UK

Country Report on ICT in Education

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Contact: Vanessa Pittard, Doug Brown, Gavin Dykes, Becta

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1 THE EDUCATION CONTEXT

1.1 EDUCATION REFORM

The Department for Children, Schools and Families (DCSF) focuses on enabling all children and young people to reach their full potential. It builds on the successes in education and children’s services that have happened over the last decade or more and focuses on the challenges that remain. These are: raising standards so that more children and young people reach expected levels, lifting more children out of poverty and re-engaging disaffected young people. In addition to its direct responsibilities, the department leads work across Government to improve outcomes for children, including work on children’s health and child poverty. The progress report “Five Year Strategy for Children and Learners”: maintaining the excellent progress sets out achievements made by the former Department for Education and Skills and identifies priorities for 2009 and beyond. For further information on DCSF priorities, read the Five Year Strategy for Children and Learners: Maintaining the Excellent Progress, DCSF, 2004.

The Department for Innovation, Universities and Skills (DIUS) and the Department for Business, Enterprise and Regulatory Reform (DBERR) were merged by the Prime Minister, Gordon Brown, on 5 June 2009 into a new Department for Business Innovation and Skills (BIS).

This change created a single department committed to building Britain’s future economic strengths. It helps to provide a regulatory environment that encourages enterprise, skilled people, innovation, and world-class science and research. It combined DIUS’s expertise in developing and maintaining world class universities, expanding access to higher education, investing in the UK’s science base and shaping skills policy and innovation through bodies such as the Technology Strategy Board; with BERR’s strengths in shaping the enterprise environment, analysing the varied strengths and needs of British industry, building strategies for industrial strength and expertise in better regulation.

It also puts the UK’s Further Education system and universities closer to the heart of government thinking about preparing for and helping to drive the economic upturn.

New Qualifications and Curriculum Development Agency (QCA)

The Qualifications and Curriculum Authority (QCA www.qca.gov.uk) was set up under the Education Act 1997 to develop and regulate the national curriculum, assessments in schools and qualifications. In 2007 the government decided to set up an independent exams regulator, Ofqual, which has now taken on most of QCA’s regulatory functions. The government introduced legislation in the Apprenticeships, Skills, Children and Learning Bill in May 2009 that made Ofqual a completely separate organisation and transformed QCA into the Qualifications and Curriculum Development Agency (QCDA). QCDA’s role is to develop the curriculum, improve and deliver assessments, and review and reform qualifications, to ensure that everyone can access the knowledge, skills and qualifications they need for life in the 21st century.

New Office of Qualifications and Examinations Regulations (Ofqual)

To separate the regulation of qualifications, examinations and tests in England from the development of the curriculum, the government also introduced legislation in the Apprenticeships, Skills, Children and Learning Bill in May 2009 to make Ofqual directly accountable to parliament rather than to Ministers. Ofqual (www.ofqual.gov.uk/) is responsible for:

- continuing to secure the standards of qualifications and tests
- ensuring that public investment in qualifications provides good value for money
- accrediting existing and new qualifications
- monitoring and reporting on the standards of tests and qualifications
- regulating the awarding body market

1 http://tinyurl.com/3269g6i
1.2 KEY CHALLENGES /PRIORITIES FOR EDUCATION

The Children’s Plan

In 2007 DCSF published the first ever Children’s Plan, a vision for change with the ambition to make England the best place in the world in which children and young people can grow up.

- It sets out clear steps to make every child matter, through five principles:
- government does not bring up children – parents do – so government needs to do more to support parents and families;
- all children have the potential to succeed and should go as far as their talents can take them;
- children and young people need to enjoy their childhood as well as grow up prepared for adult life;
- services need to be shaped by and be responsive to children, young people and families, not simply designed around professional boundaries; and
- it is always better to prevent failure than tackle a crisis later.

In order to give children the best possible start in life, The Children’s Plan built upon the Every Child Matters agenda for children described by the following five elements:

- Be healthy;
- Stay safe;
- Enjoy and achieve;
- Make a positive contribution;
- Achieve economic well being.

The Children’s Plan Goals for 2020 are:

- Enhance children and young people’s wellbeing, particularly at key transition points in their lives
- Child health improved, with the proportion of obese and overweight children reduced to 2000 levels
- Parents satisfied with the information and support they receive
- Every child ready for success in school with at least 90% developing well across all areas of the Early Years Foundation Stage Profile by age 5
- Every child ready for secondary school, with at least 90 per cent achieving at or above the expected level in both English and mathematics by age 11
- Every young person with the skills for adult life and further study with at least 90 per cent achieving the equivalent of five higher level GCSEs by age 19; and at least 70 per cent achieving the equivalent of two A levels by age 19
- All young people participating in positive activities to develop personal and social skills, promote well-being and reduce behaviour that puts them at risk
- Significantly reduce by 2020 the number of young offenders receiving a conviction, reprimand, or final warning for a recordable offence for the first time, with a goal to be set in the Youth Crime Action Plan
- Child poverty halved by 2010 and eradicated by 2020
- Employers satisfied with young people’s readiness for work

An Outcomes Framework matching the Children’s Plan goals against the Every Child Matters outcomes, The DCSF Strategic Objectives and a set of National Indicators and measures can be found online.

