. This study shows that history teachers have a clear preference for classroom based use of ICT, but teachers in other school subjects may have very different views on investment in ICT.

In view of the recent high profile of electronic whiteboards in the education media it is perhaps worth noting that two history teachers who were also responsible for ICT procurement for their respective schools as ICT coordinators felt that data projectors offered much better value for money than whiteboards. Although the scale of this survey is clearly not sufficient to draw meaningful conclusions, it is an example of the sort of questions which might be posed to a broader range of teachers.

The way in which ICT is used by teachers also has implications in the field of teacher autonomy and professionalism (Helsby and McCulloch, 1997, McCulloch *et al.,* 2000). Will new technology be used principally to emancipate or direct the teaching force? Noss and Pachler (1999) warn that ICT's facility for the electronic transference of information from the centre might be used to deskill and deprofessionalise teachers,

reducing them to the role of technicians who implement curricula designed elsewhere (Harland, 1988). Further research into ICT use might explore the extent to which new technology use can provide an avenue for the development of a 'new professionalism' where teachers are empowered to 'play with ideas' and develop creative pedagogical approaches which enrich their subject teaching (Woods and Jeffrey, 1997: 66-7).

Even within the eight years of the empirical element of this study, there have been some shifts in history teachers' perceptions of the extent to which ICT either threatens or empowers them, the degree to which they feel it has the potential to teach their subject more effectively, and the precise *ways* in which they feel it might help them to teach history more effectively. Given recent reports that the DfES may be planning a radical model of schooling based around classes of 90 pupils supported by ICT and classroom assistants, with a reduction in the number of qualified teachers per school ('Schools without teachers', *Times Educational Supplement*, 5 December 2003), the ways in which ICT impacts on subject teachers' professionalism, autonomy and effectiveness is another area which needs to be explored if such reforms are not to be a 'leap in the dark'.

The future role of ICT in secondary school history

As well as providing a history of the use of ICT in secondary school history in England and Wales, and insights into the current situation with regard to history teacher and trainee use of ICT, this study has implications for the future use of ICT in secondary history teaching.

As for the question of whether the substantial investment in ICT has been and will prove to be worthwhile, it is too early to say. Given the attributes of the wide range of ICT applications which have been developed in recent years, it would be surprising if

computers were not capable of contributing to effective teaching and learning in history. But because the relationship between technology, learning and subject disciplines is a complex one, it is taking time to assimilate ICT into pedagogic practice. The outcomes of the surveys reported in Chapters 4 and 5 show clearly that history teachers and trainees *do* believe that ICT has the potential to improve teaching and learning in history. There is emerging evidence (from both this survey and others – see, for example, Harrison 2003, Jones-Nerzic, 2003), that some history departments are generating ideas for making effective use of ICT. Given more time for collaborative work to integrate ICT into classroom practice, and more appropriate deployment of resources, it is likely that further progress will be made over the next few years. As La Velle and Nichol (2000) suggest, progress will be more rapid if bridges are built between policy makers, teachers and education researchers in the fields of computer science, cognitive science, and developmental psychology (and, it might be added, teacher education).

Comparisons might be drawn with the use of television and video in the history classroom. In 1957, Lord James, The High Master of Manchester Grammar School proclaimed that 'over my dead body will a television set for looking at and listening to the BBC, and still more, for looking at ITV, enter the school' (quoted in Moss, 1998). Today, there are few secondary history departments in England and Wales which do not make extensive use of television and video (Sharp, C., 1995).

The future development of ICT use in secondary history has important implications for the vitality and robustness of the subject's position in the secondary curriculum. As several commentators have pointed out (Hillis, 2000, Slatta, 2001, Phillips, 2002, Jones-Nerzig, 2003), in schools where pupils are in a position to choose between subjects where there is either high or low use of ICT, they are choosing to opt for the former.

But the issue of ICT use in secondary history should go beyond a concern for 'market share' of the curriculum and 'bums on seats'. Given the substantial funding that is being invested in ICT, concern should also focus on whether this is a wise investment in terms of its contribution to improving teaching and learning in school subjects. Four factors stand out as having the potential to reduce the 'rhetoric-reality gap' which has characterized the use of ICT in secondary school history thus far.

First, this study suggests that history teachers will only make regular use of computers if it is reasonably convenient to use them as part of day to day teaching in 'ordinary' classrooms. Chapters 4 and 5 demonstrate that this precondition has not been met for the majority of history teachers.

