

Further Education & Skills

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learning

In partnership with

157 Furthering Education & Skills
group

Pushing the boundaries of technology

Towards a future vision for the
innovative use of technology in
FE colleges

A report of a joint seminar held by Becta
and The 157 Group on 5 October 2009

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Technology today is transforming the way in which we communicate and has the power to transform the ways in which we learn. Many learners are already witnessing the benefits that this brings to their experience in Further Education.

Introduction

Technology is shaping the jobs of the future and employers want people who can work in teams and are equipped to research, analyse and synthesise information using the latest technologies. At the same time, other people lacking the scope or access are being left behind on the wrong side of the digital divide.

How will colleges and other providers rise to meet the challenges this will bring? What role will the technology industry play in supporting learning and skills development? A joint seminar by Becta and the 157 Group on 5 October 2009 set out to build a vision of what our colleges could be like in ten years' time and the potential for technology to bring about a transformation. The event, involving leading principals and senior e-learning managers, was hosted by Google, supported by Blackboard International and Cisco and chaired by Simon Jack, a journalist in the BBC's Business and Economics Unit and the regular presenter of BBC Breakfast's business news.

The main themes addressed by speakers and in discussion groups were:

- How will technology make us think differently about the concept of the community and the role of colleges in the community?
- How might technology alter relationships between teacher and learner?
- How can technology help colleges become more efficient?

This report sets out the views of key speakers from colleges and the technology industry who share a vision of how public-private partnerships and collaboration might enhance learning for all through the effective use of technology. It also looks briefly at how the remarkable 'Hole-in-the-wall' experiments in self-organised learning in the Asian sub-continent by Sugata Mitra, Professor of Educational Technology at Newcastle University, are being applied in the UK. The third section of the report summarises intensive roundtable discussions between delegates on the range of barriers to embracing technology and potential innovations to help overcome them.

Finally, the report sets a challenge – which the 157 group accepts – to lead a new generation of pioneering colleges breaking new ground in the use of technology in all aspects of college life.

If you would like to contact us with your views on the ideas of the seminar participants please email feskills@becta.org.uk or info@157group.co.uk

Jane Williams, Executive Director Further Education and 14–19, Becta
Frank McLoughlin, Principal of City and Islington College and Chair of The 157 Group

A partnership in progress

Under the influence of technology, education and training appear to be changing very rapidly. There is a groundswell of activity around the use of technology.

E-portfolios are being used by learners to collect evidence of their learning. There is an abundance of content on the Excellence Gateway that is shared and teachers are posting material on YouTube. But is it going far enough? There has been an incredible transformation since the 1990s. Colleges have made great strides – involving more people in learning – with technology having the potential to put people much more in control of their learning. However, universal access is needed if everyone is to gain the digital life skills they need. Jane Williams, Executive Director, FE and 14–19 in Becta underlined the urgency when she said: “Digital exclusion will be a real barrier in education and other walks of life.”

There is also a growing body of evidence that where technology is deployed effectively, there is an increase in motivation and learning among learners of all ages. Improved outcomes and progression are seen at every level, as Graham Moore, Chair of the 157 Group 2008–09 pointed out: “We find that learners take very quickly to the technology. Education has a role to show the relation between the technology and their life; the teacher is the glue that pulls this together.”

At the foothills of change

But, if technology is changing the way FE colleges operate, it is still having too little impact on the role of the teacher, according to Frank McLoughlin, Principal of City and Islington College and Chair of the 157 Group. Colleges are at the transformative stage of business process redesign, for example with electronic registers, “but the power relationship, where the teacher is the expert dispensing knowledge, remains.” It suited an age when the education of small elites mattered. But this is changing under pressure from learners, employers, and as a result of a revolution in the information environment including Google, wifi, open content, new broadcasting models, user-generated content etc. There was a consensus that we are only at the foothills of redefining educational change and, in future, changes in users will drive changes in colleges. Furthermore, when learners are in the driving seat of change it won't be possible to ignore the momentum generated.

