VISION

Looking at the future of learning

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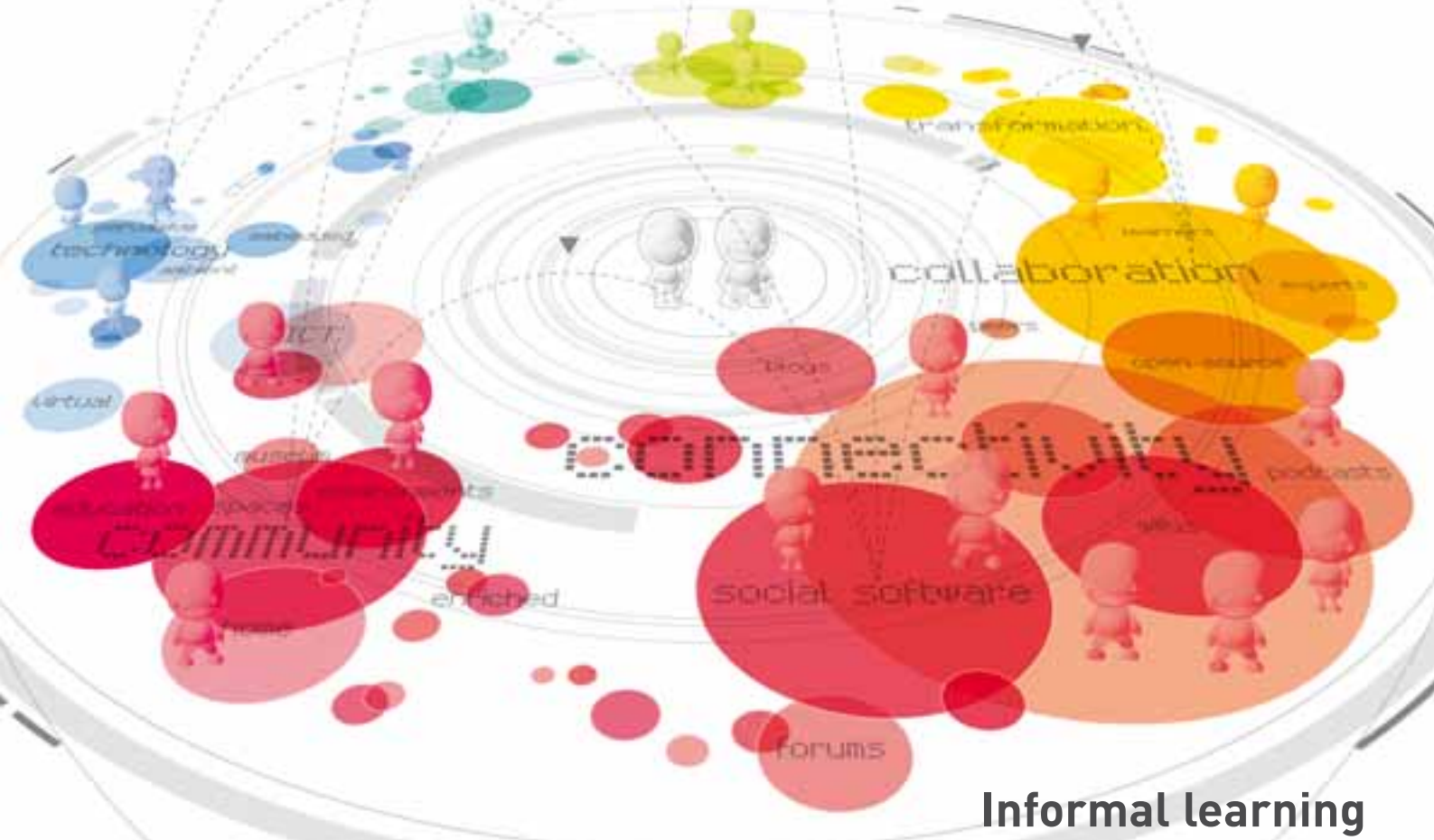

Informal learning

How might we acknowledge it within the education system?

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The future of assessment

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futurelab

About Futurelab

Futurelab is passionate about transforming the way people learn. Tapping into the huge potential offered by digital and other technologies, we are developing innovative learning resources and practices that support new approaches to education for the 21st century.

Working in partnership with industry, policy and practice, Futurelab:

- incubates new ideas, taking them from the lab to the classroom
- offers hard evidence and practical advice to support the design and use of innovative learning tools
- communicates the latest thinking and practice in educational ICT
- provides the space for experimentation and the exchange of ideas between the creative, technology and education sectors.

A not-for-profit organisation, Futurelab is committed to sharing the lessons learnt from our research and development in order to inform positive change to educational policy and practice.

How to get involved

The UK has a wealth of expertise in the education, technology and creative sectors that can contribute to improvements in the quality and use of digital learning resources. Futurelab mobilises collaboration between these sectors to develop compelling new tools and practices.

If you are interested in innovation, technology or education, Futurelab invites you to contribute to a digital revolution in education by signing up to the Futurelab mailing list. To stay abreast of new thinking in education and to be kept informed about Futurelab's activities (and, of course, to receive future editions or further copies of this edition of VISION), simply e-mail vision@futurelab.org.uk with your details and the subject title 'Subscribe: mailing list and e-newsletter'.

This and previous editions of VISION are also available to download free from the Futurelab website - www.futurelab.org.uk/viewpoint.

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Welcome to VISION

With the adoption of mobile phones, broadband and wireless data technologies now at critical mass, we are operating in a world of near ubiquitous access to information, to people and to digital tools. In this edition of VISION, we examine the changing needs of today's constantly connected learners and teachers and explore how our education system might respond to those changes.

With young people spending, on average, no more than 15% of their time in formal education, we need to find ways of acknowledging, valuing and rewarding learning that takes place outside the classroom. Digital technologies offer the chance to reconsider the relationship between schools and the wider community, between different sites and spaces of learning. How can greater connectivity create opportunities for flexible, collaborative modes of learning, while supporting stronger links between learning in the home, school and community?

Ambient and pervasive technologies point to a future in which intelligence is built into not just networks but everyday objects such as clothes and toys. What impact might this ubiquitous access to information have on our approach to learning, teaching and assessment? We hear how the QCA's plans for an open GCSE might represent an important move towards assessing learning and research skills rather than purely subject knowledge.

Social software is proving a useful tool in developing these learning skills while also promoting the learner's sense of ownership, identity and responsibility. And teachers are benefiting too, using social software such as blogs to exchange ideas and build networks. We take a look at the tools that teachers are using to support their own development, how new training initiatives might help teachers to further integrate emerging technologies; and how the education system might recognise and reward innovative teaching practice.

If we are to create an education system that is responsive, dynamic and driven by the needs of learners, radical new approaches to teaching and learning are required, supported by high quality resources. This is no small ambition but the case studies outlined in this edition of VISION give much reason for optimism. As ever, we look forward to your comments and contributions.

Annika Small
Chief Executive
Futurelab

Here, there and everywhere

The impact of pervasive and ambient technology on education

The world of tomorrow – which may be closer than you think – will feature massively distributed processing power, with intelligence built into not just networks (increasingly wireless, invisible and always connected to information sources like the internet and its possible successors) but into buildings, everyday devices and maybe even our clothes.

Welcome to the world of pervasive (in everything) and ambient (part of the constant background) computing. What will it be like to live in such a world, and how will what we need to learn and how we choose to teach change in this context?

Young people are already familiar with the idea of constant connectivity: and so we have the concept of millenials - those under 25 years old, who have grown up in an era of digital abundance and expect constant communication and online access. A survey by IPA Touchpoints in March 2006 suggested that e-mail and text messaging has already eclipsed handwriting, with half of all written communication now being done by e-mail, 29% by text messaging (SMS) and just 13% by pen and paper – that falls to 5% among 15 to 24 year-olds.

And that only takes into account current conventional technology. Ambient and pervasive technologies such as speckled and mote computing (see 'What's happening with ambient and pervasive technologies?'), as well as greater use of sensors integrated into our surroundings, point to a future where people are likely to be connected to a hugely powerful and flexible information infrastructure.