Second, history teachers need to be given more time to explore how to integrate ICT into their classroom practice. Chapters 4 and 5 of this study suggest that this would be a much more effective way forward than the well intentioned but misguided policy of providing more information on the use of ICT, whether in the form of strategy documents, exemplification materials, lists of competence statements or web based support sites. The tendency to 'throw information' at the issue of ICT use in subject teaching has not worked. Doing more of what isn't working will not make things better.

Third, future research on the use of ICT in schools should pay much greater heed to the subject discipline dimensions of classroom use. Chapter 3 of the thesis demonstrates that this has been a neglected facet of research on ICT in schools, and that there are major differences between what ICT might offer to a teacher of history, as opposed to a teacher of maths or science.

Finally, it is the combination of gaining insight into how things are at present in the field of ICT and secondary history, how things were in the past, and the ways in which

things have changed over time, that offers the potential to bridge the gap between what is and what might be in the use of ICT in secondary school history.

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Key to appendices

Appendix 1: Instrument to explore perceptions of barriers to the use of computers in classroom teaching in the first phase of data collection 1995-7

BARRIERS TO THE USE OF COMPUTERS IN THE CLASSROOM

1 (A) ACCESS TO COMPUTERS

2 (B) LACK OF KNOWLEDGE/CONFIDENCE IN USING COMPUTER HARDWARE

(C) LACK OF KNOWLEDGE/CONFIDENCE IN USING HISTORY SOFTWARE AVAILABLE

4

(D) WORRY ABOUT CLASSROOM MANAGEMENT IMPLICATIONS OF USING COMPUTERS

(E) TIME TO PLAN COMPUTER BASED LESSON AND MATERIALS FOR IT.

(F) CURRICULUM TIME PRESSURE

3 (G) FINANCE - MONEY TO PURCHASE HISTORY SOFTWARE

(H) NOT KNOWING WHAT "GOOD" HISTORY SOFTWARE IS AVAILABLE.

(I) HARDWARE CHANGES

5 (J) IDEOLOGICAL RESISTANCE - YOU DON'T BELIEVE IT DEVELOPS PUPILS HISTORICAL SKILLS AND UNDERSTANDING

Appendix 2: Instrument used to explore aspects of ICT use in the first phase of data collection 1995-7

Classroom use of I.T.

I have used	under 5 5 10 15 20 25 different I.T. applications in the classroom

I use computers in my classroom teaching	once a week once a month once a term once a year less than once a year

I use I.T. in the classroom in the form of	concept keyboard word processing to enhance display and project work spreadsheets data handling/databases data logging simulations/modelling CD-Rom graphics-paint/draw newsroom simulations desktop publishing improving essay technique quizzes/games/revision other.....

I use I.T. in my lessons because it makes for an easy, relaxing and enjoyable lesson
because I feel I should once in a while
because Dearing, OFSTED and my Head of Dept/Senior Management Team say I should
I don't use I.T. in my lessons

Computer assisted learning has improved the quality of learning, the quality of pupils' work and motivation in my lessons	not at all a bit quite a lot enormously

Appendix 3: Instrument used to explore aspects of ICT use in the second phase of data collection, 2000-1

History teachers' use of ICT in their teaching

Use of ICT as a history teacher

1. How big a contribution does ICT make to your history teaching ?

Substantial Some Little None

2. In what *ways* do you use ICT in your teaching:

Preparation?

Teaching/classroom activities?

Assessment?

3a) How much use do you make of the NGfL/VTC?

Substantial/some/little/have looked at it but not made use of it/not looked at it

3b) Is your use of NGfL/VTC influenced by your views on a) its usefulness or b) lack of time to consider how you might use it? a b

4. In roughly what percentage of your lessons do you use computers?

(Please give the answer as a percentage)

5. Do you feel generally confident in your *personal* use of ICT

Yes No To some extent

6. Do you feel confident in the use of ICT within the history curriculum?

Yes No To some extent

7. Do you have access to a personal computer at home? Yes No

8. Do you have internet access at home? Yes No

9a) How helpful did you find the "Identification of Training Needs for the use of ICT in subject teaching" materials?

