

July 2008

Becta leading
next generation
learning

Harnessing Technology: Next Generation Learning

2008–14



On behalf of



department for
children, schools and families

Department for
**Innovation,
Universities &
Skills**

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Ministerial Foreword



Jim Knight MP
Minister for Schools and Learners,
Department for Children, Schools and Families

It is three years since we published *Harnessing Technology: Transforming Learning and Children's Services*, setting out our plans for utilising information and communications technologies across our sector. Much has happened in that time. Real progress is being made and we are one of the leading countries in the world in the use of technology for learning; at least £10 billion has been invested since 1999. Many schools, colleges, universities and training providers are using technology in innovative ways to raise standards and improve learning. Critically, learners are making use of technology to support flexible learning stimulated by their personal use of technology.

There is a significant agenda for change for the education and skills system over the coming years. For our country to compete in the future we need to significantly improve our learning, upgrade our skills and develop our knowledge and understanding. Both the Department for Children, Schools and Families (DCSF) and the Department for Innovation, Universities and Skills (DIUS) see technology as a vital tool to help achieve our ambitions as set out in the Children's Plan, *World Class Skills and Higher Education at Work – High Skills: High Value*. We need to ensure providers and learners use technology well in supporting these ambitions.



Bill Rammell MP
Minister for Lifelong Learning, Further and Higher Education,
Department for Innovation, Universities and Skills

Developments in technology continue to bring new opportunities. The ways we use it at home, on the move, at work, and for leisure are always expanding and make real differences to our lives. Technology has – and will always have – huge potential to change things for the better. Equally the risks it creates have grown too and we need to make sure that we guard against these.

We therefore asked Becta to update the strategy to reflect these changes and to address the major challenges we face across the system. Both our Departments see the strong need for a strategy which supports learners of all ages and in all sectors as they move from one part of the education and skills system to another. Technology has a central role to play in enabling services to be more innovative, responsive and coherent, in ways which would not be practicable without the opportunities technology offers.

This strategy is the outcome of an extensive dialogue. We commend it to you. It sets out a vision for where we are going and clearly shows how working in partnership will create a system that is confident in its use of technology. Learners of all ages need the chance to use technology well to support their learning. In some cases this learning is an investment for the future; in others it is more informal; but importantly it can lead to greater productivity and prosperity, personal fulfillment, and a stronger community and a fairer society. In many ways learners are leading the way in using technology and we need to listen to them. They are entitled to the best we can offer them and we really do need a world-class approach if we are to compete as a country for the future.

So none of us can ignore technology now – it is part of the learner’s world and is therefore a fundamental part of our world. Becta is tasked with leading and implementing this strategy, but it is a challenge to all of our delivery partners across the sector, as well as to Government. We look forward to seeing it develop over the coming years.

Jim Knight MP

A handwritten signature in blue ink, appearing to read 'Jim Knight', with a stylized flourish at the end.

Bill Rammell MP

A handwritten signature in blue ink, appearing to read 'Bill Rammell', written in a clear, legible cursive style.

Preface



Andrew Pinder
Chairman, Becta

Ministers have asked Becta to review and refresh the *Harnessing Technology Strategy* to ensure that it is aligned with the needs of learners of all ages, parents and employers, and that it meets the challenges facing us today and in the future.

In reviewing this strategy we carried out an extensive and stimulating series of events and seminars during the autumn of 2007 involving nearly 2,000 experts, policy makers and practitioners. These generated a wealth of information on the changing environment and much good advice on the development of the strategy. We have considered this carefully in the light of the needs which flow from the recently published Children's Plan and DIUS strategies for skills development.



Stephen Crowne
Chief Executive, Becta

The role of technology to support improvements to learning across the system remains central, but now the context has broadened. Children and their families are increasingly at the centre of a wide range of connected services and there is a recognised need for work-related skills and more HE graduates to enhance national competitiveness and innovation.

Technology is increasingly used in other sectors to provide personalised services. Learners of all ages use technology for informal learning, recreation and entertainment. This is matched by rising expectations from learners, parents and employers to make good use of technology to support education and training. Achieving a modern world-class education and skills system, embracing schools, colleges and providers in the learning and skills sector, and higher education, is essential to ensuring the UK's global competitiveness. Technology is a key enabler for that development.



Whilst changes have taken place, learners across all sectors do not experience a consistent quality of technology-supported learning and the system as a whole needs to better exploit new ways of working to meet future needs. We need a step-change in the way we apply technology, so it becomes an integral tool in supporting and improving key processes in education.

This can only be achieved by securing a **technologically confident education and skills system** where all participants have a good and self-improving capability with technology. We set out an approach, led by Becta, for delivering this through the co-ordinated work of a wide set of national and local partners.

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The system-wide framework outlined here will provide the basis for specific sector implementation plans. In addition to building this broad capability, these will be informed by five important cross-sector themes.

- Promoting a technology-related **learner entitlement**, and working to close the gap for disadvantaged learners to enable all learners to access and use technology effectively, safely and purposefully in support of their learning.
- Putting in place universal access to powerful learning tools, content and support for **family and informal learning**.
- Helping to secure better teaching by fully exploiting the benefits of technology to provide **professional tools and support for teaching**.
- **Mobilising leadership** at all levels of the system through nationally recognised leadership networks supporting innovation and knowledge transfer.
- Developing a fit-for-purpose system-wide national digital infrastructure that supports **personal ownership and environmental sustainability**.

We fully recognise that this is a high-level strategic plan and it needs to be turned into reality through the actions of Becta and its partners, including those at a local level. We will work with our partners to develop sector-based implementation plans. Local leaders are natural and important allies for the further development of the strategy within each local context, and over the next year we will work with them to identify how this strategy can be used to support local plans.

We look forward to your response to our revised strategy. We welcome the challenge of delivering it on behalf of Government and of ensuring that every learner is supported by the power of technology to transform their learning and achievement.

Section 1: Introduction

Background

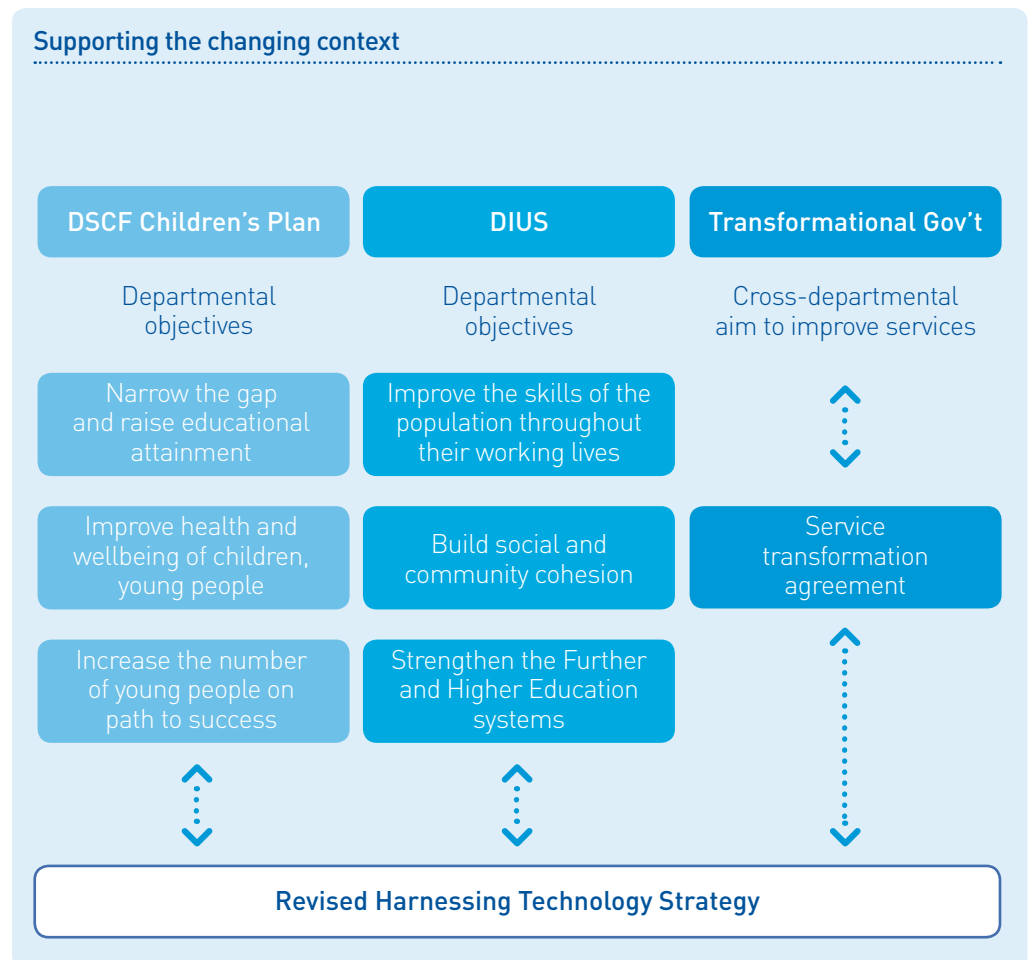
1. In March 2005 the Government published *Harnessing Technology* as a system-wide strategy for technology in education and skills. It identified four key objectives for the use of technology within the education system, to:
 - transform teaching and learning
 - engage 'hard to reach' learners
 - build an open, accessible, system to improve personalised support and choice
 - achieve greater efficiency and effectiveness.
2. Three years on, much has been achieved and much has changed in the education and skills system and in the ways learners of all ages use technology. In many aspects of life outside education, technology has revolutionised the way we communicate, collaborate and do business. Major advances supported by technology have taken place in public services such as health care. Information and communication technologies are now fast, cheap, easy to use, widely available, increasingly mobile, personal, and above all, powerful.
3. These trends reinforce the need for a continuing system-wide approach to technology use in education, skills and children's services. We now need to make sure that technology is used more systematically to help improve the quality of provision and improve outcomes for learners of all ages. Leaders in the education and skills system now require a good understanding of how technology can help improve outcomes, solve problems and improve efficiency. Our goal is to ensure technology enables the development of a productive and 'agile' education and skills system, with self-improving organisations and a workforce that is confident and capable in its use of technology.

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The changing policy context and the aims of the strategy

4. Since *Harnessing Technology* was first published, two new Departments, the Department for Children, Schools and Families (DCSF) and the Department for Innovation, Universities and Skills (DIUS) have been formed. This has led to major policy developments including the DCSF Children’s Plan and *World Class Skills*, which set out the Government’s agenda and priorities over the coming years.
5. The DCSF Children’s Plan presents DCSF’s ambition to put the child and the family at the centre of a wide range of connected and personalised services, while DIUS policies and strategies focus on the need for work-related skills, innovation and social cohesion to enhance national competitiveness. Both Departments recognise that using technology well is central to the achievement of these ambitions.



6. The *Harnessing Technology Strategy* retains a focus on learners and learning but recognises the significant changes that the two Departments are making to the context in which learners work and develop. The strategy focuses on ensuring that technology underpins Government's overall ambitions for learners, whatever their context – the home, school, college, the workplace, on the move, in the community, at university – and whether their learning is formal or informal. Quite simply, the aims of the *Harnessing Technology Strategy* are the objectives of the two Departments (the first six outlined below are from the DCSF and the latter three are from DIUS), with the core focus on the contribution technology can make to improving learning.

Securing the well-being and health of children and young people

7. Research (Ofcom, *Media Literacy Audit*, 2008) shows that children's use of key media including the TV, games consoles and the internet are well established by the age of five; it also found that the number of households using safety provisions has declined. Young people, their parents and carers, schools, colleges, and local authorities need support in getting the most from digital technologies whilst safeguarding those in their care. The growing use of technologies such as video games and the internet in the home and elsewhere highlights the need for information and guidance on safe practice both within formal educational settings and in a wider general context. Fortunately, technology itself offers powerful channels for informing parents about the support available in their area to assist them in their parenting role – and increasingly they will be able to engage with these services online. Technology-based approaches may prove particularly effective in reaching fathers, 63 per cent of whom say they prefer to access information and support via the internet (Children's Plan).

Safeguarding the young and vulnerable

8. Technology also provides information channels for those who work in education and children's services, through which they can share information about young people and vulnerable adults. This helps identify those potentially at risk at an earlier stage, and allows more focused and timely intervention. At the same time, technologies themselves need to be configured to help safeguard users, particularly the young and vulnerable.

Achieving world-class standards in education

9. Used well, technology enables more effective and more personalised teaching and learning. It improves planning of teaching and learning, makes the learning experience more dynamic and allows education and learning professionals to engage more effectively with learners. It gives access to a wider and more tailored set of learning experiences and resources, enables learners to exercise more control over their own learning and increases opportunities for assessment which supports learning. Technology also enables professionals to share expertise and resources within and beyond their own institution. Core education management processes are also enhanced through the application of technology, streamlining time-consuming aspects of administration, assessment and information management.

Closing the gap in educational achievement for children from disadvantaged backgrounds

10. Learners from disadvantaged backgrounds and those with special educational needs are at risk of underperforming without additional support. Technology is often highly effective in supporting these learners, enabling access to different approaches to learning, increasing engagement and supporting those with specific learning needs and disabilities. Technology-based tools also enable learners who are unable to attend in person to participate in education, through remote online access to resources, tutor support and collaboration with other learners.

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Home Access

There are significant educational benefits associated with having access to technology at home, as this gives learners greater choice about where, when and how they study. Research shows that this helps to motivate learners and improve their attainment. We also know that learning technologies in the home can serve as a focal point for parents to become more actively involved in their child's education. This collaboration between learner and parent can further enhance a pupil's engagement and

their achievement. The Home Access Taskforce is investigating how to make sure that every learner has access to technology at home and will make recommendations in 2008 detailing how universal access could be achieved. At the moment, there are over a million children with no access to a computer in the home. These children are disproportionately from disadvantaged backgrounds, and their limited access to technology reinforces attainment gaps. (Children's Plan, p.77)

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Ensuring young people are participating and achieving their potential to 18 and beyond

11. Technology helps young people to experience a more diverse range of learning opportunities and pathways. Schools and colleges acting in partnership can utilise video-conferencing and other communication technologies to co-deliver specialist curriculum subjects that they would not otherwise have the necessary teaching expertise to offer. As the new Diplomas are introduced, more learners in the 14–19 age range will be studying in multiple settings: at school, in college and in the workplace. Technology is essential in co-ordinating delivery across these settings, providing learners with the continuity they need through remote access to information, resources and support. JISC reports that 'there is clear evidence of improved student retention [in higher education] as a result of the improved personalisation and mentoring opportunities afforded by e-learning applications such as e-portfolio systems' (JISC, *Exploring Tangible Benefits of e-Learning*).

