First Steps in Organising ICT in the Primary Classroom

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Who is this chapter for?

This chapter is intended for all teachers using ICT in a primary school setting, particularly those beginning with computers. It is concerned with finding practical organisational solutions for the hard pressed teacher or teacher trainee, attempting to deliver the National Curriculum for ICT as a discrete subject or in every other subject area.

It could also be read by any teacher who wishes to address ICT in their classroom for the first time. It could be used as part of an INSET day on ICT in the Primary School. The emphasis throughout is on practical advice and activities which could be undertaken in school with relative ease as part of raising the profile of ICT in the school.

How is the chapter organised? What are its objectives?

1. The Background
This first section deals with the background to the computer in the classroom in the UK. It aims to give a broad overview of some of the variables at work which impact on the use of the computer in the primary school classroom, from government policy through to school management structures.

2. ICT in a UK primary school classroom
This second section looks at what you might see in a primary classroom anywhere in the UK in terms of equipment and use of equipment. It aims to address the varied level of provision and the subsequent difficulty of providing one teaching model for ICT in the primary classroom.

3. Strategies for managing ICT in the Primary School classroom
The third section looks at what can be done in terms of introducing the computer to children and managing the learning. It takes as an example, writing with computers in different situations: Low provision, Mixed provision, High provision with added Internet.

1. The Background
We are fortunate to be working in an education system which, on the face of it, is richly resourced for ICT in the Primary Classroom. [1] Furthermore, we have in place legislation which makes it a compulsory subject from the very earliest years in the primary school up to the ages of 16[2]. In addition to this, the NC places ICT in every subject order Thus there is a legal imperative to teach it and the equipment to do so.

And yet…
The evidence, from inspections by OFTSED and others[3] would suggest that the take up and quality of use of computers in our classrooms is actually low. Even in areas where there is rich provision of equipment, and/or Internet connections, it is possible to find little evidence that the computer is fully or usefully integrated into the curriculum.[4]

[1] McKinsey report statistics, 1997
[2] IT in the National Curriculum, 1995
[3] OFSTED report 1997
[4] Potter, J Teachers INSET needs, IOE, 1997

There are a number of inter-related reasons for this. One or more, or indeed all of these, might apply to the particular situation in your school or placement school.

Reasons for low take – up of ICT:

Firstly, the actual age of the computer equipment in classrooms throughout the UK is such that it makes the use in the classroom difficult or impossible. The National Grid for Learning may be poised for a launch, but it will be to a limited number of connectable schools. Age of equipment will disqualify many from all but the slowest sort of connection.[1]

Secondly, there is pressure to deliver new national initiatives in English (the National Literacy Strategy) and in Maths (The National Numeracy Project). ICT has great potential for supporting both of these. As they become more integrated into practice, this potential might be realised. In its earliest stages, training for both of these initiatives has tended not to provide models of teaching and learning with ICT in either the literacy hour or numeracy hour. More confident users of ICT will be providing group activities in both. The majority of teachers will, understandably, be attempting to master the basics of the new initiatives without stopping to consider the use of the computer.

Thirdly, there is a lack of confidence on the part of some teachers. Occasionally, this is characterised as "reluctance". It is certainly true that some teachers find it enormously threatening to be delivering a subject which employs skills which they do not themselves have.

Fourthly, there may be no support structure for teachers in their school situation. At school level, there may be no ICT co-ordinator. Good ICT co-ordinators who attend training, pass it on to colleagues, give generously of their time and knowledge are in short supply. More of this later. At LEA level, it may be that there is no advisory team encouraging good practice and recommending hardware and software. In both these cases there has been a failure of management to see the necessity of putting money into human resources. Too much time and money is spent on hardware and software and not enough on rewarding and promoting human beings to develop and promote excellence in ICT in the classroom.

One other issue to note is the increasing skills gap between teachers and children at home. Year on year, home ownership of computers is increasing. it would be wrong to assume that it was all going into the study bedrooms of middle class students. I have visited primary schools in poorer areas of Inner London where six year old children are experienced users of Word in the latest versions of Microsoft Office through their home computer use. Many of these children are used as surrogate ICT co-ordinators, showing both teachers and children alike how to sort out, for example, printing problems and how to close down Windows properly so that the computer comes back to life the next day.

Finally, if you add poor equipment, innovation overload, lack of confidence and lack of human support structures together, you begin to see why the provision for ICT is not quite what it should be.

