



DEVON COUNTY COUNCIL

**Devon County Council  
LEA ICT Strategy for schools  
2003-2006**

## Overview/ vision

Devon has a vision of education that places the use of ICT, which includes digital media technologies, at its core. ICT provides a profound potential to make the taught curriculum significantly more relevant, purposeful, creative and flexible and more widely accessible, supporting all learners at all stages throughout their lives and in ways that best suit their own particular learning style. Within our schools and educational establishments, ICT also presents a genuine opportunity to support all teachers in their planning, teaching and learning.

E-learning is likely to be a major area of growth in coming years. It is about embedding and exploiting technologies in everything we do, and ensuring that ICT is embedded across the curriculum for all subjects and in all pedagogies. E-learning has the power to transform the way we learn, and to bring high quality, accessible learning to everyone - so that every learner can achieve his or her full potential. New technologies are providing unprecedented access to ideas, information, people and organisations throughout the world as well as to cultural exchange and understanding, new ways of personal expression, new ways of getting things done and the removal of national boundaries. For the first time in human existence, the sum of human knowledge is but a button away.

It is also about developing the skills we need for everyday life and work. In the changing world of the knowledge economy, a workforce that has good levels of ICT skills will help to boost this country's productivity and competitiveness. Young people expect to use leading edge technologies at home and at school. The actions proposed here are challenging, and rightly so. We want all children and adults, all teachers and lecturers, all trainers and mentors, to experience the excitement of these new ways of learning and teaching. We want to take that next step forward that will turn the pockets of e-learning excellence we already have into standard features of learning and teaching. It is therefore of paramount importance that:

- the school curriculum reflects tomorrow's world rather than that of yesterday;
- all pupils are included and given opportunities to strive for success;
- all pupils are empowered to develop aspirations for themselves and for others;
- all schools develop effective and genuine partnerships with a wide range of individuals and agencies, including extended school federations, to enrich schools' provision;
- all teachers have access to high quality continuing professional development (CPD) to enable them continually to update their knowledge, skills and understanding of the latest digital technologies.

**Devon's vision is for all of its communities to become e-confident, integrating teachers, pupils, parents and the community into a connected learning community with the school at its heart.**

These viewpoints are shared by the Department for Education and Skills (DfES) in their recent publications covering the Primary Strategy (*Excellence and Enjoyment*), the National Key Stage 3 Strategy and the consultation documents relating to the 14-19 curriculum and the Unified e-learning strategy.

To make this possible, the strategy for development requires the LEA to identify desirable outcomes and to plan ways of reaching these outcomes from the current position.

This document identifies

- the current position;
- the potential impact on learning and the curriculum;
- the implications for teaching and the workforce reform agenda;
- the CPD needed to enable the workforce to meet these demands;
- the improved use of data;
- the infrastructure requirements;
- monitoring and self-evaluation issues.

This document has been written in consultation with the major stakeholders in schools and the LEA. This includes head teachers, teachers, support staff and governors in schools, Devon Curriculum Services (DCS) and other advisory staff, ScoMIS and representatives of the broader local community.

## Where we are now

Devon is a large rural authority with 376 schools and other educational units. Most of the secondary schools are situated in urban areas or small market towns, varying in size from 481 to 2268 pupils. The primary schools are scattered throughout the county, varying in size between 20 and 572 pupils. Although each of the urban areas and market towns has primary schools with pupil numbers at or above the national average, many rural primary schools are both geographically isolated and small. 37 schools, 11.3% of the total, have less than 50 pupils whilst 119 schools, 36.3% of the total, have less than 100 pupils. In this situation, it is likely that there is little ICT expertise amongst the staff and that the issue of rural poverty means that such schools are likely to have a comparatively low proportion of pupils with regular access to ICT outside school. These issues have been recognised by the authority and a number of initiatives have been carried out to address them.