Very helpful Quite helpful Not much help Unhelpful Not aware of them

9b) Are your views on the usefulness of these materials influenced primarily by their content, or lack of time to fully consider them? Content Time

10. Do you feel under pressure to use/develop use of ICT or is reason for use/development stem from your own interest/ belief/ enthusiasm for ICT in history teaching? pressure interest/belief/enthusiasm
(If pressure, from whom?)

11. It would be helpful to know what are the factors which might have influenced or limited your use of ICT, and which were most influential

A) Can you put a tick against any of the factors listed below which had the effect of limiting your use of computers in your teaching, and prioritise them in order of their influence. (1= most important, 2= next most important, etc)

Difficulties in getting access to computers

Lack of confidence/knowledge of how computers work

Lack of confidence/knowledge of what to *do* with computers in history lessons

Anxiety about classroom management implications of use of computers

Lack of time to plan how to integrate use of computers into your lessons

Pressure to cover curriculum content

You do not believe that computers have much to offer in developing pupils' historical knowledge, skills and understanding

The attitude/approach of teachers in the history department you work in

Concern that the computers might crash/not work

Any other factors?

B) What is access to computers like in your department/school?
How many computers in the history department/classrooms?
How easy to get access to networked rooms? Difficult Easy Reasonable
Access for pupil use of the Internet?
Access to Internet for you as a history teacher?
Access to large monitors for whole class display?

C) Do you use the TV and video more than the computer in your history teaching?

Yes No

By a ratio of roughly……?

If so, why do you think you use TV and video more than computer?

12. Attitude to ICT

Which of the following statements most closely accords with your attitude to the use of ICT in history teaching:

(Please tick the statement which most closely describes your feelings)

a) Negative- I don't think that computers have much to offer teaching and learning in history

b) Sceptical- computers might be of some use in history teaching and learning, but their importance has been overstated

c) Open-minded- computers seem to have a much to offer but it remains to be seen whether they will bring major benefits to history teachers and learners

d) Fairly positive- computers have considerable potential for enhancing teaching and learning in history, but they have to compete alongside several other important priorities in terms of my professional development

e) Very positive- computers have enormous potential for enhancing teaching and learning in history. I see ICT as one of the most important priorities in terms of improving teaching and learning in history.

f) None of the above

13. In what order would you place the following factors in terms of helping to develop the use of ICT to improve teaching and learning in history:

Provision of laptop computers for history teachers

Provision of more dedicated time for departmental development of ICT

Provision of more computers in history classrooms

Better access to networked computer rooms

More staff training in ICT

Provision of large monitors for whole class computer display in history classrooms

Other suggestions?

14. Are there better ways of improving teaching and learning in history than investing in ICT, (spending the money on more books for instance?)

15. A ranking of the utility of ICT applications for educational purposes

Think about the utility of the following applications. Place them in the order in which you feel that they have the potential for enhancing the quality of teaching and learning in history. (11 for the most important, 10 for the next most important etc.)

Art software	
Multimedia authoring/presentation software	
Simulations	
Spreadsheets	
CD-roms	
Databases/datahandling packages	
Internet	
Desktop publishing	
Word processing	
TV/Video	
Voice recognition software	
Any other applications?	

16. Can you think of any occasions where you or your department use ICT in a way that you feel improves the quality of teaching and learning of history?

Thank you very much for your help.

Appendix 4: Responses to question 16 of the questionnaire used in the second phase of data collection, 2000-1 (see Appendix 3)

As part of the survey of history teachers undertaken between May 2000 and March 2001, participants were asked to think of any occasions where the use of ICT had improved the quality of teaching and learning in history. These were their responses.

