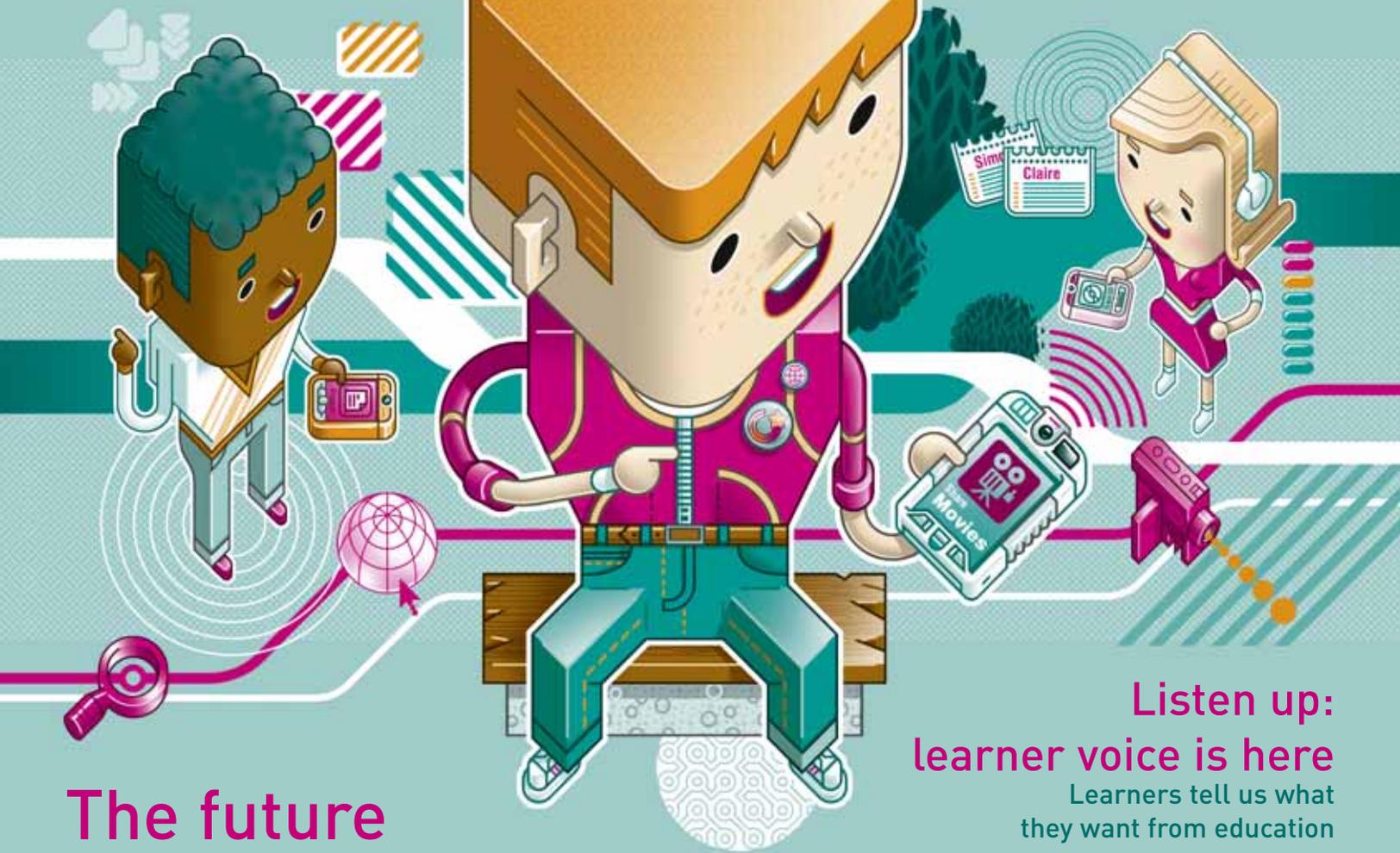


vision

Looking at the future of learning

summer/autumn 2007 FREE



The future of technology

We look forward to learning in the 'networked generation'

Listen up: learner voice is here

Learners tell us what they want from education

The 'Year 8 dip'

Transition from primary to secondary

Building bridges with the outside world

How external relationships can broaden learning horizons

A question of balance

The 'toxic childhood' debate

futurelab

www.futurelab.org.uk

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:

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 go to www.futurelab.org.uk/register or e-mail vision@futurelab.org.uk.

Website

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

Blog

Take part in FLUX, a blog hosted by Futurelab which offers the space to debate and discuss the latest in innovation and education - flux.futurelab.org.uk.

Futurelab
1 Canons Road
Harbourside
Bristol BS1 5UH
United Kingdom

tel: +44 (0)117 915 8200
fax: +44 (0)117 915 8201
e-mail: info@futurelab.org.uk
blog: flux.futurelab.org.uk
www.futurelab.org.uk

Registered charity 1113051

© Futurelab 2007. All rights reserved; Futurelab has an open access policy which encourages circulation of our work, including this magazine and its articles, under certain copyright conditions - however, please ensure that Futurelab is acknowledged. For full details, go to: www.futurelab.org.uk/policies

Welcome to

vision

Students starting school this year are likely to retire around 2065. Given that we can't, with any certainty, predict what the world's going to look like in 10 years' time, we can have little idea what it's going to look like in over 50.



What is certain is that young people will need to cope with, and contribute to, an increasingly complex, global society. If they are to address some of the challenges thrown up by rapid social, economic, technological and cultural change, they will need to apply Einstein's dictum: "It's no good trying to solve problems with the same sort of thinking that caused them". It is only by thinking differently that they will be able to anticipate and prepare for the opportunities and concerns of the next half century.

If we are to nurture young people as 'Guardians of the Future', we urgently need to think differently about the nature, purpose and practice of education in the 21st century. And if we are to make positive changes to education, we need to recognise the huge potential of digital technologies to disrupt old practices and to support radically new, user-centred approaches.

In this edition of VISION, you will find numerous examples of how the creative use of technology is challenging traditional notions of education - from the role of the teacher and learner, to the organisation of our schooling, and the definition of 'basic skills' and 'intelligence'. These case studies highlight some of the questions that go with harnessing new technologies for learning. How will technological change impact employability and skills? What might the digital divide of the future look like and how can we close it? How can technology build greater community cohesion and inter-personal relationships?

These questions will continue to evolve in the context of further social, technological and economic change. So, at a time of great enthusiasm for envisioning the future of education, our main goal must surely be to develop a dynamic education system which not only encourages young people to be flexible and creative but which is, in itself, a 'learning system' equipped to anticipate and handle change.

An article by Samia Meah and Huda Al Bander, two 17-year-olds from Edge Learner Forum, explains how we might achieve this: "We have to work together. Young people can help to transform education for the better if we are given the chance. Our generation is the future and we can help you find the solutions today." Systemic change is no small challenge but we are lucky that help - and hope - are at hand.

Annika Small
Chief Executive
Futurelab

Contents



The future's bright, the future is...

The digital learning revolution is a lot nearer than many people think, and for young people it is already happening. We explore how technology will develop over the next 10 or so years and, more importantly, how these developments will affect and enhance the world of learning.

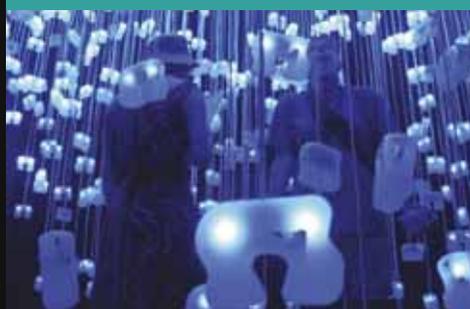
09

Regular features



Technology update **05**

What's new from those pushing the outer limits of technology.



Getting creative **16**

Some of the exciting creative ideas that have made us sit up and listen recently.



Telling it like it is?

Young learners: the real voice of education

It trips easily off the tongue, but for learner voice to succeed we have to listen. We asked two students from the Edge Learner Forum for their own manifesto, and they didn't disappoint.

02



Mind the gap

Making the transition from primary to secondary

When children move from a primary classroom to subject-oriented secondary education, learning can sometimes suffer. But there are ways to counter the classic 'Year 8 dip'.

06



Building bridges externally

As with the school that runs its own allotment and sells the produce, external links to the local community, businesses and beyond are taking some schools along new and innovative paths.

13



Toxic childhood

Sue Palmer's book struck a chord with education and the media, but was her debate hijacked? And isn't it true that too much of anything is usually bad for children?

17

Telling it like it is?

Young learners: the real voice of education



We often hear that it's important to consider learner voice in education, but we rarely hear from learners themselves in the media. VISION asks two 17 year-olds from the Edge Learner Forum, Samia Meah and Huda Al Bander, to give us their view of what education should be like. Here's what they have to say...

Politicians and experts have been talking about the year 2020 and the higher order skills needed for the UK's future success. But how much have they thought about how to get there? Only young people can make these 2020 goals a reality. Our input should be the most valued because, if we don't get involved, the nation will not be successful.

The Edge Learner Forum is a group of young people working to change the face of UK education. Our main aim is to help structure education so it caters for all ways of learning, whether that involves practical or academic paths.

It started in 2004 when a group of us came together from different walks of life, with different experiences and expectations. Over the past three years we have developed our opinions together in order to knock down the barriers faced by stereotyped young people.

As a group we have found many ways to influence the future of learning. Our voices have been heard and followed by top 'experts' and politicians. We have been 'teaching the teachers' in order to improve their methods at the Institute of Education; we are helping to design new courses for the Open University; we have also

published articles and appeared in media debates for Channel 4 and Teachers' TV.