World Class Skills

In 2006, Lord Leitch published ‘Prosperity for all in the Global Economy: World Class Skills’ as a review of long-term skills needs. The report set goals for 2020 which, if achieved, would make the UK a world leader in skills. The report set out a far-reaching reform agenda. For details, see the Leitch review of skills, “Prosperity for all in the global economy - world class skills”, 2006.

In July 2007 DIUS (Now BIS) published their response: World Class Skills – Implementing the Leitch Review. The Learning and Skills Improvement Service (LSIS)

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2 http://tinyurl.com/3ahlwx

3 http://tinyurl.com/33b8kxz

4 http://tinyurl.com/4sgg

5 http://tinyurl.com/2xeaww

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has responsibility for the implementation of this plan\(^6\). For further information please refer to:

**Building Schools for the Future (BSF)**

BSF was launched in 2004 with a major capital investment programme to renew or re-furbish all secondary schools buildings. Schools are being rebuilt, re-modelled or upgraded to provide flexible, inclusive, attractive learning environments that teachers want to teach in and pupils want to learn in and provide a 21st century environment.

Partnerships for Schools (PHS)\(^7\) is the organisation responsible for delivering this programme and their key role is to ensure that investment in secondary schools is based on robust educational strategies, that will achieve local transformation. They are also responsible for ensuring that BSF schools and Academies are well designed, built on time at a reasonable cost to the taxpayer, are properly maintained over their lifetime.

### 2. ICT POLICY

#### 2.1. RESPONSIBILITIES

In *England* the Department for Children, Schools and Families (DCSF) School Funding and Technology Unit sponsors a contract managed by Becta on the development of Harnessing Technology (the e-strategy).

Becta (www.becta.org.uk) is a “Non Departmental Public Body” and the Government's key partner in the strategic development and delivery of its information and communications technology (ICT) and e-learning strategy for schools and the learning and skills sectors. Becta has developed the Government’s e-learning strategy delivery plan.

As a UK agency, Becta supports all four UK education departments in their strategic ICT developments, facilitating knowledge transfer among them in order to encourage innovation and improvement, and bring coherence and synergy to UK-wide developments. Becta’s purpose is to apply the power of ICT to support learning, providing strategic leadership on ICT and learning and helping to develop a world-class education system. Becta seeks to guide and coordinate the necessary changes in policy and practice and broker effective partnerships to establish and exploit reliable and sustainable educational technology.

Becta’s remit\(^8\) issued by the Secretary of State for Education and Skills Ed Balls in May 2009 outlines Becta’s role in the Government’s plans for ICT in education.

Acting on this remit, Becta leads the national drive to improve learning through technology. The organisation works with industry to ensure that schools have the right technology for education in place. Becta also supports the education sector to make the best use of technology so that every learner in the UK is able to benefit and achieve the best they can. For further information about Becta, visit the site:

- **In Northern Ireland** the C2k is a government programme for major investment in delivering high quality, sustainable ICT services to all schools, teachers and pupils. It is the largest, single e-learning project in the world, involving 1,280 schools, over 330,000 pupils and 20,000 teachers.

- **In Wales** the National Grid for Learning Cymru (NGfL Cymru, www.nnglf-cymru.org.uk/) is managed by WJEC (previously the Welsh Joint Education Committee, but now a charity owned by the 22 Welsh Local Authorities) on behalf of the Welsh Assembly Government. Its ICT Strategy for Schools “Transforming Schools with ICT” was published in 2008. This interim report sets out the conclusions which have been reached so far by the working group that was established in May 2006 to advise the Welsh Assembly Government on the development of an ICT Strategy for Schools for all learners aged 3-19. In *Scotland*, Learning and Teaching Scotland (LTS - www.ltscotland.org.uk/) is an executive non-departmental public body sponsored by the Scottish Executive Education Department to help review, assess and support developments in learning and

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\(^6\) [http://wcs.excellencegateway.org.uk/](http://wcs.excellencegateway.org.uk/)

\(^7\) [http://www.partnershipsforschools.org.uk/](http://www.partnershipsforschools.org.uk/)

\(^8\) [http://foi.becta.org.uk/display.cfm?resID=40390](http://foi.becta.org.uk/display.cfm?resID=40390)
education, including the use of information and communications technology (ICT).

Due to the educational, cultural and political differences between Scotland and the rest of the UK, the NGfL Scotland initiative was set up by the Scottish Executive Education Department (SEED) in September 1999. Learning and Teaching Scotland manages the NGfL initiative in Scotland, branded ‘Glow’ (www.ltscotland.org.uk/glowscotland/) and the first national intranet for education.

2.2. ICT POLICIES FOR SCHOOLS

On 15 March 2005, the DCSF published its e-strategy "Harnessing Technology": transforming learning and children's services.

The strategy describes the use of digital and interactive technologies to achieve a more personalised approach within all areas of education and children's services. It is an ambitious strategy covering all education sectors. The strategy’s major aim is to prepare the common ground that will bring all our education and children’s services to the critical baseline of being able to use the technology effectively.

The strategy sets out to achieve four overarching objectives:

- transforming teaching, learning and child development, enabling children and learners of all ages to meet their highest expectations
- connecting with hard to reach groups in new ways
- opening up education to partnerships with other organisations
- moving to a new level of efficiency and effectiveness in our delivery.

