500 ICT TIPS *for* PRIMARY TEACHERS

STEVE HIGGINS,
NICK PACKARD
& PHIL RACE

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Key to Icons

Throughout the book, some tips have icons printed beside them. These icons are intended to help you locate relevant information more quickly, and therefore to ignore irrelevant ideas too. They are also intended to help make the meaning and focus of each tip a little clearer. The icons mean...

Tip is particularly relevant for Early Years.

Tip is particularly relevant for Key Stage 1.

Tip is particularly relevant for Key Stage 2.

A Teaching Point, or something that might suggest one!

A Time Saver. For life both in and out of the classroom.

Our Top Tip. Hopefully the most useful tip on the page!

Introduction

In this book we offer practical suggestions to help you to get into using computers in primary schools. The content of the book is very much based on some of the particular developments which have happened in primary education in England and Wales, where there is a 'National Curriculum' for schools which includes Information Technology as a discrete subject. However, we trust that many of our suggestions will be equally relevant to other parts of the world, where similar conditions exist and where computers are being introduced into primary education in similar ways.

In Britain, the term Information Technology (IT) has recently evolved into Information and Communications Technologies (ICT). In this book we try to use ICT when talking about Information and Communications Technologies generally. When we use IT, it often refers more specifically to England and Wales National Curriculum for Information Technology. We have tried to be consistent in this inconsistency!

The emphasis now seems to be on getting 'connected' and making the best of the information and communications revolution of the late 20th and early 21st Century. We could say that we are seeing two separate and parallel revolutions. One is an information explosion, where the amount of available information on just about everything has increased dramatically, and the range of formats through which this information is available has expanded rapidly. The other is the communications revolution, whereby information of all sorts can be communicated locally, nationally and world-wide by ever more sophisticated electronic means, and with great speed and increasing reliability. Children who are now in primary schools will need to be able to survive and thrive in this new world of information and communications technologies. Already, many of the young of the human species are proving to be more able than most of their predecessors (including parents and teachers) at embracing the effects of this revolution.

In the UK, Government initiatives are driving hard to meet the newly emerging needs associated with the communications and information technology revolution. The Superhighways initiative has been superseded by the National Grid for Learning. It is envisaged that every pupil will have access to e-mail in the first decade of the third millennium. The Virtual Teachers Centre will offer speedy access to a wealth of curriculum resources to teachers. Some people seem to believe we will have computers instead of teachers in the near future. However, such predictions were made decades ago when the first teaching machines, and early forms of open and flexible learning, were introduced, and the value of human beings as resources to facilitate learning has never been eroded in practice and, indeed, has become enhanced.

Our aim in writing this book is to offer support, encouragement and practical ideas to teachers wishing to develop both their personal ICT skills and their teaching skills. Alternatively, to mix metaphors, we hope that some of the ideas in this book will help teachers and IT coordinators to 'get on the bike', or perhaps pedal a little faster, both in terms of tackling new skills and in trying out different approaches for using ICT in the classroom.

It isn't a book that is meant to be read from cover to cover. Elsewhere there is a wealth of scholarly, research-based material about the communications revolution, so in this book we make no attempt to develop arguments on the basis of educational theories, or to promote any one particular approach to addressing rapid change. Rather, we see this book as a 'dip in' text – a quick and accessible alternative source of advice and ideas – and a trigger to help you to take our ideas and develop them into better ones of your own. The suggestions in this book are based on the collective practical experience and accumulated wisdom, including about 15 years of coordinating IT in primary schools (SH and NP), and as much time helping staff to develop and improve their practice, as well as rather more years than any of us care to remember working (and often learning from our own struggling) in the field of ICT in general.

While the whole of this book is intended to be useful to primary teachers in general, Chapters 7, 8 and 9 are written for the particular benefit of those with the responsibility of IT coordinator in their schools. Chapter 10 on 'The Internet' is intended for everyone. Sometimes we repeat ourselves! As you will quickly notice, there are nearer 700 tips in this book than 500, so we trust that you will regard our repeats as being intended to be helpful, so that when a point is important, you can find it in whichever part of the book you are using.