The ICT in Schools standards funding (formerly the National Grid for Learning – NGfL) has been used to support schools in the development of their ICT infrastructure. In the first year of funding (1998-9) each school was provided with at least 5 Ethernet points (one of which was for administrative systems) connected by a router to the Internet via ISDN. Subsequent years' funding has been used to increase the number of computer systems, extend networks and to provide broadband rather than ISDN links. DfES set the following targets for resourcing of ICT; Devon figures are included in the table

Year	DfES target (primary schools)	Devon ratio	Devon best ratio	Devon worst ratio
2002	1:11	1:10.1	1:2.4	1:31.7
2003		1:9.0	1:1.8	1:31.5
2004	1:8	1:7.9	1:1.4	1:24.4
Year	DfES target (secondary schools)	Devon ratio	Devon best ratio	Devon worst ratio
2002	1:7	1:7.3	1:3.6	1:13.2
2003		1:6.3	1:2.9	1:12.8
2004	1:5	1:4.6	1:2.6	1:9.9

Devon is an active member of the South West Grid for Learning (SWGfL). This Regional Broadband Consortium has procured a managed service for schools. All secondary schools and 40% of primary and special schools currently use a broadband service. The installation of broadband facilities into the remaining primary and special schools is scheduled for completion by 2006, in line with the DfES requirement.

It is recognised that meeting the DfES requirements for resourcing schools is not a measure of effectiveness of use. Schools have been required to write ICT development plans that focus on curriculum development and raising standards, both in ICT and in the wider curriculum through the use of ICT for teaching and learning. Templates and other resources for auditing and planning the curriculum have been provided by DCS via the website, and through training courses. At present, most primary schools meet the requirements of the National Curriculum for ICT, although many are still at an early stage with the less accessible areas of modelling and measurement & control. These areas are points of focus for LEA-provided CPD in ICT. The ICT curriculum at KS3 has seen dramatic improvements in 2002-3 as a result of the KS3 National Strategy. Devon has a team of 3 consultants supporting ICT in this Key Stage. Compliance at KS4 has been poor, but the past two years has seen an increase in the number of schools offering certification in ICT for all pupils. In 2003-4, 43% of secondary schools do so, with a further 22% starting at Y10.

NOF training, which will finish in December 2003, has had a variable impact across the authority. The majority of schools chose SWIFT as their Training Provider, usually involving a member of staff as an in-school trainer accredited by SWIFT. The impact of these trainers has been generally positive and it is hoped to continue to use them (together with ASTs) to support staff CPD in coming years.

The authority has been effective in piloting leading-edge aspects of ICT in education. DCS took an innovative step in June 2002, establishing a new grouping of advisers and consultants at the *digital* Media Education Centre (dMEC), to complement the work of the existing ICT advisory team. The purpose of this team is to develop the creative potential of digital media as a learning tool and to encourage teachers and pupils to use digital technologies creatively.

Videoconferencing (VC) has been an area of particular prominence, with work being carried out by the DCS dMEC team. Many schools in England have used a DfES-sponsored publication about videoconferencing: it is available in print and on the web. Devon was successful in bidding for involvement in the "Classroom of the future" initiative. This was sited in a rural area, linking two small primary schools with a small Community College. It includes intensive use of ICT and AV systems as well as meeting Agenda 21 issues of sustainability. Lessons learned from this initiative will be used to inform future developments on rural areas.

The outbreak of Foot and Mouth in 2001 accelerated the development of home-school links using ICT. A number of schools have created systems that allow pupils to access resources on the school network from home, and this will be a key area for development in the next few years. A community primary school near Exeter has successfully created, in partnership with key commercial companies, the Home/School Learning concept (HSL). Students on the school's roll now continue with their current ongoing school work from home at any time of the day, and even during weekends and holidays, via personal computers linked securely with the school. This was one of the first genuine Home/School Learning Channels in England and Wales and is now being extended further to become a Learning Gateway. This school has also been highlighted by NCSL as one of three schools nationally as models for the 'Schools of the Future' project.

The innovative use of ICT in PE has been developed by DCS through the Video-based Learning in PE Project based on the Dartfish video analysis software. In Devon, the project is currently running in 7 schools and has been rolled out nationally in 5 LEAs. Similarly, Devon has a high profile nationally for work in CAD/CAM initiated and developed by DCS.