"THINGS WON'T CHANGE OVERNIGHT – AS HUMANS WE CAN ONLY TAKE A CERTAIN AMOUNT OF CHANGE AT ANY ONE TIME"

Granted, it's early days for some of these developments. DK Arvind is a researcher in ambient computing at Edinburgh University: "People are thinking in terms of intelligent ambient spaces, where you have sensing and computation technology embedded in the physical infrastructure so that it disappears into the environment - much in the way that cable and electricity networks do in built spaces. The idea is that they can be found on objects and people, although it will be at least 2010 before we see some of this vision being realised."

But people are already trying to think about how such ubiquitous computing could change the way educationalists will have to operate. Futurelab's Development Director Martin Owen: "When I did my O-level exams in the 1960s I was asked to draw the principal rivers and cities on an outline map of South America. Nowadays a child could answer that in 15 seconds using Google. The nature of knowledge and how to acquire it has shifted. And as technology starts embedding intelligence into more and more devices and objects, computers will become invisible but access to knowledge will become even more so."

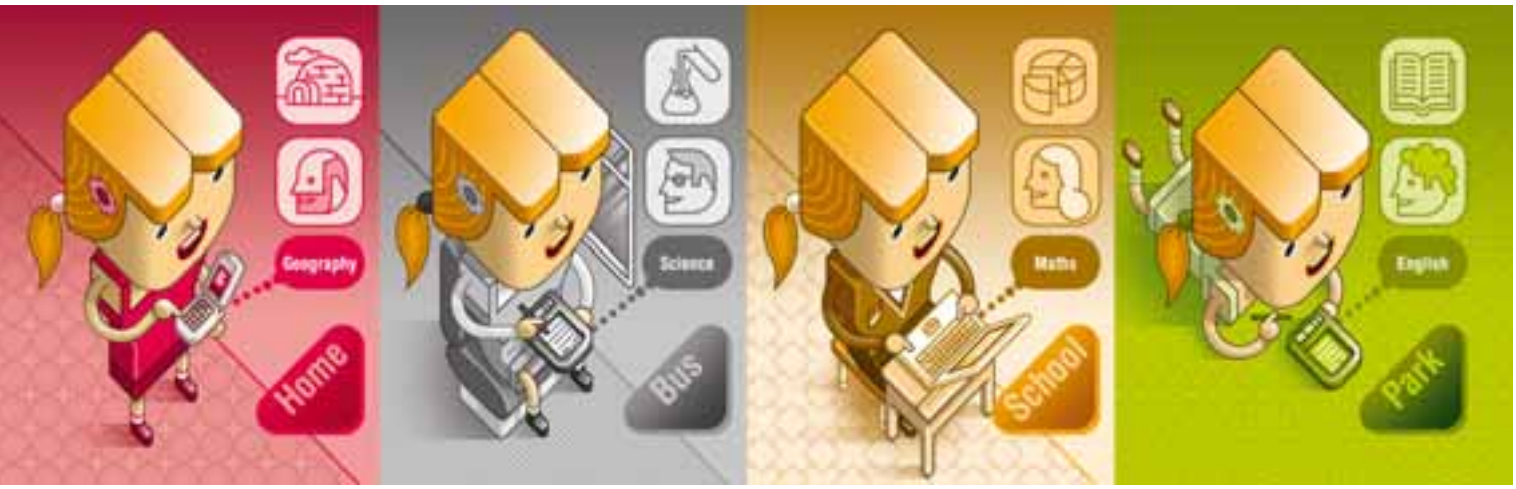
Others agree that the consequences of such widespread dissemination of ubiquitous access to processing power and information sources will change the ways we learn and work. "Is education about learning or about how to use logic?" wonders Martin Illsley, Director of Research for Accenture Technology Labs in the South of France. "Use of Google etc means we will develop skills around how to find relevant facts for sure. But ubiquitous computing may soon also mean that we will let children start sending text messages in the classroom as it'll be part of the school day. But things won't change overnight – as humans we can only take a certain amount of change at any one time."

Edinburgh's Arvind is less conservative about the possible impact. "Forthcoming greater personalisation in the educational environment will exploit the responsive and adaptive nature of these new technologies to better meet learners' requirements and needs," he told VISION. "For example, one can use computers worn by people to teach skills involving motor control, tracking movements and comparing them with how it ought to be done – and so you could teach dance, martial arts, sports etc. Also this type of ubiquitous computing enables greater flexibility by delivering learning opportunities in a more seamless way – not necessarily in a classroom; one can have learning environments in museums, parks and so on."

"THERE ARE OPPORTUNITIES TO COMMUNICATE AND DISTANCE-LEARN CONSTANTLY, AND FROM ANY LOCATION"

"Ambient computing will eliminate 'geography'," agrees Robin Mannings, a professional 'futurologist' for BT. "What we need to do will be decoupled from where we need to do it. We could see links between children in not just the same school but in different schools, countries, continents and belief systems. And as IT becomes 'everywhere' it will disappear from our conscious gaze; you won't have separate IT rooms any more than you have special rooms now to do 'writing' in."

Caroline Gabriel is Research Director with Rethink IT, an IT consultancy: "Clearly, if everyone can access sufficiently cheap and portable devices, and wireless networks are ubiquitous, then there are opportunities to communicate and distance-learn constantly, and from any location – to tap into teachers and other resources that would otherwise be confined to a single school or district. Conventionally, this is seen as a way to include remote or underprivileged people in the education system in developing economies, though it could also change the way people learn in developed economies and create new learning methods that better suit the behaviour patterns of young people (or adults for that matter). But it would require a huge culture change in teaching and lesson structure to work, and we'd have to be sure there isn't a counter-result of children being deprived of socialisation



opportunities." However she goes on to warn: "There's also the much discussed issue that, if you allow children to access lessons from anywhere, there is no way of knowing where they are (ie the teacher's role as guardian is gone), and so it's suggested that the same pervasive technology needs to be used to monitor children to keep them safe and keep them under control (however you look at it). Pervasive doesn't necessarily mean free."

"A QUALITY EDUCATION HAS VIRTUALLY NOTHING TO DO WITH THE TECHNOLOGICAL ENDOWMENT OF THE SCHOOL"

Award-winning British science-fiction author Stephen Baxter – who makes a living thinking about the future – feels that the education system can adapt. "The convergence of communications and computing technology with the coming oil crisis is surely going to change the whole basis of education. I live in a rural area and you have the absurdity of children being bussed 30 miles to school every day; this will soon be too expensive. So education will be brought to the students. There will still be local schools, for socialising, and local teachers will be non-specialist pastoral 'guides'. Most education will surely come through the technology, with real specialist teachers perhaps remotely based, or with virtual guides, to help you find your way through an effectively infinite world of fact and interpretation. Searching and critical thinking will be the key skills, and grading will be based on testing those skills, not memorising lists of facts. But all this will be balanced with 'real world' experience - field trips, time out of the class, participation in real-world projects like ecology initiatives perhaps." Most probably involving the use of ambient and pervasive technology too.

There are of course sceptics who don't see any value in computers in education at all, pervasive or otherwise. In a recent hard-hitting attack on the use of ICT in schools, Massachusetts Institute of Technology (MIT) researcher Michael Schrage mocked what he dubs the 'edutainers', educators who subscribe to the (ideological) 'edutopian' belief that computers should be essential ingredients of classroom life: "A quality education has virtually nothing to do with the technological endowment of the school." Schrage points to ineffective US deployment of so-called language labs and the inability of the global profusion of cheap electronic calculators to significantly raise mathematics ability as evidence. He concludes: "Classroom computing offers less of a bold vision [of educational transformation] than a cowardly cheat by technocrats counting on technical innovation to shield themselves from hard questions about what schools should be."

And then there are others who feel that the pervasive and ambient vision may be flawed technology-wise. Technology Editor of the Guardian newspaper, Charles Arthur argues: "A lot of these visions ignore the practicalities, like the complexity of making wireless network settings and content permissions. Look at how restrictive licensing of digital content can be. So while things might be connected (our phones are, so why aren't we all using 3G?), the reality is that it's much more complicated than that."