It is designed to harness technology to meet the needs of children, learners, parents, teachers, careers, employers and all our stakeholders. We are only able to do this if we are clear about what we want as well what we need, and how by using ICT this will be achieved.

For further information, read the Government’s e-strategy, Harnessing Technology: Transforming learning and children’s services, DCSF 2005⁹.

An updated version of the strategy and its implementation plan, was published by Becta in March 2009. It supports more recent national priorities including:

- improving achievement and narrowing attainment gaps,
- engaging disadvantaged and vulnerable children and young people and
- developing the capacity, quality and efficiency of provision.

It identifies the core goals for national partners to work together to achieve:

- greater flexibility and choice among learning options – using technology to offer differentiated curricula and learning experiences which help meet children’s and young people’s needs and preferences
- tailored and responsive assessment – both formative (for example, more immediate feedback on learning, better information about progress) and summative (for example, flexible end-of-stage assessment)
- engaging learning experiences – for learners of all abilities, in all contexts, including children and young people who are hard to reach
- strengthened relationships between families, schools and learners – with an emphasis on the adoption of information systems and use of online tools to improve parental involvement.

These goals are supported by four objectives:

- Technology-confident schools and providers – ensuring that providers progress well towards e-maturity, that the workforce is aware and confident in using technology to improve practice and that

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⁹ http://tinyurl.com/372uukc
teachers demonstrate a wide repertoire of professional skills with technology.

- Engaged and empowered children, young people and families – ensuring that home access entitlement is delivered to all learners, and especially those who are hard to reach and those at risk of digital exclusion, and that technology adds value to family and extended learning, and learners use technology confidently and responsibly to support their learning and access to information.
- Confident system leadership and innovation – ensuring that capital investments embrace a world-class vision of technology, that school leaders understand how technology supports their priorities and innovation is encouraged, with good practice shared and adopted.
- A world-class, joined-up technology infrastructure – ensuring that systems for learning are fully interoperable, that high-quality tailored resources are available to all learners and that the infrastructure is designed for efficiency and sustainability.

**Home Access**

In September 2008 Gordon Brown announced the Government’s aspiration that all school age learners should have access to a computer and connectivity at home. The Home Access programme (announced in 2008 by Jim Knight, Minister of State for Schools and Learners), has a key role in this aspiration and the Harnessing Technology plan. Over the next two years the programme will be targeting the most disadvantaged families in order that their children can have access to appropriate technology to support their learning at home.

**Funding to support Harnessing Technology**

The availability of a single Harnessing Technology grant to schools and local authorities has been an important step in offering flexibility to schools and local authorities in technology investment. The grant is the principal source of central government funding for technology in schools. Between 2008–2011, over £600 million (670 million Euros) is being distributed through this funding mechanism.

**e-safety**

The plan is also designed to ensure every child and young person develops the skills to use technology effectively and responsibly, and that providers evaluate the effectiveness of their systems and teaching in developing and monitoring safe practice. The plan requires, amongst other things, development of the curriculum to reflect the role of technology in society and the future of work.

**Involving Parents**

- Actions to build parents’ understanding of the opportunities and benefits of technology have also been identified. These will, amongst other things:
  - raise awareness of opportunities with technology through the “Next Generation Learning” campaign,
  - encourage parents’ use of schools’ online information,
  - build the role of technology in supporting extended learning and
  - promote take-up of Home Access grants and exploitation of technology to access online services and support learning at home.

‘Harnessing Technology for Next Generation Learning: Children, schools and families implementation plan 2009-2012’

**Digital Britain**

In June 2009, the Government published the Digital Britain Report, as an action plan to secure the UK’s place at the forefront of innovation, investment and quality in the digital and communications industries. The report provides actions and recommendations to promote and protect talent and innovation in our creative industries, to modernise TV and radio frameworks and support local news, and introduces policies to maximise the social and economic benefits from digital technologies.

The report is one of the central policy commitments in the Government’s “Building Britain’s Future” plan.

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10 http://tinyurl.com/3x22v7p
11 http://tinyurl.com/mg3o8b
and draft legislative programme. Digital Britain measures include:

- A three-year National Plan to improve Digital Participation
- Universal access to today's broadband services by 2012
- Next Generation fund for investment in tomorrow's broadband services
- Digital radio upgrade by the end of 2015
- Mobile spectrum liberalisation, enhancing 3G coverage and accelerating Next Generation mobile services
- Robust legal and regulatory framework to combat digital piracy
- Support for public service content partnerships
- A revised digital remit for Channel 4
- Consultation on funding options for national, regional and local news

The report can be found at: on implementing those actions is already ongoing across Government and outside. Following ministerial changes, the implementation plan formally sets out the future governance arrangements12.

**2.3. ICT PRIORITIES**

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12 [http://tinyurl.com/33cgqmd](http://tinyurl.com/33cgqmd)

**2.4. NATIONAL CHARACTERISTICS (OPTIONAL)**

Establishment of the two new government departments addressing education signposts the UK policy approach to education. The Department of Children, Schools and Families makes explicit the links between welfare and education for children, and highlights the importance of family in supporting children’s health, welfare and learning.