The LEA provides a service by which schools are provided with support for analysis of performance data, and for using this data for target setting. This is managed by the DCS statistician, phase advisers and school improvement officers. The LEA has implemented the DfES Information Management Strategy (IMS) effectively, making use of a generally satisfactory communications infrastructure; the PLASC returns for 2003 were completed on time. This is managed in Devon by the MIS section in the EAL Directorate, and by ScoMIS.

Technical support has been a difficulty in a scattered rural community. Secondary schools generally have ICT technicians, but most primary schools do not. The authority has encouraged the use of Academic Council-based technicians, with limited success. ScoMIS provides technical support to both administrative and curriculum systems, following the successful tendering operation to procure curriculum computer systems for use in schools.

## **E-learning**

The LEA follows the DfES definition that e-learning is any learning that uses ICT. It identifies three distinct, though mutually linked, aspects to ICT in the curriculum. These are

- the teaching of ICT capability, so that pupils can use the technologies effectively;
- the application of ICT capability so that pupils can use the technologies to enhance knowledge and understanding across the wider curriculum;
- the use of ICT by teachers and learners to access resources, information and tools to support teaching and learning.

The expected growth in e-learning will demand that schools address each of these effectively. E-learning is developing rapidly in some schools, with increasing access to ICT facilities out of school and growing broadband access to the Internet. Schools will need to develop strategies to enable pupils, and the wider community, to have genuine access to 'any time, anywhere' learning that is individualised to meet their personal learning requirements. An effective management structure is needed to plan, monitor and develop these strategies. A DCS adviser, based in the dMEC team, has a brief for monitoring and disseminating good practice in e-learning development.

### **The teaching of ICT capability**

The LEA encourages schools in Devon to address the statutory ICT curriculum by teaching the Programmes of Study for ICT in full, at appropriate levels of challenge and in ways that engage and motivate pupils. Most primary schools choose to use the QCA Schemes of Work for ICT to ensure compliance and challenge, although not all schools have yet fully met the requirements of the Programme of Study. In particular, aspects of the use of ICT to control and monitor are not well developed in many schools.

Secondary schools have largely engaged with the KS3 National Strategy for ICT, which provides support and training for pedagogy as well as well-structured Sample teaching units. Most schools now offer discrete ICT teaching at Key Stage 3, the majority offering the recommended time allocation of an hour a week during KS3.

Teaching of ICT at Key Stage 4 is more variable. About half the secondary schools in Devon offer a certificated course for all pupils, whilst a small number offer no certification in ICT. The LEA recommend that schools offer courses that lead to appropriate certifications such as ICT Key Skills, GCSE, applied GCSE (double award) and GNVQ Intermediate.

### **Use of ICT to support teaching and learning in the broader curriculum**

The National Curriculum requires teachers to make use of ICT in subject teaching in contexts where such use will improve the quality of teaching and learning. The New Opportunities Fund ICT teacher training initiative was designed to address this issue; its impact was variable. Developments in the Primary Strategy, exemplified in the DfES publication *Excellence and Enjoyment*, the KS3 National Strategy and the 14-19 consultation paper all stress the central role of ICT in teaching and learning. The consultation on developing a unified e-learning strategy looks closely at the role of ICT in genuine lifelong learning, and the Standards Fund includes, for 2004/5, a new element to promote hands-on support for teachers using ICT.

A key element of Devon's strategy is therefore to ensure that all teachers see the impact and value of using ICT as a tool for learning in all subjects, at all ages and at all levels of ability and attainment.

**Schools will need to:**

- ensure that they fully comply with the requirements of the National Curriculum Programmes of Study for ICT;
- plan for the use of ICT to support teaching and learning in the curriculum, both to raise standards in the wider curriculum and to consolidate ICT capability;
- ensure that teachers have the competence and confidence to use ICT effectively;
- understand progression in ICT and implement effective strategies for summative assessment and recording these for later use;
- identify opportunities for pupils for whom the use of ICT will aid inclusion (for example, pupils with specific learning difficulties, pupils with English as an additional language);
- set targets for individual pupils and for cohorts in ICT;
- develop effective assessment for learning in ICT;
- develop effective assessment for learning when using ICT;
- identify a subject leader for ICT. In larger schools, there will be a need to consider responsibility for individual Key Stages, or for splitting responsibility for the ICT curriculum and for the use of ICT to support teaching and learning;
- know the levels of ICT accessibility for pupils out of school;
- provide access to e-learning tools such as portals/VLEs for pupils to use from outside school;
- provide access to e-learning tools to support teachers through collaboration and online communities.