If the UK's goals for 2020 are to be achieved, there is a lot to be done. We have to modernise educational choices and allow young people to learn in ways that suit them. We have to inspire young people to follow their own dreams. And, more than anything, society should see young people as a part of the answer rather than the problem.

Why we learn - motivation and inspiration

Young people like us sometimes lose our dreams because we are labelled with low expectations. We are forced to settle for something far from our actual motivations. The messages surrounding us tell us to expect a below average future. Let us dream, inspire us to aim high, and encourage us to do what we really want

be available in every school, not just a few. Subjects like health and social care are available widely but they only cater for a small percentage of students. A variety of subjects should be available instead of the typical choices. To make the vocational route successful it has to provide a wide range of opportunities which open doors to a life just as exceptional as that offered by academic courses.

In the future, adaptability will be vital. Constant change means that people don't stay in one job for life any more. More and more choose to change their occupation to get different experiences. 'Learning how to learn' should be taken as seriously as any other skill. Just training people for skills to use in the short term or for a particular job limits their ability to be flexible and adapt to new professions - not to mention its effect beyond the workplace.

Stop judging us and let us be judges too

Examinations today are just a task to memorise information. But learners won't remember it beyond the exams so what is the point of all this test taking? To prove you have a good recollection of the past?

More practical assessments of students should be carried out to provide a true indication of student skills, especially within vocational subjects, where there should be practical evaluations and not just theory.

The Ofsted inspection also lacks reality because teachers and students know of the visit beforehand so often it isn't a true review of the school in an everyday situation. We believe that the answer to this problem is to develop a 'student Ofsted', where young people would be embedded in the inspection team alongside the existing inspectors.

SOCIETY SHOULD SEE YOUNG PEOPLE AS A PART OF THE ANSWER RATHER THAN THE PROBLEM

to do. How you put this message across is really important. Don't just rely on teachers and career advisers. Bring in people who can share their current life experience to project a vision in our minds.

One slogan we believe within the Learner Forum is: "It's not how intelligent you are, but HOW you are intelligent." We all need to know we have intelligence and are experts in our own life experiences so we can truly believe in our dreams.

Time to update what we learn

It's the 21st century, so why are we still using ancient ways of learning when the world has advanced so much? We have to bring vocational and academic learning together to make a real difference. We have to bring education up to date and fill the gap between the two routes. We don't mean scrapping the academic route altogether; we mean bring them both together to form one integrated, educational route. Currently, the problem is that vocational learning has led to everyday jobs and has often made learners settle for something below their potential.

In every part of the country there should be a wide range of learning options available. Vocational opportunities should

Different ways to learn, but relationships are always at their heart

Each student has a different way of learning and developing skills, but these days schools often don't provide a diverse enough curriculum for everyone. We feel that the National Curriculum limits the methods that teachers use to teach; therefore students' expectations are often not met. Inside the school system it feels like there is only one way of learning, and for learners (who come in all shapes and sizes) this seems ridiculous.

As technology develops it is vital that education does too. The way teachers educate students should be integrated with new technology. As technology advances we realise the role of the teacher will change and become less dominating. But we think new gadgets and software shouldn't be relied upon to teach the students, just used as good resources and teaching aids. Communication between the teacher and the student will remain the fundamental asset. Without this there is no hope of effective learning. The role of the teacher is to create an enjoyable environment and motivating atmosphere for learning. The curriculum doesn't always allow this because of its off-putting points such as insufficient practical work.

It would involve a group of young people accompanying Ofsted inspectors when they visit a school. These youth inspectors could interview randomly selected students to get opinions and find the truth. The





logic is simple. Young people can see what is really going on at inspection time because they have been inside schools undergoing inspection. They can therefore help the inspectors to arrive at a more accurate review of the school. This could mean detecting inaccurate claims made by the staff or leaders in the school, but it could also mean celebrating aspects of the school life that may not otherwise get recognition or reward - or show up on the league tables.

We are the solution not the problem

To make the national vision for 2020 a success, one thing is certain: we have to work together. Young people lose their dreams too often because we are labelled

and underestimated. This means that the potential of individuals is lost, along with the potential of society as a whole. All our work within the Edge Learner Forum proves that young people can help to transform education for the better if we are given the chance.

So don't just tell young people what you think is right. Give us a way to get stuck into the real debates about improving the system, the things we learn and the ways in which we learn them. Education is our problem as a society and we can't leave it until tomorrow. We can help you find the answers today. Our generation holds the hope and we are the future - if nothing is done it will be us who experience the failure.

What do you think of this point of view? Are young people stereotyped and forced to settle for low expectations? Does the National Curriculum limit the methods that teachers use to teach? Should we have a 'Student Ofsted'? To debate these issues further, visit FLUX, a blog hosted by Futurelab - flux.futurelab.org.uk/young_learners_the_real_voice_of_education.

Edge is an educational foundation with a mission to raise the status of practical and vocational learning in the UK (www.edge.co.uk). The Edge Learner Forum is a growing network of young people across the UK who are actively involved in improving the education system. To make contact, call Rose Dowling, national coordinator, on 020 7242 5504.

How can teachers work with students to improve things? Advice from the Edge Learner Forum...

- Break away from the assumptions you have about your students. Your assumptions (and students' consequent assumptions of you) will get in the way. Try out different ways to change the power balance.
- Instead of just consulting young people, work with them as your equal partners. Show them they are equal in the way you treat them.
- Inspire your students to be involved. Show them that you are motivated yourself and that you are human too.
- Bring people together across the usual divides, such as staff or students or parents. Break people out of their normal cliques. Get everyone to work together to achieve a change they will be able to see.
- Create an atmosphere where people feel free to speak their mind. Have open discussions about how to improve things in your school or college. Ask your students for their ideas about how to improve teaching practice, the environment and what they learn.
- Give students real responsibilities in the school. Let them design new projects and after-school activities.
- Involve your students in staff training and staff meetings. They are the best people to tell you what works - and what doesn't.
- Prove that you are listening to your students and taking them seriously. Show them what an impact their views are having.
- When you've had a go at doing this, ask your students to help you evaluate what you did.

Enquiring Minds

An approach that recognises student voice

Launched in June 2005, Enquiring Minds is a three-year research and development project undertaken in partnership with Microsoft, which supports young learners to take responsibility for their own learning and equips them with the skills and tools required for effective learning. This approach allows children to act as researchers and innovators and not simply as the recipients of knowledge, and so better prepares them for life and work in the 21st century.

If you are interested in following an Enquiring Minds approach in your school, then a draft guide and associated resources will be available to download from the Enquiring Minds website from September 2007 onwards - go to: www.enquiringminds.org.uk.

Technology update

They range from logical developments to tests of your credulity but be assured, all the items in our technology round-up are under way and, one day, we may well be using them in one form or another...

Enter the robotsurgeon

Astronauts of the future who become seriously ill in space could well be operated on by a robot guided remotely by a surgeon. NASA has sent a team - consisting of a flight surgeon, two astronauts and a doctor - on a 12-day underwater mission to carry out a range of experiments including "robotic telesurgery on simulated patients" on the aptly named NEEMO 12 mission (NASA Extreme Environment Mission Operations 12). NASA now hopes that scientists and schoolchildren will also get a chance to manipulate the two surgical robots on board Aquarius, the underwater laboratory run by the National Oceanic and Atmospheric Administration (NOAA), which is permanently moored under 60 feet of water off the Florida coastline.

www.nasa.gov/neemo and www.uncw.edu/aquarius

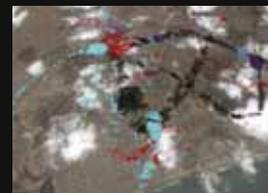


NASA

Sensory power of mobiles

The World Health Organisation suggests that two million deaths a year can be put down to air pollution. But how much do we know about pollution levels in our own environments? The coupling of mobile phones and sensors could provide communities with their own evidence. Pioneering work in 'Participatory Urbanism' points the way. Researchers mounted air-sampling devices onto taxis in the Ghanaian capital, Accra, to collect pollution data on mass via mobile phones for two weeks (some participants used body-worn technology with GPS). This resulted in a map showing levels of carbon monoxide pollution encountered by each user as they travelled across the city in a day. Participatory Urbanism is part of the Urban Atmospheres research project being run by the University of Berkeley, California and Intel Research.

www.urban-atmospheres.net/ParticipatoryUrbanism



Intel Research and UC Berkeley



Networks go interstellar

Just when people are used to the idea of global networks, the US Department of Defense introduces the concept of interstellar networks. Its IRIS project (Internet protocol Router In Space) intends to put a Cisco internet router into space by early 2009. The first purpose is military, to improve US troop communications anywhere in the world, but eventually it will probably extend the internet into space. "IRIS is to the future of satellite-based communications what Arpanet was to the creation of the internet in the 1960s," says Don Brown, who works with Intelsat General, one of contractors.

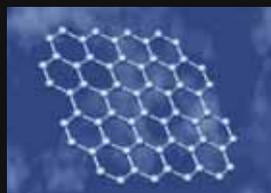
www.defenselink.mil/releases/release.aspx?releaseid=1068

Graphene joins the menu for chips

Miniaturisation has gone to a new level with the news of transistors that are only one atom thick and less than 50 atoms wide. They are created with what

is thought to be the world's thinnest material, graphene, which is described by Professor Andre Geim and Dr Kostya Novoselov from the School of Physics and Astronomy at the University of Manchester as "a gauze of carbon atoms resembling a chicken wire". This breakthrough could spark the development of a new type of super-fast computer chip. Graphene is being touted as the eventual replacement for silicon in chip-making, as silicon and other known materials become unstable at sizes even 10 times larger than the graphene strips the Manchester scientists are working with.

onnes.ph.man.ac.uk/nano



The University of Manchester

Thought precedes the action

Using brain power to control technology has long fascinated researchers and science fiction fans. Technologists working with Professor Allan Snyder in Sydney, Australia, predict that they will be able to harness both conscious and non-conscious thought via special headsets, using sensors to allow people to control machines. The Emotiv Systems product development team is working with developers to make that happen with Project Epop, and the most likely first application will be computer games.

www.emotiv.com/2_0/2_1.htm



Emotiv Systems

Car of the future - open source?