Keeping children and young people on the path to success

12. Technology has an important role to play in ensuring greater participation by parents in children's learning. It enables schools and colleges to report to parents on their child's progress as it develops, rather than at a few fixed points in the year, and offers parents new opportunities to engage in dialogue with providers.
13. Data, held electronically, enables a more holistic view of an individual learner's progress and well-being. Patterns in achievement, attendance and behaviour become easier to identify, so teachers and other professionals can make more timely and effective interventions.

Parental engagement

Every parent will have regular, up-to-date information on their child's attendance, behaviour and progress in learning. A school website will also offer information, such as school events calendar, health and lifestyle issues, behaviour information and access to blogs from experts to parents. Discussions

between parents and schools will cover what is expected from the pupil and how the parent can support their child. Parents' evenings and face-to-face discussions between parents and teachers will be held at times when working parents can attend. (Children's Plan, p.58)

14. Online storage systems enable learners to access records of achievement and to maintain evidence of their own work in a diverse range of media. As learners move through educational phases this also provides opportunities for professionals to develop a better understanding of learners and their needs, so they can support transition and progression.

Improving the skills of the population throughout their working lives

15. Knowledge and skills represent an investment in the future. When it is used imaginatively and efficiently, technology enables people to study for new qualifications or upgrade their skills in the context of busy working lives. In effect, technology makes it possible for adult learners to choose what, how, where and when they learn. The effect of this on their overall experience is powerful: the ICT Test Bed programme reported that, where technology was used to support Further Education programmes, learner satisfaction rose from 50 per cent to 99 per cent. There was also evidence of learners 'fast-tracking' through courses.

The benefits of e-learning

The appropriate use of technology (in higher education) is leading to significant improvements in learning and teaching across the sector and this is translating into improved satisfaction, retention and achievement. E-Learning is facilitating the

expansion of the sector without necessitating corresponding increases in the footprint of the physical estate and it is allowing broadly the same numbers of staff to educate a larger and more diverse student body. (JISC, *Exploring Tangible Benefits of e-Learning*, p.5)



www.jisc.ac.uk/whatwedo/programmes/programme_elearning_capital/camelbelt.aspx

16. Some people learn for their own interest or self-fulfilment. As the recent consultation document, *Informal Adult Learning – Shaping the Way Ahead* points out, technology can open up the world of knowledge. Increasing access to broadband, open resources and digital services means there are more opportunities and media to support learning than ever before. Technology-enabled learning brings a sense of empowerment and wider choice to informal adult learning.
17. Employers value the advantages technology can bring. They find that, working in collaboration with training providers, they can tailor skills training to their business needs and schedules, and economies of scale can be achieved which improve cost-effectiveness. In one survey 73 per cent of employers who used e-learning cited flexibility as a key reason for adopting the method (e-Skills UK, 2007).

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Building social and community cohesion

18. Technology can bring people with shared interests or concerns together, provide channels for voicing local needs, tools for maintaining local networks, and ways of building and sharing community learning resources. The LSC's Technology to Enhance Adult and Community Learning (TrEACL) programme has been successful in demonstrating the value of technology in supporting participation in community-based learning. The Adult College, Lancaster, for example developed an online creative writing course accessible to groups of people with mobility or transport problems, shift workers and those with physical or mental health problems.
19. Although technology can enable communication and interaction, there is still a 'digital divide'. This needs to be bridged so that everyone can enjoy the benefits technology brings and which go far beyond just learning. There is now a Cabinet Minister and a Cabinet Committee for Digital Inclusion. The *Harnessing Technology Strategy* will link closely with the Government's work in this area.

Strengthening the capacity, quality and reputation of the Further and Higher Education systems

20. Blended and online provision can support more tailored learning and, where economies of scale can be achieved, deliver capacity to meet greater demand. The integration of information and management systems can reduce workloads and overheads. For example, time spent in recording and analysing learner achievement in further education colleges could be reduced by half through the adoption of integrated systems, saving an estimated 1,880 hours per college per year. Just as it can help learners acquire knowledge and skills, so technology can help professionals in further and higher education do the same, building quality through initial training and continuing professional development. It can also enable effective delivery of the more flexible and customised forms of learning that employers need that might otherwise be possible or too expensive to sustain.

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Assistive technology

Technology has made all the difference to Liam as he will probably never be able to use pen and paper to write legible notes. He is now in Year 2 and has a visual impairment as well as poor fine-motor skills. Liam was assessed in

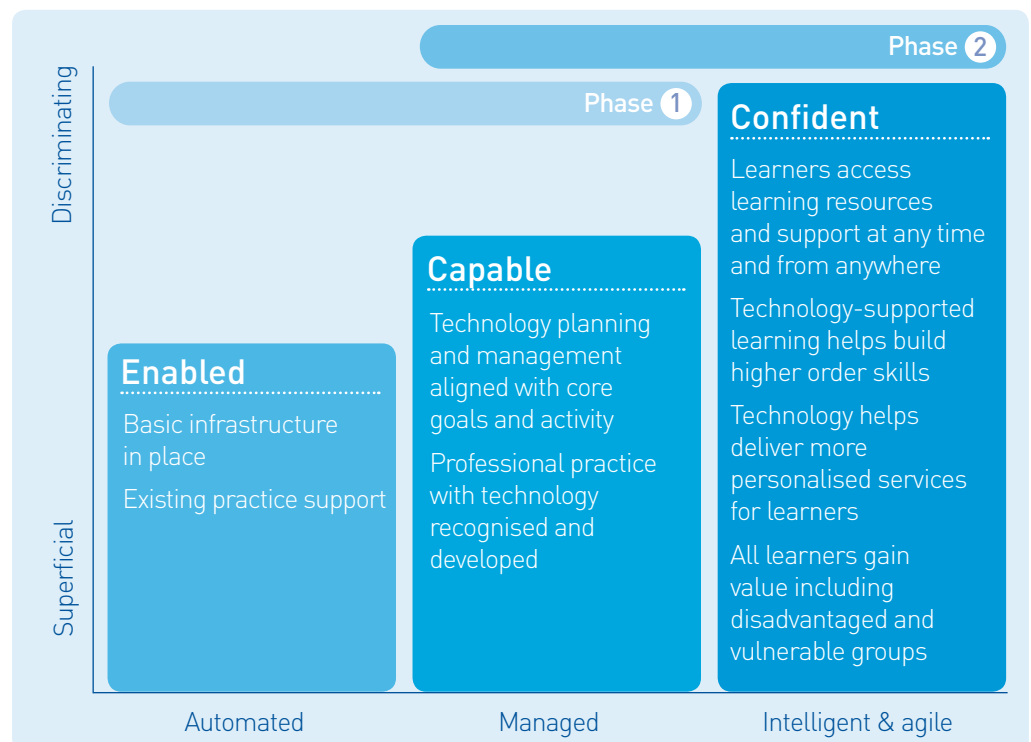
nursery and the school applied to CAP so that support would be in place for when he began Year 1. He received a special keyboard with large, chunky keys and this helps him to see the shapes of letters.

The next phase of the strategy

- 21. During the last three years, the *Harnessing Technology Strategy* has focused primarily on building a fit-for-purpose technology infrastructure for education and supporting education and learning providers in integrating technology in learning and teaching. Although there is still more to do in these areas, Phase 2 will focus on achieving greater value for learners from technology and supporting improvement and transformation.

Developing an 'e-confident' system

- 22. Becta will provide leadership and support for policy makers, intermediary bodies and the front-line to derive better value and impact from technology investment. It will work with national partners, challenging and supporting where appropriate, to develop an 'e-confident' system.



Supporting the disadvantaged, the vulnerable and the hard to reach

23. This second phase will also focus on ensuring that technology is used to give every learner greater opportunities to learn, no matter what their economic or social circumstances. We propose to establish a clear set of learner entitlements for children and young people to ensure that vulnerable pupils, those with special needs, and those who are hard to reach are supported. We will also explore how the concept of an entitlement might work in the further and higher education system.

Greater efficiencies

24. An efficient national digital infrastructure, with a new generation of services, tools, connectivity, support and content will deliver significant efficiencies for the education and skills system by gaining better value from consumer spending and ensuring that educational provision does not duplicate it unnecessarily. We will set a challenge to technology suppliers to deliver universal access to coherent services which support learning at any time and from anywhere. We will also continue to develop frameworks for purchasing to help schools, colleges and local authorities to gain best value.
25. This document sets out how we will achieve this. It describes the progress we have made since *Harnessing Technology 2005*, identifies important gaps and weaknesses and sets key priorities for the next six years. It also describes how we will deliver these priorities, how we will manage that delivery, and how we will measure progress.

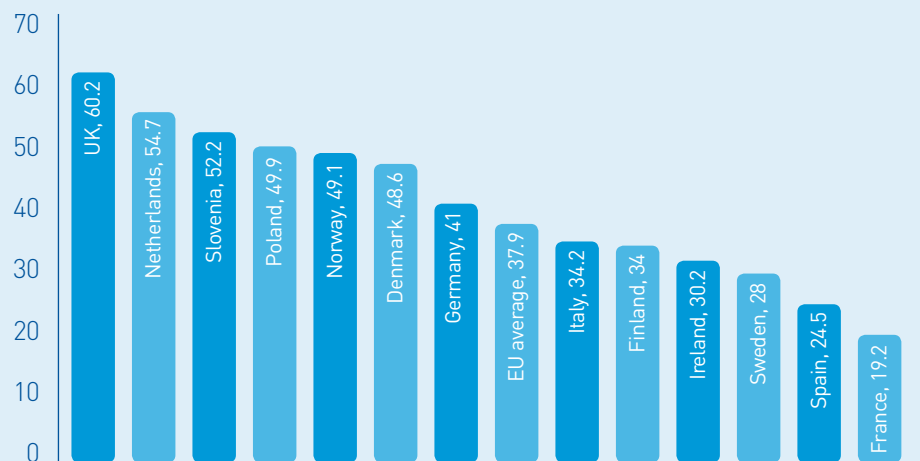
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Section 2: Progress to date

Use of technology to support learning

26. Current evidence shows that access to technology by learners in the UK, and workforce confidence in using technology to support learning, compare well with international levels.
27. The use of ICT-based resources by teaching practitioners has continued to grow in all sectors. For example, over 38 per cent of teachers now report using subject-specific software in half or more lessons, up from 10 per cent in 2002 (*Harnessing Technology Schools Survey, 2008*).
28. In FE colleges, reported practitioner competence in using e-learning rose from 42 per cent in 2000 to 62 per cent in 2007. The ratio of computers to students is shown on the graph overleaf.
29. In addition, links between the use of technology and improved learning outcomes have been identified in an increasing body of evidence (*Harnessing Technology Review 2007*), and evidence from learners suggests that the use of technology improves both engagement and satisfaction (*Evaluation of the ICT Test Bed Project: Final Report*).

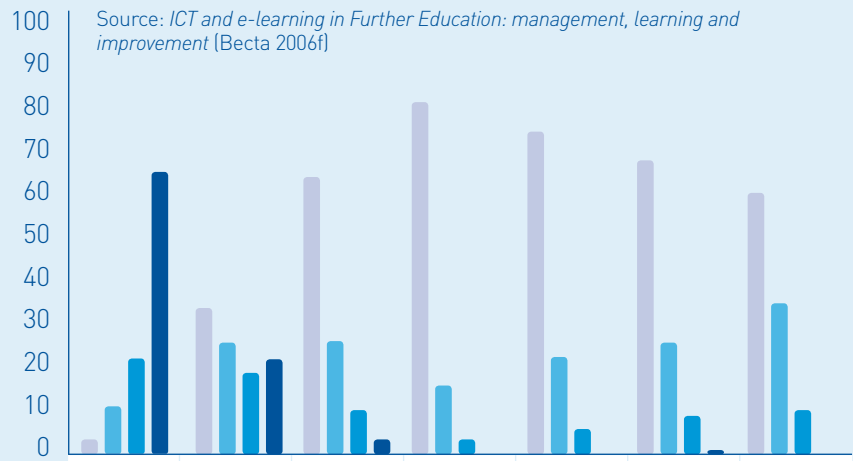
Percentage of teachers with access, competence and motivation to use the internet and computers in classroom situations



Empirica (2006), *Benchmarking Access and Use of ICT in European Schools*

FE College ratio of FTE students to all computers

Source: *ICT and e-learning in Further Education: management, learning and improvement* (Becta 2006f)