**The LEA will** (*some activities may incur a charge*):

- provide support for teaching the ICT curriculum at all Key Stages;
- work with the SWGfL to make available e-Learning tools (Portal initially) to schools;
- work with schools to pilot and evaluate e-Learning tools including VLE/MLE technology;
- develop methods to provide coherent online support to schools;
- encourage the development of online communities e.g. Small Schools;
- develop a broader e-learning strategy;
- identify and promulgate examples of good practice;
- recommend e-Learning resources that have proved successful elsewhere.

**LEA targets:**

- Improvements in pupils' attainment in ICT - by summer 2004, 75% of pupils reaching level 2 at the end of KS1, and 70% reaching level 4 at the end of KS2 (EDP2, 1.5), rising to 80% and 75% respectively by summer 2006
- By summer 2004 75% of pupils reach level 5 and above in teacher assessments at the end of Key Stage 3 (EDP2, 2.3), rising to 85% by summer 2007
- By summer 2004, 35% of pupils attaining National Framework Level 2 accreditation at the end of KS4, rising to 55% by summer 2006 and 60% by summer 2007. (EDP2, 3.3)

## **Continuing professional development (CPD) & human resources**

Provision of appropriate resources and planning for their use in the curriculum will have little or no impact if staff do not feel competent and confident in their use of new technologies. Although initiatives such as NOF ICT teacher training have had some impact, there is a need for ongoing professional development as new technologies become an integral part of the teaching and learning processes. It is essential that the use of new technologies is seen and fully appreciated as being purposeful and genuinely helpful to teaching and learning, in order to encourage staff in schools to apply these technologies successfully.

### **Schools will need to:**

- recognise that CPD in ICT (including digital media technologies) is an ongoing issue for all staff, due to the rapidly changing nature and potential of the technologies for teaching and learning;
- identify new areas of ICT capability that are to be taught and used by teachers and pupils;
- conduct audits of ICT capability for teaching and non-teaching staff;
- plan and implement appropriate CPD for these staff;
- identify ICT elements within staff professional management review process (appraisal);
- create a management structure to tackle issues inherent in the ICT curriculum, resourcing and data management;
- write job descriptions for staff which identify the ICT expectations of their individual roles within the school;
- monitor and update ICT development plans and policies annually.

### **The LEA will** (*some activities may incur a charge*):

- provide a directory of courses for both teaching and non-teaching staff, managers and governors to develop
  - ICT skills using software;
  - ICT capability;
  - teaching the ICT curriculum through QCA tasks, National Strategy units or examination syllabuses;
  - the use of ICT to support teaching and learning in curriculum subjects;
  - management of ICT in schools;
  - technical issues such as network management;
  - creative use of digital media technologies
- provide or procure training through management of Advanced Skills Teachers (ASTs), ICT consultants and other advisory staff;
- provide guidance on roles, responsibilities and management structures in schools;
- provide online resources to aid the audit process;
- explore the support of courses through the use of online communities;
- provide a forum for peer support, through the DCC website or the SWGfL Portal.

### **LEA targets:**

- all staff to be confident and competent in their use of ICT;
- all staff to have access to CPD activities appropriate to their identified ICT needs.

## **Managing & handling data**

Management Information Systems (MIS), along with the data that they hold, are important tools that schools must learn to use in order to provide information on the performance of pupils and staff. MIS systems facilitate the learning cycle, in which the elements of assessment and review are key to reaching targets. Recording data electronically, storing it centrally, and sharing it with colleagues is vital to reducing workloads through ICT.

Systems are becoming available that link MIS to Learning Environments and therefore producing Managed Learning Environments. The DfES has produced an Information Management Strategy (IMS) for use by all education suppliers, users and schools that is designed to maintain a common framework of applications, hardware and staff competencies.