Respondent	
1	'Only time I've used them behaviour issues much reduced- that in itself is most interesting. CD-roms- not particularly sensational but the fact that we had it in the room helped.'
2	'It just generally improves the depth of research on any topic. For instance, railways can be a dire topic in terms of making it interesting, but set them up with the internet to conduct the enquiry and it really takes of and they learn really well.'
3	'I think what stands out is the formulation of revision notes using Excel, filtering the causes of the civil war- organising things, using filters within Excel for thematic revision.'
4	'We used it with Black peoples of the Americas... independent learning assessment, groups of 4 getting on with it... 2 days later, feedback, research, presentation. I made work more factual, we covered the unit in 2 days.. Also stuff on the Civil war.'
5	'A web based exercise on Mormon men- Wild West syllabus, could follow up things from empathetic view- added real value. Data handling and spreadsheets for analysis exercises- gives them data handling skills usually only available at a higher level.'
6	'Database work on 1832, Cholera epidemic in Newcastle, the kids interrogate the database, they deduce it's the water supply- more interesting... lessons not just pen and paper, then DTP the results and write report. Works well, good... couldn't do it any other way.'
7	'The booklets from BECTa (on using word processing and datahandling)... helping kids to structure essays.. where things go... superb way to structure essays, nightmare without word processor. The whiteboard for presentation of pupils' projects... Powerpoint. relevant skills, helps them, it's the media they receive and recognise... makes history a lot more relevant to them.'
8	'Year 7, Battle of Hastings; we team teach it... CD-rom of the battle, you can actually see the course of the battle, we've got a large screen, very good way of bringing it to life and getting them enthusiastic.'
9	'Mainly for GCSE- Bytesize rvision, year 11s loved it... and for research for coursework they get loads out of it. At Key Stage 3, I give them titles and paragraphs- matching them up... it's just word processing but it worked really well.'
10	'I haven't really... in my situation it's quite hard.'
11	Desktop publishing is set up for Year 7- bias and the Battle of Bannockburn, half do an English account, half Scottish and a selection of pictures. Printed off, next lesson, swapped accounts- what's different, what's the same.... A digital archaeology

	program.... The kids absolutely love it.. put together theories about what happened.. what is archaeology, evidence, how do we know..'
12	'Use of CD-rom to search for war dead, us of internet to find graves in World War One.'
13	'Internet research and presentation of lessons and homework.'
14	'Ben Walsh's Excel exercise on the C19th Census into groups and pictures using groups and pictures- good way of manipulating a potentially boring source of information... The internet for images of architecture in Roman Britain, London post 1666, seems to make history more relevant and interesting. Digital camera for visits... pupils keen to use it in projects. Makes them look at things that they wouldn't usually look at- Norwich cathedral website for instance- kids wouldn't usually be bothered to do that.'
15	'One thing did the job.. World War One, Commonwealth War Graves site.. look back ask grandparents for names- put the name in, brought up the whole record- it really turned them on. It's got to be relevant.. ICT doesn't stand on its own, it goes with everything they've done before and after. It was a bit of an adventure, engaging them. Some kids went to the local war memorial, it sparked a lot of interest.'
16	'The Learning Curve (website).. sources on Hitler written in 1938 based on what Britons were receiving on Hitler. A computer exercise in GCSE book on economics- 13 graphs and charts, put chats on the screen so they could discuss them in pairs and write a report for the government. So much software out there that is very general... kids flick from bit to bit.'
17	'It motivates a lot of pupils especially those who struggle, they're enthused by working on the internet.. a couple of good CD-roms- Castle- stages of building, better than text books, more lively.'
18	'When I was at X school, slavery project using the Amistad CD-rom- fantastic for information, the kids really responded to them. Me and Jenny used CD-roms for research.. we haven't got huge access, no internet yet.'
19	'The monastery at Bury St Edmonds- BBC virtual reality and the Battle of Hastings. Most computers are used for copying up work- their reward almost- if you're good you can go on the computer and copy it up neat.. perhaps 80% of work is on these lines.'
20	'Kids finding paintings from the NationalGallery and [illegible] exploring changing interpretations- easy to do.... So many good ideas, the Historical Association stuff (packages on word processing and datahandling)... We're well resourced.'
21	'Recently.. a research project; different experiences of the Home Front... they looked at sites where they could interview people from different countries- 8 excellent sites, interactive. Before, we just used posters etc. The pupils were really motivated- excited at the prospect of interviewing someone from Japan. Also use it for Modern World coursework- Northern Ireland, they used the internet a lot.'
22	'We had an IT day.. most of the kids know what they're doing or they ask one another. We had it on writing frames on the English