The Home Access programme, which provides access to technology and learning through technology, is one outcome of that policy approach.

The steps from the previous Department of Education and Skills through the Department of Innovation, Universities and Skills to the present Business, Innovation and Skills reflect a policy of strengthening the link between post-compulsory education, innovation, business and the economy.

**3. THE CURRICULUM AND ICT**

**3.1. THE CURRICULUM FRAMEWORK**

**England** has a national curriculum.

The two broad aims for the school curriculum are reflected in section 351 of the Education Act 1996, which requires that all maintained schools provide a balanced and broadly based curriculum that:
promotes the spiritual, moral, cultural, mental and physical development of pupils at the school and of society;

prepares pupils at the school for the opportunities, responsibilities and experiences of adult life.

The Act requires the Secretary of State, local authorities and the governing body and school head to take steps to achieve these requirements. The Secretary of State meets his or her responsibilities in this area by providing a national framework that incorporates the national curriculum, religious education and other statutory requirements. This framework is designed to enable all schools to respond effectively to national and local priorities, to meet the individual learning needs of all pupils and to develop a distinctive character and ethos rooted in their local communities.

The four main purposes of the national curriculum are:

• To establish an entitlement
• To establish standards
• To promote continuity and coherence
• To promote public understanding

The curriculum is delivered through four Key Stages, each with statutory subjects and programmes of study leading to measurable attainment targets. There are some additional non-statutory programmes of study for citizenship and personal, social and health education (PSHE)\(^\text{13}\).

National curriculum in Wales

The school curriculum for 3 to 19-year-olds in Wales, implemented from September 2008, established a curriculum for the twenty-first century. It meets the needs of individual learners whilst taking account of the broader needs of Wales. The school curriculum:

• focuses on the learner;
• ensures that appropriate skills development is woven throughout the curriculum;
• offers reduced subject content with an increased focus on skills;
• focuses on continuity and progression 3-19, by building on the Foundation Phase and linking effectively with the 14-19 Learning Pathways programme;
• is flexible;
• supports Government policy, including: bilingualism, Curriculum Cymreig/Wales, Europe and the World, equal opportunities, food and fitness, sustainable development and global citizenship, and the world of work and entrepreneurship;
• continues to deliver a distinctive curriculum that is appropriate for Wales.

The school curriculum comprises the following areas\(^\text{14}\):

• Foundation Phase;
• skills development;
• national curriculum;
• personal and social education;
• sex education;
• careers and the world of work;
• religious education.

In Northern Ireland, the curriculum is similarly delivered through Key Stages, but the emphasis is upon “Areas of Learning” rather than discrete subjects\(^\text{15}\).

In Scotland the curriculum is non-statutory, and so is not dictated by the Government. Responsibility for what is taught rests with local authorities and schools, taking into account national guidelines and advice\(^\text{16}\). However in 2008 ‘Curriculum for Excellence’ was launched, outlining the experiences and outcomes that are an essential component of Scotland’s curriculum and will apply wherever learning is planned. They signpost progression in learning and set challenging standards that will equip young people to meet the challenges of the 21st century. At the Scottish Learning Festival on 23 September 2009, the Scottish Education Secretary Fiona Hyslop announced the publication of the strategic vision and key principles for assessment in Curriculum for Excellence.

3.2. ICT IN THE CURRICULUM

As well as being a defined subject in the national curriculum, ICT is clearly flagged as a skill to be applied in

\(^\text{13}\) http://curriculum.qcda.gov.uk/index.aspx

\(^\text{14}\) http://tinyurl.com/3a8fgqk

\(^\text{15}\) http://www.nicurriculum.org.uk/about/

\(^\text{16}\) http://tinyurl.com/85njl
most other subjects. The national curriculum programmes of study (key stage 1)\(^17\):

- Art and design
- Citizenship (non-statutory programme of study)
- Design and technology
- English
- Geography
- History
- ICT
- Mathematics
- Music
- Physical education
- Science
- Personal, social and health education (non-statutory programme of study)
- Religious education (statutory subject with a non-statutory programme of study)

The national curriculum programmes of study (key stage 2):

- Art and design
- Citizenship (non-statutory programme of study)
- Design and technology
- English
- Geography
- History
- ICT
- Mathematics
- Modern foreign languages (non-statutory programme of study)
- Music
- Physical education
- Science
- Personal, social and health education (non-statutory programme of study)
- Religious education (statutory subject with a non-statutory programme of study)

Becta has produced a set of documents that exemplify a pupil's entitlement to use ICT across the curriculum for primary\(^18\) and secondary subjects\(^19\).

In Further Education (16+), ICT remains more widely used for learning support and independent learning than for classroom delivery, although the more formal approaches are becoming more widespread. ICT is identified as one of the key 'skills for life'.

The ICT Skill for Life Curriculum document, developed by the Qualifications and Curriculum Authority (QCA) for the Department for Education and Skills (DfES) is also available\(^20\).

### 3.3. STUDENTS’ ICT COMPETENCE

During Key Stages 1-3 (key stages = age 5-14) progress in most national curriculum subjects is assessed by the teacher against eight levels.