C,mm,n (pronounced "common") is the world's first open source car, being produced by a collaboration between The Netherlands Society for Nature and the Environment and three leading Dutch technical universities - Delft, Eindhoven and Twente. Three lifesize models were shown at the AutoRAI car show in Amsterdam in a presentation supported by the Dutch Prime Minister, Jan Peter Balkenende. The car is described as supporting "sustainable individual mobility", with "zero emission" and "cooperative" features. Blueprints are available on the web for sharing, amendment and development. The only condition is that improvements are returned to the community.

www.autoindetoekomst.nl



AutoRAI

Mind the gap

Making the transition from primary to secondary

The 'Year 8 dip' in achievement has been the subject of a great deal of research, indicating that many pupils make little if any progress in the first year or two of secondary school in the core areas of English, maths and science. The transfer from smaller primary schools, where most teaching is undertaken by generalist class teachers, to large secondary schools with specialist teachers, can be difficult for many pupils.

"We forget what it is like to move from working in one room with one teacher to having to cope with 10 subjects in 10 rooms," argues Damian Allen, Executive Director of Children's Services at Knowsley Council, who feels that the gap between primary and secondary schools has widened markedly recently. "My argument is based on the inappropriateness of a subject-dominated Key Stage 3 curriculum at secondary together with an increased focus on personalised learning, tracking and progression at Key Stage 2," he adds. "This exacerbates the classic Year 8 dip."

The Office for Standards in Education (Ofsted) was warning of the need for "curricular continuity" across the phases as long ago as 2002. Its document 'Evaluation of the effectiveness of transfer arrangements at age 11' recommended that schools "direct their attention to the academic rather than the social aspects of transfer, focusing on pedagogic strategies known to improve both pupil attainment and motivation." It also urged that consideration should be given to continuity in ways of learning.

Looking at ways of learning as well as the social aspects of education is central to the way that Nottingham's Djanogly City Academy works. It is using technology in ways that will, over time, address some of the Ofsted concerns.

Assistant Principal Sanjesh Sharma describes the way that they work. "We have one teacher who liaises with primary schools. And we have school-based community learning leaders who also go out to the primary schools.





Those are the traditional mechanisms. On a more innovative level, we are in the process of getting our feeder primaries to use our Learning Gateway, our virtual learning environment (VLE). Essentially we will host intranets for the feeder schools and it will cost them nothing. Because they will have access to our VLE they will have access to our resources. That will create some continuity. Pupils will be able to look into the future to see what they will be doing in Year 8 and Year 9 and so on. It will take down some of the boundaries but there is

in an uncertain world, and position the classroom within the global village.”

The rich tasks encompass all the core skills so there are no discrete lessons in English, maths and ICT. They are all embedded within the rich tasks. Assessment is based on the tasks. At Djanogly the pupils are in groups of around 70 with four core staff, as opposed to 12 or 13 teachers and all pupils staying in one area. The areas are flexible and have movable walls and projection facilities.

raw scores. We also transmit preliminary information forms which give all the teacher assessment levels and a profile of the pupils, giving their interests. Every child also does a piece of unaided autobiographical writing. However there are limitations: for instance, an English teacher in one of the secondary schools will only have numerical data to go on.”

Jane Cooke, Head of ICT at Saltash Secondary Community School in Cornwall, likes to use technology creatively to smooth

“WE FORGET WHAT IT IS LIKE TO MOVE FROM WORKING IN ONE ROOM WITH ONE TEACHER TO HAVING TO COPE WITH 10 SUBJECTS IN 10 ROOMS”

a little resistance to the idea from some teachers in the primary schools; they worry about having the capability to use the VLE.”

Djanogly might be considered to have an advantage because, as an academy, it does not have to adhere closely to the National Curriculum. It uses the curriculum of the New Basics Project which has been running for about six years in Queensland, Australia. Students work through a range of “rich tasks” which range from science and ethics through to national identity. The originators describe it as an “attempt to empower and encourage teachers, unclutter the curriculum, up the ante intellectually, deliver fewer alienated students, prepare students for a future

Children also have access to laptops. “It involves us working with students in a very different way,” says Sharma. “They work in groups rather than working singly. It is similar to the primary school set-up they are used to but it is a secondary curriculum.”

The transmission of pupil data via Capita’s SIMS electronic transfer is already used by many schools to support transition. Jane Carson of Roselands Primary School in Hoddesdon, Hertfordshire, describes the process. “We use an electronic common transfer file (CTF). We complete the form and send it to the school that children have applied to. When the SATs are completed the file is revised with the

the pastoral and personal elements of the crossover. The transition project at Saltash involves linking to the primary schools via social networking software. “We link our school to the primaries using Skype video-conferencing. The students, both at my end, Year 7, and the other end, discuss what we are up to in ICT and any exciting things we are doing. The Year 6 students ask the Year 7 students questions about the school, what it is like being at such a big school, whether they get loads of homework, if the teachers are monsters etc. This works really well, and both groups behave just like children and have loads of fun with the medium of video-conferencing; lots of larking around and being a bit daft, loud, having fun with the sound and camera.”



saltash.net community school

Cooke feels the experience is a great ice breaker. Both sets of students are on home ground so they feel confident. She emphasises how affordable the technology is, and “totally transferable, achievable, requires no technical knowledge at all, no tech support”.

However she feels that Skype works for most students, but not all: “The quiet ones - the ones with problems they don’t want to reveal to a whole group, let alone a remote group through a camera - have one-to-one sessions with one student. In this way they are paired with someone who was perhaps from their primary last year, so they are familiar with them, or they will have a Year 7 student who is mature enough to be a good mentor. When the Year 6 students come up to the school for their transition

visit they will be escorted by their mentors, have lunch with them and feel, hopefully, more confident about the transfer.”

So, achieving a balance so that both the pedagogical and social issues are kept consistent across the transition seems to be of utmost importance. Additionally, it seems likely, with improved infrastructures and the increasing resources in secondary schools, that the challenges of transition and continuity will continue to test everyone in education. However, pioneering new ways of easing transition, making secondary work more cross-curricular and investing some of the new resources in feeder primaries, as well as using technology to aid social interaction between the two stages, could all help to overcome these challenges.

Background research

Transfer and Transitions in the Middle Years of Schooling (7-14): Continuities and Discontinuities in Learning, Galton, M, Gray, J and Ruddock, J 2003, Research Report RR443, Nottingham, DfES Publications

Further information

- Djanogly: www.djanogly.notts.sch.uk
- New Basics Project: education.qld.gov.au/corporate/newbasics
- Roselands: www.roselands.herts.sch.uk
- Saltash: wamp.saltash.cornwall.sch.uk/saltash.net
- www.skype.com/intl/en-gb/campaigns/offermatica/index2.html
- moodle.org
- www.trackinglearningonline.co.uk
- www.capitaes.co.uk/sims

Transition in practice: South Dartmoor College

Optimising the transition between Key Stages 2 and 3 was the purpose of the Networked Learning Community led by Martin Burt at South Dartmoor College. It is a community of five primary and two secondary schools. The primaries are scattered and meetings are difficult. Martin found that research suggests that, pastorally, students settle very well; the academic transfer is what’s not effective.

The college gets all the usual data that schools receive and transmit about SATs at Key Stage 2. “None of those things told us about pupils’ learning habits, their learning muscles. Building Learning Power (BLP), a program based on the ideas of Professor Guy Claxton, is what we decided to use.”

Students in the primary school investigate their learning habits using the BLP Tracking Learning Online Quiz. There are five different quizzes. The first is a general introduction and asks questions about all of the four dispositions of BLP, while the remaining four focus on each disposition (resilience, reflectiveness, reciprocity and resourcefulness). Information from the quizzes is recorded in students’ learning passports.

The learning passport aims to use the children’s knowledge of themselves as learners to record their learning journey in primary school and then use this in secondary school to guide their future progress. Using BLP enables staff and students to focus on learning dispositions, to address common skills across subjects, rather than focusing on content. It is a sophisticated system and can be diagnostic. The output can set targets for students to improve their learning muscles.