5:1 and better

1999

2000

2001

2003

2004

2005

2006

6:1 to 7:1

9

26

24

15

20

24

31

8:1 to 11:1

21

18

9

3

5

8

10

12:1 and over

65

21

3

0

0

1

0

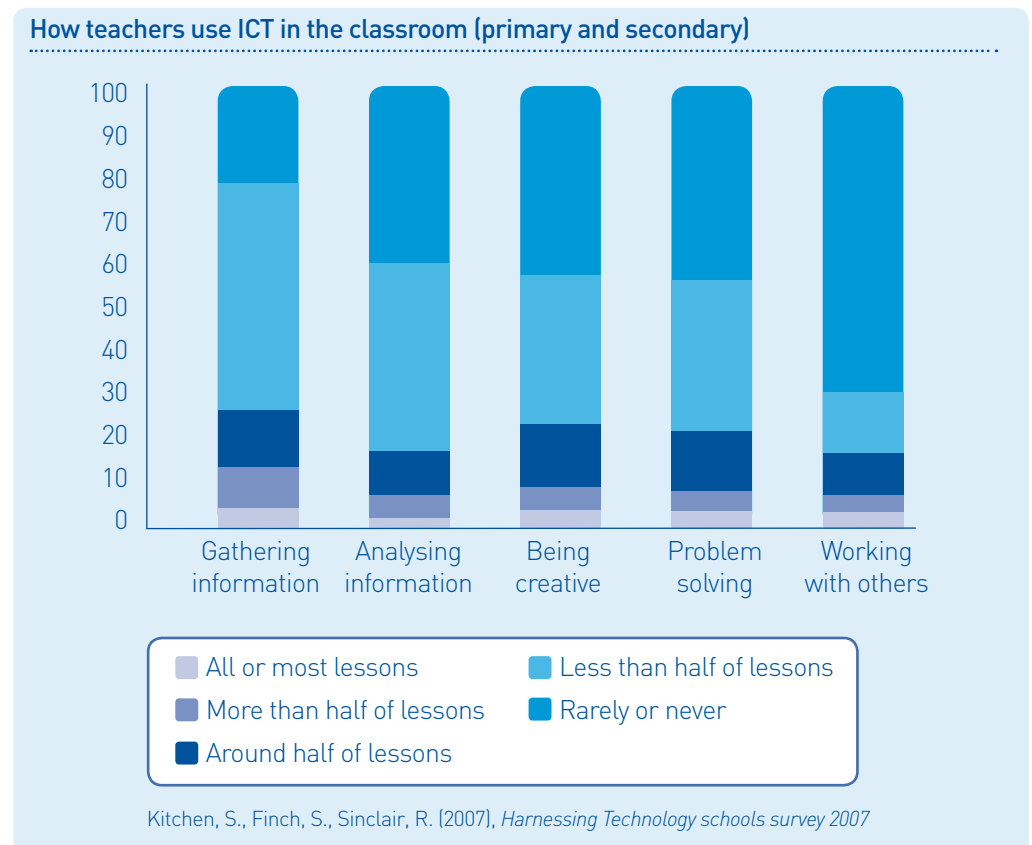
Provider e-maturity

30. 'E-maturity' refers to the capacity of a learning institution to make strategic and effective use of technology to support educational outcomes. Becta has tracked e-maturity in the schools and FE college sectors for several years, and this year established e-maturity baselines across FE and skills.
31. Over the last five years, both schools and FE colleges have demonstrated steady progress in e-maturity. The percentage of e-mature FE colleges rose from 6 per cent in 2003 to 25 per cent in 2008. In schools, average e-maturity scores have increased from 22.3 per cent (primary) and 20.4 per cent (secondary) in 2002 to 27 per cent (primary) and 27.2 per cent (secondary) in 2007.
32. However, a significant proportion of providers across the schools and FE sectors remain late adopters, and this has an adverse impact on the experiences and skills of learners. For example, fewer FE college learners (27 per cent) reported they were very confident in using computers for a range of tasks in 'late adopter' colleges than in 'enthusiastic' colleges (39 per cent). In schools, lack of maturity in deploying and using technology has an impact on how well information can be used to support learners, the range of resources available for teaching and learning, and the ability of the school to enhance links with the home.

- 33. Among those delivering adult skills, e-maturity is highly variable. Only 9 per cent of Personal and Community Development Learning (adult education) providers could be considered e-mature, and less than a third of work-based learning providers. Evidence indicates that the challenge for FE colleges and those providing work-based learning is to develop the capability of the educational workforce. Offender learning and adult education both still face significant infrastructure challenges.
- 34. Approaches to learning and teaching have not yet significantly developed through the use of technology across all sectors. It is unlikely that the full value of technology is currently being realised. In schools, for example, the majority of teachers report that they rarely use technology to support learners' creativity or working together (as shown in the figure below).

Personalised learning

- 35. Learners aged 11 to 19 report that three of the most commonly reported activities in class are still copying from the board or a book, 'listening to a teacher talking for a long time' and taking notes while the teacher talks. By contrast, learners' reported preferred ways of learning are 'in groups', 'by doing practical things', 'with friends' and 'by using computers'.



Challenges

36. Evidence from learners, teaching practitioners and providers indicates common issues which represent particular challenges for the development of system-wide e-confidence.

Technology services

- Access to reliable and sustainable infrastructure, including technical support, remains a challenge, particularly in smaller institutions. Effective management of the technology estate and good value for money are currently not being achieved. There is a strong argument for promoting more professional technology services, particularly to schools. JISC evidence suggests that integration of systems in smaller higher education institutions and colleges is not well advanced and that this may be linked to lack of funds, planning and in-house ability (*Measuring and Understanding Systems Integration Change*, 2006). In addition, though there are good products and services available, many digital tools and resources offer limited value to teaching and learning.

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The body of evidence

The JISC study, *Student Expectations*, shows that young people expect ICT to be just as present in their formal learning environment as it is at home, and thus assume it will also be present at university. While the students surveyed expected to be able to set themselves

up, technologically, in the same way that they are perhaps used to, they will not expect either their connectivity to decrease or for the technology to encroach on what they see as the key benefits of university – interaction and learning.



www.jisc.ac.uk/publications/publications/studentexpectations.aspx

Pedagogical change and professional development

- Though there is evidence of significant integration of technology across the curriculum, the range of uses remains fairly limited and practitioners rarely realise the full benefits of technology in supporting learners. Use of digital resources and tools is regarded as optional in many cases, suggesting a need to ensure professional standards and requirements, and cultures of practice, are in place which recognise the technology as a core tool in a modern education and skills system.

Continuity of learning

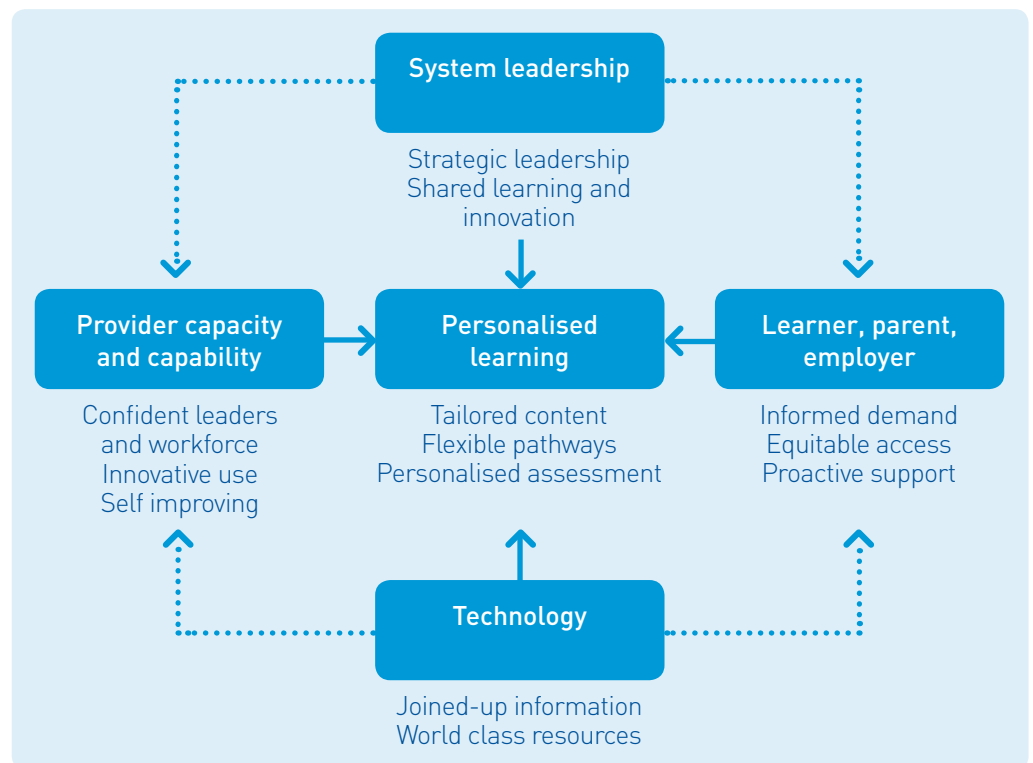
- Although technology offers opportunities for continuity and flexibility in learning, and for parents and carers to be more closely involved, this use is not yet widespread in homes and few schools are making use of the extended learning opportunities now available. FE college learners are also offered variable opportunities to use technology to extend and continue their learning. Overall, progress in continuity of learning, and in recognition of informal learning, has so far been limited.

Learner expectation

- Levels of access to and use of technology are high among young learners – especially out of school. However, their experience of technology in formal education generally differs from that at home and there are increasing indications that learners' expectations of technology, and, as a result, of learning, are not being met. Learners commonly report that they enjoy learning with technology, and increasingly use a range of tools and approaches to support their learning, including the use of Web 2.0 technologies, which may not be recognised and supported in formal settings.

Section 3: Building the e-confident system

37. The aim of the strategy is to bring about a step-change in the way technology is used across the education and skills system. Becta's goal is to develop a system which exploits the benefits of technology for learning and delivers tangible and measurable improvements and outcomes.
38. Becta will work with leaders and others at all levels of the system – with policy makers, partners, front-line providers, learners of all ages, parents and employers to develop an 'e-confident' system, which has the capacity and capability to harness technology effectively.
39. Our strategy is based on addressing five major system components, as shown below. This requires considerable collaboration and shared effort by a range of key partners.



System leadership and innovation

Strategic leadership

40. The strategic leadership of organisational change is critical in realising the benefits of technology. Becta's strengthened remit puts it in a strong position to support change and accelerate improvement by working with leaders. Together with our partners – the Higher Education Funding Council (HEFCE), the Higher Education Academy (HEA) and the Joint Information Systems Committee (JISC), the new FE Improvement Body (LSIS), the National College for School Leadership (NCSL) and the Leadership Foundation – we will take action to ensure that leaders at all levels of the education system are well supported to exploit technology fully for transforming learning and for organisational improvement.
41. Leaders in all sectors need to be involved in making this happen. Good leadership entails developing an informed vision for learning combined with a deep understanding of the potential of technology and the skills to lead the required change. Becta will invite leaders to take on roles as 'Technology Leadership Champions' within their existing networks to enable this. The network will be open to leaders from schools, colleges, providers, universities, local and national government and industry. Technology Leadership Champions will learn from each other and build shared understanding of how technology can help address their problems and priorities.
42. Given the importance of leadership in delivering the step-change that is required, Becta will look to NCSL, Lifelong Learning UK (LLUK), Leadership foundation for HE and the HEA to define leadership standards to take account of the strategic leadership of technology as a key understanding and competency area and build these standards into leadership qualifications frameworks and programmes.
43. Becta will discuss with Ofsted how inspection and institutional self-evaluation can better assess leadership effectiveness in this area. We will also work with Ofsted to provide guidance and support to inspectors to support their judgements.

Shared learning and innovation

44. A key theme for our next phase in *Harnessing Technology* is to make better use of the capacity and capability already in the system and actively support transfer and joint development of practice with technology. Technology Leadership Champions will share innovation and build understanding actively within their networks. Becta will also directly encourage existing networks to play a more direct role in knowledge transfer. One aim of the strategy is to mobilise and support leaders so that knowledge and experience of 'what works' – what delivers improvement – is shared across the system.

Personalised learning

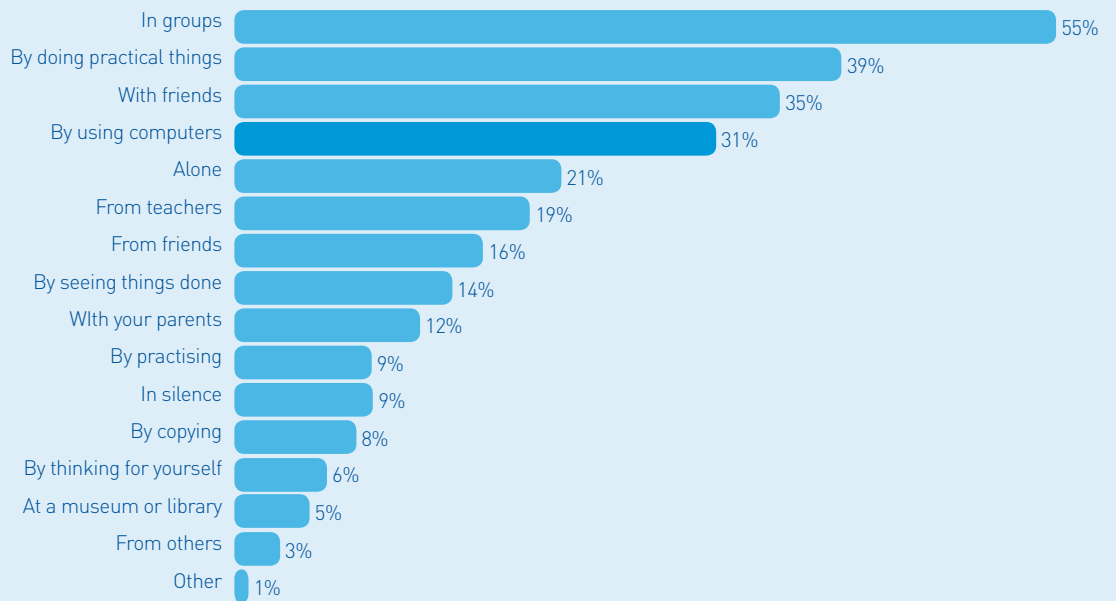
45. A key role of learning professionals is to ensure that programmes of learning are geared to the needs of individuals and provide the right level of challenge. Technology-based tools can improve assessment for learning by providing ways in which learners can demonstrate and share their achievements, as well as providing information on progress. Combined with tailored content and resources, there are greater opportunities for a more differentiated learning experience where learners' needs are better understood and met.
46. A shift towards more personalised learning is fundamental to the Government's approach to education and skills. It is likely to entail significant development of practice with technology. Becta, the Training and Development Agency (TDA), LLUK, Specialist Schools and Academies Trust (SSAT), NCSL, General Teaching Council for England (GTCE), National Strategies and others will work together to identify what these changes are and help provide the support that practitioners will need. The UK Professional Standards Framework (UKPSF), which is supported by the HEA, is a vehicle through which the engagement of staff in higher education environments to support learning with technology can be integrated with the associated Academy's Professional Recognition Scheme. In addition to this systemic approach, the HEA works with Higher Education Institutions (HEIs) to support institutional change and supports the work of individuals who are champions of many aspects of learning, including that enhanced through technology.