	Civil War… it was superb. We do lots of group work with it, kids can see that the IT has been useful.'
23	'Revision, (Bytesize) worked really well. Year 7 devised a chronology exercise, then use the sort button and find other things- they love it and got right into it.. then they used the internet to search for other things to put in. 'A' level, for researching Chartism.'
24	'Year 9, a database for Felling Colliery, number of deaths, the database helped to pull things out. Some technical hiccups but worked quite well… otherwise would have taken piles and piles of paper.'
25	'Yes, the Medieval Realms CD-rom, and an exercise where they designed their own castles- worked really well. The kids did really good work and it brought castles to life…. And it was quite accurate historically… Also a good CD-rom on the Tudors, and a Powerpoint thing on the American Indians looked good.'
26	'I used powerpoint to put music to merge with images on screen and it worked well with some low ability pupils.'
27	'At my school, the box is still blank. No to be honest but on observation I saw a CD-rom on the Elizabethan Court… kids were taking on the characters- there was art to go with it, pupils come to an understanding that they don't have when they come into the room.'
28	'One lesson I was quite pleased with… Overview of the C20th… Give them a range of websites, preliminary preparation lesson, they were TV producers, select 5 events for a TV programme, most significant, pairwork, could present as they worked- it was easy and they enjoyed it different people has picked different events, then we talked about criteria for significance.'
29	'Data handling on old boys from the school in World War One- who got killed where and when- most casualties on July 1st 1916- led nicely into the Somme. CD-roms… decision making in Cold War- global conflict- get it wrong- the end. Word processing exercises on Stalin from the Troubled Century CD-rom… nothing radical.'
30	'Not really.'
31	'Powerpoint and internet sites for history- first point of call for whatever you want. We want to build up a website and and use it to help in managing pupil assessment. Come September, an intranet, they can work on all this outside school. Also, decision making exercise on Britain between the wars.'
32	No response
33	'The Tressell publications probably- 'Attack on the Somme' (simulation)… it gets across the futility, no matter how much you vary the tactics- that's why I'd love to see more simulations- they really do hold the key to these things.'
34	'With Year 10, the intranet in school- scanned photos of the beach village in Lowestoft to review and revisit fieldwork. With Year 9, the use of Publisher (Desktop publishing package) and Word for a newspaper article on Archduke Franz Ferdinand.'

35	'Database handling, powerpoint presentations, guided use of the internet and drafting/redrafting extended writing exercises.'
36	'Students working in pairs on the internet and producing presentations. Some of the World War One battlefield sites- makes it really visual, and sorting type exercises ascribing significance- placing things in categories... It takes away the writing and gets them thinking.'
37	'Assessment- detailed records of notebook grades, test and exam marks with accompanying movement indicators allow an instant visual as well as detailed record of student progress. Highly praised by Ofsted. Internet work- scanned Punch cartoons on the fight for women's franchise- provided a wide range of sources then used on OHP (Ofsted impressed).'
38	'Use of word processing allows redrafting to be more efficient- especially with coursework. Where I direct them to websites- instant success.'
39	'Lower sixth Edexcel individual assignment... online library a real asset for research. The civil war CD-rom on Cromwell.. really good simulations of battles. The student's lesson on the A-bomb using the internet.'
40	'Using CD-roms on the Roman Course.. definitely gave another dimension... quality of the resources, ability to print things off. Definitely changed it, particularly for the less able compared to banks of dense text... the virtual walk around the forum, and the use of the internet for GCSE fieldwork- to be able to look up sites before you go- they have background knowledge before they go, the brighter ones take a lot of information... Plus the digital camera I've been quite impressed with... Did work with 'Mentor' (History database) on World War One and Two. Bytesize revision (website)... the kids get a lot out of it very quickly.'
41	'No but we've had stupid courses at x institution... We're hoping the student will help with development... I can see that some kids are anoraks... There must surely be something that it does better?'
42	'Very recently, Belgium.. Research on North Walsham people killed in World War One- details about them. We used that for a search together, with the Commonwealth War Graves site. We went and found a number of the graves. Without the internet and CD-rom, wouldn't have been able to do it as quickly and easily.. Very much using it for a clear purpose.. it enhance experience on the trip... relating to people locally had a bigger impact.'

Appendix 5: instrument used to explore aspects of ICT use in the third phase of data collection, October 2003

History teaching and ICT

BECTa have asked subject associations to provide an up to date picture of the use and integration of ICT in subject teaching, and to establish what it is that teachers want in terms of support for using ICT in the classroom.

We would be very grateful if you would find a few minutes in the course of the day to fill in this questionnaire in order to provide the basis for a response to BECTa' s request.

In order to minimise the inconvenience and intrusion of the exercise, we have tried to make as many of the questions as possible closed responses.