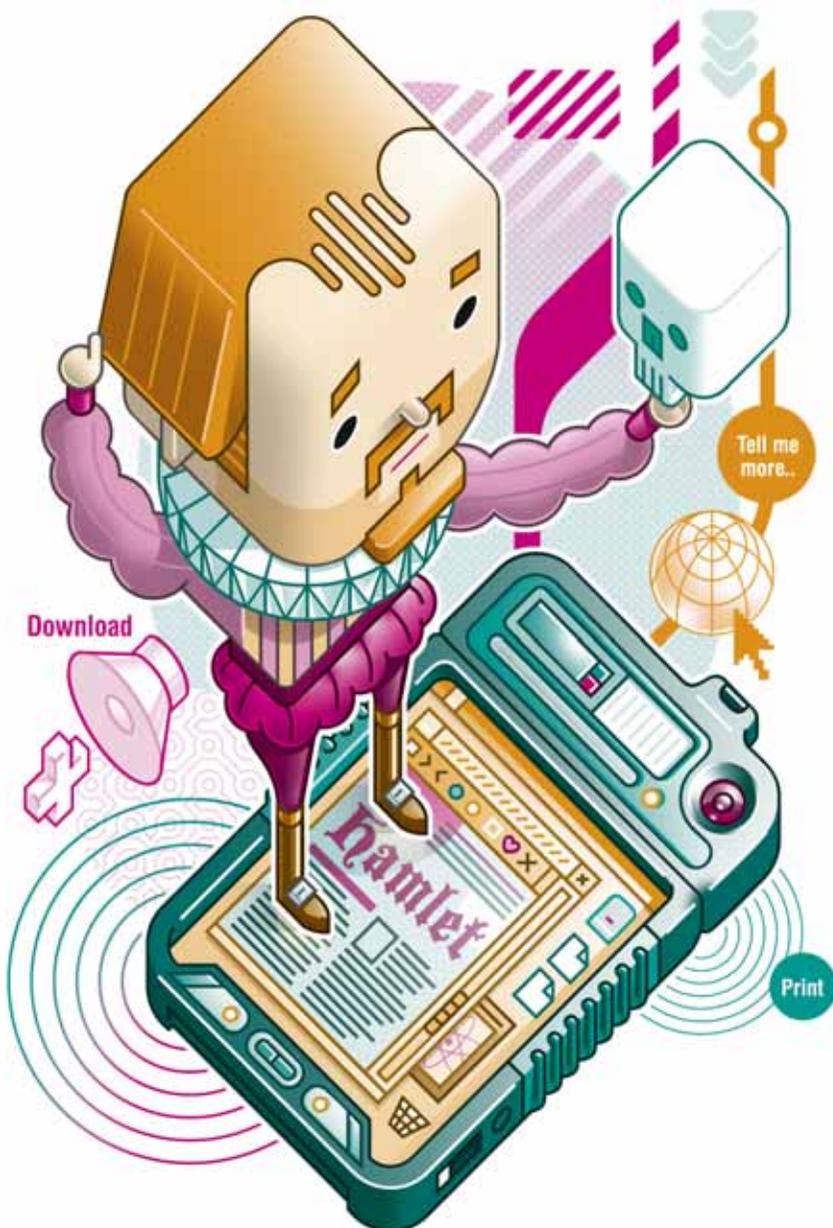
Before going to secondary school, each student reflects on his or her learning and creates a learning portrait to go in the front of their passport. This is a snapshot of what they know about themselves as learners. It puts less emphasis on the teachers. The data can be put into the SIMS software so that the tutors in the college have a learning overview of each student.

www.guyclaxton.com/blp.htm

www.southdartmoor.devon.sch.uk

The future's bright, the future is...

How will technology develop over the next 10 or so years? More importantly, how will these developments affect and enhance the world of learning? VISION takes a look at what is coming up and finds that the future is nearer and will have more impact than you might think.

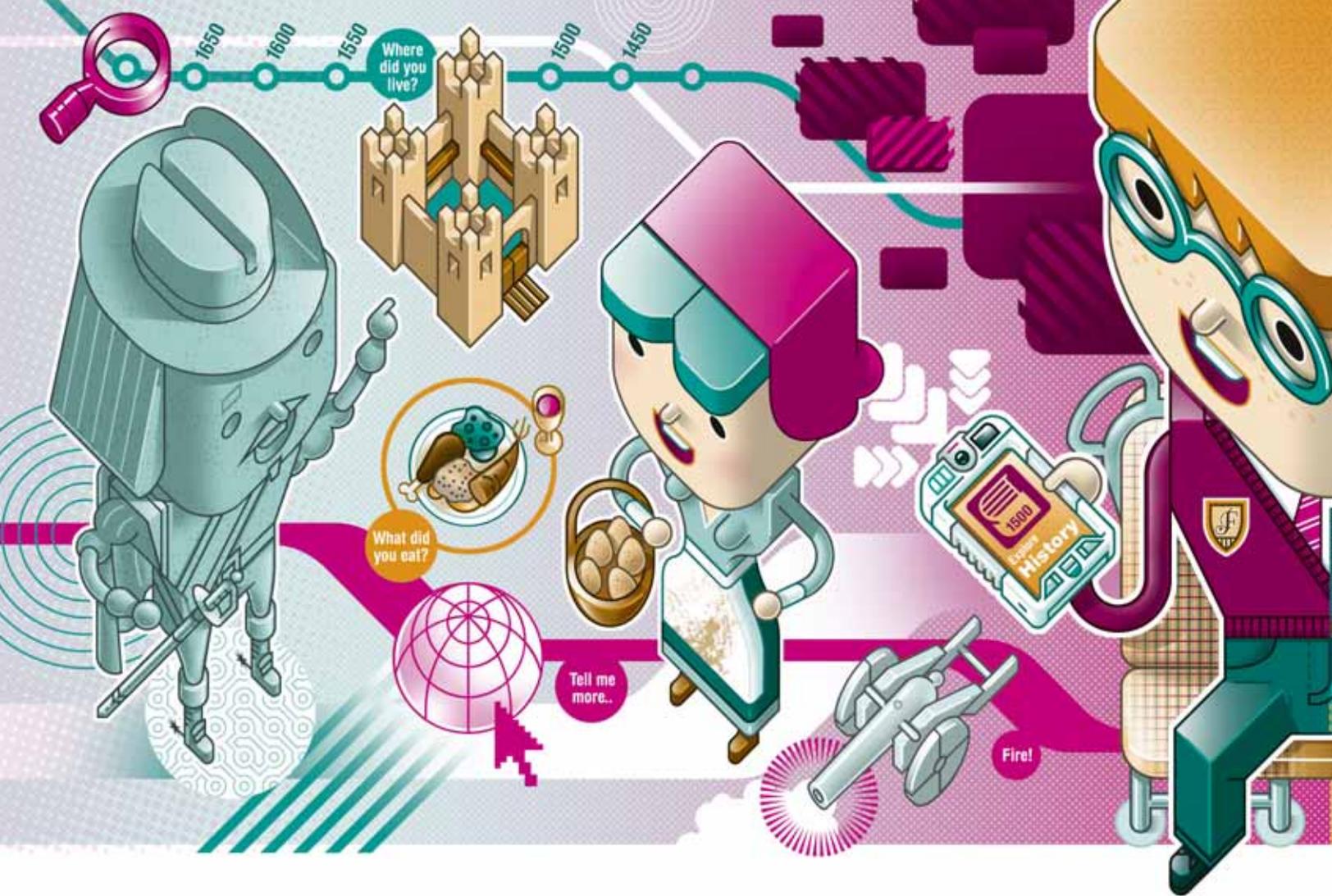


The term 'horseless carriage', as IT guru Nicholas Negroponte has observed, tells us a lot about how the automobile pioneers regarded the new contraption. They saw it only in terms of what came before. They couldn't envisage how it would shape a future that included a Model T on every driveway, autobahns, OPEC, the Sherman Tank, drive-in movies and Jeremy Clarkson.

It can sometimes be reassuring for hard-pressed teachers to think of today's new technology in much the same way. Often the whiteboard is thought of as simply a blackboard with whistles and bells, and the web as just a big encyclopaedia. And for some there's a feeling that technology might advance, but education will remain teacher-led, classroom-based and more or less the same as it always has been.

The simple truth is that the emerging technologies will revolutionise teaching and learning. And it will happen not in some comfortably distant future of tinfoil jumpsuits and jetpacks, but during the next 15, 10 or even five years: the school days of the children currently in our infant classes.

These young people are growing up in a world in which the much-heralded 'convergence of technology' is becoming a reality. They can watch television on their PCs and, with Apple TV, enjoy their computer files and MP3s on television without ever having to think about what bit of kit does what. The 3G mobile can do just about everything except make your bed - which is probably why Nokia explores future developments with



MIT's Computer Science and Artificial Intelligence Laboratory. As prices tumble (as they invariably do) and ye olde 3G gives way to systems Beyond 3G (B3G), most children will grow up able to surf the net, watch movies, or create their own movies and webpages on a pocket-size Ultra Mobile Device (UMD) - an all-in-one phone, personal organiser, movie camera, media player, PC and fashion statement.

applications, newsfeeds, the lot - on any computer in any corner of the wired world. Google offers something similar. Pay \$50 per annum and it will provide 10Gb of online storage, together with a package of generic applications which users can download if and when they need them.