What can be done

There is no point in waiting around for computer provision to become better. Educational provision will never match industry's latest standards, although it can and does sometimes come close. In the state sector at least, money is available for a limited range of strategies and the focus of government can shift in a very short space of time from one priority project to

[1] Article in TES about age of equipment

another. Neither is there any point in waiting around for a level playing field across LEAs in the country. On the other hand, simply to throw up our hands in horror and forget ICT is to fail our children.

The Stevenson report, commissioned by Labour in opposition paints a frightening picture of the outcome of ignorance of ICT,

> "…if the next government does not take steps to intensify the use of information and communications technology (ICT) in our schools, a generation of children -and a generation of adults as teachers- will have been put at enormous disadvantage with consequences for the UK that will be difficult to reverse."
> (Stevenson et al, 1997)[1]

Notice how teachers are included alongside their children as being put at a disadvantage.

A situation where equipment is poor and skills are at a premium in the majority of schools calls for particular organisational strategies. Before discussing how this might be achieved, the following section attempts an overview of what you might see in a primary school in the UK in the way of ICT equipment.

2 What will you see in the way of ICT in a primary school classroom?

The following sections offer comments on observations that you can make about three areas which impact strongly on ICT in Primary schools, namely, the hardware, the software and the people therein.

Observation Task 1: The computers and other hardware

This would make a good observational task, early on in your time in the primary school.
Have a look at all the classes, all the places in the school where computers may be in operation. What do you see?
Make a list.
Compare it to the one below:

Ignoring other ICT devices for the moment and focusing on the computer and its related equipment (apologies if I've missed anything out, this is a *broad* overview):

Computers
BBC Micros
Acorns (all ages, A3000, A3020…A7000)
Apple Macs (with enthusiasts, see below)
RM 480Z computers
RM PC 186 computers
RM Turnkey systems
RM WindowBox PCs with Windows (3.1, 3.11, 95 and beyond)

Old PCs donated by businesses with inappropriate software and dangerous hardware
Good condition, renovated PCs donated with guarantees and good software (same source as above)

[1] Stevenson report

PCs donated with inappropriate software and no training (a supply teaching agency or related business might have tried to help out local schools towards the end of a financial year)
PC given by a parent or governor (in any of the states mentioned above)

Networks
Acorn EcoNet round a school, or in a "Computer Room"
(The computer suite is back in fashion again – see below)
RM Net 3.0 with PC 186 stations (same)
PC Networks running Novell or similar with ILS packages running on them[1]
PC Networks with Windows NT Workstation running, for example, RM Connect
Networks of Acorns or Apples supplied by Xemplar
Other PC Networks recently set up by LEAs responding to Connecting the Learning Society. Typically, companies previously only associated with businesses will be bidding to provide such resources.

Printers
Large, robust Dot matrix printers with continuous feed paper very noisy in a classroom but economical (when it isn't jammed)
As above but smaller with a cut sheet feeder[*]
Higher quality inkjets, quieter, cheap to buy but very expensive to maintain. Some popular models will even persuade you that the ink has run out when it hasn't.
Lasers of all shapes and sizes. Quiet, efficient and better value than many people realise.

Portable computers
Pocketbooks, I or II or III
e-Mates
Ancient laptops from Acorn or Apple or RM
Multimedia laptops from a pilot project
All of the above used by children OR teachers OR the headteacher
(Sometimes with a portable printer that it is very difficult to get going)

Internet access
Via a modem (external or internal) of varying speed and quality
Or via an ISDN line
Or via cable
Or via a Local Authority or Higher Education Internet connection
Access will be standalone in the enthusiast's classroom or the library
Or it will be across the whole school (or just in the "Computer Room")

Some Internet access will be unfiltered. Most schools will have opted in to an education provider like BT CampusWorld or RM Internet for Learning which provide a measure of protection from undesirable sites and which provide links to national curriculum content without the need to search the world wide web in the first instance.

Other things
Training monitors
A Roamer, Pixie, Pip or other programmable toy

[1] ILS – Integrated Learning Systems. Tutorial software, mainly core skills, targeted at individuals who use the system and proceed at their own pace. The subject of much debate. You will hear of SuccessMaker (supplied by RM) and Global (from S.I.R software). There are others.

[*] Incidentally if there is bent, yellowed, dust covered paper loaded, you will have an idea about computer use in this classroom. If you find it in every room you could perhaps reckon on the school failing OFSTED in IT.