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1. History teachers' attitude to ICT

Which of the following statements most closely accords with your attitude to the use of ICT in history teaching:

(Please tick or ring the statement which most closely describes your feelings)

a) Negative- I don't think that computers have much to offer teaching and learning in history.

b) Sceptical- computers might be of some use in history teaching and learning, but their importance has been overstated.

c) Open-minded- computers seem to have a much to offer but it remains to be seen whether they will bring major benefits to history teachers and learners.

d) Fairly positive- computers have considerable potential for enhancing teaching and learning in history, but they have to compete alongside several other important priorities in terms of my professional development.

e) Very positive- computers have enormous potential for enhancing teaching and learning in history. I see ICT as one of the most important priorities in terms of improving teaching and learning in history.

f) None of the above.

2. Barriers to the use of ICT in the history classroom

It would be helpful to know if there are factors which you feel have limited your use of ICT in the history classroom, and which were most influential.

Can you put a tick against any of the factors listed below which had the effect of limiting your use of computers in your teaching, **and** prioritise them in order of their influence. (1= most important, 2= next most important, etc)

Difficulties in getting access to computers

Lack of confidence/knowledge of how computers work

Lack of confidence/knowledge of what to *do* with computers in history lessons

Anxiety about classroom management implications of use of computers

Lack of time to plan how to integrate use of computers into your lessons

Pressure to cover curriculum content

You do not believe that computers have much to offer in developing pupils' historical knowledge, skills and understanding

The attitude/approach of teachers in the history department you work in

Concern that the computers might crash/not work

Any other factors?

3. Ways forward for the use of ICT in the history classroom

In what order would you place the following factors in terms of helping to develop the potential of ICT to improve teaching and learning in history:

(1 = Most helpful, 2= next most helpful etc)

Provision of laptop computers for history teachers

Provision of more dedicated time for departmental development of ICT

Provision of more computers in history classrooms

Better access to networked computer rooms

More staff training in ICT

Provision of data projectors/whiteboards for whole class projection facilities

Provision of more published support materials and web based help sites

Other suggestions?

4. Use of ICT as a history teacher

a) How big a contribution does ICT make to your history teaching in terms of:

i) Your preparation of lessons

Substantial Some Little None

ii) Classroom use of ICT

Substantial Some Little None

iii) Assessment and administration activities

Substantial Some Little None

b) In roughly what percentage of lessons do you use computers in your classroom teaching?

Never	Under 1%	1-5%	6-10%	10-20%	20-50%	Over 50%

5. Access to ICT in school history

a) How easy is it to get access to computer rooms for your classes?

Not a problem	fairly easy	reasonable	difficult	very difficult	impossible

b) How easy is it to use computers in designated history teaching rooms?

Not a problem	fairly easy	reasonable	difficult	very difficult	impossible

c) How easy is it for pupils to get internet access in your school?

Not a problem	fairly easy	reasonable	difficult	very difficult	impossible

d) How easy is access to data projectors/whiteboards/large monitors for whole class projection in history lessons?

Not a	fairly easy	reasonable	difficult	very difficult	impossible

problem					

6. Usefulness of ICT support web sites

BECTa are keen to obtain feedback on the usefulness of the web support services which they run. How helpful have you found the following support web sites?

a) 	ICT Advice www.ictadvice.org.uk

V. helpful	Quite helpful	Not much help	Looked at it but not used it	Not looked at it	Not aware of it

b) 	ICT in subject teaching http://www.ncaction.org.uk

V. helpful	Quite helpful	Not much help	Looked at it but not used it	Not looked at it	Not aware of it

c) 	Virtual Teachers Centre www.vtc.ngfl.gov.uk

V. helpful	Quite helpful	Not much help	Looked at it but not used it	Not looked at it	Not aware of it

d) 	Teacher Resource Exchange http://tre.ngfl.gov.uk

V. helpful	Quite helpful	Not much help	Looked at it but not used it	Not looked at it	Not aware of it

e) Are your views on the usefulness of these support sites influenced primarily by:

i) the quality of the resources and advice on them

ii) lack of time to look at the resources and advice on them

iii) not being aware of their existence

iv) Any other factors?

7. Are there examples of effective practice in using ICT in the classroom in school history?

BECTa are keen to secure evidence of specific examples where the classroom use of ICT has benefited teaching and learning in school subjects. Can you think of ONE example where the use of ICT in a history classroom worked well and seemed to have some beneficial influence on teaching and/or learning in history? (If you can't, put 'No', if you can could you briefly describe it/explain what was good about it).

8. Details of respondent

a) Are you a primary or secondary school teacher?