We have also added six appendices to the book. Appendix 1: 'Jargon-busting ICT terms for education' is a table of definitions and explanations of some of the main terms and acronyms you are likely to meet. This table is not to be taken as definitive, and indeed you will spot entries that are intended mainly to make you smile at times! Appendix 2: 'Audit your own ICT skills with quick quiz!' may make you feel better (or worse!). Appendix 3 lists 'Top 20 web sites', but of course this reflects our own opinions, and is current at the time of writing the book. However, we hope you will find them as useful starting points to lead you towards the sites that will prove most helpful to you. Appendix 4: 'Starting points for software' lists some details of suppliers and further web sites. Once more, just treat these as starting points. Likewise, Appendix 5: 'Some British educational acronyms and abbreviations' collects together some of the terms and phrases that are in everyday use in primary schools in England and Wales, but which may need translating for readers for other parts of Britain or the world. We could not resist reflecting in our 'definitions' of some of these terms several of the more popular feelings that primary teachers we know have about them. Appendix 6: 'Further reading'. There is a great deal of information around now, and the most important thing is to seek and find information that you find useful and appropriate for your own needs, and for those of your pupils.

At times, the style of this book is certainly somewhat tongue in cheek! It is definitely intended to be on the side of the teachers, who may sometimes feel that the world is conspiring to make more difficult their mission of helping primary children to learn and develop. However if the tone of our book helps to make the absurd amount of jargon bandied around in the area of ICT more understandable through gentle irony, then so much the better! We hope that most of the wry smiles that it may engender will be accompanied by useful learning points.

Finally, in this age of technology, we don't want to stop just because the book is now in print. We have included details of the address of a web site that we are setting up to get feedback from *you*. If you have comments, criticism or suggestions for the next edition of this book, contact us via this web site, where we hope to maintain the momentum of sharing yet more practical suggestions on the use of ICT in primary education.

Steve Higgins
Nick Packard
Phil Race

December 1998

Chapter 1 Coping with ICT in the Classroom

There are a great many problems associated with teaching Information and Communications Technology in schools. This is especially true in primary classrooms where children require high levels of support and structure to facilitate learning. In addition, so often at present there is only one computer, limited software and limited time actually to teach the skills needed to use the computer. As a result, in many primary classrooms, ICT is reduced to a 'choosing activity' for much of the time. This picture is likely to change very rapidly in the next decade or two but, meanwhile, we offer practical suggestions to help you to make the most of the facilities that you already may have.

In this chapter we offer practical support and ideas for managing and teaching IT effectively and, subsequently, for getting the best out of the time and the equipment available. We have divided our suggestions into the following sections.

1 Setting up an IT area
2 Getting to grips with hardware and software
3 Managing IT work in the classroom
4 Developing self-supporting activities
5 Effective use of support materials
6 Planning appropriate activities for ICT

1

Setting up an IT area

It is important that you make the best of the equipment and resources that you have. There is usually more equipment and software around than is used, and it is worth reflecting on how you can use what you have got more effectively.

1 **Pick a practical space.** If you are setting up a discrete area for IT in a classroom, try to make it self-contained, make sure it is near a mains socket and that it will not distract others. If you are putting a cluster of computers together, try to ensure they are accessible. Aim to make sure children can be left there on their own, but can still be seen (in a wider corridor or in a very central classroom). If possible, make the area chosen close to the IT coordinator's room.

2  **Make sure you can set up a whole class demonstration to introduce new software.** It is very inefficient to teach 16 pairs of pupils to do the same thing 16 times. A brief demonstration to the whole class is more effective, even if it means moving the computer for a session to a different place in the classroom by using a long extension cable, so that all the pupils can see the demonstration clearly.

3 **Make sure the computer does not face a window.** Firstly, direct sunlight on the computer might damage it, or floppy disks. Secondly, more importantly, the glare of the sun on the screen might make it very difficult for children to use. Similarly, make sure chairs and screens are the correct height for good posture.

4 

Put things the children don't need out of the way. While you want to encourage children to develop an understanding of how all this stuff works, we have all heard stories of what can get pushed into floppy disk slots or seen what an enthusiastic four-year-old can do to a diskette! As far as possible, keep the things the children don't need to know about just yet firmly stowed out of sight. Some software only needs a mouse, especially for early years children, so even the keyboard can be hidden away.