The reality of course is that the future may be very different from all these current visions – and fears. But as Futurelab's Learning Researcher Dan Sutch puts it, "The challenge for educationalists isn't to worry about the specifics of technology – which will become less and less visible – but how to find the most appropriate and practical ways to support learners. What will these new practices be? We are going to be living in vastly enriched learning spaces – both inside and outside of school - and we must find a way to maximise their use for effective and engaging education."

University of Edinburgh

What's happening with ambient and pervasive technologies?

There are a number of research projects underway that come under this banner. For instance motes, developed by chip giant Intel, are being used by companies like BP to act as tiny remote sensors, reporting on the environmental conditions in hard-to-get-at areas that are otherwise impossible to investigate. Speckled computing, or 'specks', in the words of University of Edinburgh researcher DK Arvind, are intended to be miniature semiconductor devices (5x5x5mm in the first instance) which combine sensing, processing and wireless networking. Specks are autonomous and have their own battery. A future version of the speck will also incorporate energy scavenging - either light-to-electrical or mechanical-to-electrical conversion. A mesh network of tens (or even hundreds) of these devices is called a specknet. "We intend specknets to be a platform for future pervasive computing applications," he says. For further information, go to **www.specknet.org, www.intel.com/research/exploratory/motes.htm** and **www.ercim.org/publication/Ercim_News/enw47/sleep.html.**

A number of education projects have already started looking at how embedded intelligence in devices and games can be used to stimulate learning and engage children, such as Futurelab's Fizzees project **(www.futurelab.org.uk/showcase/fizzees/fizzees.htm).**

For a round-up of how pervasive technology is being used at MIT, go to **alumweb.mit.edu/opendoor/200309.** More from MIT can be found at **www.campus-technology.com/news_article.asp?id=11058&typeid=155.**

Teaching the teachers

Is CPD equipping our teachers for a technological world?

The world is changing. Students are increasingly attuned to the demands of living in a technology-driven world and fully expect 24/7 connectivity, be it by e-mail, text or mobile internet access.

For some students, this can create a gap between their experiences outside school and within it – leading them to feel that they are powering down once they enter the school gates. Some teachers, meanwhile, are struggling to find the time to keep up with new teaching methods and the practical acquisition and use of the new learning technologies available.

As Professor Rosamund Sutherland of the University of Bristol's School of Education puts it, "Children are pretty experimental. Often it is the teacher who is more cautious – we have to change that. We want them to do things that are creative and that help with learning."

Continuous Professional Development (CPD) for teachers has the potential to bring about this change - as well as being vital for morale and personal development, and for creating a vibrant and discursive professional environment. Until the introduction of five compulsory annual INSET training days in the 1980s, most professional development took place during initial teacher training. However since then, in this age of connectivity, the ongoing development of teachers' CPD has been inextricably linked to new technologies and the use of ICT in the classroom.

INSTEAD OF REPLACING TRADITIONAL TEACHING METHODS, THE USE OF ICT CAN AUGMENT TEACHERS' POSSIBILITIES FOR ENGAGING AND TEACHING YOUNG LEARNERS

ICT really does assist learning, as the University of Bristol's InterActive Learning project is finding out. Built around the adaptation of existing software to develop innovative tools for learning purposes, many of the participating teachers found that the 'wow factor' of the technology draws children in – and after that, they are more likely to develop a genuine interest in the subject, whilst also improving their life skills such as communication and team-

working. Instead of replacing traditional teaching methods – which some teachers fear – the use of ICT can augment their possibilities for engaging and teaching young learners.

So, many teachers are looking to CPD to help them to acquire the skills they need to make use of technology in this way. Some of the options, many of which have been developed by the DfES (Department for Education and Skills), include:

- **Internet forums and online learning modules on Teachernet** – available to all teachers, the site provides resources and useful links for all aspects of teaching from planning to supporting children with medical needs. It includes links to useful sites, such as museums, and has a broadband video channel which plays a host of topical clips including key discussions with Ministers and experts. It also guides teachers through the various elements of CPD, be it national strategy and standards or individual case studies and resources.

- **Teacher's TV** – launched in February 2005 and linked to Teachernet, this digital TV channel for teachers offers unique support, facilitating the sharing of experiences and eliminating the need to reinvent the wheel. It shares best practice, news round-ups, documentaries, debates and other resources, including CPD information.

- **Online publications –** with all the latest news and reports on subjects of interest to teachers, such as the exploration of learning behaviours and new pedagogies.

- **Digital video** to capture classroom interactions, enabling teachers to analyse their techniques.

- **Teaching software,** such as the BETT 2006 award-winning MediaStage that puts creative and collaborative learning at its core **(www.immersiveeducation.com/uk/MediaStage_Whatis.asp)**.

However, use of these types of resources is voluntary, as is participation in the CPD scheme itself. "At present, it's up to schools to decide what resources they allocate to teacher development," says Fisher. "Ideally, the online resources would be backed up by a mentor system and the programme would be rolled out to all schools. For now, at least all teachers should be aware of them and able to access them."

In practice, £8 million has been allocated for developing ICT in schools to help teachers during their initial training, and subsequently most existing teachers have been given access to laptops as part of their continuing development. "It sounds simple, but it has made a huge difference," says Tim Tarrant, ICT specialist at the Teacher Development Agency (TDA). "The best way of equipping teachers to work with new classroom technology is to have them using it. Teachers' understanding has grown exponentially, and with that, so has their willingness to use technology in lessons." He goes on to explain further about the CPD scheme: "It also extends into leadership and management, with training for teachers at the National College of School Leadership which was set up six years ago."

"THE BEST WAY OF EQUIPPING TEACHERS TO WORK WITH NEW CLASSROOM TECHNOLOGY IS TO HAVE THEM USING IT"

Tarrant contends that solid progress is being made in terms of teachers' ongoing development. Some 75% of schools – 23,000 – and 35,000 teachers in the UK are involved in training at any one time, some of which will be ICT-based and some more general. "I've seen amazing results from teachers using building blocks on an interactive whiteboard to teach algebra, and equally from the simple use of puppets in role-play at Key Stage 2," he says, "whilst the use of computer-aided design has had a big impact at secondary level. Most teachers are keen to try new techniques which enable children to learn more effectively."

The TDA is clearly moving things forward but there is still much more to be done to empower teachers to work with technology in the classroom. Tarrant again: "We are closing the gap. We are trying to create the environment where schools have the time and resources to develop their staff, and the CPD scheme has a crucial role to play in this."

"WE ARE EQUIPPING TEACHERS FOR THE TECHNOLOGICAL AGE"

There are others too that are helping to develop teachers' CPD for the 21st century. Tony Fisher, who, having been a geography teacher for 18 years, now works as ICT coordinator and teacher trainer in the School of Education at Nottingham University, expands: "We are definitely equipping teachers for the technological age, and our current focus is to enhance subject teaching using ICT. We have developed numerous online resources and modules for teachers to use as part of their ongoing development, providing help with lesson planning and learning software designed for classroom use – and of course ICT has the potential to greatly assist CPD through online forums, virtual communities and so forth."

These developments are welcome, but John Morgan, an ex-teacher and now a Senior Researcher at Futurelab, adds a note of caution. "There is a difference between the rhetoric and the reality," he says. "Of course it's good that these resources are available, but it is also essential to make sure that they match teachers' actual needs. There has been a sense in the past that training has been

imposed – hopefully, with these new initiatives and the choices they bring, this situation will improve."

So, do these measures go far enough? There remains an overarching question over the potential need for transformation of the education system – the actual way we teach. Current initiatives in CPD mostly facilitate current methods and thinking but, for real development, more wholesale change might be needed. If the first step, from the 1980s to the present, has been essentially about giving teachers the tools and skills they need to teach, then maybe the next step should be more transformational – CPD which encourages and supports teachers to think outside the box and to learn from the technology which can help them to teach more effectively.