Primary Secondary

d) Do you feel generally confident in your *personal* general use of computers?

Very confident	Quite confident	Not very confident	Lack confidence

e) Do you feel confident in the use of computers in your classroom teaching?

Very confident	Quite confident	Not very confident	Lack confidence

d) Do you have access to a personal computer at home?

Yes No

e) Do you have internet access at home?

Yes No

Appendix 6: From October 2003 survey of history teachers (responses to question 7, Appendix 5)

(Can you think of one example where the use of ICT in a history classroom worked well and seemed to have some beneficial influence on teaching and/or learning in history?)

1	'Positive images of black resistors of/campaigns against the transatlantic slave trade.'
2	'Elizabethan symbolism and pupils' current symbolism using an image of the pupils e.g. Muslim head scarf.'
3	'Using the National Geographic site "Runaway Slave", pupils got to make choices about the story, helped them to think about Harriet Tubman as a real person, not just a story- enjoyed sound effects.'
4	'Investigation of websites for Irish coursework on Bloody Sunday- how accounts differ, source evaluation and assessment.'
5	'No.'
6	No response
7	No response
8	'Pictures from the net.'
9	No response.
10	'Annotating propaganda posters.' Text manipulation/sorting categorising info. Selecting appropriate and relevant information into a powerpoint presentation.'
11	'Powerpoint for AS presentations on Nazi propaganda- involved being aware of relevant propaganda in searching and making a relevant selection.'
12	'No.'
13	'No.'
14	'Showing pictures with anachronisms in them, during a powerpoint presentation, asking pupils to pick them out. Pupils grasped the hard concept very well due to the use of images.'
15	'PPT (powerpoint) on causes of WW1 using analogy of a student house- pupils remember the story for months/years and can easily substitute character names for country names.'
16	'Assessment on the interpretations of evidence on the JFK assassination- lone assassin versus conspiracy statements in a table, colour allocated by students according to the theory they supported. Same topic included a workbook including an evidence log for students to complete and link to Zapruder footage, witness photographs and radio interviews etc.'
17	'Classroom use of ICT- database on census- where large amounts of data were to be handled. Has enabled and facilitated individual research.'
18	'History live by Nelson Thorne and Ben Walsh- brilliant!'
19	'No.'
20	No response.
21	'Using sources on Battle of Naseby- cut and paste exercise.'
22	No response.

23	GCSE American West. Question- What can the internet tell us about Native Americans, research task, find a site, evaluation: how useful is it? How reliable is it?'
24	No response.
25	'Online simulations/lessons- see www.activehistory.co.uk and www.schoolhistory.co.uk'
26	'GCSE year 10 New Deal powerpoint presentation on assessing the New Deal, downloaded form schoolhistory.co.uk.'
27	No response.
28	'Bottom set year 11 history group using Activehistory.co.uk to research League of Nations and work through cartoon analysis and roleplay on that site. They found it very motivational.'
29	No response.
30	No response.
31	'Use of schoolhistory.co.uk- always a wealth of resources for tired teachers and some great ICT lessons for otherwise awkward pupils on a Friday afternoon.'
32	'Use of First World War propaganda posters on smartboard/projector.'
33	'Use of Battle1066.com to look at Bayeux tapestery. Used conventional photos of entire tapestery in classroom to discuss sequence of events. Used ICT lab to look at individual panels in small groups and try to work out what was happening. Pupils reported back findings using a data projector. Students enjoyed looking at things in detail.'
34	'Labelling/manipulation of text images- highlighting key features, categorising etc. It's more effective in terms of attractive presentation (no scruffy bits of paper or frustration at poor handwriting), less fear of making mistakes- they can be deleted and changed without embarrassment.'
35	'Images and history- labelling and analysing portraits of Elizabeth I using powerpoint.'
36	'Yes- editing and re-editing of an extended piece of writing.'
37	No response.

Appendix 7: End of course instrument to explore provision of ICT support for trainees, June 2000

ICT resources in placement school A

It would be helpful if we had some idea about which subject departments were strong and which were not so strong in ICT to help to pair students and schools over the two placements.

Name of School A Ashton.

What central computing facilities does the school have?
(e.g. one IT room with 15 PC's)

one IT room.

How easy was it to gain access to these facilities when required?

Not easy.