### **Schools will need to:**

- have installed a suitable integrated Management Information System (MIS) that can provide the school with the tools to store and analyse data, transfer data to external organisations (e.g. DfES, QCA) or to other schools and provide the LEA with data in the required format;
- make sure that safeguards are in place to protect information from unauthorised access or loss;
- use software that is able to produce a Common Transfer File (CTF) of pupil information;
- provide a generic school email address for communication;
- provide all appropriate members of staff with the tools necessary to access MIS and data held in the school and that technical support and training of sufficient quantity and quality is available;
- identify staff to input and maintain core pupil/staff, attendance and assessment data;
- establish an “Academic Register” (AR) for the storage and analysis of performance data;
- comply with the needs of Data Protection and the Freedom of Information Act;
- perform a core data collection and checking exercise once a year.

### **The LEA will** *(some activities may incur a charge):*

- provide advice and guidance on available MIS together with technical and training support for implementation and ongoing use;
- provide school level analyses against national, benchmark and similar Devon schools, together with trends over time;
- provide individual pupil progress analyses for individual schools compared with other Devon schools;
- provide performance data to schools about new pupils;
- provide data to support school target setting;
- offer support to schools in the use of assessment data and target setting processes.

### **LEA targets:**

- schools’ business needs are met by the LEA working with suppliers of schools’ MIS resources;
- transfer of data between schools, the LEA and DfES will be optimised to ensure that the burden on schools is kept to a minimum.

## **Infrastructure & resources**

The LEA recognises that schools have autonomous responsibilities for financial planning. However, if schools are to meet DfES targets and to maximise the impact of e-learning, there are certain key issues that must be dealt with. Some of these have been addressed in detail in the DfES publication 'Building Schools for the Future – Managed ICT Infrastructure Service' (March 2004).

### **Schools will need to:**

- allocate funding, from Standards Fund or from other funding streams, to ensure that there are adequate ICT facilities to allow pupils to meet the expectations of the National Curriculum and of e-Learning initiatives;
- ensure that the pupil: computer ratio meets or better any targets set by DfES;
- plan for the renewal of equipment on a rolling life cycle of 3 to 4 years;
- ensure that computers within the school are networked, using technologies appropriate to demand and physical structure of the school, so that all computer systems can communicate with each other and with external systems;
- identify appropriate deployments of ICT resources, both fixed and mobile, so that their use is maximised;
- maintain a fully-licensed software library that meets the needs of the ICT curriculum and provides appropriate resources for supporting teaching & learning in other areas of the curriculum;
- ensure that effective external telecommunications links (with broadband connections replacing ISDN during the period of this strategy) are maintained, adequate to meet the needs of the school;
- provide or procure technical support, at a variety of levels of competence, to ensure that the ICT resources work effectively and facilitate teaching and learning;
- provide resources for staff use, in and out of school, using initiatives such as the 'Laptops for Teachers' schemes and home user licences for staff;
- actively maintain security measures, such as anti-virus software, software updates and firewalls;
- give due attention to government recommended infrastructure developments e.g. internet caching;
- use environmentally-sensitive strategies for disposal of obsolete equipment.

### **The LEA will** (*some activities may incur a charge*):

- the LEA will investigate the central hosting of MIS systems for schools that may want to move to a managed service environment for their administrative ICT
- survey schools each year, to monitor levels of resourcing;
- carry out R & D on new ICT resources, including hardware, networking, peripherals and software;
- tender for turnkey computer systems for primary schools at regular intervals, and facilitate schools' purchase of such systems;
- provide advice and support on networking issues, both internal and external;
- recommend and make available appropriate security software;
- provide technical support for curriculum ICT facilities;
- provide CPD for in-school technicians and support staff;
- provide an up-to-date list of recommended software for curriculum use on the Devon website;
- provide training for users linked to the recommended software packages;
- provide regular newsletters and/or website news to keep schools updated about issues relating to ICT resources;

- provide helpline facilities for schools through telephone systems, email and the Devon website;
- review schools' ICT policies and development plans according to DfES requirements or recommendations;
- maintain active membership of the SWGfL, to procure broadband facilities;
- facilitate e-Learning activities including videoconferencing between schools;
- provide advice and support for environmentally-sensitive strategies for disposal of obsolete equipment.