There is, therefore, a common interest in digital life skills and universal access, shared by learners, teachers and colleges, aided by industry. More colleges need to take advantage of the technology premium. There was a 10 per cent rise last year in the number of colleges judged to be 'e-mature'¹ – to around 35 per cent. But, as Jane Williams pointed out: "While that's fantastic, there's still a large percentage that fall below that."

Many in industry see the problem as being one where colleges are caught between the needs and expectations of users and the cost and complexity of technology. Sam Peter, New Business Development Manager of Google Enterprise, said: "There is a new generation of users of technology – they regard themselves as part a worldwide community, to whom they broadcast themselves, and they want access anywhere at any time and they want it to be fast. They have grown up with consumer technology that changes at a rapid pace. As colleges rise to the challenge of the new learner, they must learn to think differently and cannot go on attempting the same old solutions."

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Graham Moore,
Chair of 157 Group 2008–09

¹ E-maturity is defined as 'the capacity of a learning provider to make strategic and effective use of technology to improve educational outcomes'.

Build on your core strengths

According to Sam Peter, although new solutions may suggest the need for prohibitively costly software this need not be the case. She says: “Colleges are currently spending up to 80 per cent of their IT money just on keeping the system running, which leaves very little for innovation. Since successful companies are those that concentrate on their core purpose, it makes sense for colleges to concentrate on education (not on running their own email system, for example) and for industry to concentrate on IT. The current revolution is being driven by cloud computing. In the Google model, your software and data sit in our centres. You manage the systems and your users can access them anywhere in the world, using a browser. We provide storage, your own domain name, 24/7 administrator support and advanced integration capabilities, for example, a number of people can be updating a spreadsheet collaboratively in real time.”

Richard Halkett, Cisco’s Director of Strategy and Research, says technology is now ready for education where it wasn’t previously. There were problems with technology access, bandwidth and cost. “Education prizes reliability and robustness above the level of other industries, but now we are at the stage where it could really work.”

Colleges face challenges from learners not currently served by the system and there is a drive for personalisation to meet demands for new skills for employment and new demands from learners generally. Richard went on to say, “technology is not innovation in itself, but it is a fundamental part of the holistic reform we need. Education 3.0 will be a much more fragmented landscape with the learner at the centre, giving and taking, both actively and passively, from a variety of sources. There will be more input from the private sector and more collaboration between teachers and students. There will be an increase in informal influences and a host of learning providers.”

Learning reform needs innovation

In this new era, education must move away from the old industrial revolution model in which everyone is processed through the same system, says Richard Horton, Senior Director of Education Strategy, Blackboard. “Now we need a new model which will make learning more attractive and allow people to move between education and work throughout their lives. Because it is so difficult to change the education system, it may be necessary to run a parallel virtual system alongside existing institutions – forcing the system to change from the outside – as is currently being tried in New Mexico.” There is dual enrolment as learners pick and choose courses from each system.

An ideal system, he says, would remove barriers and give greater access for learners by increasing flexibility and choice for students. The curriculum would be modular and competency-based. Individual students would have a single record which followed them throughout their life and the system would support multiple entry and exit points to suit individual needs and circumstances. “Teachers would be more effective and education technology would keep pace with the technology students used in their everyday lives.”

A pioneering challenge for the 157 Group

Becta has done a lot of work with the supply chain, on behalf of people in education, harnessing best value in products and services, licenses and leasing systems. Jane Williams says: “There is therefore a clear need for all partners to get their priorities right, to play to their respective strengths and support others wherever possible.” But the new phase calls for new pioneering work, research and innovation from the colleges themselves, which sets a challenge to the 157 Group. Key questions must be addressed anew: What does it mean to be a teacher and what does it mean to be a learner in the new era? What are the real barriers to using technology? Can you define success in using technology in FE? Is technology changing the kinds of people and skills we need? And if new partnerships are so important, what are the main barriers to collaboration? Where is the innovation in teaching and learning taking place?