A Valiant turtle (infra red linked to an Acorn usually)
A Jessops turtle (linked by cable)
Digital cameras
Hand scanners requiring "podules" (Acorn)
Flatbed scanners with cards
Flatbed scanners with parallel printer port connections

There will be more in the cupboard. It will be in varying states of disrepair.

Older equipment
Beware of writing off the capabilities of all but the very oldest equipment. The A3000 computer, for example, has been able to handle mixed text and graphics by drag and drop for many years. PCs with reasonable amounts of memory and later versions of Windows are only now in a position to compete.

Health and Safety
One other issue you may observe is connected to health and safety. Children sitting at a table which is not designed to hold a computer and which could provide a lethal dose of electricity were any small hand to come into contact with certain wires at the back. They may also have inadequate space in which to use the mouse. They may be sitting too low down and craning their necks to look at a display monitor.

Good quality computer trolleys with earthed sockets are available at less than one tenth the cost of a new computer (from e.g Diamik in Leeds). Again, trolleys are often low on the list of budget items when people sit down to plan for computers in schools. They will, however, prevent injury and protect the equipment in the longer term.

Maintenance
Before we leave the general observations on computers in schools and tackle the organisational aspects, it is worthwhile considering the maintenance situation. One of the obstacles faced by teachers in schools is the lack of working equipment. If you add poorly maintained equipment into an equation which already includes reluctance and even fear on the part of some staff members, you have a recipe for poor provision.

It is not uncommon to find teachers in such schools making remarks such as "…I never use the computer, it's never working." There may follow a general nod of agreement. It is hard to think of another subject where a remark like this would go unchallenged, for example, "I never do Maths because there are never any Maths books." It is no longer a tenable position to hold.

Maintenance is a serious issue and a school should have a procedure for dealing with it. Some LEAs offer central support contracts which ensure that the equipment is kept at a decent level of operation for large periods of time. In other LEAs, schools organise their own maintenance contracts. Whether or not this is the case, there should be a procedure for logging defective equipment and regularly servicing it. If there isn't, you need to take action to start logging it yourself and asking awkward questions of senior managers. One question might be "How can I provide the IT entitlement for children in my class when I don't have any working equipment?"

If you cannot find any computer in your classroom, look for any large objects in the corner which may be covered in batik or similar. Some may have plants or even fishtanks on them. List the corner of the fabric and note down what you see.

If you still cannot find any, ask the school caretaker for the key to the AVA cupboard (in some schools computer equipment is still listed under audio visual equipment and stored with the Coomber tape recorders and broken Overhead Projectors). When you track down the cupboard and the key, take a deep breath and enter. You never know what may be lurking there.

Observation task 2: The software

Find the software associated with your age phase in the first instance. Note down particular curriculum content or applicability. Then widen your search to see if there is a similar range available for other classes in the school.

See how the software titles have been arranged.

These are the sorts of things you may see:

Software which came bundled together with the computer. It was pre-loaded and intended to form a basic toolkit of software which could be used as a starting point for the school.

The toolkit is a common concept across platforms and is usually organised to the following labels or similar:

Word or Text Processing
(e.g Talking WriteAway or Textease – PC, Talkwrite or Pendown – Acorn)

Desktop Publishing
(e.g Microsoft Publisher or Creative Writer – PC, Ovation Pro – Acorn)

Controlling and Modelling Software
(e.g Logo or WinLogo – all platforms)

Monitoring or DataLogging Software
(e.g Junior Insight – all platforms)

Image processing or graphics
(e.g Dazzle or First Artist – PC or Acorn)

Data handling
(e.g First Workshop or Information Workshop – PC, Junior Pinpoint – Acorn or PC)

Early Years
(e.g. MyWorld – PC or Acorn)

Multimedia authoring
(e.g Hyperstudio –PC, Acorn or Apple)

Internet
(e.g BT CampusWorld, RM Internet for Learning)

There may be additional CD Roms in use, bought for specific teaching purposes such as Animated Alphabet from Sherston (for early literacy) or The Way Things Work from Dorling Kindersley (for Science, Design & Technology)

If you have braved the AVA cupboard on a previous foray looking for hardware, you may feel tempted to rummage around in the semi-darkness for software. Usually, you will find every era of software, sometimes going back to the days of data cassettes, often taking in 5.75" disks of Cars: Maths in Motion and coming right up to date with unopened, brand new CD ROMS (ordered but never installed). As a general rule of thumb, seek advice before installing unchecked older software on newer machines. Early Windows programs will happily install all sorts of arcane files and folders all over your brand new hard disk, crippling its operation. Seek advice from the ICT co-ordinator or LEA advisor, or manufacturer of your new machine (you may even find the software house is still in existence).