#### Level 1

Pupils explore information from various sources, showing they know that information exists in different forms. They use ICT to work with text, images and sound to help them share their ideas. They recognise that many everyday devices respond to signals and instructions. They make choices when using such devices to produce different outcomes. They talk about their use of ICT.

#### Level 2

Pupils use ICT to organise and classify information and to present their findings. They enter, save and retrieve work. They use ICT to help them generate, amend and record their work and share their ideas in different forms, including text, tables, images and sound. They plan and give instructions to make things happen and describe the effects. They use ICT to explore what happens in real and imaginary situations. They talk about their experiences of ICT both inside and outside school.

#### Level 3

Pupils use ICT to save information and to find and use appropriate stored information, following straightforward lines of enquiry. They use ICT to generate, develop, organise and present their work. They share

\(^{17}\) National curriculum programmes of study for stages 1 and 2 [http://tinyurl.com/2wunt3h](http://tinyurl.com/2wunt3h), for stage 3 and 4: [http://tinyurl.com/3ssrgw](http://tinyurl.com/3ssrgw)

\(^{18}\) [http://tinyurl.com/365dewv](http://tinyurl.com/365dewv)

\(^{19}\) [http://tinyurl.com/322228](http://tinyurl.com/322228)

\(^{20}\) [http://tinyurl.com/3x4abzg](http://tinyurl.com/3x4abzg)
and exchange their ideas with others. They use sequences of instructions to control devices and achieve specific outcomes. They make appropriate choices when using ICT-based models or simulations to help them find things out and solve problems. They describe their use of ICT and its use outside school.

**Level 4**

Pupils understand the need for care in framing questions when collecting, finding and interrogating information. They interpret their findings, question plausibility and recognise that poor-quality information leads to unreliable results. They add to, amend and combine different forms of information from a variety of sources. They use ICT to present information in different forms and show they are aware of the intended audience and the need for quality in their presentations. They exchange information and ideas with others in a variety of ways, including using email. They use ICT systems to control events in a predetermined manner and to sense physical data. They use ICT-based models and simulations to explore patterns and relationships, and make predictions about the consequences of their decisions. They compare their use of ICT with other methods and with its use outside school.

**Level 5**

Pupils select the information they need for different purposes, check its accuracy and organise it in a form suitable for processing. They use ICT to structure, refine and present information in different forms and styles for specific purposes and audiences. They exchange information and ideas with others in a variety of ways, including using email. They create sequences of instructions to control events, and understand the need to be precise when framing and sequencing instructions. They understand how ICT devices with sensors can be used to monitor and measure external events. They explore the effects of changing the variables in an ICT-based model. They discuss their knowledge and experience of using ICT and their observations of its use outside school. They assess the use of ICT in their work and are able to reflect critically in order to make improvements in subsequent work.

**Level 6**

Pupils develop and refine their work to enhance its quality, using information from a range of sources. Where necessary, they use complex lines of enquiry to test hypotheses. They present their ideas in a variety of ways and show a clear sense of audience. They develop, try out and refine sequences of instructions to monitor, measure and control events, and show efficiency in framing these instructions. They use ICT-based models to make predictions and vary the rules within the models. They assess the validity of these models by comparing their behaviour with information from other sources. They discuss the impact of ICT on society.

**Level 7**

Pupils combine information from a variety of ICT-based and other sources for presentation to different audiences. They identify the advantages and limitations of different information-handling applications. They select and use information systems suited to their work in a variety of contexts, translating enquiries expressed in ordinary language into the form required by the system. They use ICT to measure, record and analyse physical variables and control events. They design ICT-based models and procedures with variables to meet particular needs. They consider the benefits and limitations of ICT tools and information sources and of the results they produce, and they use these results to inform future judgements about the quality of their work. They take part in informed discussions about the use of ICT and its impact on society.

**Level 8**

Pupils independently select appropriate information sources and ICT tools for specific tasks, taking into account ease of use and suitability. They design successful ways to collect and prepare information for processing. They design and implement systems for others to use. When developing systems that respond to events, they make appropriate use of feedback. They take part in informed discussions about the social, economic, ethical and moral issues raised by ICT.

**Exceptional performance**

Pupils evaluate software packages and ICT-based models, analyzing the situations for which they were developed and assessing their efficiency, ease of use and appropriateness. They suggest refinements to existing systems and design, implement and document systems for others to use, predicting some of the consequences that could arise from the use of such systems. When discussing their own and others’ use of
ICT, they use their knowledge and experience of information systems to inform their views on the social, economic, political, legal, ethical and moral issues raised by ICT.

By the age of seven, most children are expected to achieve level 2.

By the age of 11, most children are expected to achieve level 4.

By the age of 14, most pupils are expected to achieve level 5.

### 3.4. ASSESSMENT SCHEME

At key stage 1-3, students’ ICT competence is determined by teacher assessment. At the end of key stage 4 (age 16), assessment is delivered through a range of externally set qualification tests and examinations. There are many ICT-related qualifications, including the following general qualifications:

- Entry level in ICT
- GCSE (General Certificate of Secondary Education) ICT
- GCSE (short course) ICT
- GCSE in applied ICT
- Diploma in Information Technology
- AS (Advanced Supplementary) level ICT
- AS level in applied ICT
- A level ICT
- A level in applied ICT
- AS level computing
- A level computing

### 3.5. ICT BASED ASSESSMENT

QCDA has developed a bank of onscreen assessment tasks designed to be used flexibly by teachers to contribute to assessment for learning in information and communication technology (ICT) at any time during key stage 3. The tasks are taken onscreen by pupils and are automatically marked by a computer. Feedback is available to the pupils and their teacher as soon as the task has been completed. Teachers receive group reports as well as individual reports so that they can more easily plan for progression.