Tailored content and resources

47. The strategy will address the need to ensure that high-quality digital resources are available wherever and whenever learning takes place. Making such resources more easily accessible to both learners and practitioners will help to ensure that learners have greater choice and control over their learning programmes, where appropriate enabling learners to adapt the pace and depth of study.

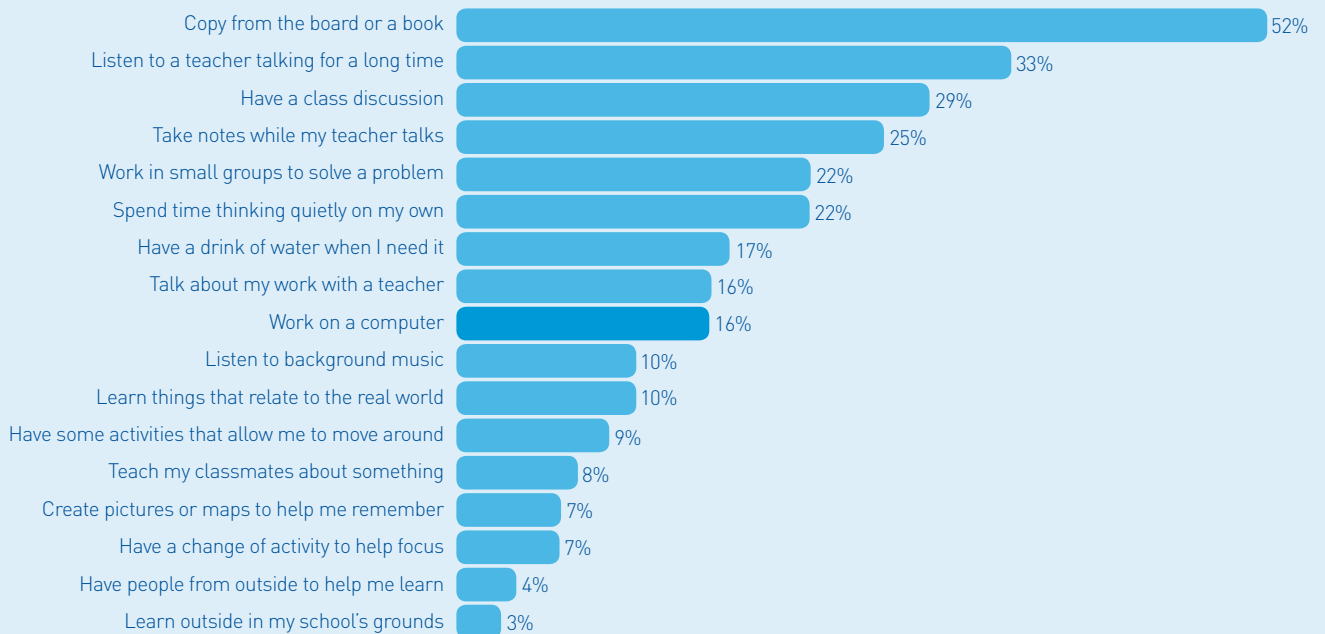
Most preferred ways to learn

In which three of the following ways do you prefer to learn?



Common classroom activities

Which three of the following do you do most often in class?



Supporting flexible delivery and pathways

48. Becta will work with its partners to establish functional specifications for technology platforms that will give learners access to learning tailored to their individual needs. This will be a very important requirement in the development and delivery of the 14–19 curriculum and diplomas, smoothing the transition into further and higher education and work-based learning. The diploma learning programmes will take place in multiple settings – in institutions, in the workplace, in the community, in the home and potentially ‘on the move’. It will therefore be vital that Becta helps to develop fit-for-purpose technological solutions that will enable this kind of flexible blend of face to face, online, collaborative and individual learning and assessment.

Personalised, formative assessment

49. Becta will work with the National Assessment Agency (NAA) and the Qualifications and Curriculum Authority (QCA) to develop specifications and functional requirements which enable technology to support personalised assessment. This includes ensuring that Management Information Systems (MIS) can support the effective use of data to promote learning, and developing e-portfolio specifications which reflect effective practice in this area. Greater use of e-assessment will also provide learners with timely feedback and diagnosis on aspects of their learning.

Engaged and empowered learners

Informed demand

50. The DCSF Children’s Plan and DIUS’s strategic objectives emphasise reform of the education and training system to become more demand-led, client focused and personalised. A key element of the strategy will be to listen to learners and those who represent them, for example employers. A recent study conducted for Becta by Ipsos/Mori showed that secondary school learners want to be active learners, to solve problems in groups and to use technology. What they report actually doing in school is dominated by ‘copying from the board’, working on their own, listening to the teacher and taking notes. Listening to the views of learners and understanding their experience will be an important feature of both Becta’s work and that of JISC, sharing that understanding with partners and leaders.

Equitable access

David Bevan has only one hand – his right hand and forearm were missing from birth. He stayed on to do A levels in ICT, history, geology and resistant materials (product design) at John Kyrle High School in Ross on Wye. He was assessed by AbilityNet for the Communications Aids Project (CAP) and

received a laptop with Microsoft Office, Corel Draw, a Cherry keyboard, an optical mouse and a bag to carry the kit around in. David is now in his second year at Swansea Institute of Higher Education and just before Christmas he won the faculty prize for project design.

Equitable access

51. Learners of all ages and in all sectors must have access to learning services, enabled through universal access to technology. The aim is to ensure that no learners are excluded from learning opportunities through inability to access the services they need. Becta will work with DCSF to agree a national target for 5–19-year-olds and their families for access to technology and learning services. The ministerial Home Access taskforce represents an important step in driving this reform to ensure that no learner is left behind.

Proactive support

52. A key aspect of proactive support for learners is ensuring that both they and those who represent and support them have access to the information they need when they need it. For practitioners that means making good use of the richer evidence and data that information systems can provide, and Becta will work with partners such as QCA, NAA and TDA to support this. Becta will also work with JISC, with industry, and with learners and parents to understand information and support needs relating to continuity of learning, so this informs the development of systems.

Confident leadership and workforce

53. Schools, colleges and other learning providers require high levels of maturity in using technology to meet the needs of learners. All education and learning professionals should have the skills and capabilities they need to do this well, including an understanding of how the use of technology supports more personalised approaches to learning. That entails both continually updated competence in using the technology and also the development of practice to make the best use of it. The strategy will reinforce these expectations through workforce standards, organisational self-review and evaluation systems and inspection.

54. In higher education, an infrastructure for e-learning already exists and this is available to support flexible learning to students, particularly learning outside the campus, both locally and internationally. The challenge now is to engage management to provide leadership in exploiting this infrastructure, to support distance and work-based learning, widen participation, attract overseas students, and provide a more integrated approach to the management of information across the university or college. This will not only improve the efficacy of the learning experience, but also enhance research practice and administration.

Innovative use of technology resources and tools

55. The availability and innovative use of technology resources and powerful tools can help raise the quality of teaching and improve learning outcomes. In this next phase, Becta will work with national partners to provide better, practically focused support to improve teaching in the following areas:
- Assessment for learning to secure a closer curriculum match and better differentiation.
 - Lesson and learning design – addressing issues of optimum pace, use of time and learning styles.
 - Resource location, access and integration – including the use of media and communication/collaboration tools for first-hand, authentic learning.
 - Teaching interactions including presentational techniques and questioning/learner engagement.
 - Monitoring, evaluation and reporting to learners, parents and employers, using whatever technology is appropriate to their needs.

Self-improving organisations.

56. During the next six years we need all education, skills and training organisations to become mature and responsive in their use of technology. Becta will promote and develop the use of self-review frameworks for schools, colleges and providers to enable this, including an e-maturity framework for FE and skills which recognises the dynamic and complex nature of this sector. We expect the HE to build on the outcomes of the HE academies' *Benchmarking and Pathfinder Programme*.
57. In continually improving their use of technology to meet the needs of learners, organisations need to listen to the views of learners and stakeholders. Becta and its partners will ensure there is effective guidance in place on approaches for eliciting learners' views, and encourage the sharing of good practice in this area.

National digital architecture: an enabling infrastructure

Joined-up information

58. Becta will work with Government, its agencies and with local authorities to put into place joined-up information systems that support the Government's objectives. A key aim is to put in place cross-system information sharing and connected services that ensure consistent and personalised services for learners and providers. This includes the implementation and take-up of MIAP (Managing Information Across Partners) and ULN (Unique Learner Number) and 'one-stop' programmes for learner support. These developments are intended to facilitate the transfer of information between disparate information platforms and systems, and are essential for the successful transition of learners between, and across, institutions and sectors.
59. Becta's current work seeks to establish a fit-for-purpose national digital infrastructure for education and training which delivers coherent and reliable services that are affordable and sustainable in the long term. Considerable progress has been made, with JISC and others, in agreeing national standards and specifications for equipment and services and, where appropriate, putting in place procurement arrangements to ensure that quality-assured services can be purchased easily. Supporting these, the JISC-funded network, JANET, is one of the world's leading research and education networks.
60. Government ambitions indicate the need for wide-ranging system-level reforms to the way services for children and young people work together. The aim is that services should be increasingly 'citizen centric', and provide a more personalised offering for learning, with equity of provision and a more diverse range of opportunities, through effective collaboration between providers.

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61. Three key interventions are required to support the delivery of the policy ambitions:
- A need for a rapid step-change in the provision of information systems to help reform and 'e-enable' the business processes which underpin education and skills.
 - Development of a common understanding of what constitutes quality resources for learners and professional tools for teachers and trainers, and how these resources may be identified.
 - A continued expectation that the best possible value for money will be achieved in all purchasing. Becta will continue to encourage collaborative provision of services, to realise the benefits of improved coherence and economies of scale that an aggregated approach can bring.
62. Becta will also now give increased priority to supporting tangible improvements in efficiency through reduced administrative burdens and improvements in access to accurate data when it is required. As part of this we will develop metrics to assess how 'efficient' current systems are and set objectives to improve efficiency by 50 per cent by 2011.

World-class resources

63. Digital resources to support learning and teaching are now increasingly available across sectors and borders. In this next phase we will explore how the best resources can be made available to support all learners. We also need to pool effort in the way such resources are procured. Therefore, we will promote national arrangements for the collaborative development of content and services, to enhance front-line value for money and reduce duplicated efforts.
64. We already have models whereby resources made available to one sector can be extended to others – the JISC Collections for Schools materials being an excellent example [<http://jcs.nen.gov.uk/home.html>]. In the next phase we will challenge all publicly procured developments to examine whether the benefits acquired in one sector can be applied to the whole system – and be available to support informal and family learning.

Section 4: Priorities in managing the change: equity, quality and efficiency

65. Our aim is an e-confident system that fully exploits the benefits of technology for learners. Some aspects of this vision may take place without intervention, but others will not – particularly those relating to the vulnerable and the disadvantaged, new areas of development, and achieving significant developments to quality and impact on outcomes. In addition to building good overall capability in using technology to support learners, the strategy will place a particular emphasis on change in five key areas, described below:
- Learner entitlement
 - Family and informal learning
 - Professional tools for teaching
 - Mobilising leadership
 - Fit-for-purpose sustainable technology.

A learner entitlement that closes the gap for disadvantaged learners

Learner Entitlement Framework

Becta will work with Government, learners and providers to develop a framework that can be tailored to meet the needs of learners of different ages in different contexts. This will need to encompass:

- personalised learning which reflects learners' interests, preferred approaches, abilities and choices, and tailored access to materials and content
- access to online support and tuition, alongside tailored personal support from trained advisors and other professionals
- entitlement to tools to support learning, and support to become fluent and proficient in their use
- integrating online learning with provision in school, or in the workplace
- the need for accessible online information, advice and guidance that will raise aspirations, facilitate learning pathways and enable access to employment
- access to continuing support to acquire and update skills, including support for using technology safely
- appropriate methods and avenues for learner consultation and engagement.

66. The learner entitlement applies to children and young people. Becta and its partners in FE and HE will explore whether and how the concept could be extended to the FE and skills system and HE sector, with their varied remits and groups of learners.

67. This universal entitlement is a cornerstone of our work because it encourages a change in the way that providers approach their use of the technology – knowing that all of their learners can access resources online from home, for instance, is a powerful incentive for change, and removes barriers to new ways of using technology for communicating and working with learners, parents and carers.
68. For all learners it means being consulted on their needs and being responded to positively. For learners with specific or individual needs, this entitlement includes being able to use specialised assistive technology and use it skilfully. This will be essential to their learning, as without this support these learners will remain at a disadvantage.
69. Achieving this is a major challenge to the education system. It requires a concerted effort from all those involved in learning. We will work with practitioners and third-sector organisations, and the learners themselves, to develop the framework. We will also work to ensure that disadvantaged learners receive this entitlement.

Engaging family and informal learning

70. Family and informal adult learning are important components of education and skills policy. For many adults, including those in disadvantaged groups, the opportunity to learn informally in the context of the family or on a personal basis offers fulfilment and/or re-engagement with the education and skills system. It also enables them to provide better support for their own children's learning.
71. Research has shown that when parents and carers are engaged in a child's learning and in learning together, both children and adults achieve more. A recent survey revealed that 95 per cent of parents think the effective use of technology such as the internet, interactive whiteboards and laptops can help their children to learn. Parents have a vital role to play in ensuring that technology helps their children to develop and learn at home.
72. Technology is now a natural part of most families' and children's home environment. It can therefore be a 'natural' conduit for communication, including for example, use of technology to alert parents rapidly to their child's absence from school and report on their attendance, which can support significant improvements in this area.