According to Jane Williams, “In our annual surveys we have introduced a new category this year for ‘pioneers’ which recognises those colleges and providers who are transforming learning and teaching with technology and our results show that 8 per cent of colleges have lifted their game so high that they are now in that category. They are leading the way and that is where we would like the 157 group to be. We would like to look to all of you as those pioneers.”

A pioneer in action

How does technology change the relationship between the teacher and the learner?

In a series of five hundred experiments in different parts of India, Professor Sugata Mitra provided a computer to a group of children and allowed them to organise their own learning. Often in rural areas where teachers were scarce and poorly equipped, his work raises fundamental questions about the respective roles of teacher and learner.

The findings were remarkable. For example, a 13 year old boy learned to browse in eight minutes; a group of children learned 400 words of English, which they spoke to each other, in order to play games; others learned about advanced bio-technology, with little prior science knowledge, purely from information on the computer; some improved their English pronunciation using text to speech software; and a group of desert singers learned to make recordings of their performance. In all cases, the children worked together in groups and instructed themselves.

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“The nature of qualifications will have to change when you have Google in your pocket.”

Professor Sugata Mitra
Professor of Educational Technology,
Newcastle University

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From these experiments, Professor Mitra was able to draw some conclusions:

- Computers and the internet must be provided in a safe, public place that the children associate with play.
- Left to their own devices, the children learned to use basic Windows functions, browsing, painting, email, games and educational materials.
- The method produced computer literacy and improved maths and English.
- It changed social values because the children made friends to learn from each other.
- It improved school attendance and reduced dropout rates and reduced petty crime because the children were occupied.
- Learning is not to do with how difficult the subject is but how relevant they feel it to be.

Building on his pioneering work in India Professor Mitra has been working recently with UK schools and has witnessed similar results. Experiments in the UK in which children worked in groups sharing one computer to research presentations and solve mathematical problems improved test results and raised career aspirations. Based on these experiments, Professor Mitra has drawn some conclusions about the future of learning. It will need:

- subsidised electricity and broadband in every school
- self-organising, fault tolerant technology
- support for self-organised learning environments as part of teacher training
- 'clouds' of mediators as part of the teaching workforce
- a curriculum based on questions not content
- a self-organising learning environment as part of the timetable
- self-organising assessment systems.

He concluded that "Technology will have profound effects on the way people learn and this must change the way we assess. The nature of qualifications will have to change when you have Google in your pocket."

Roundtable discussion groups

Seeking solutions. Roundtable discussion groups addressed three issues: key barriers to progress, what individual colleges should do and what should be done to influence the wider sector. They then outlined challenges for the 157 Group to take forward.

Key barriers to progress

Participants proposed that one of the biggest barriers was the fixed mindset of people with power to bring about change. Discussion also focused on the funding methodology and the need for better-targeted investment; staff training for an ageing workforce; an inflexible curriculum; and the slow move towards systems integration.

Funding and investment:

- The narrow focus for funding on face-to-face teaching and guided learning hours is a disincentive to investment in technology.
- Colleges are behind the pace with developments such as cloud computing, which could free up resources for teaching and learning.

Staff training and CPD:

- Insufficient recognition in staff training and CPD that teaching is more about creating an environment for learning than transmitting facts.
- An ageing workforce that has not grown up with the technology needs more training in new skills, particularly a 'safe place' for CPD to acquire technology skills without fear of judgment. Training and development should be about raising confidence and 'enabling' staff.

Curriculum and assessment:

- Curriculum design and the assessment systems need radical change to allow flexibility to cope with the changing opportunities to learn using technology.
- The education system is too centralised, inhibiting innovation and stopping managers, teachers and learners from trying out new technology.