The UK Education support industry also provides online solutions for assessment.

For instance, Edexcel (www.edexcel.com) and its subsidiary Pearson provide e-assessment through downloadable controlled assessment tasks and the ResultsPlus service (www.edexcel.com/resultsplus). This provides insight into exam performance for a range of GCE and GCSE subjects and for functional skills qualifications. For every Edexcel exam, teachers can see how each of their individual students performed, question by question, giving an understanding of how each class is performing in each area of the specification.

City and Guilds (www.cityandguilds.com) is a major provider of UK vocational qualifications, providing more than 500 qualifications in over 28 industries. More than 100 of these are supported by comprehensive on-line tutorials and resources. City and Guilds offers the “Global Online Assessment” (GOLA) system, which is a single testing solution which enables candidates to be tested anytime and anywhere in the world that has a networked computer.

### 3.6. QUALITY ASSURANCE OF THE USE OF ICT IN SCHOOLS

**Ofsted:**

As well as reports on individual schools, the English inspection body, Ofsted, surveys the national picture of the delivery of subjects. The most recent ICT report, “The importance of ICT: information and communication technology in primary and secondary schools, 2005/2008” was published in March 2009.\(^\text{21}\)

**Self Review Framework: (SRF)**\(^\text{22}\)

Becta promotes a self-review framework that offers schools a route for assessing and improving their use of ICT. The framework is free to use via an online tool and is linked to the national standards for ICT. It:

- shows what “good” use of ICT looks like
- benchmarks a school’s progress against other schools
- identifies a schools’ strengths
- produces action plans for improvement.

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\(^{21}\) http://tinyurl.com/blnbb

\(^{22}\) http://tinyurl.com/gppz2
A set of standards summarise different stages of maturity in the way a school might be using technology. By comparing development against these statements it is possible to identify where improvement is needed to achieve best practice.

The framework is divided into eight categories which provide support and challenge:

1. Leadership and management
2. Curriculum
3. Learning and teaching
4. Assessment
5. Professional development
6. Extending opportunities for learning
7. Resources
8. Impact on pupil outcomes

Once a school has reached a certain level on the framework, it has the option to apply for the ICT Mark, a national quality accreditation which celebrates achievement and demonstrates competence to others.

**4. DIGITAL LEARNING RESOURCES AND SERVICE**

**4.1. CONTENT DEVELOPMENT STRATEGIES**

The UK is well served by a vibrant software and content industry. Becta works with the industry to ensure the right technology is in place to improve learning, by developing specifications, tools and procurement schemes. This involves working closely with partners to encourage the provision of high-quality content and to support effective access, selection and exploitation of commercial and non-commercial learning materials.

The document “Promoting an ecosystem that enables the discovery, delivery and sharing of digital learning resources” published in May 2009 describes how Becta will meet the objective of enabling schools in England to gain seamless access to high quality digital learning resources (DLRs) and supporting the sharing of DLRs within user communities.

As a priority, the strategy seeks to provide the most commercially and technically sustainable vision for the education sector such that innovative services offering real value to users may best emerge, evolve and flourish. Underpinning this is the goal to bring about a self supporting, education centric, technology and content ecosystem that can thrive without the need for ongoing government funding.

Becta also manages a number of procurement schemes that provide a best-value purchasing route for educational organisations. Framework agreements and accreditation schemes are placed via the formal Official Journal of the European Union (OJEU) process.

In November 2008, Becta, in conjunction with the Office for Government Commerce (OGC - http://www.ogc.gov.uk/) put in place a framework agreement for software purchases. 12 suppliers met the conditions to participate in the supply of software, including operating systems, office productivity applications, management information systems (MIS), network management software and data management tools. Supporting services, including procurement advice, technical support and relevant training, are also covered under the agreement. Suppliers can provide a range of proprietary and open source solutions. Becta also welcomed changes by Microsoft to its licensing agreements and the interoperability of its software.

**4.2. E-CONTENT DEVELOPMENT**

Regional Broadband Consortia provide a service by developing and licensing software and DLRs for use by schools. Working together, they form the “National Education Network” (http://www.nen.gov.uk/).

JISC (http://www.jisc.ac.uk/) - funded by the UK HE and FE funding bodies supports the creation of, and access to, digital content for use in teaching, learning and research through digitisation and content licensing.

JISC Collections (www.jisccollections.ac.uk) negotiates with digital content owners and publishers of resources on behalf of UK further and higher education.

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23 http://tinyurl.com/ybbw03
24 http://tinyurl.com/2u3sd5k
25 http://tinyurl.com/2w2oeff
26 http://tinyurl.com/376wvwr
The BBC, which is a public service broadcaster funded through a license fee paid by UK householders, offers a range of content available free to schools, available through their website at: [www.bbc.co.uk/schools](http://www.bbc.co.uk/schools)

Channel 4 ([www.channel4learning.com](http://www.channel4learning.com)) is a commercially self-funded and publicly owned public service broadcaster. Through its 4 Learning service it provides a range of free on-line interactive learning resources and media clips (clipbank) supporting a range of C4 televised outputs, as well as a range of charged-for resources and materials.