WE NEED FAR MORE INTENSIVE PROFESSIONAL LEARNING WITHIN A CULTURE OF CONTINUOUS DELIBERATION

Tony Fisher sees some difficulties in introducing wholesale change and in bringing teachers on board. "Cynicism can be a problem," he said. "It's not just about a fear of new technology, either. Trends come and go – in the 80s, many teachers were very much in favour of project-based, cross-curriculum teaching, which is now being put forward again, but then along came the Education Reform Act of 1988 and slapped them back. So they may ask themselves, is this just a fad being imposed on them, or something they own? Of course it's our goal to bring on board new technology, and to use CPD to cross-fertilise ideas and get teachers talking to each other – but we mustn't lose sight of the teachers themselves; why they became teachers, how they see themselves in the role. They are fundamentally 'people people', and I would argue that a vibrant staffroom can be more helpful than an online CPD forum. It is not a cure-all."

Like Fisher, Tim Tarrant does not see CPD as a panacea which alone can transform a system often considered to be over-reliant on assessment and examination. "We need to take one step at a time, and not reinvent the wheel. You can't force the pace if you want to bring teachers with you," he says. "CPD is an important part of the future, as is classroom technology, but not the whole of it."

But there are many who suggest that teachers' CPD does need to move forward if we are to keep pace with changes in the way we prefer to learn and, indeed, the wider world. In their research in 2002 McLaughlin and Talbert found that there are two types of learning communities. In the first, teachers interact around their traditional teaching practices to reinforce those things that aren't working in the first place. However, in the second, they work together to innovate to improve their teaching practices. This would suggest that we need far more intensive professional learning within a culture of continuous deliberation, and that it has to be continually tested by external best practice standards – in other words, we need to be innovative with teachers' CPD.

An example of innovative teacher training, involving the use of video-conferencing facilities and other interactive technology such as remote-controlled cameras, can be found at the Teaching and Learning Observatory (TLO), University of Nottingham School of Education. The TLO enables student teachers to observe innovative teaching live by linking the University's education department with a network of remote national and international secondary leading (or 'beacon') schools. This same technology has also enabled a 'virtual meeting' of school students and student teachers in order to discuss what is effective and what is not, in relation to teaching practice.

Whilst currently not common practice, it may not be long before innovative ideas like this are being used by all teachers, not just at the beginning of their career, but throughout. Some teachers will welcome these developments with open arms, while others will get on board more slowly. Either way, it is imperative that teachers' CPD is relevant, useful, rewarding, and improves practice in both teaching and learning - as well, of course, as preparing them for a world with ICT.

Further information

- Department for Education and Skills: **www.dfes.gov.uk**
- The Teacher Development Agency: **www.tda.gov.uk**
- Teachernet: **www.teachernet.gov.uk**

Futurelab Literature Review for Teachers

The latest Futurelab literature review focuses on the idea of teachers as learners. It examines how digital technologies provide opportunities to enable and support the process of teacher learning, helping to ensure that the potential of ICT does not remain untapped.

Go to www.futurelab.org.uk/research/lit_reviews.htm to order a hard copy, or to view or download the document for FREE.

Getting creative

It is essential for learners to be creative, to generate new ideas and to be experimental in the application of those ideas. In this section, we celebrate those that do not always take the safe and proven route, but instead are committed to trying something truly innovative. Here are just some of the exciting creative ideas that have made us sit up and listen recently...

Marie Sester

Who's watching you?

ACCESS is a touring art installation by Marie Sester, which links internet users to public spaces using surveillance technology. Through a website, users can direct a beam of light onto specific members of the public in the installation space, and so track the person as they move around. In the space, this beam is accompanied by a localised beam of sound which only the tracked person can hear. Although they are obviously aware that they are moving within the installation space, the person being tracked does not know who is tracking them. With some not liking the idea of being under surveillance and others loving it, it's difficult to know who is truly in control.

www.accessproject.net

Castelo and Mongiat

Sounds like a great idea

While the Royal Festival Hall in the UK is undergoing building works, artists Arlete Castelo and Melissa Mongiat have created an interactive sound sculpture called Gamelan Playtime which uses the hoardings that surround the building. These hoardings contain nodules and each nodule contains a sensor that registers the touch and close movement of passers by. This, in turn, triggers recordings of an Indonesian music workshop at a local primary school, filling the street with the sound of children's voices and traditional Indonesian instruments, known as gamelan – hence the name of the sculpture.

www.milkandtales.com/gamelanplaytime.htm

Levin and Lieberman

What a performance!

Zachary Lieberman and Golan Levin have created a new performance tool, called Messa di Voce, which integrates human vocal sounds and software-created graphics. As the performer makes noises, the software interprets the volume, tone, pitch and sounds to create responsive abstract graphics in real time. The graphics can be altered by the performer as they move around on the stage and, as the visuals change, they can trigger sound clips of the original noises of the performer - so creating a cycle of creativity between the performer and the software. With innovative ideas like this, concerts, theatre and even conferences could be given a new lease of life...

www.tmema.org/messa

Philip O'Dwyer

The V&A goes digital

The V&A museum has been commissioning a wide variety of digital artists to create works that reflect the contents of the museum, which are then exhibited as part of their Friday Late evening events. Digital artist Philip O'Dwyer chose to respond to the museum's Japanese collection and the resultant work features many natural motifs of the surrounding gallery including birds, dragons and plants. They grow, flourish and bloom as part of an ever changing self generative system, leaving an impression on the background as they fade away, creating an array of cumulative shadows.

www.philipodwyer.com

Michael Pinsky

A new kind of forecast

The Essex coastline has recently been enhanced by a number of art commissions as a result of a project called Coast. One of these is Weather Cluster, an installation by artist Michael Pinsky, which displays video clips of weather onto a collection of 30 screens hanging from the ceiling of a school atrium. Students collect clips of weather conditions locally and from around the world (whilst on holiday, field trips, exchanges etc) and input them into a database. The software then monitors the weather using a local weather station and uses the information provided to choose relevant clips to be displayed.

www.michaelpinsky.com

whisper project

Something to shout about

Whisper[s] (wearable, hand-held, intimate, sensory, personal, expressive, responsive system) is a collaborative project from the Simon Fraser University in Canada which looks at new ways to communicate using Bluetooth, wireless and wearable technologies. It brings together the disciplines of dance, sculpture, music, visual and textile design, computer science, and hardware/software engineering to create 'performances'. These are created though the movement and interaction of the performers, via their costumes which monitor and respond to the performers' body statistics. The data is then interpreted by software and projected back into the performance as sound and visuals.

whisper.surrey.sfu.ca

Social software in education

www.blogger.com

moodle.org

www.myspace.com


wikipedia.org

www.flickr.com

Social software is becoming increasingly popular as it enables people to communicate and collaborate easily, wherever they are based, and often leads to a result that is greater than the component parts. There are many types, but the best known are blogs (an abbreviation of weblogs) and wikis. But how might they be used to transform education?

In the case of the best known wiki, the encyclopaedia Wikipedia, entries can be edited and added to by any user, although recently users have been required to register if they want to start new pages or edit certain heavily-altered ones. This ongoing and open authorship means that the information cannot be guaranteed to be reliable, although enthusiasts for Wikipedia argue that errors get spotted and corrected quickly. This was given support by research published in December 2005 by the scientific journal Nature, which found nearly the same number of errors in articles from Encyclopaedia Britannica's website as in the corresponding Wikipedia entry. (Britannica disputed the result, but Nature stands by its story.) However, there have been specific problems: last year a Wikipedia entry was edited so that for four months it wrongly implicated American journalist John Siegenthaler in the killings of John and Robert Kennedy.

Wikipedia has nevertheless become one of the most popular websites for learners – it's free, straightforward to read and it's impossible to steer students away from it. So, should we recognise its strengths and use it to educate? Miles Berry, Deputy Head of St Ives School in Haslemere, prefers to show his pupils how wikis work: "I say to the class, look what I can do. I go into the Haslemere page and delete everything - just to demonstrate to them that it is entirely editable."

In fact, Berry doesn't save his deletions, but he believes that helping pupils to engage with wikis is extremely worthwhile. He has mainly used the free course-management software Moodle which has been designed to help educators to create effective online learning communities. "The first few times, they were freaked out by the idea that someone could not only copy, but delete their work," says Berry. However, by trusting classmates to respect each others' work, "there was a big social benefit that I wasn't expecting". As every change is tracked through the pupil's account, Berry is able to trace any vandalism, but this problem hasn't occurred at his school.