Observation task 3: The human beings

People in the primary school who impact on the organisation and use of ICT. Find out who they are in your particular school situation. Interview them and discover more about their influence on the whole school development for ICT.

Before going on to list some of the things you might have discovered about people who impact upon ICT in your institution, it is worth noting that, in general, far too little attention is paid to the human resources in schools. A great deal of agonising goes on about hardware and software and much, often increasingly successful appealing for money from the school budget for equipment. Sometimes, training is included in such planning and budgeting. Far more rarely is there consideration for who will oversee the management of the resources and their continued development once they are actually in the school. Who will provide the leadership in both the technical and the curriculum sense? And, more significantly for a smaller school perhaps, how will they be remunerated and what will their status be within the school management structure?

The following are the people who impact on ICT in your institution, together with some of the background factors which may be contributing, in the background, to their actions:

ICT Co-ordinators

These, often hard-pressed, individuals will be in one of the following categories:
Unpaid, or
Given one responsibility point, or
Given two responsibility points. or
Working solely on developing ICT

Or, more usually, they will be combining ICT with one or more of Science, Maths, Technology or, less usually, English or other creative arts subject (since ICT is still seen in some quarters as a technical matter on account of all the wires and the electricity involved.)

They may be part of the senior management team or they may be summoned only occasionally to management team meetings to give an account of what is going on at the school in terms of ICT (Such summonses are common when an inspection is looming).

They may be working in total isolation or they may be part of a support network organised by their LEA advisors for ICT.

They could have got the job because:
They weren't listening properly and only found out later why no-one else had their hand up;
They applied and gave sound reasons why ICT should be a part of the curriculum;
They were told to do it by a senior manager or else

They may be acquirers and hoarders of both equipment and skills, believing that knowledge is power and holding it for themselves. They will never share this knowledge with you, for fear that you may go on and do something with it! (This archetype is not unique to the primary school. They can be found widely in secondary schools, local authorities, health services, colleges, higher education and elsewhere)

Or you may be fortunate indeed and find yourself in a school where the ICT co-ordinator is a well trained individual who generously gives of their time and knowledge to support their colleagues. They may keep themselves up to date with current developments and argue their case for funding every year vociferously and successfully (e.g by asking awkward questions along the lines of Why should the ICT budget pay for Science CD ROMS? For paper? For inks???)

Senior managers, heads and deputies
Like teachers (see below) headteachers and senior managers sometimes see ICT as the lowest priority imaginable. There are many pressures on senior managers in schools, particularly in our inner cities, which tend to distract them from ICT. Providing enough teachers for the children, finding money to repair schools which are falling to pieces, finding support for children with special needs and heating older buildings are just some of the practical issues.

Furthermore, with so much pressure on "the basics", curriculum development is often focused on literacy and numeracy initiatives. Strangely, hopefully not for much longer, these initiatives and the managers' understanding of them fail to address the opportunities for ICT to provide valuable activities and support for delivery of the "basics". The two could, indeed should, go hand in hand together.

Many senior managers are fast becoming adept and well trained users of school administration software. As equipment in the classroom begins to approach the office machine in terms of speed and reliability (maybe even supersede it), managers may encourage teachers and children to become involved in administration tasks using ICT. Certainly, there are opportunities for record keeping and assessment and ICT (I am NOT talking about incomprehensible reports for parents automatically generated from National Curriculum statements but about creative electronic profiling and records of achievement such as may be found in, for example, the Newham Primary Toolbox)

The next curriculum review will place ICT as a core subject and a core basic. It is already exempt from the slimming down process. Happily, imaginative management teams have grasped the nettle sooner rather than later and are reaping the benefits.

Teachers
The class teachers themselves impact on the provision of ICT in school. Some of the things that they say reveal much about their own position in relation to it. Remember that unless they have supportive ICT co-ordinators or senior managers, a programme of staff development and working equipment, they may well have given up on ICT.

Here are some things you may hear said in a Primary School by the staff there, together with what it reveals about the nature of ICT in the school:

"You've finished your work now, go and play on the computer"
In this case, the computer is seen as something outside of the work of the classroom. It is used here as a reward (or a sanction for those that never finish their work). While it is important to remember that children need to play to learn and need to learn to be playful on the computer, it should be planned for and it should be high status, with some sense that it what happens is important and will be recorded at some level.