Teachers’ TV ([www.teachers.tv](http://www.teachers.tv)) supports the professional development of the education workforce, through provision of video, practical resources and an online community. Offering instant access to up to date professional development videos and resources, practical tips, lesson ideas and classroom resources and latest information with content covering the latest developments in the education agenda, it is also transmitted on several free to air TV services such as Sky, Virgin Media, Freesat and Freeview and, most recently, through iTunes U.

### 4.3. USER - GENERATED CONTENT

There are a number of independent content sharing initiatives active in the UK. Samples of these are described here:

The national digital resource bank is a bank of copyright cleared, digital teaching and learning resources that have been mapped and tagged and made suitable for use with learning platforms. The resources in the bank range from tutorials, activities, and interactive games covering entire courses to individual photographs, audio clips and worksheets. Membership of the national digital resource bank is via a local authority membership and involves a contribution of digital teaching and learning resources to add to the bank and an equal share in the costs of running the bank. Designed and promoted by the North West Learning Grid ([http://www.nwlg.org/](http://www.nwlg.org/))

TES - The resource section of [www.tes.co.uk](http://www.tes.co.uk) hosts a library of teaching materials including lesson plans, videos, presentations, games, puzzles, quizzes, worksheets and tutorials all created and uploaded by teachers from the TES community.

ICTopus ([www.ictopus.org.uk](http://www.ictopus.org.uk)) - ICT online primary user support) is a free support service for primary education.

Primary School Teaching is a social networking and resource sharing site and a platform for sharing and ranking teaching resources and ideas. It allows teachers to communicate effectively in a collaborative environment ([http://primaryschoolteaching.co.uk](http://primaryschoolteaching.co.uk)).

Open Source Schools is a community of people who have experience of open source software in schools, and those who are just getting started.

### 4.4. WEB 2.0

While appropriating Web 2.0 ideas into education seems to have face-value appeal, there has been little research into the benefits of doing so, the extent to which this is already happening and the barriers and issues to implementation. In order to address some of these gaps, Becta commissioned the University of Nottingham in conjunction with London Knowledge Lab and Manchester Metropolitan University to research Web 2.0 technologies for learning at Key Stages 3 and 4.

The purpose of this research was to help shape Becta’s own thinking and inform policymakers, schools and local authorities on the potential benefits of Web 2.0 technologies and how their use can be effectively and safely realised.

Five reports were produced:

- Report 1: The current landscape - opportunities, challenges and tensions (May 2008)
- Report 2: Learners' use of Web 2.0 technologies in and out of school in Key Stages 3 and 4 (June 2008)
- Report 4: E-safety issues in using Web 2.0 (September 2008)

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28 [http://tinyurl.com/cf6mgc](http://tinyurl.com/cf6mgc)
4.5. CONTENT SHARING

Please see section 4.2 and 4.3 above which describe a range of resources, which are all freely available.

Most resources generated by the British Broadcasting Corporation (BBC) are published freely to schools and are used widely, without limits to other countries. For instance the BBC Bitesize collection of revision materials is used effectively in a number of other countries (www.bbc.co.uk/schools/gcsebitesize).

In addition, all Becta’s material, including substantial digital video resources are also available without limit.

4.6. LEARNING PLATFORMS

2008 was a target date for the implementation of learning platforms and provision of personalised learning spaces, set by the ‘Harnessing Technology’ e-strategy in 2005. The ‘Harnessing Technology Schools Survey’ in 200829 identified that although the use of learning platforms was increasing, overall only three-fifths of secondary school respondents had access to a learning platform, compared with just under one-fifth of primary school respondents and one-third of special school respondents.

The most common use for a learning platform, confirmed by both ICT co-ordinators and teachers, is as a repository for documents for learning and teaching (particularly learning resources for learners). Just under a quarter of teachers said that they uploaded and stored digital learning resources at least once a week (and this proportion applied in each of the three school sectors).

Home access for teachers via a learning platform is increasing. Compared with 2007, an increased proportion of teachers reported that they could access their schools’ networks from home, but the increase was small for primary schools. The proportion of secondary school respondents able to take advantage of home access had risen from 27 per cent in 2007 to 40 per cent in 2008; in primary schools, 8 per cent of teachers said that they had home access compared with 6 per cent in 2007. Becta has identified and published a number of case studies of use of learning platform30.

5. TEACHER EDUCATION FOR ICT

5.1. ICT COMPETENCE TARGETS

Although no specific ICT competence targets are set for UK teachers, it is recognised that ICT skills are an essential part of the 21st century teacher’s toolkit, and are necessary if a teacher is to carry out the full range of professional duties required.

As part of the professional standards for teachers, all qualified teachers are required to know how to use skills in literacy, numeracy and ICT to support their teaching and wider professional activities and also how to design opportunities for learners to develop their literacy, numeracy, ICT and thinking and learning skills appropriate within their phase and context31.