"THEY WERE FREAKED OUT BY THE IDEA THAT SOMEONE COULD NOT ONLY COPY, BUT DELETE THEIR WORK"

Of course, mutual trust isn't the only benefit of using social software. Learners derive enormous benefit from sharing their work with others, both in terms of the skills they develop in doing so (communication and collaboration) and in terms of the knowledge they develop. It's also hugely beneficial to be able to 'present' and discuss work with others – a 'learning conversation' takes place, often with wider audiences than are usually available for children's work.

One question relating to the use of online learning environments is whether parents should be given access. Although Berry doesn't stop pupils sharing their log-in details with their parents, he has not made changes to Moodle which would allow separate parental monitoring accounts, as he feels that this would be akin to allowing a parent to sit in on his or her child's lessons. He sees the online environment as being analogous to the classroom, where parents aren't invited.

However Lyndsay Grant, Learning Researcher at Futurelab, suggests that this is only the case if the software is limited to a class of school children: "If it's more open to others to share, then it could be likened to a public space such as a town square."

There is a case for allowing learners' social software use to remain open. Will Richardson, Supervisor of Instructional Technology and Communications at Hunterdon Central Regional High School in Flemington in New Jersey, has used wikis and blogs in his school, and says that making the results publicly available encourages students. He thinks that the audience that a blog or wiki provides has "a tendency to make writing more meaningful for kids, making them think about planning and organising. They really make a difference," he says.

SOCIAL SOFTWARE CAN ALSO SUPPORT PARTICIPATION ACROSS PHYSICAL DISTANCES

Richardson, who maintains a weblog on education and social software called weblogg-ed, warns that pupils' work will not necessarily gather an audience, but adds that teachers can kick-start one by collaborating with other schools, so a network of classes working on similar projects can view and respond to each other's work. "It's kind of viral," he enthuses when explaining how material can often find readers without too much effort.

Opening interaction to the world means that a project can develop a life of its own. Richardson says that, in the case of wikis, he limits editing rights to pupils only, in spite of the fact that there is a risk that closed projects will only progress while the authorised participants remain interested. However he simply provides a single password for all, so it is not possible to track who has changed what. "It promotes responsibility, policing of content and ethics," he says, as everyone has a stake in the results. This raises the significant, but not insurmountable, issue of accreditation, particularly where the assessment system requires individual contribution. The use of tools like social software adds to the argument that we need to de-stigmatise and legitimise collaboration, changing what we value and assess.

Social software can also support participation across physical distances. Richardson ran a class blog on 'The Secret Life of Bees' which included contributions from the author Sue Monk Kidd (weblogs.hcrhs.k12.nj.us/bees): authors and other usually inaccessible 'experts' can participate in this way as it takes much less time than it would to travel to and from a school. Richardson adds that other kinds of software, such as packages used to create podcasts (downloadable audio files) and free internet telephony such as Yahoo's or MSN's Messenger services, can have a similar effect. "There will be more and more opportunities for people to connect and collaborate in future," he says.

This removal of physical distance also allows international collaboration between students. Randy Metcalfe, who manages a wiki on the use of open source software in higher education for the Joint Information Systems Committee (JISC) called OSS Watch, says that his niece wrote a blog while on a nine-week exchange in South Africa studying for her English course. "It allowed her to stay in touch," he says.

"SEARCHING VIA OTHER PEOPLE'S TAGS PUTS INFORMATION IN A SOCIAL CONTEXT, SO YOU CAN FIND RESOURCES THAT OTHER PEOPLE FOUND USEFUL"

On a bigger scale, John Bidder, Adviser for ICT and Innovation for Bolton Council, has set up Wikiville, an open wiki intended to allow pupils to add and edit entries about their home towns. Although entries at the early stage of its inception have tended to come from relatively well-off English-speaking countries, Bidder says that national differences are already apparent. "We've had some really gritty stuff from Bolton," he says. "When you go to Australia, you get a real sunshine impression of life," with a similar attitude to the US. He hopes users will come to realise such national differences in world-view through the wiki.

Social bookmarking sites such as del.icio.us and Blinklist - which allow users to share their internet favourites (or bookmarks), tagging them with keywords and using other people's tags to find material - are becoming increasingly popular. Another example is Flickr, which allows something similar for photos uploaded by users. The concept of tagging – which is also supported by some education-specific social software such as Elgg – has great potential, according to Lyndsay Grant: "Searching via other people's tags puts

information in a social context, so you can find resources that other people found useful, and how they categorised them. This can mean, in some instances, that search results are both more informative and more relevant, and that we can learn from what other people found useful. Of course, social bookmarking is not a replacement for search engines or specific authoritative sources – it's merely an alternative."

"IF YOU CREATE A CULTURE OF TAKING KNOWLEDGE AND LOOKING AT IT, REFLECTING ON IT, YOU WILL GET A HIGHER ORDER OF THINKING AND PROCESSING"

There are also other uses for social software, such as making life easier for teachers. Leon Cych, a consultant on emerging technologies in education, says that blogs can be used for regular writing practice and the compilation of coursework, saving the collection of books. Writing and storing material online leads to concerns about plagiarism, but Cych says this can be turned to educational advantage by teaching pupils about attribution. "If you create a culture of taking knowledge and looking at it, reflecting on it, you will get a higher order of thinking and processing," he says, whereas if pupils are used to simply receiving material "you will get people who cut and paste."

Away from pupils' use, Cych believes that teachers can benefit from writing their own blogs, as it allows the sharing of ideas and the building of networks – the kind which could allow collaboration between different schools, as mentioned by Will Richardson.

A final word of warning comes from Cych who suggests that teachers should resist looking up what their pupils get up to on social networking websites. "If teachers go onto MySpace and look up their pupils, they may well be shocked," he says. "It's a bit like looking behind the bike sheds." However, notwithstanding this piece of advice, there are many opportunities to use social software for learning – to develop the kinds of life skills such as collaboration, learning from others and the ability to reflect on one's own work that our young people need for the 21st century. And many teachers and learners are already using it with a great deal of success.

What do the terms mean?

Blogs (or weblogs) - easily updated websites arranged in a diary format, which often allow readers to leave comments

Wikis - sites which can be extended and edited by a group of users

Useful links

Blinklist - www.blinklist.com

del.icio.us - del.icio.us

Flickr - www.flickr.com

Moodle - moodle.org

MySpace - www.myspace.com

OSS Watch - wiki.oss-watch.ac.uk

Skype - www.skype.com

weblogg-ed - www.weblogg-ed.com

Wikipedia - en.wikipedia.org

Wikiville - www.wikiville.org.uk

Yahoo's Messenger - uk.messenger.yahoo.com

How to get started

It is easy to experiment with social software. You can start a free blog at numerous sites, including Blogger (www.blogger.com) or WordPress (wordpress.com). Instructions for, and providers of, wikis can be found at en.wikibooks.org/wiki/Wiki_Science:How_to_start_a_Wiki (itself a wiki) – although this guide starts with the sensible advice that contributing to an existing wiki may be preferable to starting a new one.

General social software tools are often open access by default although many include the ability to customise privacy settings. The open, democratic and participatory nature of much social software can be a powerful drive to encourage peer learning. However, education-specific packages often give greater consideration to privacy and include useful extra functions such as assessment tools. Incsub (incsub.org) offers free blogs specifically for pupils and teachers, and Elgg (elgg.net) is a free social software package which includes blogging, podcasting, tagging and a file repository.

Opening Education: Social Software and Learning

Futurelab has recently launched a new publication which looks at the use of social software for learning. More specifically, it asks: how do we learn in an era of connection and collaboration? Does learning change in an information society? How do we move towards learning with social software? It also looks at what technologies are included under the banner of social software, providing an easy-to-use guide with common terms.

Go to www.futurelab.org.uk/research/opening_education.htm to view or download the document for FREE (hard copies are available on request while stocks last, e-mail info@futurelab.org.uk).