Memory chips are as cheap as, well, chips and getting cheaper. Soon schools - or any

hotspot. To be more exact, it will be served by an all-embracing network of hotspots, seamlessly linked by common protocols. Not that the infrastructure will bother the users, who'll simply take it for granted that they can remain permanently online wherever they are, from the inner city to the remotest rural backwater. With the promise of access speeds to a UMD of one megabyte per second or more, the

SOON SCHOOLS WILL BE ABLE TO OFFER PUPILS AS MUCH STORAGE AS THEY'LL EVER NEED TO STASH AWAY THE STUFF THEY CURRENTLY SAVE TO DISKS AND MEMORY STICKS

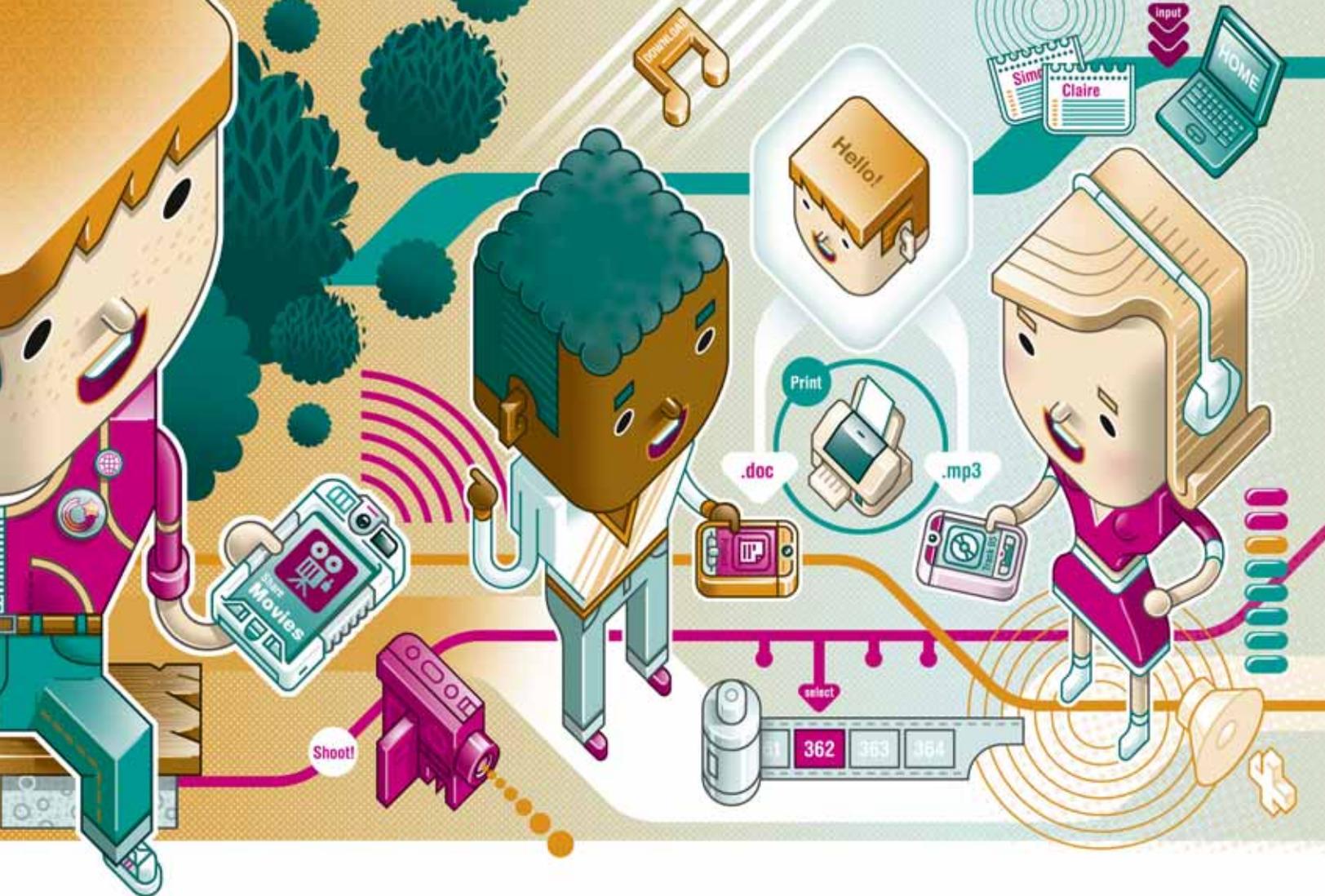
Inevitably children will lose their UMDs (some things will never change) but it won't mean that they'll also lose their precious applications and files. These will all be safely stashed away online, instantly accessible wherever they are via whatever digital device they can get their hands on. It's the sort of service students at Cardiff University will be able to enjoy this year. Using IBM's Virtual Structure Access, they can re-create their desktop - files,

other provider - will be able to offer pupils as much storage as they'll ever need to stash away the stuff they currently save to disks and memory sticks. So they won't be tied to the school or home computer. They'll be able to work wherever they can find a broadband landline or a hotspot.

And within the decade, if the EU has got its sums right, the whole of Europe will be one gargantuan technology-enabling

networked generation (that is, those in today's infant classes) can look forward to an education in which they'll be able to pick 'n' mix from the net, video-conferenced tutorials and DVD-quality distance learning packages which, because of the immediacy of the UMD, won't seem in the least bit distant.

It poses a fundamental question. When e-learning provides so many resources and



in a way so easily personalised to meet their specific needs, what added value can schooling bring to the educational process? Answers to that question - and let's hope there are hundreds - will help fashion a curriculum which will focus not on content but on equipping students with the skills they'll need to select, evaluate and make most effective use of so much multimedia all-singing, all-dancing material.

However, people's dependence on multimedia, rather than on traditional text-based sources of information, could make them particularly susceptible to what scientist, writer, broadcaster and member of the House of Lords Professor Susan Greenfield calls "the 'yuk' and 'wow' factors". The more exciting the presentation, the more likely they are to be impressed by it. So, for an obvious example, young people using the net to get the truth may decide between creationism or evolution not on the quality of the arguments but on the cleverness of the web designers' pyrotechnics. But healthy amounts of adolescent scepticism ("whatever") kick in at about the same time as acne. So, if we are able to equip young people with the skills to evaluate different

sources in the context of a media-rich world, pupils will know how important it is to take everything they find online - however wicked the graphics - with a huge pinch of salt.

Their parents only had to cope with information in the mass media, books and the web. Today's children will have all of that and more. They'll grow up in what has been described as "an internet of things". Intel, Microsoft and others are spending millions on the technology that will allow mobiles to track down and chat to any smart devices in the immediate vicinity. These ambient, ubiquitous and pervasive technologies will enable even inanimate objects to interact with students.

The educational potential is incalculable. The banished Duke in 'As You Like It' claims that he can find "books in the running brooks" and "sermons in stones". In the wireless world this won't be poetic licence but the literal truth. Artefacts, buildings and landmarks, tagged with sensors and processors, will be able to emit multimedia information - and they'll be able to determine its relevance (or lack of) to you. For example, as pupils on a field

trip gawp at the run-down ruins of a castle, their UMDs will pick up a multimedia recreation of the castle in its heyday. On the screen of the built-in camera they'll be able to impose the virtual recreation on to the real thing, listen to commentary, follow up web links or download information from a range of inanimate objects nearby. They'll be able to save the information, manipulate it, annotate it with text, sound or graphics and share it with mates back in school - or virtual mates anywhere on the planet.

This ability to share, of course, is already becoming the dominant feature of digital life for young people. MySpace has more than 50 million members with 160,000 new ones joining everyday. YouTube is visited more than 100 million times a day. More than half the world's bloggers are still in their teens. It's estimated that by 2010 more than 70% of digital information will have been generated, not by commercial producers, but by Joe Public.

Wikis, chatrooms and IMs allow students to collaborate on projects with peers across the globe. They find it as easy to swap coursework as their favourite album tracks. Down the ages, teachers have asked,



"Is this all your own work?" But it's a question that is becoming increasingly meaningless as students spend more time on the net where it's second nature to borrow, share and adapt information. Indeed the real skill is in assimilating and synthesising a range of second-hand materials in a way which makes it new and uniquely your own.

It's a new order that no longer fits with the traditional systems of assessment. So teachers will not only have to think again about how, where and with whom students learn but also how that learning is evaluated. Simultaneously, they're going to have to keep pace with emerging technologies and rethink exactly what it is that teachers can do to ensure that the networked generation gets more from education than a symphony of wows and yuks. The benefits will be enormous, but it could be considered a daunting prospect by some. Stablemen probably felt much the same when the first horseless carriages took to the road.



Further information

For a readable summary on developments in ubiquitous computing see David Ley's essay in 'Emerging Technologies for Learning Vol 2'. It's available as a pdf file from: partners.becta.org.uk/index.php?section=rh&rid=11380

For more on the seamless wireless network visit: www.wireless-world-initiative.org

For video simulations and discussion of how we might use the network visit: cisco.com/uk/humannetwork

For details of how ubiquitous technologies are being used in museums and public spaces see: www.cio.com/archive/071505/et_article.html, and visit: ookl at www.ookl.org.uk

For IBM's Virtual Infrastructure Access at Cardiff University visit: www.ibm.com/news/uk/en/2006/12/uk_en_news_20061219.html

For Baroness Susan Greenfield's views on multimedia and children's learning see: education.guardian.co.uk/schools/comment/story/0,,1760235,00.html

2020 and beyond: Future scenarios for education in the age of new technologies

If educators are to shape the future of education (and not have it shaped for them by external technical developments), it is crucial that we engage with developments in digital technologies at the earliest stages. Futurelab has launched a new publication which reviews current predictions about the development of digital technologies between now and

2020, explores their implications for education, and tries to understand how we might best harness these changes.

Go to www.futurelab.org.uk/openingeducation to view or download the document for FREE (hard copies are available on request while stocks last, details can be found online).

Let's go outside

External influences and their impact on education

Many schools operate as islands, separate from the rest of the world. An ability to link to sources of knowledge apart from other local educational units has not been deemed necessary. Yet connections to the local community, businesses and beyond are taking some schools along new and interesting paths.

"There are lots of places where different forms of training and education occur, but schools have not been very successful at tapping into them to date," says Tim Rudd, Senior Researcher at Futurelab. "Schools often start off with the idea that they have a curriculum and a set way of doing things, taking a largely prescriptive approach. They need to look at the outside world as a way of extending what they already do, to look for new opportunities for learning outside the school that may have greater relevance and offer more diversity to learners."

For example, at Drove Primary School in Swindon, links are being forged with the local community to improve students' ability to learn. Parents from 30 different nationalities come into the school to learn specifically about nutrition. Headteacher Nick Capstick says that many parents are not used to sending their children to school for the day. Add to that a new country, a new lifestyle and new foods, and some students are left unaware of their dietary needs for the school day - and the effect that can have on their learning. So parents are brought in, taught about creating a balanced diet, and are then able to not only cater for their own children better, but to inform others in their community. As a result of building these bridges, Capstick says children are better able to sit and concentrate in class.