5 **Make sure children have access to resources they do need.** Putting work cards, help sheets, overlays and reference CD-ROMs for older children, or even a new telephone socket for Internet access, near to the computer, will help to promote more independent work.

6 **Try to put your computer area where there is good access to display space.** If you are setting up one or maybe two computers in a particular area in your classroom, make sure the displays of pupils' IT work can go next to the computer itself. You could also display prompts or hints to aid independent use.

7 **Use what you have got.** IT in the National Curriculum involves computers, calculators, programmable robots and a whole host of other electronic devices. It's not all high tech, however. Some aspects of the National Curriculum require you to consider wider uses and applications of IT, work that in itself may not involve technology more complex than a paper and pencil.

8 **Investigate what the software you *have* got can do.** Most programs have added features that regular users, and even very experienced users, know nothing about. Some handbooks give a good overview of the capabilities of the software by way of introduction and are worth reading. A flick through the handbook can sometimes point you to new possibilities, too. Remember, though, that handbooks are rarely designed to be read one page at a time and are more suitable for dipping into.

9 **Decide what more you need *now*.** There will be areas of the IT curriculum where you do not have enough equipment, effective programs for what you need or an adequate range of software or hardware (eg, better database program, concept keyboard, programmable robot). Find out urgently what you really need, and make suggestions about how the school could afford to buy it or acquire it.

10 **Nag the headteacher/IT coordinator.** This might be about making the computer secure and permanently in place where you want it in the classroom. Do this to save time spent every day setting up the machines – a major time waster!

11 **Beg, borrow or rescue extra equipment.** Redundant equipment may not offer all the possibilities of the latest Internet-ready multimedia machine. However, many of the skills in the National Curriculum for IT can be developed with older equipment, helping you to make the most of the newer equipment.

12 **Don't go overboard, blinding your pupils with technology.** Make *good* use of a limited range of software and equipment. We suggest one main program per half term for the year group you are teaching. You might have other favourite 'time-fillers' you wish to use from time to time, but do not be fooled into thinking these will help you to develop pupils' IT capability as required in the National Curriculum.

13 **Borrow extra computers or equipment.** Arrange a loan for half a term when you want to focus on developing specific skills, or for an afternoon on a regular basis when another class cannot use it. Many primary schools are now organizing clusters of machines, so that teachers can focus on teaching with them rather than using them as occupiers (albeit worthy ones) for a couple of pupils at a time. Your local IT centre may have extra programmable robots, or arrange a loan and swap with another school so you can teach the skills of using them more efficiently.

14 **Establish your systems.** How much will pupils be responsible for? Can you get basic prompt cards for routine procedures, such as 'Switching On', 'Loading Software', 'Saving Files', 'Printing', and so on?

15 **Get support.** You should not be attempting to join the ICT revolution as a solitary soldier. There should be systems in place in school for learning about the hardware and help sheets for software for teachers, if not for the pupils. Someone, somewhere will have made resources like this, and your local teachers' centre should be able to provide some. The difficult question is – will it be easier to go out and look for the resources or to create them for yourself? (See Appendix 3 for some suggestions.)

2

Getting to grips with hardware and software

There is never enough time to do this properly, but that does not mean that it is OK to ignore the whole issue. Even computer gurus will only be experts in a small area of educational ICT use. The secret is to start by doing a *little*, and doing it regularly, then accepting that you will keep up to date with *some* of what is available.

1 **Borrow the class computer for a holiday.** (*Not* Christmas!) Try to learn *one* new program for use after the holiday. Borrow some children (if you do not have any of the appropriate age) to try out what you have learnt, or so that you can get them to teach you what to do.

2 **Get some staff training.** Over the next few of years in the UK there will be hundreds of millions of pounds spent on ICT training for teachers. Think about what your needs are (you could try the Self-assessment and Needs Analysis Quiz at the back of this book), and try to make sure you get your share of the training on offer, and that what you get matches what *you* need to learn.