"We used to use it all the time but now it's broken. We haven't switched it on for months…"
In this case, a hard pressed teacher is either hiding behind broken equipment or is totally unsupported. Questions need to be asked urgently about the school's strategy for repair or replacement of equipment. If it is the only class in the school where this situation pertains it is worth considering that the teacher may be at fault for not acting sooner to correct the situation. In which other curriculum area would it be tolerated? (Can you imagine anyone saying that they haven't done any Maths for months because the equipment's broken?) If it is a general problem in all or most classrooms, then the management of the school is to blame. If the school down the road and the one around the corner also have problems of this sort (ancient and unrepaired equipment) then there might also be evidence of an LEA-wide failure to support its schools in high quality ICT provision.

"It's wet playtime…OK, you can go and play on the games on the computer…"
In this case, while there are dangers of veering into the territory of the first statement, it is good to see the equipment used as part of the world of the classroom. You may decide against it in a class where it causes management problems outside of lesson time, where having it in use may generate "disharmony". If it is used, there needs to be a wet play rota for the computer and children need to see that it is fair.

"Ask Forida (or Faisal), (s)he always knows how to do it…"
While giving self esteem to children who are highly computer-literate is important, beware giving the impression that only "expert users" can get anywhere with computers. Beware, also, eating into the class time of the expert child; they also have other work to do and should not be used as a surrogate ICT co-ordinator.

"We hardly ever use the computer because of the literacy hour, the numeracy hour and everything else, there just isn't time…"
This is a familiar sentiment at a time of innovation overload. It is one which many teachers will recognise from their own practice. However, the speaker may also be engaged in avoidance of the issue in the same way as the speaker above, bemoaning the poor level of equipment. Clearly there is a failure to provide models of practice in ICT which support the literacy hour and the numeracy hour. The teacher requires more INSET, from outside or in-

house to be shown ways in which the delivery of these initiatives will be enhanced, not impeded, by the use of high quality software and hardware.

The Children…..

Children are the best source of information about what is going on with IT in the classroom, if you are new to it, or just visiting. They know about the equipment. If it is old, they know which keys stick. They tend to know how to get round the deficiencies of the equipment. Some of them, as in the case of a six year old I encountered recently are surrogate IT co-ordinators, wearily sorting out problems for people in the classroom (including the teacher).

Many children now have access to computers at home. What they say about the computers in school can be quite interesting in this regard. I have overheard young children discussing the relative merits of Word97 over other writing packages, others talking knowledgeably about computer viruses and what can be done about them.

The games playing children, those who have consoles at home of one kind or another often have a robust attitude towards computers of all sorts. They are aware of "cheating" to get to different levels. Sometimes they will indulge in various key presses which may cause havoc with onscreen displays, sometimes they may discover for the class, newer, more efficient ways of doing things.

Whatever the situation, it is always worth listening to what children say about computers and considering and valuing their contributions to the whole class body of knowledge about ICT.

Classroom assistants

Classroom assistants, where available, are a valuable source of knowledge and support about computers in the classroom. Some authorities are already in the business of providing training for classroom assistants in classroom ICT in order to alleviate the burden on class teachers. And training and good communication are the key to working well with classroom assistants.

Parents and Governors

Parents, like children, have a wide range of ability and experience and an even wider range of concerns with ICT.

They may be thinking about a purchase for their child and will often ask about a particular piece of hardware or software. They will assume that you are an individual, fully trained to deal with such enquiries.

Some of their concerns will be around the use of the Internet in your school, how it is organised and so on. They may be hinting at whether or not you have an acceptable use policy and adequate protection for their children from unsuitable material on the world wide web. Governors may raiser many of the same issues with you and the school will be held responsible for the materials which the children may, in all innocence, be accessing if you are not providing access through an education provider or through a filter which you are maintaining yourselves.

Some parents or governors may helpfully try to unload computers on you which their businesses no longer require or which they personally no longer require. Whilst it is an act of great generosity, you will need to consider carefully your acceptance of such an offer. If the equipment is no longer good enough for a small local business, is it good enough for your

children. Most of the exciting software emerging for young children requires good IT and makes heavy use of graphics and sound.

3. Some organisational strategies for using ICT in the Primary Classroom

This section looks at some general principles and follows up with what it may be possible to achieve in terms of children writing with computers. This has been chosen as an example because it is perhaps to most common use of computers in primary schools.