But it works the other way too - with the school and its pupils learning from external communities. Input from outside sources creates new opportunities for learning. Bringing other sources of knowledge into school life, or taking students out into the world to experience new things, can teach and develop latent skills in students that the National Curriculum (without additional programmes of study) does not always cover. It can also make learning a more personalised experience, where the individual interests and talents of students across all ability ranges have an opportunity to shine in ways that coursework or a written exam might not allow.

Teacher and Director of Business Enterprise at Rydens School in Walton-on-Thames in Surrey, Stephen Cabrera, agrees: "Sometimes schools can be seen in isolation, in their own little worlds. We need to teach the curriculum to make it relevant to the real world, and the best way to do that is using real-world companies. Many businesses are keen to get involved as they want people to have the lifelong learning skills that industry demands. And students get to work with different people and present to different audiences; students that aren't interested in a project suddenly become very interested."



Glebe School



Glebe School



Rydens School



Rydens School



Glebe School

Of course, given his subject area, Cabrera's focus is on business, but there are a range of organisations and individuals outside school that can make this kind of difference to learning. Cabrera has spent the past few years building bridges with businesses such as IBM, Air Products, Unilever, the local business group and, through this, McDonald's and Laithwaites wine sellers. These companies have brought real projects and new learning to the school's students, which motivate them more than regular classwork, and can be integrated into the curriculum.

Working with external communities brings a lot to students, explains Cabrera. "When

up preconceptions and increase innovative thought and entrepreneurial spirit.

For example, Laithwaites came to Rydens with a project to develop a bag that would carry six bottles of wine, with a graphic on the outside. The students were given a brief at the beginning of the project, and set off to research and design the bag. Their work has recently been judged by the Vice President of Laithwaites, and the winning bag may actually be produced.

Cabrera says: "Laithwaites commented on the work in progress, saying to students 'That's not robust enough' and 'That's not following the spec we gave you'. So the

They apply this work to different areas of the curriculum, using easily available technology like GPS systems, digital video and digital still cameras to record their work, and learn new skills. They pick up new ways of thinking from the links outside school, from the allotment people, local garden centres and businesses.

Glebe School is a special educational needs (SEN) establishment and finds that many students have a strong drive and aptitude for practical work, which allows them to express themselves far more creatively, and on a more individual level. That is why the school has, for the past four years, been a participant in a geography

"WORKING WITH ADULTS WHO AREN'T TEACHERS, AND WHO DON'T TALK LIKE TEACHERS, INSPIRES STUDENTS"

someone from a business explains what has to be done, students get a new focus. They are told they will be learning for the curriculum, but that there will also be a relevance to the skills they will learn outside school. It's all part of personalised learning; it gives them drive as they feel they will be learning something they want to achieve, increased ownership over the curriculum, and it motivates them, giving them new perspectives."

Cabrera is focused on enterprise skills that complement students in their schoolwork and beyond. Skills that Cabrera wants to develop include communication, problem solving, taking calculated risks, working with others, self-evaluation and assessment. It is about bringing the world into the school bubble, to shake

students struggled and worked harder. Working with adults who aren't teachers, and who don't talk like teachers, inspires them. They achieve their curricular goals and more."

As Cabrera says, in order to be truly effective, we need to begin with the learners' needs, looking at what makes a student buzz with interest and excitement. At Glebe School in Bromley, Kent, students showed a desire to work outdoors on the school grounds so Martin Crabbe, Head of Geography, formed the Bromley Garden Project - a collaboration between Glebe School and three other schools in the borough, funded by the Enterprise Education Initiative. The collaboration now runs an allotment where they grow vegetables for the local farmers' market.

pilot with the OCR exam board, which allows students to do 75% of their GCSE coursework as practical.

Students develop different skills from working with people other than teachers, says Crabbe: "Students have had to prepare talks for adults about the garden project, and have done way better than we would have expected, as they are so interested in the subject and have learnt a lot from interacting with different people. Others have shown skills in taking control of projects, motivating people, focusing on areas they're interested in and making them their own."

Crabbe continues: "Our students are now part of a social enterprise where they are not only learning as part of the geography



Glebe School

curriculum, but also finding their own roles in a company that needs weeders, recyclers, marketers, sellers, gardeners and researchers. From seeing other allotments and talking to the gardeners, we have learnt that there are so many different approaches to growing a potato or tomato. Students have to use teamwork and decision-making skills, look at health and safety and risk assessment; real business skills. And they learn to use different technologies outside the school, seeing how it fits in.”

With funding from the project, a part-time coordinator has been appointed to develop links between the schools involved and to establish further contacts with businesses and organisations outside that could contribute. This includes organising trips to local garden nurseries, talks from the WWF (World Wide Fund for Nature) and irrigation companies, and visits from various owners from the local allotments to share their knowledge with students in the garden.

It seems there is much to draw on from the world outside school that can help to make learning an exciting, inspiring and relevant challenge for students - and this article has only highlighted the tip of the iceberg: there are many more examples that can offer inspiration. Beginning by asking young people what makes them sit up and take notice is an obvious place to start. As Cabrera puts it: “It’s about letting the students be independent learners as well. It’s an essential part of developing the person.”

Useful links

- More on the Rydens Apprentice project: www.schoolsnetwork.org.uk/uploads/documents/be_124934.pdf
- Bromley Garden Project: www.sd-commission.org.uk/communitiessummit/show_case_study.php/00188.html
- Glebe School: www.glebe.bromley.sch.uk
- Information on School Business Links from DfES: www.csr.gov.uk/schools.shtml
- Education Business Links from DfES website for students: www.dfes.gov.uk/ebnet/students
- Global Gateway: useful information on how to start building links in the community, out to the rest of the world: www.globalgateway.org.uk/Default.aspx?page=330

External influence in action

Rydens’ Apprentice scheme is an example of how the school uses links to business to motivate students and get them to understand and learn enterprise skills. A group of Year 12 students compete over the course of a year to become Rydens’ Apprentice.

Each round of the challenge involves the development of new enterprise skills such as using initiative, innovative thought, team work, risk assessment and decision making abilities. Along the way entrants ‘get fired’, just as in Alan Sugar’s television programme, ‘The Apprentice’. Rydens’ Apprentice rounds this year have included making a TV advert using digital cameras, marketing resources such as posters and flyers designed on a PC, and a full presentation, for the desserts producer Carte D’Or. The scheme often results in real-world feedback. The judges,

Unilever executives, told the competitors that although one advert won and the other lost, in the real world they would have employed the losing team for its personality and given it the winning team’s idea to develop.

Last year the winner got to shadow Larry Hirst, UK General Manager at IBM, for one week. The runner-up was Marty, a student of low academic attainment but strong entrepreneurial skills. Marty left school and went to work in Starbucks. But when IBM’s Hirst asked the school how the winner and runner-up were doing and heard this, he immediately offered Marty two months’ work experience in IBM’s marketing department, as he had impressed the judges so much. If all goes well with his work experience, Marty may be taken on permanently at IBM.

OPENING EDUCATION: Towards new learning networks

Futurelab has recently launched a publication which explores what the educational landscape of the future should look like. It asks: What types of institutions, spaces and places for learning should we see develop? Where, and with whom, should learning happen? In this report, it is argued that we need to move away from the institutionalised

logic of the school as factory, to the network logic of the learning community.

Go to www.futurelab.org.uk/openingeducation to view or download the document for FREE (hard copies are available on request while stocks last, details can be found online).

Getting creative

It is essential for learners to be creative, to generate new ideas and to experiment 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...



Adam Brown and Andrew Fagg



WHITEvoid



Brigitte Seinoath



Digg and Stamen Design

Herding instinct

Bion is an installation by US artist Adam Brown and scientist Andrew Fagg which acts like a herd of animals, exploring the relationship between humans, artificial life and energies in the environment. Bions ("transitional forms between non-living and living matter" - Wilhelm Reich) chirp and glow to each other as they hang from the ceiling, but as a human approaches, sensors react and trigger waves of silence and curiosity in the group, and finally attraction - the Bions increase their glow when the visitors get in among them.

www.isisconceptuallaboratory.com/bion.html

A bug's life

Using projected images of insects as a metaphor for bugs in computer software, WHITEvoid Interaction Design has created an interactive installation that explores how software bugs can sometimes provoke unusual and interesting results. The images are projected onto a digital multifaceted 'anthill', where visitors can use their own shadows to stimulate the bugs into movement and guide them in particular directions. When a bug reaches the highest point of the anthill, it triggers a random variation in the software, changing the bug's appearance or behaviour.

www.whitevoid.com

Electrical walks

German composer Christina Kubisch has worked with electromagnetic induction since the end of the 70s. She has developed custom-made wireless headphones which make audible the electromagnetic fields of which we wouldn't normally be aware. Light systems, surveillance cameras, wireless internet and other electrical devices fade in and out of the audioscape as the wearer walks around an area of a town or city. Armed with the special headphones and a map of interesting emission fields, the wearer is made aware of the complex sounds of modern urban life, which are beautiful and frightening at the same time.

www.christinakubisch.de

Can you Digg it?