Informal learning – often, but not necessarily, supported by technology - can take place anywhere. It's not restricted to traditional classrooms and lessons. It's mobile, flexible and empowers the learner to make choices. It can also help to create powerful and relevant learning experiences, both in and outside of school, to truly engage learners, so maybe it's time to embrace informal learning...

Becoming informed the informal way

With its many different guises, informal learning can include phoning someone to ask for information, being shown how to do something, or meeting people by chance and talking, either literally or online. It also often involves being guided by some sort of mentor.

Ian Cunningham's work in Sussex is a good example. He offers what he calls 'self managed learning' at his South Downs Learning Centre in Brighton. "The law requires that children be educated, whether in a school or elsewhere, and it gives equal status to both," says Cunningham, who works with three Sussex secondary schools and with primary schools in the London Borough of Haringey. He also runs 'learning groups' at the South Downs Learning Centre for flexischoolers and others wanting an alternative to full-time classroom-based learning.

"Our research has identified 55 different approaches to learning," says Cunningham. "They include classrooms, computers, visits, work experience shadowing, discussions outside school and 50 others." The young people he works with can learn in any way which suits them. But this is no 'permissive' free–for-all. "They have to take responsibility for their own learning. And everyone negotiates how and what they are going to learn," he says.

"AT WORK WE ENCOURAGE INNOVATION, BUT IN EDUCATION THAT'S STEALING"

The 'well-I-never-knew-that' sensation which comes to most people as they read, hear or notice things at any stage of life is part of informal learning. It can be enhanced by the current trend for online resources which support collaboration and enable people to share knowledge creatively and freely. Websites, blogs and wikis are among the technologies which can underpin a lot of this learning – aiding learners to learn, wherever they are. However, currently many children are in a 'walled garden'

because schools, rightly mindful of child protection, restrict pupil internet and technology access. But limited information can mean limited learning - what's important is to teach them to be mature and responsible with the tools and information available to them.

Take Notschool, for example, which receives £3 million a year from the DfES and is currently working with more than 1,700 students in more than 20 LEAs, as they were known until recently. It's an online research programme which looks at ways of re-engaging young people of school age back into learning. They may be, for example, ill, disaffected, excluded or just looking for different way to learn. Notschool - part of the charity TheCademy - is specifically aimed at those for whom traditional alternatives to school, such as home tutoring, have not worked. Students are called researchers to emphasise the independent status of their learning. Each gets a free Apple Mac and online guidance in a wide range of courses, many of them leading to formal assessment and accreditation.

MANY TEACHERS ARE ALREADY RECOGNISING THAT THEY ARE MORE LIKE 'ADVANCED LEARNERS', HELPING PUPILS TO ACCESS A VARIETY OF EXPERTS, EITHER ACTUALLY OR VIRTUALLY

Recognition of the immeasurable value of informal learning requires a new mindset for schools. In the real world – at work and elsewhere - if you want or need to know something you go and ask someone, search the internet or consult printed material. If you want people to learn, it's illogical not to share expertise and knowledge. Cunningham, who regards collaboration as the key to all learning, agrees: "At work we encourage innovation, but in education that's stealing. And copying someone else's good idea is cheating if you do it in school. Research has shown that the peer group is by far the biggest influence on young people. So education needs to harness that for the good." He argues that the key to combating disaffection is choice, allowing pupils to control their own learning: "We have to get to a point when we let learners work out for themselves, with help, what they need to know and how they are going to learn it."

Of course this means a changing role for teachers and, possibly, a shift away from curriculum/exam-dominated education – although informal learning does not mean an absence of structure and nor does it exclude assessment. There has to be an increased level of trust between teachers and learners – whether they are in a nursery group, a post-retirement class or anything in between. The system will need to develop and support teachers so that they feel comfortable with not knowing all the answers. Indeed, many teachers are already recognising that they are more like 'advanced learners', helping pupils to access a variety of experts, either actually or virtually. It would make school-based learning much broader, extending it into the home and community.

Community Media is a Teesside-based project which grew out of community radio, where ICT and digital media developments have helped to create a range of opportunities for individuals and community groups to learn and teach collaboratively and to share information. It includes community websites, image galleries and a community media archive as well as Tyneblog, a number of blogs that reflect the culture, diversity and community issues on Tyneside. For instance, there is a blog called The Tall Ships Race which includes discussion and information not only about this famous race, but also about the local area generally.

FRESH THINKING ABOUT THE WAY OUR SCHOOLS ARE DESIGNED COULD HELP TO BLUR THE LINES BETWEEN LEARNING IN SCHOOL AND INFORMAL LEARNING

Informal learning already meets many lifelong learning needs. Nicola Klein, 50, for example, a freelance journalist, wanted to improve her French. So she signed up for an Open University course, structured to take seven hours a week for nine months. "I quickly realised that I just can't set aside that sort of time," says Nicola. "So I shall just work through the course material at my own pace. It will probably take me 18 months but it doesn't matter. My French is improving all the time." Meanwhile Nicola is supplementing her learning by reading French magazines, accessing French websites, listening to French radio stations and e-mailing friends in France in their own language – all good examples of informal learning. No one has told Nicola to do any of this. She is a self-motivated learner and has fixed her own goals. She has personalised what the OU is offering her.

However the question of how to successfully integrate these valuable out-of-school learning resources and the lessons they teach about learning preferences into the education system remains, on the whole, unsolved. The English novelist GK Chesterton (1874-1936) once pessimistically described education as "the period during which you are being instructed by someone you do not know about something you do not want to know." Clearly he was a disaffected student, present in body but spiritually absent from school – and there are thousands like him in schools today.

More emphasis on informal learning - already the norm for many adult learners - could be part of the solution. We need to determine how we can better incorporate informal approaches to learning into schools to create more powerful and relevant learning experiences. This might mean considering how digital technologies could be used and how a school's layout could be adapted to enable informal learning. Fresh thinking about the way our schools are designed could help to blur the lines between learning in school and informal learning.

Of course, at the heart of all of this are the learners themselves. Yes, the physical layout, infrastructure and technology of a school are significant in enabling learners to incorporate informal learning into their education, but we also need to understand how to offer appropriate and relevant choices for learners. If we can learn from the choices that students make when learning informally (eg how they prefer to select the topics and tools they use, access experts and measure success) and we can offer an education system that reflects those preferences, whether in or out of school, then we could be looking at an education provision that truly engages learners.

Useful links

The Centre for Self Managed Learning, South Downs Learning Centre:
www.selfmanagedlearning.org

Notschool: **www.notschool.net**

Community Media (North East, UK):
www.neukol.org.uk

Tyneblog:
neukol.org.uk/tyneblog

Alexia Anthony, URBIS

Alexia Anthony, URBIS

Myartspace

School visits should always be fun but how do you encourage children to actively discuss and organise the information they come across? Myartspace enables students (as part of a school visit) to collect physical objects from a cultural venue using a mobile phone, learn more about the objects that they collect, and then publish their own gallery online. General visitors can also make collections using a text message from their own mobile phones. Available through a small number of venues such as the D-Day Museum in Portsmouth and the Museum of Urban Life in central Manchester (although Myartspace is keen for more venues to adopt the project), it offers study guides to help teachers to organise visits.

www.myartspace.org.uk

Futurelab Literature Review in Informal Learning with Technology Outside School

Futurelab's seventh literature review brings together the existing research in this field, and discusses what we know about which children have access to technologies, what they are using them for and the implications of their use for learning. Most significantly, however, it summarises the extent to which the research in this area is beginning to raise fundamental questions about how children learn and, consequently, whether we need to re-examine the design of our formal education system.

Go to www.futurelab.org.uk/research/lit_reviews.htm to order a hard copy, or to view or download the document for FREE.

Technology update

Technologies such as the internet and mobile phones were once just bright ideas thought up by innovative thinkers – but, after being developed into prototypes and capturing the imagination of the masses, they have revolutionised our everyday lives. Here's a brief look at what could be next on the horizon...

Tile Toy

Are you game?