To begin with, here are some general principles:

Whole class introductions
Firstly, on a regular basis and always with new computer programs in the classroom, arrange a whole class session. In a low resource setting i.e. a single computer to a class of thirty children, first bring the computer to the carpet area where it can be seen by everybody. This immediately brings the computer out of its corner and into the world of the classroom. There may, of course, be physical reasons why you cannot do this. If there are, do what you can to overcome them or borrow areas big enough to do it somewhere else in the school. Just getting started with a piece of software should involve the whole class. This does not to be of the same order of time as for the initiatives in literacy and numeracy. Although at the beginning with a new package, when screens look very unfamiliar to the class, it would be worth spending longer on them.

What format should such a whole class session take?
I believe that it should be strictly limited to fifteen minutes two to three times a week. Ideally at the start of a session, morning or afternoon. In my own classroom, with a computer adjacent to the carpet it became a fairly regular feature which involved the children.

What mode of delivery should be adopted?
If the aim is to instruct, but at the same time to allow the computer to come into the world of the classroom more fully, then a question and answer style lends itself to this situation. Definitely not a lecture format. The last thing we need is another forum for promoting the idea that there are experts with all the knowledge.

Allow the children to provide tips for other users. Discuss with them the difficulties that they have overcome in familiarising themselves with the onscreen layout of the particular piece of software.

Ask the children to discover, and then report back on, different ways of doing the same thing.

In a writing program for example, e.g How to make text appear in a different font size or colour
Stress regular, practical instructions by giving a mantra-like tone to them[*]
Question children who don't always jump up and down with the answer (good primary practice, in other words…don't favour the loud over the quiet)
Invite children to contribute to the discussion strictly girl –boy – girl – boy etc.
Do not allow one sex or group of children to dominate
Stress the team building aspects of sharing strategies so that we can all use the computer efficiently and safely

[*] e.g Save Before You Print droned to children day in day out will persuade them that they should indeed save before they print in order to avoid the inevitable heartache which arises when a document attempts to enter the "real world" via a mechanical device.

Involve children in a discussion about safety – monitor position, length of time, seating and so on
Let everyone become an expert…don't always ask the same child who is managing their own Internet business from their bedroom at home
Value what they say even when it is patently wrong (That's a good suggestion but…)

Above all, have a bank of regular class sayings which are published on a class noticeboard near to the computer and which emphasise good practice:
Save Before You Print
(This is perhaps the first and most important thing to have written up in your classroom in -at least- 72 point type.)

What are the benefits of whole class input?
Regular whole class input increases the shared level of knowledge in the classroom about the use of the computer. It increases the overall standard of ICT work and the number of areas for which you can use ICT with some feeling of security.

It will also repay you in terms of stress reduction to have a regular period of whole class instruction in the basics of a particular piece of software. You will reduce the number of times that you have to say the same thing over and over again to groups of two to three children. You will not be followed round the room by children desperate to save or print work which it has taken all morning to complete. They will know by reference to the noticeboard or by questions raised in whole class sessions, how to carry out the most basic tasks.

Becoming independent and increasingly competent in basic ICT skills will engender in the children a sense of responsibility for their work. From an early age, as children progress through the school, they are expected to take on more responsibility for knowing where their equipment is, where their possessions are, where they're going next and so on. Why should ICT be any different? Children can be shown the importance of looking after electronic forms of their work, just as they can the importance of looking after their draft books. They will need to be shown how to save and retrieve their work and the importance of backing up work (All of us need to learn this!).

Children will less inclined to ask e.g how to print, how to save, how to underline, how to centre text, how to make a picture appear etc. if these tasks have been publicly outlined in whole class sessions. There are things that you need to be doing in a busy classroom rather than answering these questions all the time (they will never completely disappear but you will reduce them).

All of these activities allow you and the children to start to think of the computer as more a part of the world of the classroom. More than that, they foster a belief amongst all users in the classroom that they can become competent and confident manipulators of ICT.

The alternative model of instruction, a version of the cascade model, whereby one or two children learn it and teach others over a period of time discreetly while other children get on with the real work allows the more negative messages about ICT to be disseminated. Amongst these more negative messages are:
1) There are ICT experts who know everything and must always be consulted before you do anything.
2) ICT is something that happens in a corner of the room away from the mainstream and is never discussed and nothing to do with the rest of the school day.