Digg is a user-driven social content website where all submitted content can be voted on by over a million users. As well as navigating the articles by a list in order of popularity, articles can be viewed graphically as circles which 'readers' swarm around, so users can see a visual representation of site activity. The headlines, paths, articles and other users appear and disappear like microscopic organisms.

labs.digg.com/swarm



Vincent Roudaut and Maurin Donneaud

Music textile

Developed by Vincent Roudaut and Maurin Donneaud in France, Music Textile is a large tactile interface for playing electronic music. The performer plays it simply by moving his or her hand over it. The fabric is woven with

two layers of conducting threads, so that when the threads are pushed together (when touched by hand) an XY position is transmitted to a computer. This then generates pitch, effects and sounds. Interacting with the program by gesture helps children to approach the rules of music composition in a playful way. This interface has been developed in order to bring a physical dimension to electronic music.

xyinteraction.free.fr/wikiminst



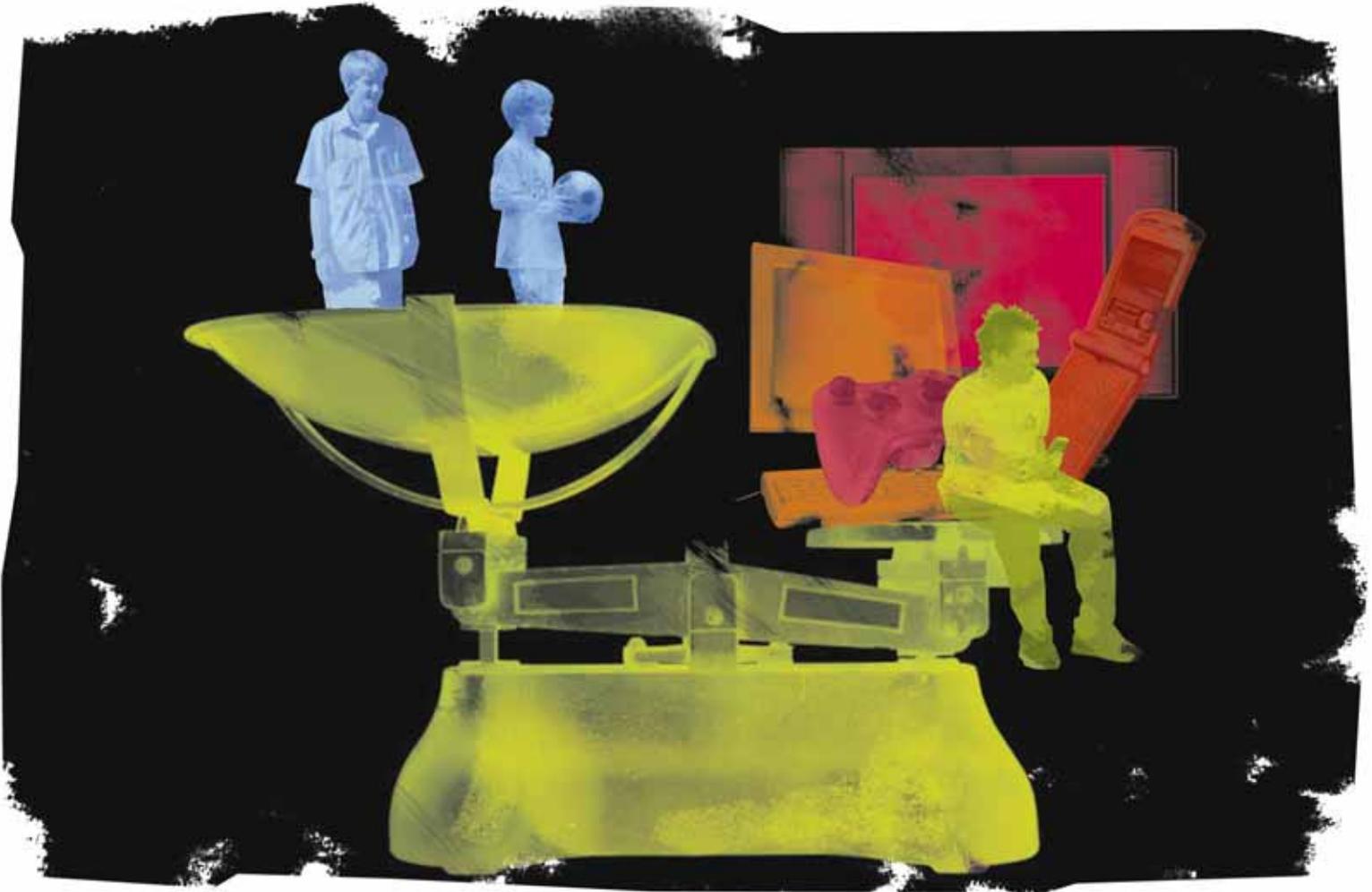
Scott Drees and the Electric Sheep

Dreams in hi-fi

The computers running the open source Electric Sheep screensaver communicate with each other via the internet while they 'sleep', sharing the work of creating morphing, abstract animations known as 'sheep'.

The result is a collective 'android dream'. Favourites can be voted for, with the more popular sheep living longer, reproducing and mutating according to a genetic algorithm. 'Dreams in High Fidelity' is the rendering of a database of selected 'sheep' by a cyborg mind composed of 40,000 computers and people mediated by a genetic algorithm. It is a painting that evolves, an example of which is now installed at Google HQ.

hifidreams.com and www.electricsheep.org



HEALTH AND THE MODERN WORLD ARE WE TURNING TOXIC?

Are the modern world and technology ruining young lives? For years this has been a recurring theme in Britain's media, and it is currently enjoying another airing in the wake of an open letter published in *The Daily Telegraph* last autumn. Signed by 110 public figures, the letter expressed concern that 21st century life was causing depression and developmental problems in children, citing culprits that ranged from junk food to screen-based entertainment.

There followed much argument over whether technologies such as computer games, mobile phones and television are good or bad for children. But is that the sort of discussion we should be having? Or are the arguments more subtle - with more consensus than most of the debates would suggest?

At the heart of the debate is journalist and literacy specialist Sue Palmer. One of the organisers of the Telegraph letter, she is also the author of 'Toxic Childhood', the book which argued that changes to society in today's fast-paced, technological world were creating a noxious environment for children. While her argument was wide-ranging and included factors such as

coverage, Sue Palmer is no Luddite and is concerned about the way her work has been represented.

"I love technology," says the former headteacher. "I have seen wonderful ICT projects - children collaborating on creating websites, newscasts or making fantastic videos. But you have to strike a balance between using technology and doing other things."

Her major concerns are over children's earliest years. "When children are tiny, they need a lot of attention. If you put a TV in a little one's bedroom, then they are not getting the interaction they need with adults. Parents are really worried about

parents often don't know." Of course, there are many who argue that, instead of preventing young people from accessing these online resources, we should be giving them the skills to use them safely.

Palmer continues: "There is no reason why children shouldn't play on PlayStations or watch telly, but that cannot be their only play - they need to learn how to get along in the world and with other kids."

In fact, Palmer's main point seems to be about the lack of balance in young people's lives. A tendency towards excess, whether in the consumption of fast foods or time spent on computer gaming, is seen by her as symptomatic of a wider social problem

"THE REAL ISSUE IS NOT THAT CHILDREN WATCH TOO MUCH TV, THE ISSUE IS WHY THEY DO"

diet and fast food, the public debate was generally focused on technology. And the irony here is that, contrary to the media

their children meeting strangers outside, but kids could be spending hours with strangers onscreen and online - their

concerning childhood and parenting. Dave Tyler, Headteacher at St Thomas' Primary, Swansea, says: "I have read 'Toxic Childhood' - and the problem is that we still have to educate children, no matter how 'toxic' they are. When I was a child I probably did things that were not very good for me - I survived and learned a lot. I read Steven Johnson's book, 'Everything Bad is Good for You', and I am interested in the idea that children will persevere with computer games when they would give up on other forms of learning. But we all need a balance - and if someone spends too long doing anything, it is probably not healthy."

He says he is "glad" that Sue Palmer opened the debate: "My big concern is that only a small percentage of society will read her book - and they won't be the people who need to be challenged by it."

Marian Brooks, Executive Director of education services company Cambridge Education and a former headteacher, feels that what we've seen in the media doesn't get to what she sees as the root cause of the issue: "The scare stories in the media are an unsurprising, simplistic response to something that demands a much more profound discussion. Yet again, people are looking at the most apparent symptom, and saying: that is the cause. It is said that children are suffering from the effects of watching too much TV. I would say that children would suffer from doing too much of almost anything." Her main concern is over the way these technologies



are used: "The real issue is not that they watch too much TV, the issue is why they do." She suggests that: "TV is used as a replacement for articulation, dialogue and experience, and the problem is that the family environment has broken down. TV is used as a childminder - and in lots of places computers are too, particularly computer games.

"It is not the fault of the tool; it is the fault of the way it is employed. I would say: look hard - if you have a home where the child has a TV in their room, you have a recipe for absolute disaster, because it takes it out of the context of it being interactive - something that people do together in the climate of a family." An extreme take

on this issue maybe, but it does raise an issue that many involved in the 'toxic childhood' debate are concerned about.

Brooks says she has always tried to strike the right balance of media access, context and understanding within her own family. "My house is suffused with technology - my kids had internet access from an early age - and everything is in our living quarters. I will not have a TV, video or computer in the bedrooms. Kids are entitled to nurturing care that isn't just parking them in front of a box and expecting them not to have absorbed what is on there. Blaming the technology is like a parent saying, 'We shouldn't have printed media, because my child looks at pornographic magazines.'"

Tony van der Kuyl, Director of the Scottish Interactive Technology Centre at Edinburgh University, agrees with Brooks' main point. "Just because you have access to a wonderful resource through computer technology does not mean that its use will always be positive and appropriate. Like any other technology it can be misused, and as an academic and parent I have seen examples of hugely inappropriate use."