TileToy is a new kind of game that uses traditional tangible pieces (tiles) together with digital software. By arranging the electronic tiles (that communicate wirelessly with each other) players can engage in various kinds of game play, ranging from fast-paced arcade-style games to puzzles and learning games. The re-programmable and constantly updated graphical information on each tile is displayed with a LED matrix system and can display an extensive range of characters. Since both the source code and the hardware are available via open licenses, it's possible for you to create your own games.

www.tiletoy.org

Aladdin Knowledge Systems

Getting to the heart of security

Aladdin Knowledge Systems is developing an innovative new authentication technology that is based on the electronic signals that the human body, including the heart, produces. Each person's signal, or BioDynamic Signature (BDS) is unique to them and so is ideally applied to security. This new form of cardio-based biometric authentication technology, which works by touching a small conductive surface, is said to be accurate, user friendly and difficult to deceive.

www.aladdin.com/news/2006/etoken/Aladdin_Biometric_Technology.asp

Seiko Epson Corp 2006

Watch out

Electrophoretic paper, or e-paper, developed by E Ink, displays electronic information on a flexible surface. Unlike liquid crystal displays, the image looks the same from all viewing angles and does not distort when touched or flexed, making it ideal for portable devices. As such, Seiko Epson and Seiko Watch Corporation have developed a new Electronic Ink watch, using e-paper, with a unique monochrome display that shows a constantly changing mosaic pattern along with the conventional time display. These timepieces are likely to be available in Japan first, with the first watches coming off the production line this year.

www.eink.com/technology/flexible.html

Fraunhofer Institute

Use your brain!

Researchers from the Fraunhofer Institute in Berlin and Charité-Campus Benjamin Franklin, the medical school of the Freie Universität Berlin, have developed a computer that can be controlled by the power of thought alone. The Berlin Brain-Computer Interface (BBCI) uses electrodes, attached to the scalp, to measure the brain's electrical signals which, in turn, enable the user to control a cursor on the computer screen. The device, which makes it possible for people that are paralysed to use computers, could also be used in computer games and in the entertainment industry.

www.bbci.de

Control freak?

Japanese telephone company Nippon Telegraph & Telephone Corp (NTT) has developed a prototype technology to use 'remote control' on people. It works by sending electricity to peoples' ears causing their feet to move, making them veer off in an unspecified direction. Apparently it's painless but a truly unique experience, some trial users describing it as akin to being drunk. The company says that possibly the best use for this innovative, but perhaps controversial, idea is to make video games more realistic although, so far, there are no plans for a commercial product.

www.ntt.co.jp/index_e.html

VideoEgg

A cracking idea

VideoEgg is a simple way to edit, store, watch and share videos on the web that has been developed by three graduates from Yale University. They believe that working with video online should be as easy as frying an egg, hence the name. The idea came from seeing everyday internet users struggle with a complex mix of video formats, editing software, and players when they try to put video online and so VideoEgg was born, or hatched! A 'universal adapter' that captures directly from hundreds of devices and reads dozens of formats, it allows users to painlessly publish videos that anyone can watch without worrying about player compatibilities, encoding settings, or extra software.

www.videoegg.com

The art of assessment

Looking forward to revision?

There's no doubt that exams mark us. Grades give us better job prospects or, indelibly etched in the mind's eye, mark us down as failures. With the growing acceptance that an examination-focused assessment system isn't appropriate for all, Gareth Mills, Head of Futures and Innovations at the Qualification and Curriculum Authority (QCA), provides insight into how his sketches for a future assessment landscape are taking shape.

No-one criticises winter flowers for blooming 'late' nor great inventors for not coming up with their ideas sooner. So why do we expect millions of individuals to be exam-ready at the same time each year?

Only a decade or so ago, the answer was relatively straightforward; paper and pencil tests were the only viable way of assessing large numbers of students against an agreed set of criteria. But, as Mills points out, if you pose the question in the modern world of blogs, pods and cams it opens up a world of possibilities. "If you think about it, most areas of life have changed with the impact of technology," so you'd expect the same of assessment, he explains. "We've learnt a lot in the last 15 years - for example, through MRI scanning, about how the brain works and how people learn; different learning styles... Then there's the world of work and the effects of globalisation; the interconnectedness of the world, being able to talk to anyone anywhere, and finally, the whole personalisation agenda."

Expanding on these issues, aptly named by the QCA as the 'forces for change', he puts forward his case for developing an assessment system fit for the 21st century that will better meet our changing needs. "We now have a knowledge-based, technologically-rich economy; children need to be creative and enterprising," he advocates. "How do we modernise the subjects to better reflect what's needed in the real world? Given that we're saying we need to customise and personalise the curriculum, then we need a more customised and personalised assessment system as well."

"WE MUST STRENGTHEN STUDENTS' LIFE SKILLS - TEAMWORK, RESEARCH, SHOWING INITIATIVE"

Even though traditionalists may reject the idea that the current examination system can be enhanced with something as equally reliable, uniform and relatively quick, Mills provides a powerful rationale for a shift of focus. "We need to develop stronger learning skills and, rather than focus exclusively on subject knowledge, we must strengthen students' life skills - teamwork, research, showing initiative - and focus on the development of personal qualities. We need flexible, adaptable and resilient people

Flight simulator - www.flightgear.org

who can continue to learn and flourish throughout their lives as technology and work changes."

Perhaps aware that he is walking a tightrope between revolutionising the education system to meet the needs of those entering a fast-paced, modern world, and risking being accused of 'throwing the baby out with the bathwater', he is keen to stress that these ideas are about enhancing and improving our assessment system. Yet, there's no doubt that his ideas – some of which are already bearing fruit – are cracking open the outer layers of the proverbial education system 'rock' to reveal the first layers of innovation.

"PAPER TESTING IS LOGISTICALLY DIFFICULT; TECHNOLOGY CAN AVOID SOME OF THE DRAWBACKS"

Mills explains some of the ideas shaping the development of the proposed new independent research, or extended project. "Part of the development of the new diploma is the Extended Project, designed to give young people the opportunity to demonstrate their skills of research analysis and communication on a topic that's of interest to them," with assessment criteria emphasising the purposeful application of research skills as much as subject content. By way of example, he mentions a club he attends where one of the young people has a thriving mini-business on eBay and muses, "how can we recognise the skills and abilities they have if it falls outside the curriculum?"

Mills moves on to the pivotal role of technology. "The other thing we're likely to see more of when ready is on-demand assessment: a bank of e-assessments that you can use anytime. Rather than waiting for one week in the summer to test young people, we'll see a more flexible system where people can demonstrate their progress when they are ready and move on at their own pace." He moves on to the pilot of e-portfolios: "a space where learners can demonstrate evidence of the progress of their work" which, as he points out, "opens up many possibilities and allows young people a wide range of ways of demonstrating abilities; a power-point presentation, a short radio programme, a podcast, a short film..."

Although his responses are artfully constructed, there is nevertheless an absence of stock answers. In fact, his approach mirrors the process at the heart of the debate by constantly asking us to consider the bigger picture, adding: "the other benefit, from an assessment point of view, is the whole notion of moderation. Paper testing is logistically difficult; technology can avoid some of the drawbacks such as getting moderators physically together."

"WE NEED TO DEVELOP A LONG-TERM STRATEGIC VISION FOR WHAT WE WANT AS PART OF A MATURE PUBLIC DEBATE IN THE PRESS"

Examples of how theories are already being translated into practice may provide sceptics with 'proof of the pudding'. He explains how a school in Bristol is assessing PE using the latest video techniques; illustrating how technology really can make testing more authentic. "They get children to video themselves, analyse their performance, and critique it, then re-video it showing how improvement has come about."

While many might consider his proposals to be somewhat unrealistic for widespread implementation, others will be enticed by his vision that online assessment could make teaching and learning more meaningful: "Everyone is familiar with flight simulation for trainee pilots: rather than using tools to solve problems in the real world, they demonstrate their skills and understanding in a virtual world which reflects the experience of the real world. Using simulations more widely could make many other assessments more authentic. At QCA, we've piloted two new assessments based on this idea. One is called eVIVA - developed by Ultralab - which brings oral skills into the process with students asked to talk through the reasoning behind their work using the latest technology. The other is e-scape – as in landscape – a pilot project in design and technology where young people take photos and record commentaries of their work to demonstrate the 'story' of the design process and their creativity".