The technology:

- Technology in colleges is rarely as up-to-date as that which many learners are accustomed to in their home, social and working lives.
- Unreliable technology is a deterrent – tutors and lecturers won't plan a lesson if they fear it won't work; learners reject systems that don't do what they need.
- Failure to integrate systems makes the sharing of services difficult – between different curriculum areas, across college pedagogic and management information systems (MIS), and among colleges, employers and other outside agencies.
- Much technology lacks sustainability – e.g. when technology changes, systems and software are no longer compatible and there is too great a dependency on project funding.

Inspection:

- Ofsted inspectors need more training to identify and highlight best practice in the use of technology for learning.

What you can do in your own college

In order to break down the barriers to progress, there were clearly identified needs to restructure staff training and CPD for an online and e-learning agenda. Alongside this there was a belief in possibilities arising from greater risk-taking and innovation, the potential to increase the use of technology across all college services and the need to ensure greater efficiency and effectiveness.

Innovate and increase usage:

- Exploit technology in radically different ways to offer more personalised learning and overcome exclusion.
- Create flexible areas in college spaces and the timetable for staff and learners to try out new technologies in safety, more akin to Costa Coffee than the traditional library, e.g. wheels on the chairs in a mobile, flexible learning environment so that learners can easily move in and out of groups.
- Increase online support for basic skills, e.g. numeracy in NVQs for nursing assistants.
- Make sure all teaching staff use technology where appropriate.

Efficiency and effectiveness:

- Conduct thorough audits of need to consider what is best done in-house and what can be run as a managed or shared service, e.g. examine cloud computing with a view to putting revenue savings into teaching and learning.
- Scrutinise ways of working more efficiently, since the current economic climate will demand more to be done with fewer resources.

What can be done to influence the wider sector

These discussions focused on issues that often fall beyond the scope of individual colleges and call for wider collaboration and sharing of resources and ideas.

- Ensure that every college has a strategy, linked to other 14–19 providers for technology in learning.
- Exploit personal, hand-held and other mobile technology devices for all staff and learners across the curriculum and working in multiple locations.
- Promote debate around access to technology for all learners, staff and stakeholders.
- Ensure that cash saved from reduced maintenance bills goes towards learning and innovation throughout the FE and Skills sector.
- Explore all means such as more efficient procurement and collaboration when purchasing hardware and software to substantially reduce the estimated 80 per cent of IT budget currently spent on 'context' rather than 'core'.
- Consider technological innovation before competition – as the 157 Group aspires to do.
- Use 157 Group and other pioneering colleges as champions.

In conclusion, discussions addressed three broad themes around the power of technology to transform the way we learn, the changing shape of employment and the economy of the future, and the urgent measures required to prevent substantial minorities in society being left behind on the wrong side of the digital divide. In so doing, seminar participants set a series of stimulating challenges for the 157 Group.

Challenges to the 157 Group

Roundtable discussions laid down a set of challenges suggesting ways the 157 Group could help remove barriers to progress. Drawing on evidence of best practice in member colleges, seminar participants said the 157 Group should help:

- facilitate a real shift from teaching to learning and show how and why technology can and should help drive that change, offering a steer on how this might be achieved through its Vice Principals' curriculum group
- make the case that the current economic climate makes investment in technology more, not less, essential
- work with Becta to prove the economic case for sustained investment
- build a case for collaboration on ILT with rigorous quality controls but without undue constraints – trust learners and teachers to find the way (as learners did with Professor Mitra's experiments)
- engage in wider continuous debate with Becta on technology as a tool for learning
- help ensure that the use of technology in education grows to meet the needs of all citizens
- ensure that college management understand the need for good learning environments
- work with other organisations to ensure that the wider e-learning needs of colleges are linked to the core of college funding.

And finally

The 157 Group and Becta will continue to work closely together so that the future vision for innovation in the use of technology in learning that we have explored in this seminar becomes today's reality for learners in FE colleges.

If you would like to contact us with your views and comments on the ideas of the seminar participants please email feandskills@becta.org.uk or info@157group.co.uk

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