**LEA targets:**

- All primary schools to meet DfES targets for resourcing of 1 computer per 8 pupils by summer 2004 (EDP2, 1.5)
- All secondary schools meet DfES targets for resourcing of 1 computer per 5 pupils by summer 2004 (EDP2, 2.3, 3.3)
- 55% of primary schools to have a reliable broadband link by summer 2004, rising to 75% by summer 2005 and 100% by summer 2006 (DfES)
- All secondary and special schools to have a reliable broadband link (EDP2, 2.3, 3.3)

## **Monitoring and self evaluation**

Once the ICT resourcing, staff training and the ICT curriculum have been planned and implemented, it is important to monitor its impact. Each school should devise and implement a monitoring and self-evaluation strategy that is appropriate to the size and complexity of the institution.

### **Schools will need to:**

- plan a calendar for self-evaluation in ICT;
- introduce appropriate monitoring strategies such as
  - scrutiny of pupils' work;
  - lesson observations;
  - scrutiny of lesson plans and longer-term planning documents;
  - joint planning of lessons;
  - discussions with pupils;
  - maintaining examples of pupils' work using ICT;
- monitor and update ICT development plans and policies annually;
- consider using an externally-accredited monitoring benchmark, such as NAACEMARK.

### **The LEA will** (*some activities may incur a charge*):

- include monitoring of ICT as part of the school review process;
- provide guidance, support and training on monitoring and self-evaluation strategies;
- promote, and provide or procure assessors for, NAACEMARK as an ICT QA benchmark.

### **LEA targets:**

- ICT is identified as satisfactory or better in 96% of section 10 Ofsted inspections between 2003 and 2006.

## **Glossary of terms and abbreviations used in this document:**

AST	Advanced Skills Teacher: teachers who have been recognised through external assessment as having excellent classroom practice. They are given additional payment and increased non-contact time in order to share their skills and experience with other teachers, within their own school and from other schools
AV	Audio-Visual
BECTa	British Educational Communications and Technology agency: the Government's lead agency for ICT in education
Broadband	Data communications facilities with a bandwidth of at least 2 mb/s
BSF	Building Schools for the Future Programme: a major DfES initiative including details of ICT specifications for building projects in Local Education Partnerships
CAD/CAM	Computer Aided Design/ Computer Aided Manufacture: using ICT in the design and manufacture of artefacts
CPD	Continuing Professional Development:
DCS	Devon Curriculum Services: a business unit within Devon LEA that works with schools to raise standards
DfES	Department for Education and Skills
dMEC	digital Media Education Centre: a team within Devon Curriculum Services
EAL	Education, Arts and Libraries: The Devon County Council Directorate with responsibility for these activities and institutions
EDP	Education Development Plan
HSL	Home School Learning
ICT	Information and Communication Technology
IMS	Information Management Strategy
ISDN	Integrated Services Digital Network: a digital telephone connection that uses digital signals instead of analogue signals to handle the transfer of signalling and speech
LEA	Local Education Authority
MIS	Management Information System
MLE	Managed Learning Environment
NCSL	National College for School Leadership
NGfL	National Grid for Learning
PLASC	Pupil Level Annual School Census: a data collecting activity carried out in January of each year by DfES
QCA	Qualifications and Curriculum Authority: the non-departmental government agency that maintains and develops the National Curriculum and associated assessments, tests and examinations
ScoMIS	A business unit within Devon LEA, which supports managers and staff, in all parts of the Directorate, by the provision of management information and affordable ICT-based Information Systems and infrastructure and to provide comprehensive advice, training and support in the use of IT management systems for schools
SWGfL	South West Grid for Learning: Regional Broadband Consortium for the South West LEAs, which procures a managed broadband service for schools in the region
SWIFT	South West Initiative for Training: a training organisation based at the College of St Mark & St John in Plymouth, working in conjunction with SW LEAs
VC	Videoconferencing
VLE	Virtual learning Environment