STREAM Hull

STREAM Hull uses digital TV, delivered over the airwaves, via cable, via the internet, and on mobile phones, to connect the local population to a series of personalised services. Among these is 'Learning STREAM' which gives pupils, parents and teachers personalised access to video-rich lessons and resources.

Much of the available material has been produced by local young people, who also produce a fortnightly bulletin for parents. One of the key benefits has been the involvement of parents in their children's learning. Schools have been broadcasting to each other, virtual revision sessions are being run and parents have requested materials for their own learning.

73. The strategy aims to support parents and carers in knowing what they should expect in terms of online information and support, and guidance and practical ideas in using technology to extend and support learning at home. This will apply particularly to disadvantaged and 'hard to reach' families, which will require research into new ways of reaching and supporting them through technology.
74. Becta will support the development of greater intelligence on the needs and aspirations of those learning at home and the practices and issues in using digital tools and resources in supporting learning.
75. Much of what relates to family learning and parental involvement, above, also applies to the context of adult informal learning. This strategy will be informed by the outcomes of the DIUS consultation into informal adult learning which is due to report in September 2008. Becta will work with DIUS to support any government priorities which result from the consultation.

Professional tools and support for teaching

76. Good teaching is critically important for good learning. Supporting teachers to be good teachers and trainers to be good trainers is a key aim for the organisations that employ them, and for the system as a whole. Technology has a good track record in other sectors as a support for the excellent practitioner and a 'scaffold' for those who wish to improve. We want to give the teaching workforce as good a range and quality of support, tools and resources as is available to other professions to help enhance their status and build professional expertise.

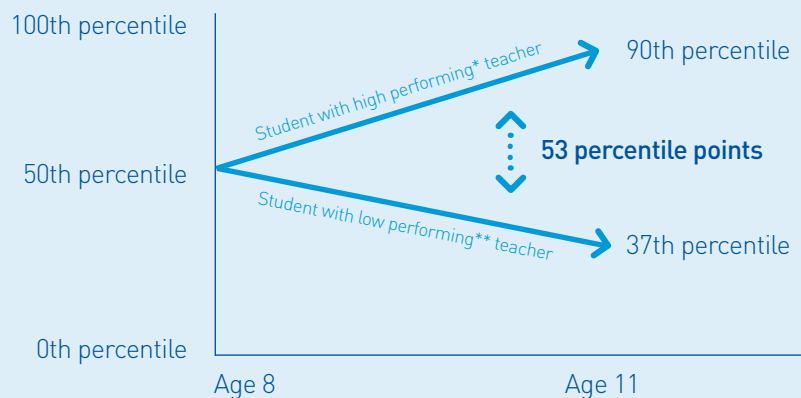
'Teachers make an Extraordinary Difference'

– Michael Barber Presentation to World Bank

Analysis of test data from Tennessee showed that teacher quality affected student performance more than any other variable; on average, two students with average performance (50th percentile) would diverge by more than 50 percentile points over a three-year period depending on the teacher they were assigned.

Source: Sanders and Rivers, *Cumulative and Residual Effects on Future Student Academic Achievement*, McKinsey

Student performance



*Among the top 20% of teachers; **Among the bottom 20% of teachers

77. Many of the technology tools used in education and skills were designed to serve the needs of business. Although many of these are useful for education, we also need specific and customised planning, curriculum management, and teaching tools for teachers and trainers to use as a natural part of their professional repertoire.
78. Success in this area will depend both on providing the right professional tools to practitioners and the right support to help them change their practice to develop more personalised learning. In supporting the development of tools we will bring together practitioners and industry, working closely with key agencies like TDA.

Mobilising technology leadership

79. There are currently a number of existing networks within individual sectors, but little communication between them. Becta will work with its partners to make better use of existing networks and significantly increase the dialogue about technology innovation and its value in relation to current priorities.

80. In addition to Technology Leadership Champions described earlier, key aspects of this work will ensure that the best examples of technology-supported learning are showcased among education leaders and influencers, and gather and disseminate evidence of technology's role in supporting improved services. Becta will work with its partners to build this evidence base and communicate it effectively.
81. In sharing and building understanding, Technology Leadership Champions will work with Becta to ensure that the existing networks play an explicit and direct role in driving and supporting change, focusing on the priorities, problems and challenges facing leaders in delivering what is required of them. Particular emphasis will be placed on supporting cross-sector groups within this network.

Leadership and the role of local authorities

This national strategy means very little unless it supports needs at a local level. Local authorities are a natural and important ally for us in the strategy's further development within a local context.

The Children's Plan outlines a strong role for local authorities and Children's Trusts in delivering the five 'Every Child Matters' outcomes and commissioning and funding education and training for all up to the age of 18. Over the next year we will work with local authorities to ensure that technology can be better used to support local Children's Plans and achieve positive outcomes for all learners.

Many communities are also developing innovative and coherent approaches to using

technology across a spectrum of services. There are a number of examples of local government making practical use of new technology to design smarter services and deliver them more efficiently, of the voluntary and community sector using it to run befriending schemes for isolated people, and schemes supported by local business for setting up digital communities and piloting wireless systems in rural areas.

Over the next year we will work more closely with local authorities and with the Local Government Association, the Association of Directors of Children's Services, the Association of Chief Executives, Regional Government Offices and others to look at how this national strategy can better support local communities.

Fit-for-purpose, sustainable technology

Choice within a national framework

82. Institutional leaders need to be able to innovate within a coherent national framework. They therefore depend on an underpinning architecture which provides interoperability across all aspects and overcomes problems of inefficient data transfer, dependency on specific proprietary systems which limits choice and value, and technological restrictions on using educational content on different devices such as interactive whiteboards and mobile technologies.
83. Overcoming this will require the continued development and implementation of technical standards which support interoperability, and a close partnership with industry and others to reach effective solutions. By building on our partnership with Partnerships for Schools (PfS) and DCSF Schools Capital we can ensure that these standards are embedded in the Building Schools for the Future (BSF) and Primary Capital programmes.

Cost-effective and sustainable provision

84. Significant sums are spent on technology each year and there will be a continued expectation to achieve the best possible value for money. Becta will continue to encourage collaborative provision of services such as those being provided through BSF Local Education Partnerships and look to realise the benefits of improved coherence and economies of scale that an aggregated approach can bring. Learners of all ages have an entitlement to appropriate, professionally run services, which requires firm central direction on technical, information and quality standards.

Development of the tools and educational content to support personalised learning

85. Becta will develop proposals for the next stage of intervention with a particular focus on quality in the context of personalised learning. This will require a coherent definition and common understanding of what constitutes quality resources for learners and professional tools for teachers and trainers, identifying those resources and tools which are considered high quality and have been shown to raise learner attainment when effectively deployed. For example, JISC collections has been effective in providing cost-effective digital educational content in HE and FE.

Personal ownership

86. There are significant opportunities to deliver educational information, resources and services via many personally-owned devices. Parents, learners and employers are already directly funding many of these and public funds can be used not to replicate this provision but to support its use for learning. The era of government investing in the major share of technology used by individuals for education and skills is passing.
87. This means that increasingly leaders will need to ensure effective management of a 'mixed economy' of publicly funded and personally owned technologies, and ensure that no learner or family is disadvantaged due to lack of access to technology. This raises significant issues, including those relating to licensing and liabilities, data protection, and health and safety. Becta and its partners will provide advice and guidance on each of these areas. Industry partners including internet service providers, hardware and educational service providers, will be fully involved.

Environmental sustainability

88. There are two sides to technology sustainability. Any solutions have to be affordable in the long term. The continuing downward pressure on the price of technology will contribute to affordability, but additional effort will be needed to achieve value for money. National procurement frameworks and reuse of digital resources can help drive down costs. The tendency noted earlier towards greater personal ownership of technology will also reduce the pressure on hardware expenditure within the education budget.

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89. The second aspect of sustainability is reducing the impact of technology on the wider environment. Technology relies on electricity and the carbon-based resources used to generate it. Becta will publish guidance on saving power and recycling components, and will work with the technology industry to develop more efficient technologies and components that can be more easily recycled.
90. Becta will work to fully support Government targets for environmental sustainability, including the ambition for all schools to be sustainable schools by 2020 and for all new school buildings to be zero carbon by 2016. We will support the newly established taskforce on zero carbon schools. Becta will develop approaches to technology infrastructure that encourage architectures which use less power and allow users to make better use of devices and technology which negate the need for energy consumption in other ways, such as remote working.
91. This work will require exploring many significant and challenging issues including the use of virtually managed technology devices, the opportunities and issues around recycling digital devices, moving to thin client approaches, and 'smart buildings' with heating, lighting and water systems controlled via ICT. We will work with key partners such as Partnerships for Schools to ensure that our infrastructure strategy fully supports this agenda.
92. The plans for sustainable FE college buildings set out in *Building Colleges for the Future*, the capital strategy for the next three years and the Government's ambition for all new college buildings to be zero carbon by 2016 are important developments, and the strategy will align with them as they take shape.

Low Carbon ICT project at the University of Oxford

Funded by JISC, this project provides a practical exemplar of how an institution can implement both the policies and the technologies to conserve energy used by desktop and server hardware with the minimum of disruption to users and system administrators alike. The aim of this project is to develop, monitor and analyse the effectiveness of virtualisation

and wake-on-LAN services in reducing the carbon footprint of the University. The objective is to serve as an exemplar project for other educational organisations that want to reduce the environmental impact of their ICT infrastructure.

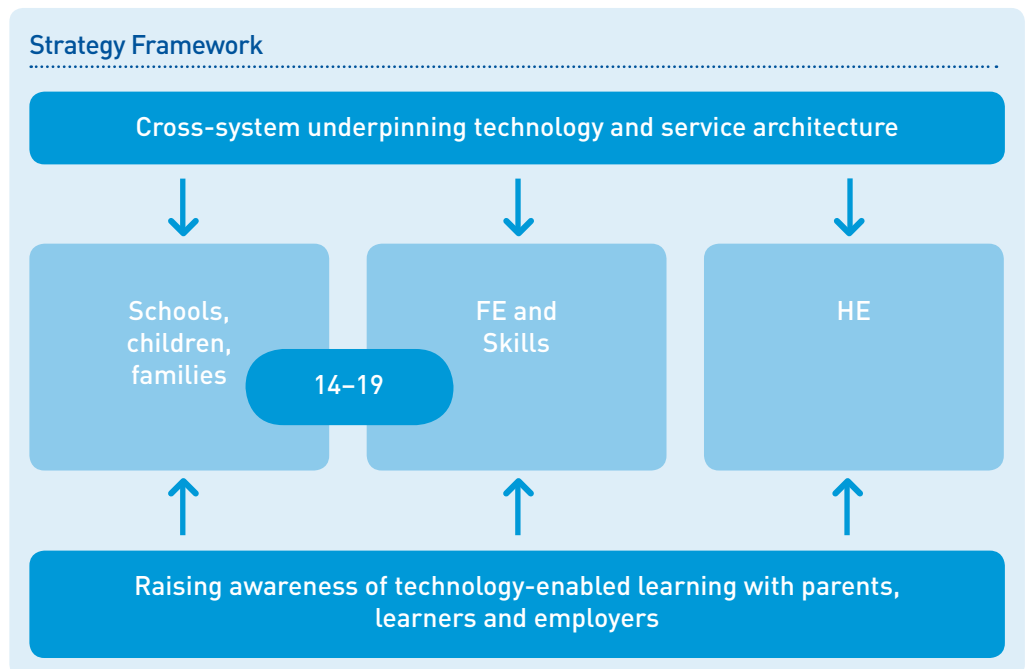


<http://projects.oucs.ox.ac.uk/lowcarbonict/about/>

Section 5: Governance, Delivery and Performance Framework

A system and sector strategy

- 93. Most change in education and skills happens within specific sectors, and this strategy embodies an implementation plan and step-by-step activity for each sector. In addition to co-ordinating the strategy within each sector, Becta will also have an important role in ensuring that there is coherence and knowledge transfer between the sectors.
- 94. We have already published the first of these implementation plans – that for the FE, Skills and Regeneration sector for 2008–11. This strategy has been shaped by four priorities: an FE system fully confident in the use of technology, the need for equity and social cohesion, raising the quality of technology products and services, and accelerating quality improvement. We are working with colleges and providers, and with the national agencies which support further education and skills, to ensure that this plan aligns with other strategies such as the National Improvement Strategy (in which Becta is a partner), and that it supports the move towards self-regulation within the sector.