Did the History department have any computing facilities specifically for their own use?
e.g. PC's in classroom (networked?) / CD-Roms / subject specific software

No PC's but 15 Apple Macs in one room.

Please ring the letter which best describes the History department:

A. frequent user (most weeks some use of ICT)
(B) occasional user (not most weeks but encountered more than once or twice during the placement)
C. rare user (know of ICT being used at some stage during the year)
D. non-user of ICT (not aware of any departmental use of ICT)

Is ICT integrated into the History department's schemes of work?

A. YES (B) To some extent C. To a limited extent D. Not really

If it is please give brief details...

Did the Link Teacher make any arrangements to support your development in ICT? If so give details

Supported class working in a database

Overall, do you think that the History department and the school as a whole were equipped to support you in reaching the 4/98 standards relating to ICT?

Yes

Appendix 8: Instrument to explore the views of university curriculum tutors on the use of ICT in the second phase of data collection, 2000-01

PGCE history students and ICT: the perspective of university curriculum tutors

1a. How helpful do you find the specification for meeting the 4/98 Standards in ICT and subject teaching (ITT National Curriculum for the use of ICT in subject teaching: Annex B of the 4/98 Standards)?

Very helpful Quite helpful Not much help Unhelpful

1b. Any comments on Annex B?

2a. Your attitude to the use of ICT in history teaching (in terms of its use and potential for improving teaching and learning in school history?)

Which of the following statements most closely accords with your attitude to the use of ICT in history teaching:

a) Negative- I don't think that computers have much to offer teaching and learning in history

b) Sceptical- computers might be of some use in history teaching and learning, but their importance has been overstated

c) Open-minded- computers seem to have a much to offer but it remains to be seen whether they will bring major benefits to history teachers and learners

d) Fairly positive- computers have considerable potential for enhancing teaching and learning in history, but they have to compete alongside several other important priorities in terms of my professional development

e) Very positive- computers have enormous potential for enhancing teaching and learning in history. I see ICT as one of the most important priorities in terms of improving teaching and learning in history.

f) None of the above

2b) Any other comments? (i.e. what seem to you to be the main advantages which ICT apps offer to history teachers and learners?)

3. What are the main things that you are hoping to achieve in the PGCE year with your PGCE students in terms of ICT

4a. In working with your PGCE students, which of the following factors do you feel are most influential in limiting your students' use of ICT in their history teaching? (1 = most influential, 2 = next most influential etc)

Difficulties in getting access to computers on school placement

Lack of confidence/knowledge of how computers work

Lack of confidence/knowledge of what to *do* with computers in history lessons

Anxiety about classroom management implications of use of computers

Lack of time to plan how to integrate use of computers into lessons

Pressure to cover curriculum content

They do not believe that computers have much to offer in developing pupils' historical knowledge, skills and understanding

The attitude/approach of teachers in the history department they work in

Concern that the computers might crash/not work

4b) Any other factors, or comments?

5a) In terms of investment in ICT, in what order would you place the following factors in terms of helping to develop the use of ICT to improve teaching and learning in history: (1 = most important/urgent, 2= next most important etc)

Provision of laptop computers for history teachers and PGCE students

Provision of more dedicated time for departmental development of ICT

Provision of more computers in history classrooms

Better access to networked computer rooms

More staff training in ICT

Provision of large monitors for whole class computer display in history classrooms

5b) Other suggestions or comments?

6. Are there better ways of improving teaching and learning in history than investing in ICT, (spending the money on more books for instance?)

7. Which ICT applications do you feel have the most potential for enhancing the quality of teaching and learning in history. (11 for the most important, 10 for the next most important etc.)

Art/graphics software	
Multimedia authoring/presentation software	
Simulations	
Spreadsheets	
CD-roms	
Databases/datahandling packages	
Internet	
Desktop publishing	
Word processing	
TV/Video	
Voice recognition software	
Any other applications?	

8. In your work with PGCE students, either at the university, or observing students in schools, can you think of any ICT related activities which seemed to work well in terms of improving the quality of teaching and learning in history?

9. "It doesn't really matter whether or not a majority of history teachers use IT in their classrooms. What does matter is that history is part of the curriculum, and that it is taught well." (An assertion made at a recent history workshop, quoted in Dickinson, 1998)

To what extent do you agree with this statement? (Or, how would you respond to this statement?)

10. Any comments on your own experience of using ICT in your teaching sessions?

(Thanks for agreeing to help)