Show them that you too are a learner. ICT will be less threatening to you as a teacher if you enter into the situation as a learner alongside them. It is wrong to give children the impression that you or anyone else knows all they need to know about computers. Frustrating as it may be, the truth of the matter is that we are all always learning about ICT. Once one thing is learned you can be sure another parameter will enter the equation. It is OK to make mistakes. If the basic care of the equipment is known and respected, there is not much harm that can be done.

Finally, if it is not obvious within, say, a word processor how to carry out the basic functions, why isn't it? Is it always your fault or theirs? Occasionally the software you use will deliberately obscure the issue. Encourage children to think about software as a tool and to question its ease of use or appropriateness to the task. Sometimes they will need to change the tool to undertake a different task or to refine an existing one. Thinking about software as a tool fosters an idea that they are in control, or will be in control with practice.

Computer rooms
Areas in primary schools which have been networked as a computer lab – or where all computers in the school have been placed obviously allow for more of this direct instruction to take place.

Computer rooms have a place in a school where previously poor practice –or non-existent practice- has been identified, for example, by OFSTED. One of the risks being run in this organisational strategy is of going to far into lecture mode and expanding the initial input to the point where the children get very little of their allotted time actually working at the computer. The other risk is of further divorcing ICT from the business of the classroom.

Ideally, a mixed economy of whole class teaching in a lab in a very directed way would be balanced by some continued input back in the classroom which allowed the children to develop a project over time.

Rotas
Rotas ensure that there is equality of access and of opportunity in the classroom. However, they should not be fixed once and for all at the start of an academic year. ICT skills acquisition is dynamic, always changing. After whole class input, in the beginning of working with a new piece of software or hardware, children need time to practise. Longer rota periods can be gradually shortened as children get more skilled.

Rotas should always be public. They should be large, on the wall, clearly visible so that children can see that there is equality of provision. Older children can be involved in the drawing up and monitoring of time on the system.

With software which has specific content, such as a game or simulation or where the software is of the Drill and Practice sort –such as Integrated Learning Systems, there are fixed, tighter, more specific timetables of use involved. These are monitored by the software itself.

Class Project scale and scope – starting points
Taking the example of writing and looking at all its aspects from a range of perspectives.

The starting point is to look at what is expected in terms of the current National Curriculum and to use the QCA scheme of work (1998) or a school version of it to provide you with the framework.

What does the National Curriculum for IT say about writing with computers?
It says:

"Pupils should be given opportunities to generate and communicate their ideas in different forms, using text, tables, pictures and sounds (KS1)

Pupils should be given opportunities to use IT equipment and software to communicate ideas and information in a variety of forms, incorporating text, graphs, pictures and sound, as appropriate, showing sensitivity to the needs of their audience."
(KS2)

The QCA Scheme of work(1998) provides a map of activities which allow for progression in all areas of ICT throughout key stages one and two. It can be used on its own or as a supplement to a school scheme or as a template for a school scheme. It has been organised into units labelled by year group. Each unit is broken down further with contexts for its operation under headings such as

Where the unit fits in
Technical Vocabulary
Resources
Expectations
Learning Objectives
Possible Teaching Activities
Learning Outcomes
Points to note

The key element for translating this into action in the classroom is how to map the learning objectives into your own particular setting, both in terms of the wider schemes of work in your school and the resources at your disposal. We have discussed ways of understanding the patterns of influence on IT in the school and have noted some solutions in organisational terms for introducing new packages and systems into the classroom. The next step is to situate the work within the given context.

In a school where the only computer is still shared between 30 children, the expectations of the units, such as 2A – Communicating Information Using Text, need not necessarily be lower than in more richly resourced environments. Using the whole class teaching sessions initially to develop basic skills of starting, saving, printing, closing down, these can be refined over time to include sessions which focus on writing skills being developed. If children are secure about where they are saving work and know that they can find it again, the computer will become a tool which they can rely on and feel confident about using much more rapidly.

If all this sounds obvious, consider the situation which can pertain if no direct intervention occurs. Long queues of demotivated children who never seem to "get a turn", copy typing their work and, possibly, subsequently losing it in an environment which does not stress the sometimes unforgiving nature of IT and the need to be precise about locations and filenames.

Whole class writing sessions in lab environments
Some schools have taken the decision to go for a lab environment, (as noted above) where they can no longer sustain smaller numbers of older computers out in the classrooms. As a result, computers have been collected in and used in a group area. The rota question no longer applies at class level. It now becomes an issue for the various managers in the school to manage the equitable provision across classes.