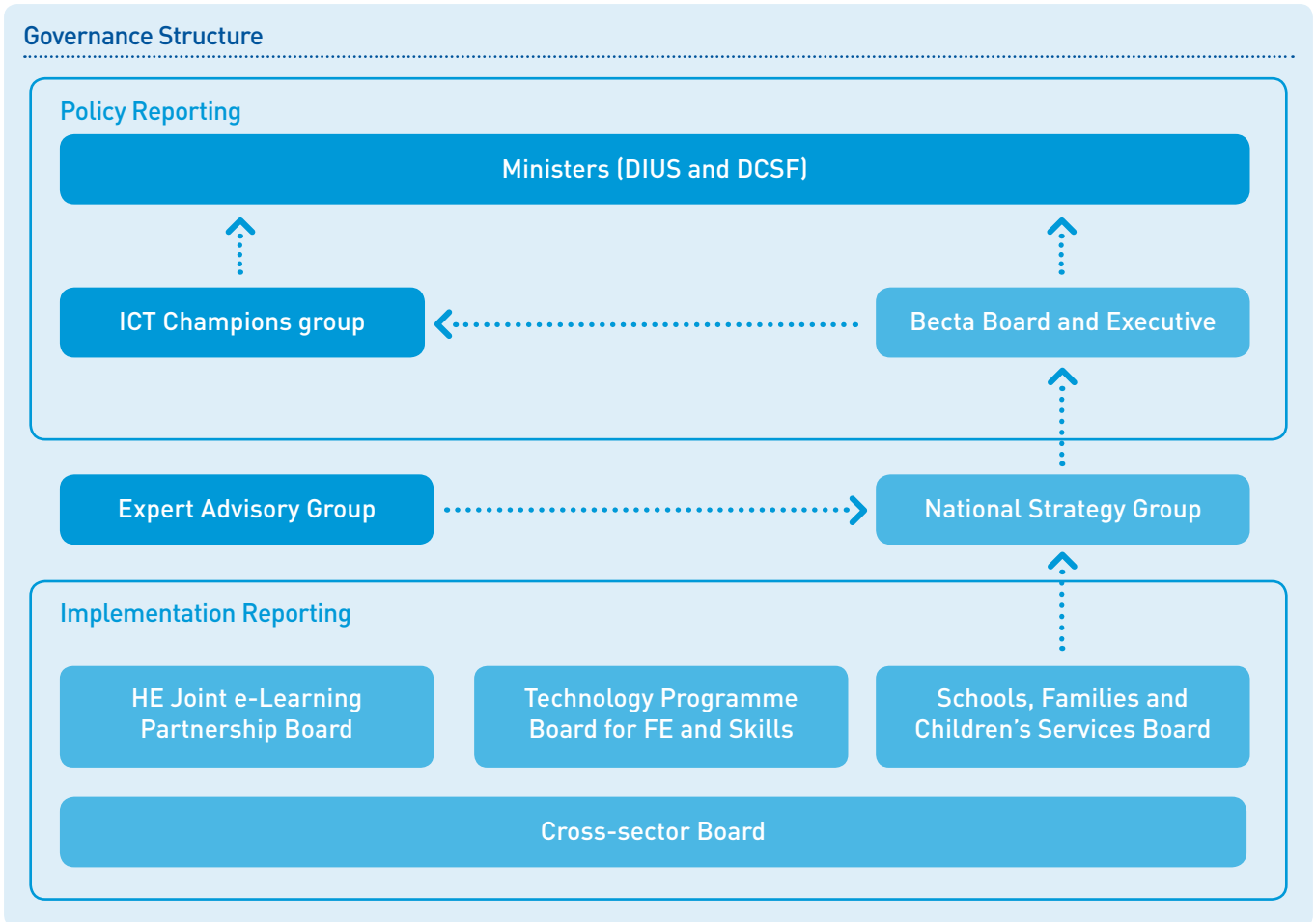
95. In pursuing each of the sector implementation plans, one of Becta's key roles will be to ensure that three overarching objectives are in place:
- That the underpinning technology is system-wide and ensures interoperability and value for money
 - That the focus is consistently on the learner and led by demand. The education and skills system must offer coherence for learners as they pass through each phase of education and training and throughout adult life
 - That in each sector, the workforce has the confidence and competence to use technology – and access to high-quality tools and resources – to support teaching and learning, and institutional effectiveness.
96. *Harnessing Technology* is a strategy for England. The other UK countries have equivalent plans for developing the use of technology for learning and there is much in common in our aims and ambitions. We will work with the devolved administrations and relevant supporting agencies in Northern Ireland, Scotland and Wales to ensure alignment and bring coherence and synergy to UK-wide developments. JISC also has a UK-wide role, which helps provide synergy and coherence in higher and further education.
97. The UK education and skills reform agenda provides the immediate context for the *Harnessing Technology Strategy*, but the wider global setting is crucial. To help position the strategy within this broader context, we are holding a World Technology in Education Forum in January 2009, which will be attended by ministers, officials and leading practitioners from the UK and abroad. A key aim of this event is to learn from international experience and refine strategy in the UK, as well as promoting UK expertise and helping others identify how to progress in the use of technology in education.

“ Learning technology and learning technologists are essential to modern learning. The Association for Learning Technology strongly supports the strategy, and will play its full part in implementing it. ”

Association for Learning Technology (ALT)

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Governance

98. *Harnessing Technology* is a national, cross-sector and multi-partner strategy. Effective governance arrangements will be crucial to its success. The proposed strategy will operate on three closely linked levels – policy direction and reporting, strategy development and leadership, and programme design and delivery.
99. The National Strategy Group will meet quarterly and will be chaired by Becta’s Chief Executive. It will comprise the Chairs of the Implementation Boards, key DIUS and DCSF sponsors and representatives from policy NDPBs.
100. The Implementation Boards will be sector-focused but include a cross-sector Board which will be responsible for issues such as interoperability, procurement, the Next Generation Learning campaign, and linking with Government, CIO Councils, and the Information Standards Board.

101. Becta has agreed with HEFCE, HEA and JISC that this strategy will provide the overarching framework of support and challenge and complement their strategy to enhance learning and teaching in higher education. We will work with them on setting up effective governance and linkage between the HE sector strategy and the *Harnessing Technology Strategy*. HEIs play a key role, contributing at both the national and the local level and we will work with them, and with key partners, to enable them to fully participate in this cross-system strategy. In particular we will work to provide better linkage and knowledge transfer between leaders working in different sectors.
102. There will be an Expert Advisory Group, comprising experts and leading educational influencers, who will provide a formal reference group for Boards to use when developing their work.
103. Becta will set up a clear process by which learner voice and learner engagement are formally incorporated into the strategy's governance.

“ We strongly support Becta's *Harnessing Technology Strategy* which provides a roadmap for the effective delivery of a flexible and innovative ICT programme across UK education. ”

JANET

“ NCSL is pleased to support the *Harnessing Technology Strategy* which contributes to making a positive difference to children's lives through excellent school leadership. ”

National Council for School Leadership (NCSL)

“ We welcome the publication of *Harnessing Technology* and look forward to working closely with Becta and the other national partners to ensure the profile of technology is raised and the benefits it brings to improving teaching and learning are fully realised. *Harnessing Technology* is an important part of the National Improvement Strategy. ”

Quality Improvement Agency (QIA)

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104. The National Strategy Group will:

- agree accountabilities for high-level actions within the strategy
- ensure coherence in delivery of the strategy between sectors and advise sector boards as appropriate
- establish a high-level view of the progress in *Harnessing Technology*, and of related risks, issues and opportunities (using reports from the Boards)
- ensure that the overall strategy reflects and supports Government policy and related priorities, advising on the consequent development of the strategy
- report on progress against strategic objectives and advise on related risks, issues and opportunities.

105. The Implementation Boards will:

- agree an implementation plan for the sector, aligned to the objectives and priorities of the *Harnessing Technology Strategy*, defining key milestones and deliverables in the short, medium and long term
- ensure co-ordinated delivery of key activities, projects and services
- monitor and track individual projects and services, identifying added value from the combination of projects across the area
- advise the National Strategy Group on progress and related risks, issues and opportunities
- review progress and impact against system outcomes
- link and communicate with stakeholders to build relationships and develop shared vision and knowledge.

Managing performance and reviewing progress

106. Delivery will be based upon solid evidence and performance data relating to the benefits of technology for improving learning outcomes, on the performance of the system in providing and realising those benefits, and on progress towards realistic but stretching targets for improvements.

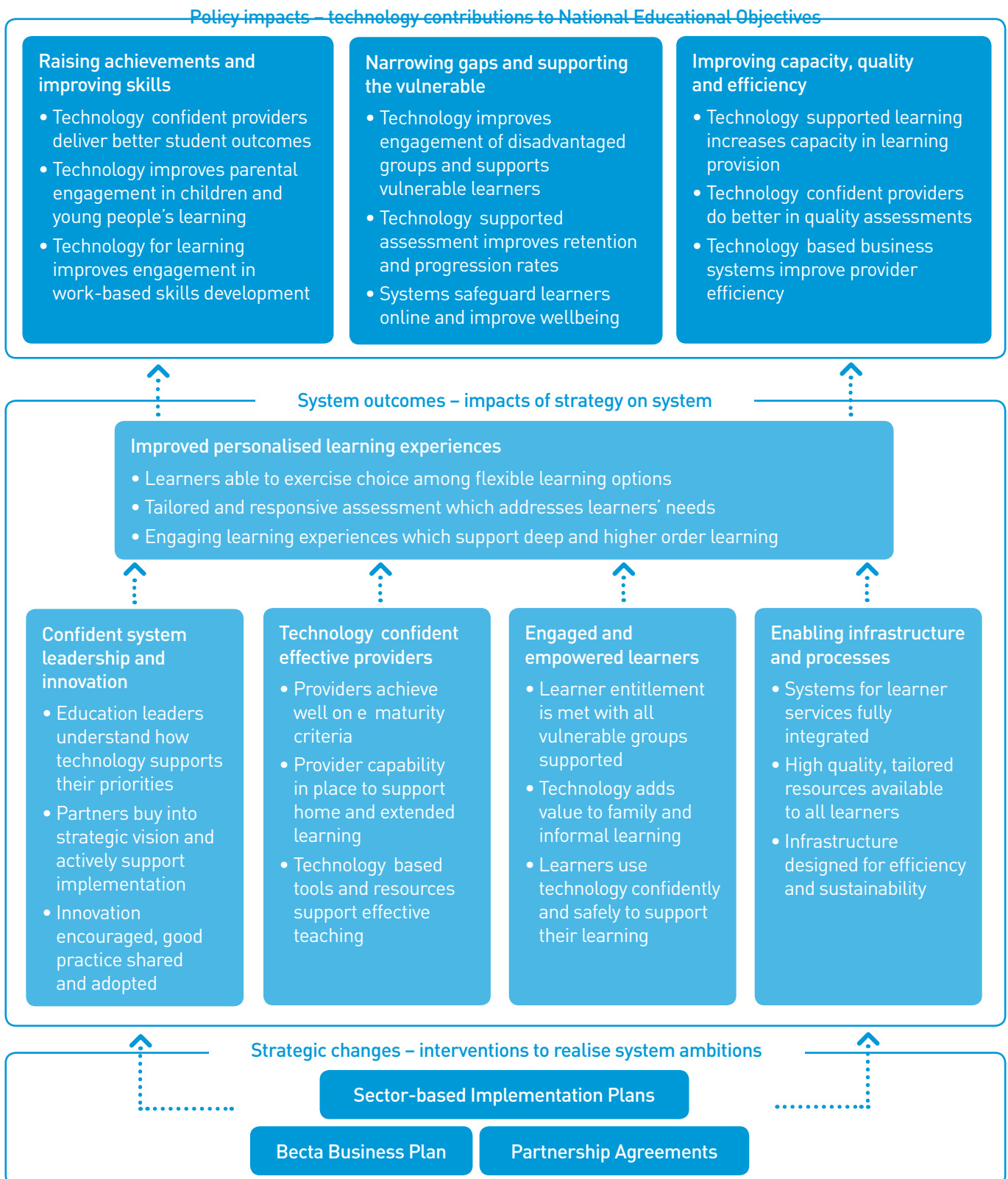
107. The main vehicle for providing this intelligence and feedback will be the Performance Framework for the *Harnessing Technology Strategy* (see page 47). This will draw from a range of sources, integrated into a database that will underpin performance and progress monitoring and will also have the capacity to produce a range of more specific analyses on particular aspects of the system.

“ The Specialist Schools and Academies Trust is fully committed to the *Harnessing Technology Strategy* and the impact learning technologies can have in raising achievement for all learners. Becta’s *Harnessing Technology Strategy* clearly identifies the opportunities which learning technologies present, and provides a framework by which these can be effectively implemented for all learners. ”

Specialist Schools and Academies Trust (SSAT)

108. The purpose of the performance framework is to support the roles of the Becta Board, the National Strategy Group, the Implementation Boards and partners by:
- demonstrating how an e-confident education system has direct impacts on the Government’s policy goals for families, education and skills
 - ensuring that developments to build a more e-confident system are designed and targeted with a clear ‘line of sight’ to specific policy impacts
 - using research evidence and performance data to monitor and learn from progress towards system ambitions and their related policy impacts
 - assuring the coherence and transparency of activities to develop the e-confident system, by providing shared objectives for all partners.
109. This strategy covers the six-year period from 2008/9 to 2014/15. For each of the outcomes set out in the dashboard Becta will work with partners to identify appropriate metrics, assess the current baseline and set appropriate goals and timescales for future performance and intervention programmes.
110. This strategy is a partnership strategy and two annexes set out a high-level performance management table showing the contributions of partners. These provide an initial framework and will continue to evolve to meet the changing needs of the system through the work of the National Strategy Group and the Implementation Boards.
111. Measures of success will be further refined with the Implementation Boards and partners using the framework in Annex 2.