3 **Just have a go!** Adults, in general, are more reluctant than children to try things out with computers, in case they get it 'wrong'. Learning from mistakes is often the quickest way to get into new computer software. You will not be able to learn effectively unless you play about and try things out.

4 **Be clear about what you want your pupils to learn.** Identify how you expect their IT capability (in National Curriculum speak) to be developed with the software you have. Then learn how to use just those particular applications. Your school's scheme of work may help here.

5 **Use a backup program.** Make sure you have a backup of each program in school and that you are not using the original disks. Companies which have found ways to prevent copying of disks will usually supply new disks on receipt of any corrupted ones you send them.

6 **Try out programs as you would expect a pupil to.** Find out what happens when you deliberately do something wrong. It will help you to rescue pupils who get stuck when working in the classroom. You may also find features of programs you did not know about. Some programs offer good help on screen, too.

7 **Ask for a student teacher who is good at ICT**. Teacher training institutions must ensure that their students are fully trained in ICT. They should also have access to good quality resources and support. Most of them work in partnership with local schools and they can be a valuable source of help. This will not only help you to keep your knowledge up to date, but will be a chance for your pupils to learn from someone else.

8 **Get your own computer.** This is not a cheap option, but you will need practice at using technology if you wish to develop your own skills. There is no quick route to becoming an ICT expert. Ideally, get the same sort of machine that you will be using in the classroom, so you will be learning skills and procedures which will help you to teach. However, it will also be useful in other areas of teaching if your own machine can perform other tasks, such as reasonable quality desktop publishing if you want to use it to produce resources. Alternatively, you might want to consider how you will get access to the Internet. Some primary schools are now using presentation packages for teachers, so that they can do demonstrations to a whole class with a projector connected to a laptop computer.

9 **Learn to use effective programs.** These are ones which can be used in more than one situation, or which can support a range of tasks and abilities, rather than one which has a limited use. The types of applications which may be suitable include a word processor suitable for the age you teach, a graphing program or a spreadsheet program for Key Stage 2, or a program around which you can develop a range of identified skills or activities.

10 **Find ways to keep up to date.** As computers have become more sophisticated so has the software that they run. This means that new programs tend to be more complex and take longer to learn than older ones. It is debatable whether the newer programs are always more effective at supporting learning! However, if you do not become familiar with newer software as it becomes available, you will have a bigger jump to

get up to date at a later stage. Your IT coordinator or local IT centre should be able to advise you on what to look at. The IT centre may have different versions of popular programs to try out, as may your local teacher training institution. Some companies also have an approval scheme for viewing software. Realistically, this might mean that you try to look at one new program a term.

3

Managing IT work in the classroom

There is no simple prescription for effective management in the classroom, and you will need to review what you do regularly as things change. The increasing emphasis on focused literacy and numeracy sessions is undoubtedly going to squeeze IT time in the short term. However, the targets for pupils' ICT use, especially for electronic mail (e-mail) and the World Wide Web (WWW), means it will have considerable emphasis, too. (In England and Wales, IT is also still in the Office for Standards in Education's (OFSTED's) gaze!)

1 **Use ICT resources as much as you can.** What you can achieve with ICT will depend upon how often, and for how long, pupils in your class have access to the technology. The more equipment or computers pupils have access to, the more time they will use them and the more they will be able to achieve.

2 **Use computers to teach and demonstrate.** It can be difficult to organize a classroom so that large groups of pupils can see the computer. However, it is efficient to introduce a new program to the whole class rather than repeating the introduction lots of times. Some ideas can be more easily demonstrated than explained. When using a word processor for demonstrations, try increasing the font size or the magnification (usually 'view %', for example), to explain 'copy' and 'paste' or to demonstrate sentence level work.

3 **Be critical.** Just because it is on the computer does not necessarily mean it is a good idea. Check that the software or particular activity is actually helping the pupils to achieve the learning outcome you want. Pupils quickly learn how to operate a program and may avoid reading any text on-screen, for example, unless they actually need to read it to progress to the next part of the program. Similarly, in maths drill and practice programs, many of them have an automated feedback prompt, or move pupils on after two or three incorrect responses. Some pupils quickly learn