5.2. ASSESSMENT SCHEMES

The school teachers performance management scheme provides methods for assessing ICT Competence, through discussion, planning and objective setting and classroom observation. In some cases a teacher’s salary may depend upon satisfactory demonstration of competence32.

Many teachers undergo ECDL training and assessment33. Some follow the European Pedagogical ICT licence in the UK (www.epict.co.uk).

5.3. ICT IN TEACHER EDUCATION

ICT is fully integrated into initial teacher training, through both undergraduate and post graduate

29 The complete survey report, including the data identifying which platforms are used, is available at http://tinyurl.com/35tu9sx
30 http://tinyurl.com/3krftu
31 http://tinyurl.com/3375z2n
32 http://tinyurl.com/39dez5v
33 http://tinyurl.com/5rbewe
courses and is specifically included in three of the compulsory standards for qualified teacher status:

- know how to use skills in literacy, numeracy and ICT to support their teaching and wider professional activities.
- design opportunities for learners to develop their literacy, numeracy and ICT skills.
- use a range of teaching strategies and resources, including e-learning, taking practical account of diversity and promoting equality and inclusion.

Most teacher trainers will also advance the argument that as a professional skill the application of ICT forms a natural part of most other standards eg:

- communicate effectively with children, young people, colleagues, parents and carers.
- have a commitment to collaboration and cooperative working.
- have a knowledge and understanding of a range of teaching, learning and behaviour management strategies and know how to use and adapt them, including how to personalise learning and provide opportunities for all learners to achieve their potential.
- know how to make effective personalised provision for those they teach, including those for whom English is an additional language or who have special educational needs or disabilities, and how to take practical account of diversity and promote equality and inclusion in their teaching.

Training provision is determined and assessed by the individual providers and varies from course to course, but is subject to examination by Ofsted and moderation from External Examiners.

To achieve Qualified Teacher Status (QTS), teachers in training must also pass an ICT skills test. The test covers the core skills that teachers need to fulfil their wider professional role in schools, rather than the subject knowledge required for teaching. Test questions are set in the context of a professional role as a teacher. This is to ensure all teachers are competent in ICT, regardless of their specialism. In-service teacher education in the use of ICT is not compulsory, but is often a major component of a school’s development plan.

Training is delivered in many different ways. The Open University has been awarded a contract by the government to deliver a programme of ICT training courses for teachers in schools (including special schools) and sixth-form colleges in England. It has been created to “support a step change in the quality of ICT teaching in English schools”. The programme will run from January 2010 until March 2011 but may be continued until 2014.

Most Local Authorities (LAs) have teams of school improvement /development officers/ consultants/ advisers who provide training at a variety of levels, both school based and centre based.

Some LAs have “City Learning Centres” who provide support and teacher training.

Most professional associations and teacher unions also have a professional development remit from their members.

**Naace** (The ICT Association, [www.naace.org](http://www.naace.org)) hosts an annual conference and regular one-off CPD Events. Other Subject associations (eg Science, Maths, Geography) perform similar functions and have been supported by Government and Becta in the past to develop appropriate ICT training resources.

There are a number of independent training organisations and individual consultants that offer their services to schools, whilst most commercial companies who provide hardware/software/content for schools include a package of appropriate training in the cost.

There are also a growing number of ‘Teachmeet’ sessions, where teachers and enthusiasts set up their own ‘unconference’ to share and exchange ‘cool’ practice ([www.teachmeet.org.uk](http://www.teachmeet.org.uk)).

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35 [http://tinyurl.com/2wyldu5](http://tinyurl.com/2wyldu5)
36 [www.ase.org.uk](http://www.ase.org.uk)
37 [www.m-a.org.uk/isp/index.jsp](http://www.m-a.org.uk/isp/index.jsp) or [www.atm.org.uk/](http://www.atm.org.uk/)
38 [www.geography.org.uk](http://www.geography.org.uk)
5.4. TRAINING THE TEACHER TRAINERS

There is no formalised system of training teacher trainers. Teacher training institutions appoint those that have the necessary experience and talent to perform the role.

However, The Training and Development Agency for Schools (TDA) encourages and supports others to ensure that appropriate resources and development programmes are in place. One such programme supported the Association for Information Technology in Teacher Education (ITTE: www.itte.org.uk) to develop materials to help newly appointed ICT Tutors. Access to the resources is via registration at: www.ict-tutors.co.uk.

5.5. INCENTIVES

The promotion of ICT in schools has been a substantial priority for UK government since the early 1980s, and has attracted considerable funding through a variety of schemes and programmes39. Over the years this has included support for hardware and software development and purchase, specific schemes for training and support for teachers and school leaders, rolling out broadband to all schools and more recently promoting managed services, learning platforms and home access.

But it is not just about teachers being motivated. Becta’s Next Generation Learning campaign is aimed at parents or carers, employers and learners. It is intended to raise their awareness of the benefits of the use of technology in education and to drive greater demand.

The campaign highlights the Next Generation Learning Charter as the means by which schools can commit to becoming ready for “Next Generation Learning”. In addition it demonstrates how greater engagement with parents or carers can increase a learner’s potential, how effective use of technology can improve schools and colleges, and how to ensure children are safe online.

39 www.becta.org.uk/nextgenerationlearning