Performance Framework for the Harnessing Technology Strategy



Annex 1: High-level performance management framework

01. Whole-system development

Ambition and KPIs

Gaps and challenges

Capabilities to be developed

Interventions and initiatives (examples)

Strategic Leadership

Government and national partners endorse and sign up to the strategy
Education policies and plans take account of the opportunities and benefits provided by technology
Key activities and priorities of partners are aligned with and supportive of *Harnessing Technology* goals

The vision for technology is not fully recognised or integrated into policy development
Partner planning happens independently of *Harnessing Technology* priorities and objectives

Becta's role in strategic leadership for technology-led solutions should be strengthened and supported
Policy makers' understanding of technology opportunities and benefits strengthened
Partners' key operating and delivery plans should directly reference *HT* aims and performance criteria

Establish National Strategy Group, chaired by Becta, to co-ordinate partners' strategies and delivery plans
Increase knowledge exchanges between Becta experts and policy makers within policy processes
Development of new e-learning and technology elements for the skills needed by practitioners, managers and leaders both for teaching and learning and efficient business processes (Further Education and Skills Plan)
Systematic national professional development programme, including updated training interventions and qualifications and a national leadership capacity-building programme (FES plan)

Ambition and KPIs

Gaps and challenges

Capabilities to be developed

Interventions and initiatives (examples)

Learning and innovation

Knowledge of effective practice, experience and research shared and used across the system

Learning providers, technology suppliers, intermediaries and others participate actively in communities or networks for knowledge exchange

'Good' levels of e-maturity become the norm for learning providers in all sectors and build on widespread adoption of best practices

Good practice and excellent performance is concentrated among a minority of providers, with an unduly long tail of underperforming institutions

Fragmentation within sectors makes it hard to propagate good practice

Decision-making relating to learning technology is insufficiently evidence based

Policy makers, delivery partners and learning providers are all well informed on current good practice and research findings

All key players participate actively in knowledge exchange activities

Providers receive help in adopting innovative and good practices

Support effective networks of communities of knowledge about technology solutions and use of technology to address frontline priorities

Use award schemes for innovative learning providers to publicise and promote best practice

Identify and support Technology Leadership Champions from leaders of sector-based knowledge networks

Establish a co-ordinated research strategy across agencies to identify and disseminate evidence of benefits and impact of technology investment (FES plan)

A supported network of business leaders who will be advocates for flexible and online delivery (FES plan)

02. Personalised learning

Ambition and KPIs

Gaps and challenges

Capabilities to be developed

Interventions and initiatives (examples)

Tailored content and resources

Technology tools and resources for improving educational outcomes are readily available and universally used – all learners benefit from high-quality learning resources, relevant to their needs

Learners of all ages are able to use online resources safely and securely – appropriate safety measures are universally applied

Learners, parents and employers (where appropriate) engage with teachers in designing personalised learning programmes drawing on a range of appropriate digital resources – e.g. percentage of schools implementing personal learning plans

Development and availability of high-quality digital resources is uneven, and teachers and learners need help to find the best materials

Many parents are concerned about the safety of their children online, which may discourage the use of valuable resources

Learning providers need to be able to locate and secure high-quality resources suitable for diverse learner needs

Providers, suppliers and intermediaries should be able to collaborate on identifying and filling gaps in available resources

Both learning providers and learners need to be able to use online resources safely and securely

Establish recognised quality standards for digital learning resources and professional tools (FES plan)

Business benefits developed and promote the use of functional and technical specifications and standards for technology products and service, a National Digital Infrastructure and quality criteria for digital content. (FES plan)

Guidance developed identifying good practice and promoting the benefits of using Becta procurement frameworks (FES Plan)

Ambition and KPIs

Gaps and challenges

Capabilities to be developed

Interventions and initiatives (examples)

Flexible delivery and pathways

Learners have choices about the style, mode, pace and places that they learn – e.g. percentage of schools providing remote access to learning networks and resources

Learners are able to progress through different episodes and stages of learning in ways that suit their lives and needs – e.g. percentage of courses recognised for credit accumulation awards

Most schools for example do not comprehensively operate learning platforms (only 11% of primary and 46% of secondary)

The 14–19 agenda and the introduction of Specialised Diplomas add urgency to the need for flexible learning solutions to support flexible, multi-mode learning patterns

Learning providers should be able to support learning at times, places and modes that fit with learners' needs

Learners need the resources and skills to make use of a range of different learning modes

Learning providers need the tools and systems to be able to support students on multi-mode programmes like Specialised Diplomas

Providers ensure that through technology learning opportunities are made available for all including 'digitally excluded', disadvantaged learners and small businesses (Further Education and Skills Plan)

Work with QCA, awarding bodies and providers (e.g. AoC) to develop solutions for SD delivery and management

Work with Local Authorities to ensure all schools provide full internet access and digital learning platforms for all students

02. Personalised learning (continued)

Ambition and KPIs

Gaps and challenges

Capabilities to be developed

Interventions and initiatives (examples)

Personalised assessment

Practitioners use technology to incorporate more formative assessment into learning experiences, alongside 'when ready' summative assessment practices – e.g. percentage of schools using ICT for assessment and student reporting

Students and parents (and employers when appropriate) receive regular and timely feedback on their performance, progress and needs – e.g. provision of 'real time' learning progress reports

Learners have greater control over their own progress and learning plans, based on self-assessment and online guidance resources

Though use of internal e-assessment in schools for example is rising (around 50% of teacher assessments are done online), the availability of e-assessment for public exams and Key Stage assessment is still limited

Parents and students still have to rely too much on once-a-term or even once-a-year feedback on performance

Teachers should be able to provide responsive assessment and feedback to students as an integral part of courses

Learners and parents should be able to receive frequent and useful feedback on their progress, available through a range of alternative media

Becta should work with the NAA, QCA and awarding bodies to develop specifications and functional requirements for technology-enabled personalised, formative assessment and develop practical implementation guidance for practitioners and learners

Increase the proportion of colleges and providers with integrated learning management systems (FES plan)

Becta and partners to produce specific advice and guidance for e-assessment and digital portfolios to include the apprenticeship programmes

Develop and extend online real time reporting from all schools to all parents

03. Engaged and empowered learners

Ambition and KPIs

Gaps and challenges

Capabilities to be developed

Interventions and initiatives (examples)

Informed demand

Learners, parents and employers are well informed about and motivated towards learning opportunities – e.g. percentage of parents believing e-learning is valuable (survey results)

Learners and parents (and employers) are able to control how, when and where they study, and to exercise real choices – e.g. the percentage of flexible courses available in localities

Low levels of awareness of educational opportunities and support available, especially among disadvantaged groups

Survey results show big gaps between children’s preferred learning styles (problem based, group work, using technology) and their actual experiences of classroom learning, for example

All parents, learners and employers should have good awareness and appreciation of their entitlements to learning opportunities and available support

Learners should have the skills and information to express preferences and exercise choices in their modes of study

Learning providers should have the flexibility to offer real choices to learners and parents

Develop Next Generation Learning campaign to promote awareness of Learner Entitlements to information, support and choice

Develop better, online information, advice and guidance services for parents, learners and employers

03. Engaged and empowered learners (continued)

Ambition and KPIs

Gaps and challenges

Capabilities to be developed

Interventions and initiatives (examples)

Equitable access

No learners are excluded from learning opportunities through inability to access services through technology – e.g. percentage of learners without internet access

All learners are able to access the same range of educational opportunities and services through direct or online modes as appropriate – e.g. availability of remote access to school and college systems, ratios of PCs/students in schools and colleges

Too many learners do not have access from home, and are effectively excluded from online services; provision in schools, colleges and providers is too uneven between the best and the worst

Support services for learners are disjointed and sometimes complicated to access, thereby putting off students with the greatest need

Many schools, colleges and providers lack the facilities to provide technology-enabled support for learners with special needs – for example, only 40% of primary and 47% of secondary schools have such facilities

Every learner, and their parents, should be able to access online services from home if they wish

Learners and families should be able to access support services through a range of channels

Learning providers should be able to ensure that no groups of students or employers are excluded from their services due to lack of supporting technology

Develop Next Generation Learning campaign to ensure that learners and families are aware of the support available to them

Extend the Home Access Scheme towards 100% penetration of target groups

A supported network of business leaders who will be advocates for flexible and online delivery (FES plan)

Develop model guidance for colleges and providers so that technology systems are not only configured to best safeguard learners but also the learners themselves are educated to become safe and discriminating users of technology (FES plan)

Ambition and KPIs

Gaps and challenges

Capabilities to be developed

Interventions and initiatives (examples)

Proactive support

Careful monitoring of student needs and emerging problems is used to help students remain engaged with learning – e.g. reducing drop-out rates, engaging those not in education, employment or training (NEET)

Smart and joined-up supporting services make it easy for students and families to access the resources they are entitled to, and hence encourage higher levels of participation – e.g. raising Higher Education participation among disadvantaged groups

Experience with support schemes like LSC Learner Support (including EMA) shows that some students find the system and processes off-putting. Student awareness of the support services available to them is uneven, and lowest among the most needful groups

All learners and families should be aware of the support available to them and how to access it. Learning support services should be able to work together and share information to provide seamless services to learners and families

The Next Generation Learning campaign should include information for students and families in hard-to-reach groups about technology-enabled support services. Support services should develop joined-up, one-stop access arrangements, using MIAP and ULN information

04. Effective and responsive providers

Ambition and KPIs

Gaps and challenges

Capabilities to be developed

Interventions and initiatives (examples)

Confident leadership and workforce

Provision is characterised by strong strategic leadership of organisational change in the effective application of technology to education, skills and training – e.g. Ofsted assessments of the quality of ICT leadership in schools

Teaching in schools, colleges and HE is based on confident knowledge and application of best practice uses of technology resources, e.g. the percentage of teachers using technology to plan lessons and to create their own digital materials (much less than 50%)

All learning providers should make good use of technology to support responding to diverse learner (and parental and employers') needs – e.g. to help articulate learner voice

Excellence and effective leadership are concentrated among a minority of high-performing providers, and too many give insufficient priority to the provision and deployment of technology solutions

Levels of technological literacy and confidence among teachers are similarly uneven, with too many teachers and trainers lacking the skills and knowledge to give their students the benefits of technology-enabled learning

All learning providers should demonstrate at least 'good' levels of ICT leadership, through Ofsted inspections and eMF self-assessments

Learning providers should be able to engage effectively with parents, employers and students to agree their needs and appropriate responses

Teachers in all sectors should demonstrate high levels of expertise in the use and benefits of technologies in learning delivery, as an expectation of their professional status

Learning technology professionals experience appropriate development and support

We will look to NCSL, PfS, and LLUK to:

- define leadership standards to take account of the strategic leadership of technology as a key understanding and competency area
- build these standards into leadership qualifications frameworks
- integrate into leadership programmes provision and development which fully address the strategic leadership of technology.

We will discuss with Ofsted how inspection and institutional self-evaluation can better assess leadership effectiveness in this area. We will work with Ofsted to provide guidance and support to inspectors to support their judgements.

Development of Technology Exemplar Network providers (FES plan)

Review of the efficiency and effectiveness of the delivery chain for technology investment (FES plan)

Ofsted to consider and propose how best it can respond to Becta's wish to embed the effective use of technology in any revision of the inspection process (FES plan)

All Initial Teacher Training (ITT) and CPD programmes to include the effective use of technology wherever appropriate (FES plan)

Ambition and KPIs

Gaps and challenges

Capabilities to be developed

Interventions and initiatives (examples)

Innovative use of resources

Providers secure and deploy technology effectively to support innovative, learner-centred services

Practitioners use technology effectively to tailor teaching, learning and assessment according to learners' needs

Although frameworks have been developed to enable providers to access quality-assured resources, take-up of these schemes is uneven across Local Authorities and localities

Issues of institutional ICT leadership and workforce e-confidence (see above) also constrain provision and innovation

Providers, supported by Local Authorities, as appropriate, make full use of the resource frameworks available to them (see also Securing World Class Resources, on page 60)

Providers and practitioners are well informed about best practice and innovations in uses of technology (see Knowledge Exchanges, above)

Becta will work with national partners to provide better, practically focused support to improve teaching in the following areas:

- Assessment for learning to secure better curriculum match and differentiation
- Lesson and learning design – addressing issues of optimum pace, use of time and learning modes (and learner involvement in this)
- Resource location, access and integration, including the use of media and communication/collaboration tools for first-hand, authentic learning
- Teaching interactions including presentational techniques and questioning/learner engagement
- Monitoring, evaluation and reporting to learners, parents and employers.

04. Effective and responsive providers (continued)

Ambition and KPIs

Gaps and challenges

Capabilities to be developed

Interventions and initiatives (examples)

Self-improving organisations

Providers use technology to maintain effective business processes and to monitor and improve performance – e.g. Ofsted judgements of the quality of ICT management in schools (eliminating 'unsatisfactory' performance)

Providers use technology to monitor and improve the performance of their students – e.g. percentage of schools using ICT for assessing impacts of technology on student achievements

Far too many providers continue to rely on manual methods for student administration, including timetabling, registers, reports

Productivity of teaching staff is constrained by the persistence of manual administration work and failures to adopt innovative good practices

All providers are able to use ICT effectively to monitor and improve their management performance

Teachers are able to concentrate on their teaching and student support, with the minimum of administrative bureaucracy

Provide the e-Maturity toolkit and self-assessment framework to help providers to assess their capabilities and develop solutions to weaknesses

Revised National Improvement Strategy and FES Technology strategy (and Harnessing Technology phase 2 strategy) are aligned (FES Plan)

Initial scoping to determine incentives to using online and blended learning (FES plan)

Provide a framework and toolkit for providers to self-assess, measure their distance travelled and develop their capability in the effective use of technology (FES plan)

05. Underpinning infrastructure

Ambition and KPIs

Gaps and challenges

Capabilities to be developed

Interventions and initiatives (examples)

Joined-up information

Cross-system information sharing and connected systems ensure consistent and personalised services for learners and providers – e.g. implementation and take-up of MIAP/ULN services by providers

One-stop services and access points for learners and families to different but closely related services such as enrolments and financial support – e.g. the integration of UCAS and SLC access for HE students

Government ambitions indicate the need for wide-ranging system reforms to the way services for children and young people work together. They seek to be increasingly citizen centric, provide a more personalised offering for learning, ensure equity of provision for all and a much richer and diverse range of opportunities through effective collaboration between providers

National partners should be able to collaborate effectively to share information and provide common points of access for learners and providers

Learners (and families and employers) should be able to access 'one stop' points of entry to a range of related services, based on one set of data entries

Continued roll-out and take-up of ULN among post-16, FE, work-based and HE provision

Encourage cross-sector adoption of solutions developed for one sector, such as the JISC Collection initiative

Increase the proportion of colleges and providers with integrated learning management systems (FES plan)

05. Underpinning infrastructure (continued)

Ambition and KPIs

Gaps and challenges

Capabilities to be developed

Interventions and initiatives (examples)

Securing world-class resources

Collaborations between national partners and major suppliers ensure the availability of high-quality digital resources that are good value

National and sectoral procurement frameworks give providers access to quality-assured resources at good prices

Learners, families and employers have access to and make good use of, national or sector-wide technology supply schemes (such as Home Access)

We already have models whereby resources made available to one sector can be extended to others. In the next phase we will challenge all publicly procured developments to ensure that benefits in one sector can be acquired for the whole system – and be available to support informal and family learning