Whole class demonstrations can, and should, still take place. But they need to be a sensible length, enabling the children to make the best use of what may be their only time in the week when they are on the machines. After all, lesson management ought to be easier with no other activities going on other than computing. The teacher can provide more direct input for the children. Where these grouped computers are networked, saving and logging of progress is

even easier. Networking solutions are becoming the norm for schools just beginning to address the issue with recently released funds for ICT development.

There are advantages to working in this way.
The computers can be more easily maintained by IT co-ordinators and by service contractors. There is a slot booked in to the week which must be devoted to IT, raising the prospect of all children gaining their entitlement to IT. Reluctant, non-confident teachers can observe more easily the use of IT and use such a lab for their own professional development.

There are disadvantages to working in this way.
It further perpetuates the concept of IT being outside of the main agenda of the class. Follow-up is very difficult and continuity, such as is required by the curriculum and by the QCA scheme of work, is very much harder to maintain.

There is only one solution which allows for all of the different elements to be satisfied. That is, to have both a lab and classroom connection to a network. Work which has been launched in whole class sessions in a lab setting can be followed up in the world of the classroom on one or two classroom stations. The business of saving and routines for writing with computers can be outlined in the lab. The other elements of the teaching of writing can then be followed up in relation to the rest of the work of the classroom.

Writing in more richly resourced environments – using the Internet

In schools which have much higher levels of ICT provision, the organisational issues are of a different but still significant nature.

Schools looking for uses of the Internet for children's writing will find that they are limited only by the kind of connection that they have. Teachers and children who can compose text in a word processor will find no particular problems with using email packages. The organisational issues presented by, for example, unit 3E, writing email with children at Year 3 include
how to compose off-line (if you do not have a cheap, reliable, fixed connection),
how to sustain motivation and interest when the correspondents do not reply for long periods of time,
what particular forms of writing are appropriate to email,
how to introduce children to the concepts of netiquette

Writing in more richly resourced environments – using portable computers

In schools fortunate enough to have portable computers which are connectable to their desktops, there are opportunities for more creative use of IT, in particular, seeing the portable as an electronic draft book and the desktop as a publishing centre. Children have access to IT from the very beginning of the composition. There is none of the sometimes awkward working from drafts in books which is often seen in school. And, naturally, there is less temptation to use the computer as a typewriter to type up from best copy!

CONCLUSION – FURTHER READING

This chapter has attempted to provide a broad overview of some organisational strategies for ICT in the primary classroom, without going into specific examples of projects. It has attempted to be generic in order to be applicable to teachers struggling to come to terms with an area of the curriculum which impacts so strongly on the classroom environment. It has, furthermore, attempted to break down the notion that expertise around a particular piece of software or hardware is a prerequisite of sound classroom practice. Rather, good use of ICT

in the classroom is about fostering an ethos in which the expertise is jointly shared and used to empower all members of the class.

There are books to which it would be a good idea to turn for some theoretical basis to bringing the computer into the world of the classroom. One of these would be "Computers and the Collaborative Experience of Learning" by Charles Crook (Routledge).

Other essential reading for getting started with computers, and thinking about the organisational aspects of their use would include:

Bennett, R. (1997) Teaching IT at key stage one, Nash Pollock
Chandler, D. (1985) Young Learners and the microcomputer, Open University
Crompton, R. (Ed) (1989) Computers in the primary curriculum, Falmer Press
DfEE (1997) Connecting the Learning Society, DfEE
Mailer, N & Dickson, B (1994) UK School Internet Primer, Koeksuster
Nash, G, Wilson, A & McDougall, R (1997) The Internet Guidebook, Peridot Press
QCA/DfEE (1998) Information Technology - A scheme of work, DfEE
Somekh, B & Davis, N (Eds) (1997)Using IT effectively in teaching & learning, Routledge
Straker, A (1997) Children Using Computers, Nash Pollock

FURTHER READING ON THE WORLD WIDE WEB
Useful websites for organisational ideas for work with children

Virtual Teachers' Centre – Literacy Time
http://www.vtc.ngfl.gov.uk/resource/literacy/index.html
BBC Learning Station
http://www.bbc.co.uk/education/schools/#top
BBC Primary English Guide
http://db.bbc.co.uk/education-webguide
Berit's Best Sites for Children
http://db.cochran.com/li_toc:theoPage.db
Funschool
http://www.funschool.com/
Epals
http://www.epals.com/