There's no doubt that Mills makes a strong argument for relegating the 'one-size-fits-all' mode of assessment to the history books, nevertheless his notions are likely to raise eyebrows once the implications become apparent. He is aware that there are hurdles yet to be negotiated and reiterates his team's role within the QCA:

"Our job is to enhance assessment because it's a powerful aspect of learning... offering a wide range of ways to demonstrate capability means less likelihood of teaching to one mode of assessment - it will enhance accountability by using technology to open up the ways we have to validate pupils' learning. We need to develop a long-term strategic vision for what we want as part of a mature public debate, and develop the evidence base to give policy makers the confidence to enhance our assessment systems using technology." Mills sees the space for optimism opening up - he talks sincerely of building a collaborative future through "productive partnership, not just with policy makers and practitioners but also with product developers." He concludes: "there is a great appetite for greater creativity and innovation in approaches to curriculum and assessment. Making learning more engaging and inspiring is at the heart of what motivates teachers. Those involved in the 'futures conversation' are saying 'it's great having this debate because it's reminded me why I came into teaching'."

So with the government already investing heavily in technology, perhaps we can share Gareth Mills' wish to develop a "wider way of measuring and celebrating success." Watch this space...

Assessment: the futures debate

The QCA's five 'broad forces for change' are:

- changes in society and the nature of work
- the impact of technology
- new understanding about learning
- the need for greater personalisation and innovation
- the increasing global dimension to life and work.

The QCA's vision of assessment is that it should:

- be an integral part of learning
- value everything that a modern curriculum is trying to promote
- allow learners to demonstrate what they know and can do
- make the most of new technology.

The QCA is keen for people to express their views and get involved. Share your expertise and be part of the discussion by logging on to **www.qca.org.uk/futures/forum.**

Further information on e-assessment

Keep up-to-date with the latest developments on these sites:

- The Qualifications and Curriculum Authority (QCA): **www.qca.org.uk**
- The eVIVA portal which is described as "providing an innovative way of assessing the ICT capabilities of students": **eviva.tv**
- e-scape: **www.goldsmiths.ac.uk/departments/design/research/research-bulletin/e-scapesummary.doc**
- Ultralab e-learning: **ww3.ultralab.net**

Futurelab Literature Review of E-assessment

The authors of this review provide a compelling argument for the central role of assessment in shaping educational practice. They outline the challenges and opportunities posed by the changing global world around us, and the potential role of technologies in our assessment practices.

Go to www.futurelab.org.uk/research/lit_reviews.htm to view or download the document for FREE.

Events

Imagining the Future for ICT and Education

26-30 June 2006

Ålesund University College, Norway

ifip35.inf.elte.hu/alesund/

An opportunity to explore new and different approaches to teaching and learning, and to re-think assessment and evaluation. In particular, there will be scope for considering new relationships between home, community, school and the wider world.

SLICT 2006: Harnessing Technology - Beyond Tomorrow

27 June 2006

Whittlebury Hall, Towcester, UK

www.ncsl.org.uk/programmes/slict/slict-conference2006.cfm

The last of four conferences in this series, this event will give you an opportunity to understand and influence policy development for the use of ICT within schools, as well as to hear from leading practitioners about their use of ICT for developing education.

International Conference on Information Communication Technologies in Education

6-8 July 2006

University of the Aegean, Rhodes, Greece

www.icicte.com

ICICTE 2006 will seek to address the many challenges and new directions presented by technological innovations in educational settings. Themes include alternative processes, procedures, techniques and tools for creating learning environments appropriate for the 21st century.

The Association for Information Technology in Teacher Education Conference

11-13 July 2006

Canterbury Christ Church University, UK

education.cant.ac.uk/itte

ICT is a major factor in driving forward innovation in teaching and learning. This year's ITTE conference will focus on sharing innovation, together with the usual variety of work in progress and research papers.

Developing Digital Diversity

20-21 July 2006

Institute of Contemporary Arts, London, UK

www.digitaldiversity.org.uk

This inaugural two-day event provides the opportunity to develop and exchange ideas between worldwide leading practitioners, academics, industry leaders and future creative talent. It will explore key issues relating to digital diversity, such as access as well as the use and creation of digital media.

4th International Conference on Education and Information Systems, Technologies and Applications

20-23 July 2006

Sheraton World Resort, Orlando, USA

www.conf-info.org/eista06

Relationships between the education and ICT communities are changing - sometimes in unexpected ways - and can result in original ideas and innovative tools and methodologies. Accordingly the main purpose of this conference is to bring together researchers and practitioners from both communities.

The Revolution will not be Televised: It is being Podcast

4 September 2006

Edinburgh, UK

curverider.co.uk/conferences.php

Curverider is putting together an informal conference based around discussion of cutting edge technologies within education. This event will be a forum for those interested in sharing ideas around and discussing the impact of podcasting, tagging, blogs, aggregation, social networking etc on higher education.

ALT-C 2006: The Next Generation

5-7 September 2006

Edinburgh, UK

www.alt.ac.uk/altc2006

This 13th International Conference of the Association for Learning Technology will feature four themes: next generation learning, focusing on innovative learning designs and the rapid development of tools on a global scale; next generation learners; next generation technology; and next generation providers.

SETT 2006

20-21 September 2006

SECC, Glasgow, UK

www.ltscotland.org.uk/sett

Key objectives for SETT 2006 are to: engage and prepare the teaching profession for A Curriculum for Excellence; provide direction and support for Scottish education; create a platform to provoke thinking and debate on current and future educational matters; celebrate and share good practice in teaching and learning; and encourage and stimulate effective integration of ICT in schools now and in the future.

Handheld Learning 2006

12-13 October 2006

Queen Elizabeth II Conference Centre, Westminster, London, UK

www.handheldlearning.co.uk/hl2006

The main themes for this conference are: Building Schools for the Future, related to a wider global perspective of what a school in the future might look like and how students and teachers interact in and with it; the personalised learning agenda; and presenting real evidence of how the use of hand-held, mobile or ubiquitous computing technologies has improved or enhanced learning.

mLearn 2006

22-25 October 2006

Fairmont Banff Springs Resort and Conference Centre, Banff, Canada

www.mlearn2006.org

This conference brings together leading researchers and practitioners in the field of mLearning. It also appeals to a wide range of educators, students and trainers, who are interested in enhancing learning by designing content and developing learning systems for mobile devices and wireless networks.

Serious Games Summit

30-31 October 2006

Crystal Gateway Marriott, Virginia, USA

www.seriousgamessummit.com

With over 40 sessions, lectures and roundtable discussions, this event offers developer training and education specific to serious game creation as well as opportunities to network. It will also feature a showcase of next-generation serious games efforts.

Spaces, Places and Future Learning

1-2 November 2006

Rich Mix, London, UK

www.futurelab.org.uk/events/learning_spaces

Futurelab's autumn conference provides a unique opportunity to challenge our preconceptions of the environments in which we learn; to imagine learning taking place anywhere, in the school, home, work and community, and to reflect on the possibilities for transforming those learning spaces with innovative tools such as computer games and mobile, tangible and embedded technology.

World of Learning

14-15 November 2006

NEC, Birmingham, UK

www.learnevents.com

The World of Learning Conference promises to bring together key industry experts and practitioners to debate and discuss the current issues surrounding learning.

Online Educa Berlin 2006

29 November – 1 December 2006

Hotel InterContinental, Berlin, Germany

www.online-educa.com

Highlights for the 2006 conference include a new games and simulation stream, a special focus on informal learning and a complete conference track on performance-based assessment. There will also be demonstrations and discussions about the impact of community-based services such as wikis, blogs and blikis, and how developments like podcasting can be used to create effective learning opportunities.

BETT 2007

10-13 January 2007

Olympia, London, UK

www.bettshow.co.uk

BETT is widely accepted as a leading educational ICT event, with over 600 educational suppliers and over 27,000 visitors. Embedding ICT is at the heart of the government's five-year strategy for children and learning, and this event is a must for those wishing to keep abreast of the issues relating to ICT in education.

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