But he differs on how he would manage this issue. "There is absolutely no doubt that today's child lives in a learning environment that is very different from anything experienced by children a decade ago. Things have changed so fast that technology at levels we previously couldn't

"THINGS HAVE CHANGED SO FAST THAT TECHNOLOGY AT LEVELS WE PREVIOUSLY COULDN'T COMPREHEND NOW SITS IN THE HANDS OF TODAY'S LEARNERS"



comprehend now sits in the hands of today's learners. So a reactive stance that says, 'Let's ignore this because of its possible toxic effects,' does a discredit to children of today. The role of parents and educators is to engage our young people in appropriate uses of technology to enhance their intellectual, social and pastoral

years of experience using pencils on paper." However he does balance this statement with: "I would also say that when you speak to children and ask them why they love word processors, they tell you it is because it is neat - they don't have to score out or rub things out. It gives kids - particularly the less able - a sense of

Not everyone is able to take this long-term perspective and so, in the meantime, the debate continues. But some common themes have emerged, suggesting that the 'sides' to the argument aren't perhaps as diametrically opposed as the media coverage would have us believe. When you ask experts with years of experience for

"THE LESSON OF HISTORY IS THAT THESE MEDIA HAVE ALL HAD POSITIVE ROLES TO PLAY IN THE CULTURAL LANDSCAPE, AND THE IMAGINATIVE PLAY OF CHILDHOOD"

development. That should be encouraged in a variety of collaborative and personal environments, and creative activities are very important."

He too advocates that a proper balance of experiences has to be struck: "There are some who would say that non-technological solutions are no longer appropriate - I would say that is nonsense. It is appropriate to play the piano and the guitar as well as to use sampling software."

It's van der Kuyl's opinion that: "Anybody who wants to use an electronic pen on a tablet will not succeed unless they have

esteem in their work they would not get with pencils and pens."

Of course, none of this is really new. Dr Andrew Burn, Reader in Education and New Media at the Institute of Education, University of London puts this debate into context: "18th century parents worried about the corrupting influence of Romantic and Gothic fiction on their daughters. Films, rock and roll, comics and soap operas have all been blamed in their turn for successive social ills. The lesson of history is that these media have all had positive roles to play in the cultural landscape, and the imaginative play of childhood."

their views about 'toxic childhood' the main issue that comes up again and again is the need for balance - in children's experiences at home and at school, and in their use of both the traditional and the technological (as well as the way these tools are used). Such is the importance of this issue, it is imperative that we debate it in a rational and constructive way, avoiding the media's tendency to appropriate education's concerns for its own agendas, reflecting its own anxieties, particularly where technology is concerned.



Background information

- Toxic Childhood: www.suepalmer.co.uk/toxic.php
- Letter to the Daily Telegraph: www.telegraph.co.uk/news/main.jhtml?xml=/news/2006/09/12/njunk112.xml&page=1
- Cambridge Education: www.camb-ed.com
- Scottish Interactive Technology Centre: sitc.education.ed.ac.uk



Digital pet promotes healthy living

One argument regularly levelled against computers and electronic games is that they lure children into an unhealthy, couch-potato existence. One of Futurelab's current prototype projects, Fizees, is exploring how digital technology can be employed to encourage young people to lead healthy lives. Aimed at 10 and 11 year-olds, the project gives children their own Fizee - a digital pet that is displayed on the screen of an electronic device worn on the wrist. To nurture and grow their pet, children need to take exercise. A heart monitor and accelerometer measure their activity levels, and the results have a direct impact on the wellbeing of their pet. Children can also use a website to swap experiences, find out about healthy living and look at how

their activity rates have developed over time. The scoring system employed by Fizees is based on current expert knowledge about recommended amounts of exercise for young people, and was developed in collaboration with the University of Bristol's Department of Exercise and Health Sciences. The project aims to find out whether the Fizee can motivate young people to build physical activity into their lives and help them develop a better understanding of what constitutes a healthy lifestyle.

It is currently only available in prototype form, but Futurelab is seeking partners to make Fizees available on a wider scale.

www.futurelab.org.uk/showcase/fizees



Events

eLearning@Greenwich: Designing for Learning

4 July 2007

London, UK

web-dev-csc.gre.ac.uk/conference/conf32

This University of Greenwich conference is aimed at practitioners, developers and researchers to tease out emerging new approaches to learning and teaching made possible by ICT-based tools and practices. It will ask questions about what further changes are required: for example, "What are the new skills, knowledge and roles required of teachers in order to be effective 21st century practitioners?"

Mobile Learning 2007

5-7 July 2007

Lisbon, Portugal

www.mlearning-conf.org

Futurelab's former Director of Learning Martin Owen is a keynote speaker at this conference organised by the International Association for the Development of the Information Society. It's a forum for research into mobile learning influenced by last year's Big Issues in Mobile Learning workshop. A report on that event is downloadable via the conference website

SIGGRAPH 2007: Face Tomorrow

5-9 July 2007

San Diego, USA

www.siggraph.org/s2007

Digital creatives from a range of industries including imaging and gaming gather at SIGGRAPH in San Diego to check out the products, systems, techniques, ideas and inspiration for emerging generations of computer graphics and interactive techniques.

EISTA 2007

12-15 July 2007

Florida, USA

www.cyber-inf.org/eista2007

The 5th International Conference on Education and Information Systems, Technologies and Applications explores the relationships between education and training and ICT, and asks questions like "What is the impact of the information and communication technologies in education and training?"

Building Learning Communities

16-18 July 2007

Boston, USA

www.novemberlearning.com/Default.aspx?tabid=29

Many UK schools have sent teachers to US educationist Alan November's annual Building Learning Communities event and it's easy to understand why. Alan's laid-back and practical approach is very effective for staff development and the feel-good factor scores very highly.

Imaginative Education: Provoking Excellence Across the Curriculum

18-21 July 2007

Vancouver, Canada

www.ierng.net/confs/index.php?cf=2

It's a deliberately provocative title as the organisers want to "revisit the definition of 'academic excellence' through an imaginative approach". They feel that imagination in learning and in research helps bring about excellence throughout the curriculum.

ALT-C 2007: Beyond Control

4-6 September 2007

Nottingham, UK

www.alt.ac.uk/altc2007

"Learning technology for the social networking generation" is the theme for the annual conference of the Association for Learning Technology (ALT). Keynote speakers include UK educationist Dr Michelle Selinger, Google's director of research Dr Peter Norvig, and Professor Dylan William, deputy director of the Institute of Education.

Mobile HCI 07

11-14 September 2007

Singapore

www.mobilehci2007.org

Mobile HCI 07 Conference - Human Computer Interaction with Mobile Devices and Services takes a close look at mobile devices, from phones to PDAs. It is concerned with "the analysis, design, evaluation and application of human-computer interaction techniques and approaches for all mobile computing devices, software and services". Sponsors include Nokia and Microsoft.

The Scottish Learning Festival

19-20 September 2007

Glasgow, UK

www.scottishlearningfestival.com

Professor Stephen Heppell and leading international authority on educational reform Michael Fullan have been confirmed as keynote speakers at one of the UK's premier learning and teaching events, the Scottish Learning Festival (formerly known as SETT). Learning and teaching lead this event which has ICT at its core. Wide range of keynotes and seminars with major exhibition too.

The 10th European Conference on Computer-Supported Co- operative Work 2007

24-28 September 2007

Limerick, Ireland

www.ecscw07.org

Innovative techniques and technologies, design space and the conceptual foundations for computer-supported co-operative work are the areas being addressed in this five-day single-track conference.

Handheld Learning 2007

10-12 October 2007

London, UK

www.handheldlearning2007.com

The signature event for those interested in opportunities presented by 'always-on' learning. You can expect to catch up on developments in national and international classroom use of handheld computers at this annual event covering handheld computers and learning. This year, supported by Becta, it moves to a larger venue, Central Hall, Westminster.

MLearn 2007

16-19 October 2007

Melbourne, Australia

www.mlearn2007.org

The organisers of the sixth MLearn conference continue their mission to "take mobile and ambient learning from the theoretical and niche into the mainstream of education delivery". The event covers a wide range of issues, from pilot projects to large-scale deployment of innovation in pedagogy.

Why don't you...?

Supporting innovative approaches in education

30-31 October 2007

London, UK

www.futurelab.org.uk/events

This conference has been designed for audiences from teachers to local authorities, policy makers and industry. Through a mix of inspirational presentations and hands-on activities, the aim of this event is to explore the conditions, tools and strategies that support innovation, particularly in relation to teacher practice and the design and development of digital learning resources.

Education and Educational Technology (EDU '07)

21-23 November 2007

Venice, Italy

www.wseas.org/conferences/2007/venice/edu

The World Conference of WSEAS on Education and Educational Technology (EDU '07) is organised by the World Scientific and Engineering Academy and Society (WSEAS). While its main focus is educational technologies, it also covers engineering technology.

Online Educa Berlin 2007

28-30 November 2007

Berlin, Germany

www.online-educa.com

"Web 2.0 linked to Education 2.0" is one of the themes of this European conference. It also takes a look at "Designing Teaching and Learning with Digital Media and Tools", promising a focus on innovative approaches and personalisation.

BETT 2008

9-12 January 2008

London, UK

www.bettshow.com

It's the world's biggest educational technology show and attracted nearly 30,000 visitors to its 607 stands in 2007 - all the key UK ICT organisations, agencies and companies are there. Increasingly international, you need to pre-register and pre-plan to make the most of this bustling event.

Futurelab

1 Canons Road Harbourside Bristol BS1 5UH UK tel: +44 (0)117 915 8200 fax: +44 (0)117 915 8201

e-mail: info@futurelab.org.uk blog: flux.futurelab.org.uk www.futurelab.org.uk



VISION is printed on Howard Smith 'Greencoat Plus Velvet' which is produced from mixed sources containing 80% recycled post-consumer fibre. This paper has FSC and NAPM recycled certification.