In parallel, technology development will continue apace. Speed of connectivity, processors and memory will all continue to develop without the need for intervention

Government no longer invests the major share in technology used by users in education

National partners should be able to collaborate with each other, with technology providers and with end-users in a managed and non-competitive environment

Learners, families and employers should be able to access quality-assured learning resources through their own technologies, and on diverse platforms

Learning providers should be able to secure technology resources that have been quality assured and at negotiated best prices

A rapid step-change in the provision of information systems to help reform and 'e-enable' the ways in which education carries out its underpinning business processes

Development of a common understanding of what constitutes quality resources for learners and professional tools for teachers, identifying those resources and tools which are considered high quality and have been shown to raise learner attainment when effectively deployed

Becta will continue to work with partners to encourage collaborative provision of services and to realise the benefits of improved coherence and economies of scale that an aggregated approach can bring

Business benefits developed to promote the use of functional and technical specifications and standards for technology products and services, a National Digital Infrastructure and quality criteria for digital content (FES plan)

Ambition and KPIs

Gaps and challenges

Capabilities to be developed

Interventions and initiatives (examples)

High-value tools and content

Innovative solutions to shared needs or problems are developed through cross-sector collaborations, and are quickly disseminated – e.g. percentage of providers engaged in collaborations with other providers to share or develop technology resources

The time, skills requirements and costs of developing local solutions to identified needs inhibit innovations that could be cost effective on a national or shared basis

Front-line providers should be able to articulate and share identified needs for new solutions, and to collaborate with suppliers in their development
 Innovative providers should be encouraged and helped to share their resources with others

We will promote and seek to put into place national arrangements for the collaborative development of content and services to enhance front-line value for money and reduce duplication of effort
 Establish recognised quality standards for digital learning resources and professional tools (FES plan)
 Identify, develop and maintain efficiency opportunities to allow the FE system to achieve significant cashable efficiency savings (FES plan)

Annex 2: Partner roles in delivering the strategy

Shared interest in HT'08 strategy success	Contribution sought towards HT'08 goals	Proposed partnership activities	Indicative measures of success
Policy Makers (DCSF, DIUS)			
Impacts of technology on policy targets for improved achievement levels, and to reduce inequalities in educational opportunities	Building understanding of technology impacts and benefits into the design of educational policy initiatives	Programmes and exchanges to develop policy teams' awareness of technology possibilities	Technology considerations and evidence included in policy papers and plans as a matter of course
Impacts of technology for improving the capacity, quality and efficiency of educational provision	Giving departmental agencies a remit and encouraging other Government Departments to collaborate with Becta on HT'08 strategies	Updating of Becta and relevant partners' remit letters to include appropriate HT objectives	All key partners are mandated to work with Becta to realise HT goals
Power of technology for improving parental, employer and learner voice and choice	Providing funding as needed for investments in educational technologies and systems	Reflection of technology-related benefits and goals in Departmental publicity and campaigns (e.g. DCSF websites for parents, governors and teachers)	Increased awareness and demand for technology benefits among target groups
Demonstrating value from Government's investment in technologies for education		Active participation in HT delivery management, through National Strategy Group and sector Delivery Boards	Senior Departmental membership on all HT governance groups
			Becta invited to participate in Departmental policy thinking at the design stage

Shared interest in HT'08 strategy success	Contribution sought towards HT'08 goals	Proposed partnership activities	Indicative measures of success
Local Authority (LGA, ADCS, local authorities)			
Uses and benefits of technology to improve provider capacity, performance and efficiency at local levels	Using influences over local schools and (in future) colleges to encourage effective planning for and use of learning technology	Introduce local Technology Leadership networks and excellence awards, working with Becta's TL Champions	Percentage of LA schools (and in future colleges) rated as good or better on e-maturity criteria
Uses of technology to improve quality and range of local education services, such as extended schools, home access and 14-19 pathways	Developing and leading local implementation plans for relevant Becta and other HT programmes	Use local improvement programmes to encourage schools and colleges to develop technology strategies and plans	Percentage of local schools, colleges using national frameworks
Uses of technology to support delivery of LAs' education service obligations, e.g. for special needs, Travellers, asylum seekers, child safety, etc.	Ensure that local schools and colleges and LA aggregated procurement including for BSF and PCP, make best use of national ICT procurement frameworks	Use LA positions on school, (and in future college) governing bodies, and LA aggregated procurement including PCP and BSF, to encourage use of national frameworks and systems	Percentage of local schools, colleges and LA aggregated procurement making use of national frameworks
Impacts of technology-enhanced provision for improving local participation and achievement levels	Ensuring that LA education services and providers make full use of national learner service systems, such as the Unique Learner Number and LSC's Learner Support Service	Set up local collaborative programmes for schools and colleges to procure, operate and share learning platforms	
		Set up local programmes to support Home Access and IT-enabled extended school schemes, with extra funding as needed	Percentage of local families with home access to school information and learning platforms
		Support and challenge LAs to develop appropriate locality planning for technology	

Shared interest in HT'08 strategy success

Contribution sought towards HT'08 goals

Proposed partnership activities

Indicative measures of success

Funding Bodies (LSC, HEFCE)

Deployment of technology solutions to support providers' delivery of funding contracts, re access, numbers and quality

Developing and promoting sector-specific articulation of HT priorities and strategy, especially re Learner Entitlement

Uses of technology to enhance efficiency and value for money of provision

Using funders' influence with FE and HE providers to encourage institutional technology planning

Promoting good practice and knowledge exchanges in use of learning technologies

Impacts of technology for enhancing the flexibility, effectiveness and sustainability of provision

Leading sector-wide schemes for shared standards and frameworks for technology resources and services

Uses of technology to make sectors more responsive to learners' and employers' demands

Encouraging use of technologies to improve public engagement and institutional outreach to schools and communities

Shared interest in HT'08 strategy success	Contribution sought towards HT'08 goals	Proposed partnership activities	Indicative measures of success
Curriculum Development Organisations (QCA, NAA, OFQUAL, Awarding Bodies, SSAT)			
Uses of technology to support introduction of new curriculum and qualification models (especially Diplomas)	Ensuring that new curriculum and qualification models align with aims of e-enabled personalised learning (re content, pathways and assessment)	Identify and support development of technology tools to support Diploma and Apprenticeship pathways	Percentage of providers (schools and colleges) using technology to deliver Diplomas and Apprenticeships
Applications of technology to maximise the number of providers supporting new curriculum models	Helping and encouraging providers to use technologies to support introduction of new learning offers (such as 14-19 diplomas, apprenticeships, etc.)	Develop specifications and recommended practices for e-assessment and e-enabled exam marking	Roll-out and take-up (numbers of users) for QCF credit accumulation
Uses of technology to streamline and improve reliability of exam systems	Encouraging and supporting more flexible and better integrated assessment, using e-enabled methods	Encourage recognition of extra-curricular study and experiences for Diploma and Apprenticeship awards	Percentage of summative assessments and exams completed, marked and returned using technology systems
Uses of technology to deliver national schemes and systems for learners, such as records of achievement and e-portfolios	Providing national infrastructures to support flexible learner pathways and cumulative records of achievement	Progress roll-out of Minerva and the Qualifications and Curriculum Framework for improved learner experiences	
Use of technology to support innovation in curriculum design	Encouraging schools to use technology to support innovation in curriculum design	Develop downloadable tools to support curriculum design	

Shared interest in HT'08 strategy success

Contribution sought towards HT'08 goals

Proposed partnership activities

Indicative measures of success

Quality Assurance Agencies

Uses and benefits of technology for assuring and improving the quality of learner experiences and the performance of providers

Using inspection criteria and processes to encourage providers to develop relevant capabilities

Develop criteria for assessing providers' technology leadership, uses of technology resources, and competences of staff

Relationships between inspection judgements and e-maturity (self-review) ratings

Sector-wide adoption of best practices in learning and teaching models and in institutional management

Using technology to enhance learning experiences and staff effectiveness, and to give feedback and advice on performance

Develop capabilities of inspection workforce to assess and advise on effective uses of learning technologies

Percentage of agency staff with recognised competences in NGL assessment and advice

Support development of self-review tools for providers, and of appropriate professional standards for leaders and teachers in uses of learning technologies

Availability and use of appropriate standards across sectors

Shared interest in HT'08 strategy success

Contribution sought towards HT'08 goals

Proposed partnership activities

Indicative measures of success

**Workforce and Leadership Development Agencies
(TDA, GTC, NCSL, ASCL, leadership foundation, LLUK, ALT, SSAT)**

Improving the professional capabilities of teachers and support staff to support modern teaching methods and e-enhanced learner experiences

Improving the confidence and awareness of technology leadership in schools and colleges

Support recognition and uses of Technology Leadership Champions within sectors

Number of TL Champions recognised and supported, and their impacts on schools, colleges and HEIs

Using technology to help teachers and support staff respond to growing administrative demands for lesson plans, learner plans, feedback to parents, etc.

Developing the confidence and skills of teachers and learning technology practitioners to make best use of learning technologies

Develop criteria and standards for e-confidence among heads/principals/ leaders and teachers/ lecturers/trainers and support staff

Availability of new e-confidence standards for heads/leaders and teachers/lecturers/trainers

Using technology to improve teacher and support staff productivity and job satisfaction, and hence to improve recruitment and retention

Identify and promote good practice in uses of learning technologies among school/college leaders and teachers and learning technology practitioners

Incorporate such standards into improved initial teacher training (e.g. QTS, and equivalent FE and HE standards) and in subsequent CPD programmes

Percentage of teachers/ lecturers/trainers with recognised levels of ICT competence, both at initial qualification and in-service

Shared interest in HT'08 strategy success

Contribution sought towards HT'08 goals

Proposed partnership activities

Indicative measures of success

Delivery Bodies (local authorities, PfS)

Uses and benefits of technology to improve provider capacity, performance and efficiency at local levels

Use influences over local schools and (in future) colleges to encourage effective planning for and use of learning technology

Introduce local Technology Leadership networks and excellence awards, working with Becta's TL Champions

Percentage of LA schools (and in future colleges) rated as good or better on e-maturity criteria

Uses of technology to improve quality and range of local education services, such as extended schools, home access and 14–19 pathways

Develop and lead local implementation plans for relevant Becta and other HT programmes

Use local improvement programmes to encourage schools to develop technology strategies and plans

Percentage of local schools, colleges and BSF partnerships using national frameworks

Uses of technology to support delivery of LAs' education service obligations, e.g. for special needs, Travellers, asylum seekers, child safety, etc.

Ensure that local schools and colleges, including BSF partnerships, make best use of national ICT procurement frameworks

Use LA positions on school, BSF (and in future college) governing bodies to encourage use of national frameworks and systems

Percentage of local families with home access to school information and learning platforms

Impacts of technology-enhanced provision for improving local participation and achievement levels

Ensure that LA education services and providers make full use of national learner service systems, such as the Unique Learner Number and LSC's Learner Support Service

Set up local collaborative programmes for schools and colleges to procure, operate and share learning platforms
Set up local programmes to support Home Access and IT-enabled extended school schemes, with extra funding as needed

Shared interest in HT'08 strategy success	Contribution sought towards HT'08 goals	Proposed partnership activities	Indicative measures of success
Technology Suppliers and System Operators (JISC/Janet UK, MIAP, NAA, ISPS, ICT Suppliers)			
Development of a coherent and growing market for educational ICT products and services	Participation in programmes to develop and implement interoperability standards, including personal access	Support for work of Technology Champions to promote informed provider investments	Percentage of localities with at least two Technology Champions
Widespread adoption of common standards to promote interoperability and competitive choices	Developing, extending and integrating national information systems, including MIAP, QCF, IAG services and Children's Services systems	Extend cross-sector infrastructure services including JANET, ULN, QCF and JISC Collections	Penetration and use of key services, e.g. percentage of providers using ULN
Cross-sector systems and platforms to support information sharing and related services	Supporting development of sustainability standards for ICT, and their implementation in future systems and solutions	Participate in new and updated Frameworks, and promote their use by LAs and providers	Percentage of LA ICT purchases through Beta Frameworks
Creation of technical conditions and options for accessing learning through personal technology		Develop standards and guidance for ICT sustainability across education applications	Percentage of provider ICT resources meeting appropriate sustainability and efficiency standards

Annex 3: Abbreviations

AoC	Association of Colleges	LA	Local Authority
ALT	Association for Learning Technology	LAN	Local Area Network
BSF	Building Schools for the Future	LLUK	Lifelong Learning UK
CPD	Continuing Professional Development	LSC	Learning and Skills Council
DCSF	Department for Children, Schools and Families	LSIS	Learning and Skills Improvement Service
DIUS	Department for Innovation, Universities and Skills	MIAP	Managing Information across Partners
EMA	Education Maintenance Allowance	NAA	National Assessment Agency
eMF	e-maturity framework	NCSL	National College for School Leadership
FE	Further Education	NDPB	Non-Departmental Public Body
FES Plan	Further Education and Skills Plan	NEET	Not in education, employment or training
GTCE	General Teaching Council for England	NGL	Next Generation Learning
HE	Higher Education	OFSTED	Office for Standards in Education (England)
HEA	Higher Education Academy	PCP	Primary Capital Programme
HEFCE	Higher Education Funding Council for England	PfS	Partnerships for Schools
HEIs	Higher Education Institutions	QCA	Qualifications and Curriculum Authority
HT	Harnessing Technology	SD	Specialised Diplomas
IAG	Information, Advice and Guidance	SSAT	Specialist Schools and Academies Trust
ICT	Information and Communications Technology	TDA	Training and Development Agency for Schools
IT	Information Technology	QTS	Qualified Teacher Status
JANET	Joint Academic Network	T2G	Train to Gain
JISC	Joint Information Systems Committee	UCAS	Universities and Colleges Admissions Service
KS	Key Stage	ULN	Unique Learner Number

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Millburn Hill Road
Science Park
Coventry CV4 7JJ

Tel: 024 7641 6994

Fax: 024 7641 1418

E-mail: becta@becta.org.uk

www.becta.org.uk